GEOTAB WHITE PAPER

All fleets have one thing in common – **the need to know how assets are used in the field** in order to make **informed decisions** on where and how to **save costs** and **improve performance**.

Fuel costs increase:
How do we find cost reductions?

Sales projections increase:
How many people are required to service existing and new business?
Where should they be deployed?
How much work can each person do?
Is your businesses invoicing for actual time on site?

We want to buy new equipment:
Are we making the most out of all of the equipment that we have?
Should we redeploy our assets or acquire new ones?

Insuring our fleet has doubled:
Should we self-insure our risk?
Can we identify our field risk for collisions or driving violations?

Geotab is a highly accurate yet simple to use management tool that provides reports and views that answer these tough questions. Most fleet find that payback is within 6 months and GEOTAB guarantees payback within 12 months of deployment.

GEOTAB is one of the very few NO RISK investments your business will ever make that will truly impact the way you view your business and make decisions.

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www.geotab.com

GEOTAB BACKGROUND

GEOTAB is a Canadian company that develops fleet solutions using proprietary, patent pending GPS vehicle systems and fleet management software. GEOTAB is a Microsoft Product Integration Partner whose application is simple to use and to generate meaningful information for management and employees.

Driver ID Key

Data Transfer to Key

GEOTAB High Detail Trip Recording System – using GPS technology

GEOTAB GPS antenna receives vehicle position data anywhere in the world

All fleets have one thing in common – ***the need to know how assets are used in the field.***

Through the use of GEOTAB fleet systems, management in fleet, risk and administration can make knowledge-based decisions on what, if any, action steps are required to improve operations.

Fleet operating budgets must be managed within the framework of new technology development. ***Implementing new technology within a fleet must have attainable payback goals.***

GEOTAB provides highly detailed information on how vehicles are used in the field. The GEOTAB foundation technology is an on-board recording computer – meaning there are no monthly costs in cellular or satellite time. All data is recorded inside the GEOTAB GO system and then is transferred from the vehicle either using a memory key or by using a wireless extraction method.

The clear advantage to fleets is that first GEOTAB will identify the information needed to take further actions steps at the lowest possible flat fee cost per vehicle. If a real time solution is needed for a portion of the fleet (not all vehicles need to be found in the field at any given time), then fleets can simply plug in a real time cellular component to the modular GEOTAB foundation vehicle kit.

In June 2003, the GEOTAB solution was selected by the Rollins Orkin pest control fleet for fleet-wide adaptation to accomplish several objectives: reduced fleet risk, capture distance driven without manual readings for improved lease management and maintenance scheduling and to document a score card of proof of activity of employees in the field based on Rollins Orkin performance standards.

GEOTAB benefits fleets by driving down the cost of business directly through reduced fuel costs, reduced accident or legal claims and indirectly through improved customer retention, employee productivity and safety record. GEOTAB benefits the environment by giving fleet managers unprecedented visibility of excess fuel consumption in the field.

GEOTAB AND THE 2003 FLEET CHALLENGE

GEOTAB provided the GPS technology at no cost to participants during the 2003 Fleet Challenge period. Participating fleets included municipal government and commercial fleets who had a minimum of 100 vehicles in their overall fleet, who volunteered a minimum of 5 vehicles for monitoring during the program and who expressed interest in understanding how their vehicle assets were used in the field in order to reduce engine over-idling in order to reduce fuel costs and Greenhouse Gas Emissions (GHGs).

The following fleets participated in the 2003 Fleet Challenge using GEOTAB GPS technology:

Toronto Hydro	CANAR Transit (York)	City of Toronto
Rogers Cable	City of Barrie	City of Oshawa
Enbridge Gas	City of Richmond Hill	City of Hamilton
Al's Cartage	Town of Newmarket	City of Burlington

VEHICLES IN THE CHALLENGE

A wide range of vehicles were monitored during the Fleet Challenge powered by gasoline, diesel and natural gas.

ByLaw Enforcement	Public Works	Street Sweeper
Engineering	Roads	Supervisor Van
Forestry	Service Technician	Utility
Parks & Recreation	Short Haul Delivery	Waste Management

THE PICTURE OF IDLING

Before GPS, attempts at capturing idling data were restricted to monitoring engine RPMs or oil pressure and reporting extended periods of low RPM activity or oil pressure that signaled idling. Each system wasn't perfect as true idling wasn't always accounted for.

