BusBoss™
TRIP PATROL GPS
EASY, AFFORDABLE, ROUTING & TRACKING SOFTWARE
Because your precious cargo comes first
Orbit Software
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TRIPpatrol™ OVERVIEW

TRIPpatrol is a sophisticated, state-of-the-art, Automated Vehicle Location (AVL) software system based on GPS technology. With the TRIPpatrol system, a GPS transceiver is mounted on each of your vehicles. Data is collected by the GPS receiver and periodically transmitted to the Server.

With TRIPpatrol, users can easily monitor their entire fleet in real time. Data can be collected as often as every 30 seconds with an approximate accuracy of 30 feet. As a result of the high data throughput, users can monitor vehicles more closely and in a timely fashion. TRIPpatrol allows users to more effectively manage their entire fleet. With the many reports available with TRIPpatrol, users can closely monitor driver activity to improve the efficiency of their organization.

TRIPpatrol provides real-time tracking and emergency notification giving students a critical measure of safety as well as managers more control over their assets.

WHO NEEDS TRIPATROL?

Any organization that manages a fleet of vehicles! If you’ve ever wondered where your vehicle is, why your driver is late, where your vehicle stops, or how long they’re stopped, then TRIPpatrol is for users.

TRIPpatrol will allow users to pinpoint where their vehicle is located. With the double-click of a mouse; users can re-center the map to show the current location of any vehicle being tracked. Want to know where your vehicle has been? Users can easily display histories, shown graphically on the map to indicate positions. Want to know how fast your vehicle was traveling at 8:30 AM? TRIPpatrol can tell you..
TRIPpatrol™ SYSTEM CHARACTERISTICS

TRIPpatrol is the primary application interface used to display and report on vehicle activity.

The display is separated into two distinct views. On the left side of the screen, users will see an ordered list of vehicles with the Miles, Text Location, Speed, Status, and Sensor Indicators. Each vehicle that has transmitted that day is displayed. Vehicles that are currently transmitting are displayed in a **bold and green** font. Vehicles that are no longer transmitting are displayed in a normal font.

Users can configure the system with a **Max Speed**. When the speed of the vehicle exceeds the maximum speed, it is displayed in a **red** font.

The status column represents many different conditions. If the vehicle is currently transmitting, the status column will indicate the direction of travel. If the vehicle is stopped, the
status column will display the length of time that the vehicle has been at its present location.

Users can right click on any vehicle in the list to get additional information. Users can cause the map to re-center to display the vehicle in the center of the map window. Users can quickly generate historical reports to display the previous positions of the vehicle for the current day. Additional reports are available that allow users to display the vehicle locations for previous days.

On the map display, users will see each vehicle represented by any symbol users choose. Along with the symbol, users will also see the vehicle number. When users use the mouse to hover over various objects on the map, information is displayed in the lower left corner of the screen. For example, hover over a vehicle and the agency name is displayed. Hover over a street and the street name is displayed. Hover over a stop symbol and the arrival time and duration are displayed. Hover over a historical route and users will know the time, speed and location of the vehicle.

MAPS

TRIPpatrol maps are stored in the popular TomTom (aka TeleAtlas) file format. When users purchase TRIPpatrol, users can choose up to 5 counties of map data to be included in the installation. Additional counties can be purchased separately. The map data includes streets, rivers, railroads, lakes, county boundaries, and more.

Orbit Software has the ability to convert map data from various sources. Call to find out if their map data can be used in TRIPpatrol.
DATA SERVICES

TRIPpatrol uses GPS signals to determine vehicle locations. TRIPpatrol accuracy is determined by the accuracy of the GPS system. With current technology, this accuracy is approximately 30 feet.

TRIPpatrol uses Cellular data services to transmit the location of the vehicles. Using Cellular Technology, monthly data fees apply.

NETWORK

TRIPpatrol was designed to be compatible with most popular types of networks. TRIPpatrol is certified to work on Windows network. When TRIPpatrol is networked, multiple users can view and display real-time positions simultaneously.

SECURITY

Often times, the location of their vehicles are proprietary or contain sensitive information. Using SQL Server, users can easily password protect their database so that only authorized personnel can view and display the vehicle locations.