WHAT IS IDLING ACCORDING TO GEOTAB?

GEOTAB monitored the location of the vehicle along with the ignition status. When the ignition was turned on, GEOTAB started actively logging the vehicle position within 3 metres of accuracy. When the vehicle was stationary with the ignition turned on, it was recorded as engine idling.

THE BENEFIT OF GPS IDLE RECORDING

To engage in an anti-idling campaign, the fleet must be able to accomplish 3 things: **1)** record idle activity accurately **2)** locate where the idling took place and **3)** report it and be able to show the idling on a map to the driver in order to be able to trigger the driver's memory of the idling occurrence and then retrain the driver to not idle under similar situations.

During the Fleet Challenge, a waste truck driver was reviewing his idling performance and was shown a 30-minute idling incident. The driver did not believe he was idling that day. Upon seeing the idling on a map – he identified that the idling happened at the waste transfer station.

The lesson learned is that many drivers perceive idling to only "count" when it happens on the road. The perception of idling changes when the vehicle is on the property of the place of business or at a customer site.

THE REPORTS

Here are the main reports used for tracking idling within the fleet.

The **GEOTAB ACTIVITY REPORT** shows the Vehicle ID, the Driving Time, the Idling Time and the Distance Driven. The Idling Percentage was arrived at by dividing Idling Time into the total of Driving Time and Idling Time (total engine operating hours). The Distance driven number was used to put the % into perspective of vehicle use.

ACTIVITY REPORT

REPORT PERIOD: 25/05/2003 TO 31/05/2003 11:59:59 PM

VEHICLE	TOTAL HOURS			
	Driving Time	Idling Time	Distance	Idle %
H2130	0:06:18:43	0:01:53:04	121	23%
H2208	0:09:35:33	0:00:52:17	227	8%
H2214	0:19:35:49	0:03:53:33	364	17%
H3091	0:17:43:46	0:00:15:03	408	1%
H3105	0:01:41:37	0:00:21:15	32	17%
H3407	0:14:47:05	0:02:07:54	360	13%
H6419	0:10:06:18	0:02:39:09	244	21%
H6513	0:10:30:36	0:00:09:24	396	1%
H7395	0:00:19:10	0:00:01:11	27	6%
TOTAL	**3:18:38:37**	**0:12:12:50**	**2179**	**12%**

Note: GEOTAB reports are exported to MS Excel for further integration within a fleet operation.

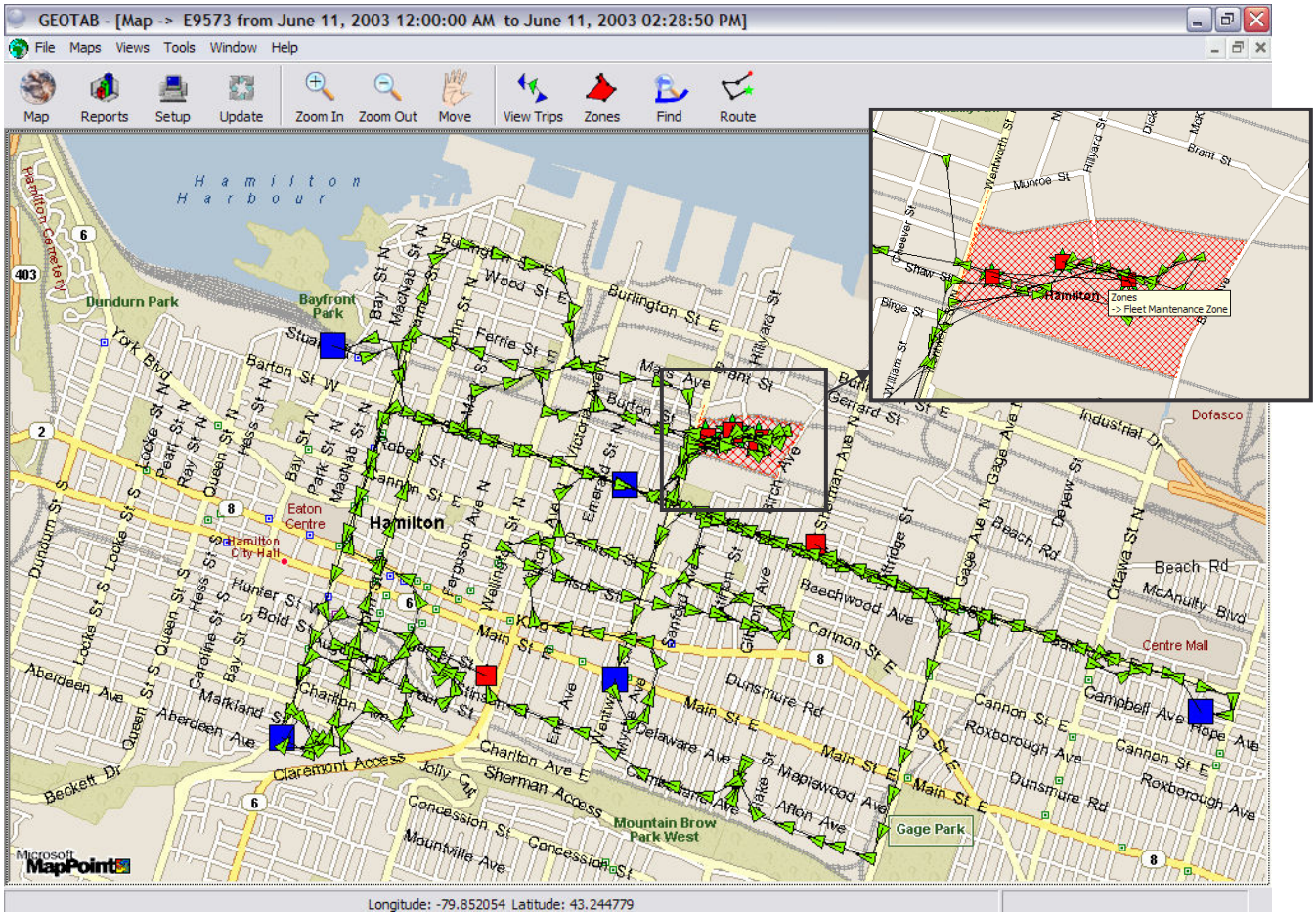
The **GEOTAB TRIPS LIST** report breaks down the daily trip per vehicle and driver. Information for each stop includes Departure Time, Driving Time, Arrival Time, Location (if used with Microsoft MapPoint, GEOTAB will display the street address of the stop), Trip Distance, Stopped Time, Average and Maximum Speed (monitoring speed is another way to control fuel costs for on-highway vehicle use), Odometer (reporting the accumulated distance helps in other GEOTAB reports for lease management and maintenance scheduling) and Idling. Idling incidents over 10 minutes are highlighted in red for immediate attention.

TRIPS LIST

FROM 25/05/2003 TO 31/05/2003 11:59:59 PM

Vehicle	Driver	Departure Time	(d:h:m:s) Driving Time	Arrival Time	Location	km Trip	(d:h:m:s) Stopped Time	km/h Ave. Speed	km/h Max. Speed	km Odometer	(d:h:m:s) Idling
H2130											
Monday											
H2130	1033028913	2003-05-26 08:23:25	0:00:08:27	2003-05-26 08:31:52	N/A	3.6	0:00:03:29	38	65	717	0:00:00:00
H2130	1033028913	2003-05-26 08:35:21	0:00:10:32	2003-05-26 08:45:53	N/A	1.4	0:01:40:52	26	44	718	0:00:00:00
H2130	1033028913	2003-05-26 10:26:45	0:00:12:19	2003-05-26 10:39:04	N/A	3.5	0:00:23:49	29	53	722	0:00:00:00
H2130	1033028913	2003-05-26 11:02:53	0:00:00:58	2003-05-26 11:03:51	N/A	0.2	0:00:46:24	7	21	722	0:00:00:54
H2130	1033028913	2003-05-26 11:50:15	0:00:07:31	2003-05-26 11:57:46	N/A	3.8	0:00:42:49	35	60	726	0:00:00:00
H2130	1033028913	2003-05-26 12:40:35	0:00:10:31	2003-05-26 12:51:06	N/A	3.4	0:00:59:04	28	53	729	0:00:07:49
H2130	1033028913	2003-05-26 13:50:10	0:00:04:45	2003-05-26 13:54:55	N/A	1.4	0:00:41:50	22	53	731	0:00:00:00
H2130	1033028913	2003-05-26 14:36:45	0:00:01:56	2003-05-26 14:38:41	N/A	0.2	0:00:46:40	2	7	731	0:00:25:35
H2130	1033028913	2003-05-26 15:25:21	0:00:20:51	2003-05-26 15:46:12	N/A	4.2	0:16:59:04	31	60	735	0:00:04:27
TOTAL FOR MONDAY			**0:01:17:50**			**21.5**	**0:23:04:01**				**0:00:38:45**