Internet data security is always a big issue. As a TRIPpatrol customer, users have the ability to host their data from their internal website. If users only want authorized personnel to view the vehicle locations on the Internet, users can password protect the web pages to provide security. If users want anyone with an Internet connection to view their vehicle locations, users can do that too. TRIPpatrol can accommodate any security level users choose.
SPEED MODE

TRIPpatrol can display vehicle locations in several ways. The speed mode does not display any historical information until users request it. Each vehicle is represented by a single point indicating the current position. This allows for a very clean, un-cluttered display of the data.

SENSOR/TIME MODE

With the Sensor/Time mode enabled, TRIPpatrol will display historical information on the screen. Each vehicle is represented by a line displayed on the map. The color of the line indicates the time interval for the location. The shape of the line indicates the various sensor statuses.

ALERTS

Various events can trigger an alert. When the vehicle exceeds a pre-set speed limit, an alert is displayed. An alert is triggered when a vehicle idles too long while outside a “safe idle” zone. Users can configure alerts to trigger based on sensor status. For example, users could set one of the sensors to be a “panic” button. When pressed, the sensor status is transmitted and an alert is generated.

REPORTS

TRIPpatrol uses a Microsoft SQL Server to store the data. Since these are the most popular databases currently available, there are many third party reporting tools that can be used to access that data to create additional reports.

There are numerous built-in reports that give TRIPpatrol users the tools required to effectively manage their fleet.
**TRIPpatrol DATA MANAGER**

Every TRIPpatrol installation must be running the TRIPpatrol Data Manager. This application serves many purposes, each one critical to the successful operation of the system.

When data is transmitted by the vehicle, the receiver collects the data and writes it to a communication port. This communication port is connected to a similar communication port on their computer. When data arrives on the port, the TRIPpatrol Data Manager collects it and saves it to the database.

Once the data is in the TRIPpatrol Data Manager, users can modify the agency number and the vehicle number. This allows users to display the vehicle using their own numbering system.

Typically, once the TRIPpatrol Data Manager is configured, users no longer need to regularly view it. In order for data to be collected, it must be running; however, it runs in the background as a task tray icon.
WHAT DATA IS COLLECTED?

When the data is synchronized the vehicle transmits information. The data transmitted is...

- **Agency Id Number** - a unique number assigned to each agency that uses TRIPpatrol. Users can use this information to filter out vehicles that are not part of their agency.

- **Vehicle Id Number** - a unique number assigned to each vehicle.

- **Latitude and Longitude** are used to locate their vehicle on a map. This information is the basis of other information that can be displayed within TRIPpatrol, such as direction of travel and the street name the vehicle is currently traveling on.

- **Speed** - measured by the GPS device located on the vehicle and is transmitted with every message coming from it.

- **Distance** - represents the cumulative distance the vehicle has traveled throughout the day. This value is always reset at midnight.

HOW DO AGENCIES WORK?

Agencies allow for logical groupings of vehicles. If their fleet contains school buses, users could easily represent one agency as 72 passenger vehicles, and another for handicap accessible vehicles. If users are a city municipality, one agency could represent snow plows, another for leaf collectors, and another for road repair crews.

TRIPpatrol allows users to view all vehicles from all agencies simultaneously on the screen, or all vehicles from any one agency. It’s up to users to decide how the data is displayed.
TRIPpatrol TRACKING BENEFITS

TRIPpatrol™ is an option that serves as a sophisticated tool to reduce costs as well as provide enhanced features for safely transporting students to and from school. There are a multitude of aspects to consider with TRIPpatrol™:

- Provide real-time data to administrators to help them better manage their routes and drivers resulting in potential savings of fuel, wages, and vehicle efficiency.
- Save money! Track driver times to eliminate excess hours.
- Capture actual data to help eliminate problem drivers (unauthorized rerouting, speeding, etc.).
- Contain costs and eliminate the possibility of unnecessary expenditures by providing the ability to audit third party contractor invoices.
- Eliminate unauthorized stops and the opportunity for their drivers to waste time.
- Utilize as a risk management tool to possibly lower insurance premiums, and/or eliminate certain insurance claims, improve loss experience and save on cash liability payments.
- Provide actual data for accident and insurance claims to disprove false allegations (cars hit, mail boxes run over, etc.).
- Provide peace of mind to parents concerned with the safety of their children.
- Enable parent notifications to enhance student safety.
- Effectively manage daily transportation operations and accurately track ridership.
- Quickly and effectively respond and manage emergency situations.
TRIPpatrol TRACKING FEATURES