GEOTAB can integrate with many mapping platforms to graphically show where driving exceptions occur. The **GEOTAB View Trips** image shows direction of travel (green arrows), blue squares depict stops and red squares depict stops for longer than 5 minutes when the ignition was on.



In this example, a street sweeper's trip for 1 day is shown on the map. GEOTAB uses a zone creation function to easily draw an area around the fleet facility for the city. Street sweepers regularly return to the facility throughout the day to empty the collected road debris. These return trips and time spent in the yard per trip can be viewed for over-idling.

*An analysis of all vehicles participating in the fleet challenge and their respective fleet facility zones showed that **20% of idling occurs within a fleet's own facility**. This fact reinforces the importance that all fleet staff (drivers and maintenance technicians) must be involved in the anti-idling effort. Drivers are not the only operators of equipment who idle.*

How to Measure Improvement

GEOTAB units were installed on fleet vehicles during March and April 2003. The vehicles were chosen by the participating fleets.

While drivers were made aware that anti-idling technology had been installed on the vehicles, no instruction or other information was extended to the driver during the first few weeks of installation. This enabled the collection of baseline driving and idling information.

Baseline data was retrieved from the vehicles and the reports (Activity and Trips List) were provided to fleet management. Fleets shared the information with their drivers and then discussed the anti-idling campaign in more detail. Drivers were told that their specific fleet was in competition with others and the objective was to achieve the lowest possible idling percentage.

Vehicle data was extracted in early June and the data for the week of May 25 to May 31 was used for final analysis.

1. Data from the baseline was compared to the final data for each fleet to understand what improvements were made by the drivers' altering their driving and idling behavior.

2. Summary data from the final week for each fleet was compared to learn which fleet had the lowest incidence of overall idling.

The Results

Idling improvement:

Over 100 hours in reduced idle time was accumulated from participating vehicles. One fleet alone managed to reduce their participating vehicles idling by 37 hours.

Average idle time:

When rolled up into a simulated fleet of over 100 vehicles, the fleet average idle time for our commercial/municipal green fleet is 7.35% of total engine hours (see page 10). This number is a dramatic reduction from the 15-20% found in fleets pre-GEOTAB installation.

Lowest idle category:

After communicating the benefits of keeping idling low, the fleet composite with the lowest idle in light duty vehicles (pickup trucks) came in at 1.1%.

5 reasons given by drivers for idling:

GEOTAB helped dispel myths for idling and brought light to other issues within a fleet.

#1 is to keep warm in winter
#2 is to keep cool in summer
#3 is to keep the batteries from draining due to the use of safety lights
#4 is to assist power to auxiliary equipment (PTOs) require the engine to be used in order to supply power to work equipment.
#5 is that maintenance personnel idled the engine for diagnostics.

Idling varies from type of vehicle monitored:

Heavy duty highway trucks commonly report befween 40-60% idle time and strive to achieve idle times as low at the 7% that our light through medium duty city fleet achieved.

Payback

GEOTAB payback in fuel cost savings alone for fleet participants is between 3 and 8 months if they continue to monitor idling and maintain low idle numbers versus baseline averages.

Putting the reasons into GEOTAB perspective

Through the use of GEOTAB, we can learn that summer and winter idling most often takes place around breaks, meals, maintenance or during cellular phone conversations. Drivers must be educated to understand the negative impact to the environment of idling in order for them to choose to enjoy their breaks or meals inside heated/air conditioned restaurants of facilities.

Of course, safety comes first, but new LED safety light technology will eliminate any need for idling to power safety lights. The cost benefit to purchase new light technology will pay for itself through the reduction in fuel costs.

Several participants in the Fleet Challenge had auxiliary battery systems quoted to power their PTO equipment. A solenoid, backup battery supply, cables and installation can be as much as $1700, so the cost/benefit analysis must be done. If an auxiliary battery system is only being installed to power safety lights, lower cost LED light solutions should be examined first.

> *During the Fleet Challenge, one fleet participant showed that 56% of their operating hours were spent idling. When GEOTAB was connected to the PTO equipment in relation to the idling locations, we discovered that 80% of the idling time was spent with the PTOs on. Through education, the 56% dropped to 30% and 37 idling hours were eliminated on the operating vehicles.*
>
> *The benefit for fleets operating with PTOs or on-highway trucks is that the GEOTAB system will also capture distance traveled per vehicle for fuel tax rebate reporting.*

Is measurement recording important for fuel efficiency?

If you don't know where you are going, any road will take you there.

Any fleet that wants to engage in fleet management for reduced fuel costs through idle, speed or route monitoring **must first find the facts.**

With the graphic perspective that GEOTAB GPS idling incidents reported, it enabled drivers to see where over-idling took place. Driver idling habits changed. Without the proof, the evidence is more anecdotal for drivers and managers and is less likely to be acted on.

How fleet management should use the information with drivers

Drivers are part of the solution but they aren't the entire solution. The company must engage a fleet program including all personnel who access vehicles. A program must include management, supervisors, drivers and maintenance.

Of course, employees will be somewhat skeptical that the GPS solution will be used only for anti-idling. GEOTAB is a robust fleet solution that can generate payback for fleets in more ways than fuel cost savings. When used for reduced risk, GEOTAB can protect an employee.

Every day, fleets are approached by other drivers who accuse fleet drivers of inappropriate driving activity. GEOTAB can be used to prove that the employee driving conduct was right. GEOTAB can prove that a vehicle was on site doing the job it was supposed to be doing.

If you see it as the glass half empty, you are more likely to be skeptical and view on-board recording technology as an invasion of your privacy. If you see it as the glass half full, you will know that GEOTAB is there to ensure your protection. In many European countries, GPS recording technology is used to ensure that assets are being properly used. Both employees and vehicles are viewed as company assets. Significant investment in training and salary goes into people. The question of who owns your time when you are at work varies from culture to culture and continent to continent. In almost all organizations, employees recognize that there is an increasing cost of doing business today.

GEOTAB recommends being as open and honest as possible about why a GPS fleet solution is being used and what the payback expectations are through its use.

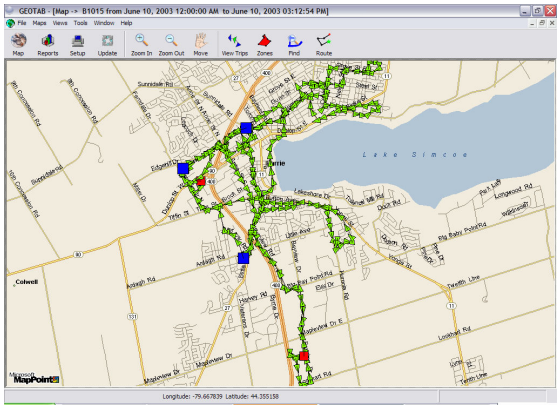
Payback can come from operations savings from reduced fuel consumption through reduction in idling, administration savings in automating fuel tax records. time & attendance sheets, lease management, reduced self-insurance risk and maintenance scheduling. All of these have no impact on the employee's job function but generate significant contribution payback for the business.

What flags to look for when evaluating GPS systems and data

When trying to achieve lower fuel costs, fleets must examine three elements: route planning and scheduling, over-idling and highway over-speeding. Over-revving the engine with a manual transmission also applies and can be monitored if required.

The first summary report to generate is the Activity Report (above). By comparing vehicles to each other, a quick glance or bar chart will show which vehicles had a higher than average over-idling incident.

The next step is to generate a Trips List Summary Report for the vehicles identified as having higher over-idling. Idling incidents over 10 minutes and speeding over 110 kph are highlighted in red by default. Note the date, time and address of the trips that had questionable idling or speeding. The manager always has the option of selecting the vehicle trip for display on a map and printing it. The manager needs to provide the reports to the employee (driver or mechanic) of the vehicle and work with them to understand why the idling occurred. It could be one of the 5 reasons listed above. Work with the driver to find alternative solutions than over-idling.