- LIVE LOCATION UPDATES
  - Monitor and display your entire fleet in real time on detailed wide area maps with speed, time and location information.
  - Display the path a vehicle traveled to track where their drivers have been.
  - Real-time data can be accessed over a network for display on unlimited computers.
  - Keep historical data about their vehicles speeds and times at specific locations.
  - Automatically create ‘safe streets’ for each vehicle that triggers a warning when a vehicle is outside its acceptable area.
  - Set various security and alarm modes for the following:
    - Vehicle deviates from its normal route
    - Vehicle stops for a significant period of time at an unauthorized location
    - Vehicle exceeds preset speed limits
    - Vehicle arrives late or never arrives to an assigned stop
    - Identify ‘safe idle zones’ where vehicles can layover between trips without triggering a warning.
    - Panic button hidden from view can send a signal back to the depot or district in case of emergencies.
    - Compare their scheduled routes with actual driver routes to update their routes with accurate times and mileages.
    - Print activity logs for vehicles (start time, end time, average speed, max speed, and total miles) to help users better manage their routes and drivers.
HARDWARE

VEHICLE TRANSCEIVER

Each vehicle being tracked must have a GPS Transceiver installed on it. In most cases, the equipment is connected to the ignition switch so that when the engine is on, the vehicle starts transmitting.

Black Box

The black box records and sends the position of the buses every 30 or so seconds via the cellular network. It comes with a built-in antenna and an accelerometer, and supports up to 5 inputs, such as a panic button and a door sensor.

Inside the black box lies a cellular SIM to collect and send the GPS data back to the TRIPpatrol™ Data Manager. We typically use the AT&T network; however tests will be conducted in your service areas to ensure maximum data coverage.

The black box gets plugged into the OBDII connector or installed in a safe location behind the dash through a 3-wire harness (Positive, Neutral and Ignition). A typical install takes under 30 minutes. Users can mount an antenna on the roof of the vehicle to improve the cell reception. This antenna can be magnetically mounted to any metal surface.

It also supports the option to add a fully integrated driver touchscreen.

TRIPpatrol™ software may be used with your choice of GPS tracking hardware.
COMPATIBILITY with BusBoss™

Add real-time tracking to the comprehensive routing features found in BusBoss student routing and scheduling software.

TRIPpatrol tracking software can be easily added to BusBoss routing software whenever a need is determined. BusBoss with TRIPpatrol has all the great features and functionality available in BusBoss with the added capability of real-time GPS tracking and reporting.

BusBoss with TRIPpatrol will do it all in one, fully integrated software program. No additional data work or maps are required when TRIPpatrol is added to BusBoss. Everything displays on one map!

Alerts can be triggered when drivers deviate from the planned routes created in BusBoss. These routes can also be saved to overwrite the planned routes.

IMPLEMENTATION STEPS

1. Train District staff on installation of hardware.
2. Install black box hardware on all buses, including panic buttons. Extra portable devices can be provided.
3. Distribute flyers and registration forms for parent notification subscription service.
4. Set up and configure TRIPpatrol software and Data Manager.
5. Test TRIPpatrol data collection process.
6. Train district staff.
7. Set up and configure Parent Notifications System.
8. Test and troubleshoot communication infrastructure.
To Schedule a Demo:
Ms. Sonia M. Mastros
soniasr@orbitsoftware.net
866-740-8994 x111 toll-free
484-941-0825 fax

For Technical Questions:
Mr. George M. Mastros
gmmastros@orbitsoftware.net
866-740-8994 toll-free
484-941-0825 fax

Online Chat:
Get answers fast online
from 9:00 a.m. – 7:00 p.m. EST,
Monday through Friday at
chat.busboss.com