When trying to achieve lower accident or liability risk, fleets must examine other GEOTAB report flags including use of vehicle outside of regular hours, outside of insured region, stop time and others associated with training on auxiliaries in relation to zones and vehicle movement.

Should fleets use passive high resolution recording or real time active systems?

While GEOTAB offers both high resolution recording and reporting at no monthly cost as well as real time active systems (cellular and satellite) at a monthly cost per vehicle, we believe strongly that investment in fleet technology should start at the high resolution recording foundation.

Once the vehicle kit is purchased and reports are generated, fleets generally will achieve payback within 6 months of installation. In generating payback, the fleet will achieve a much higher appreciation for how, when and where equipment is used. For example, during the first 6 months, fleets can expect savings in operating costs (fuel and maintenance), administration costs (time & attendance, fuel tax rebates), and fleet management costs (lease returns) will be managed proactively.

The first step is to record the true operating environment within the fleet by obtaining accurate and detailed data that can not be achieved in other real time cellular or satellite system. Next, GEOTAB recommends that only the vehicles that would benefit from real time location are outfitted with an optional plug-in to the existing GEOTAB GO system already installed in the vehicle. Real time solutions should be considered for hazardous goods haulers, fleets with high risk of theft and fleets that have a high degree of dispatch and redeploying field personnel throughout the day.

Fleets where vehicles routinely return to a central facility (up to once a month) and who are performing pre-scheduled, dedicated routes or work, in most cases do not need a real time active solution and the expense that comes with it.

The GEOTAB fleet solution is unique in the world. It enables a central database to be developed for all makes and models of fleet vehicles. It enables each group of vehicle to have unique rules and conditions assigned to it. It enables some vehicles to have active real time location while also offering high resolution data recording on the entire fleet.

GEOTAB enables fleets to quickly "see" the activity in the field, meet with employees with solid information to change behaviors in over-idling that saves fuel for the fleet and rewards the environment with fewer Greenhouse Gas emissions.

The GEOTAB Green Fleet

The table of GEOTAB vehicles represents municipal and commercial vehicles rolled up into a fleet of various makes, models and drivers.

This table will serve as the benchmark for future fleet reporting initiatives for GEOTAB customers wishing to save operating costs while improving the environment in a "green fleet" initiative.

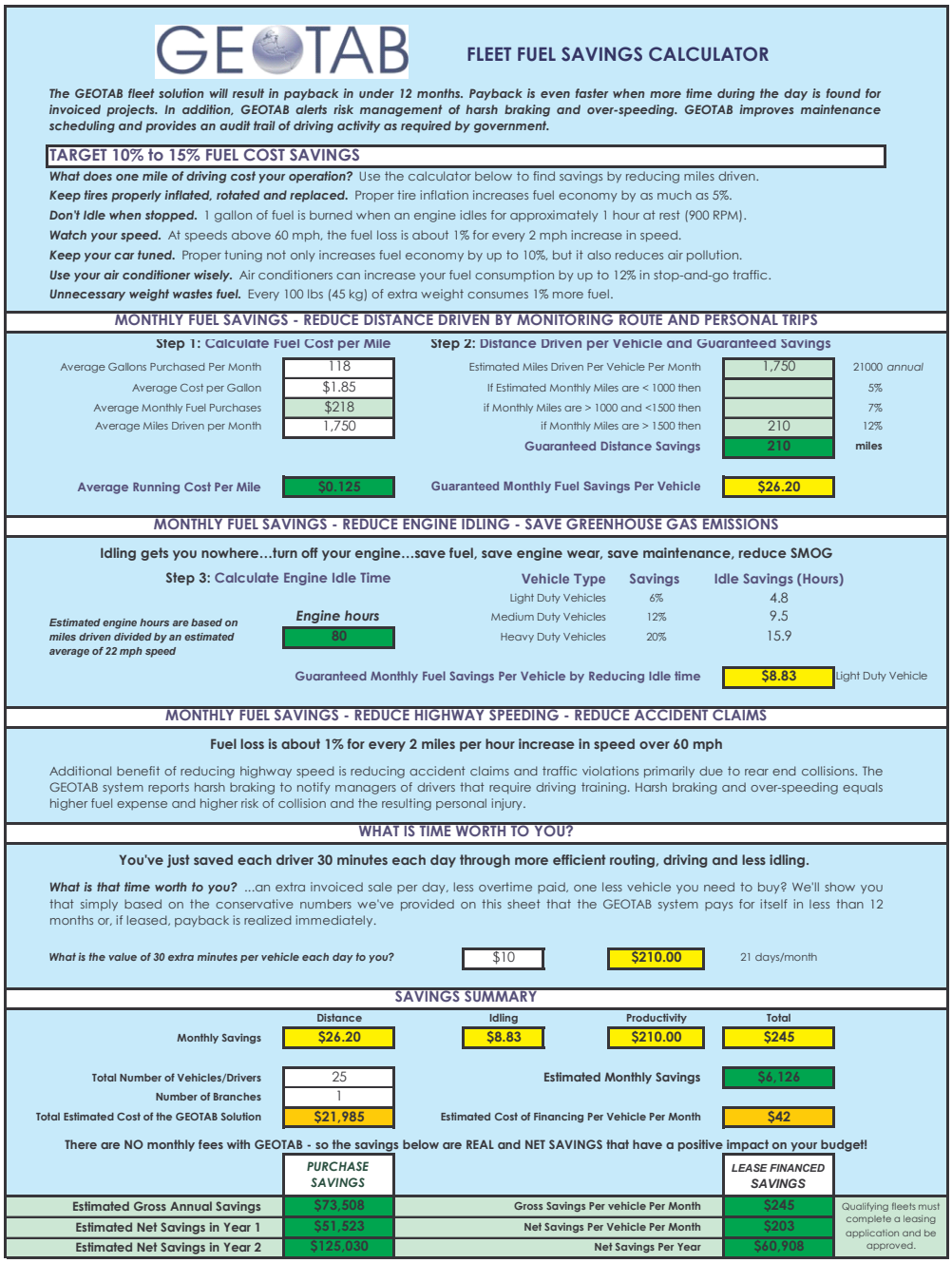
In most cases light duty through medium duty vehicles reduced their idle time from 8% to less than 3%. Vocational trucks (garbage trucks, sweepers) reduced their idle times from 20% to less than 12%. Highway trucks will average idling over 40% and a target of 25% is considered achievable. 1 gallon/4 litres of fuel are burned every hour in an idling light duty vehicle.

ROLL UP ACTIVITY REPORT
MUNICIPAL AND LIGHT DUTY CITY VEHICLES
REPORT PERIOD: 25/05/2003 TO 31/05/2003 11:59:59 PM

	TOTAL HOURS			
	Driving Time	Idling Time	Distance	
Engineering	0:01:53:59	0:00:00:00	189	0.00%
Service Technician	0:06:49:31	0:00:00:00	139	0.00%
Service Technician	0:11:25:32	0:00:00:00	231	0.00%
Service Technician	0:05:03:24	0:00:00:00	135	0.00%
Service Technician	0:10:33:49	0:00:00:00	201	0.00%
Parks	0:06:20:41	0:00:00:00	284	0.00%
Works	0:01:41:52	0:00:00:02	89	0.00%
Works	0:03:34:42	0:00:00:07	169	0.10%
Engineering	0:06:16:37	0:00:00:13	322	0.10%
Parks	0:11:49:27	0:00:00:31	420	0.10%
Bylaws	0:12:17:22	0:00:00:49	330	0.10%
Service Technician	0:09:32:17	0:00:02:10	315	0.40%
Supervisor	0:12:31:44	0:00:03:15	399	0.40%
Works	0:11:48:49	0:00:03:15	450	0.50%
Parks	0:09:57:51	0:00:03:11	506	0.50%
Supervisor	0:04:19:56	0:00:01:27	228	0.60%
Parks	0:13:58:40	0:00:04:51	697	0.60%
Waste	0:15:14:08	0:00:05:48	430	0.60%
Supervisor	0:07:07:51	0:00:03:12	277	0.70%
Works	0:08:24:22	0:00:04:31	202	0.90%
Parks	0:03:00:37	0:00:01:39	59	0.90%
Parks	0:10:00:48	0:00:06:28	230	1.10%
Forestry	0:08:05:00	0:00:06:20	257	1.30%
Roads	0:10:52:14	0:00:08:45	309	1.30%
Bylaws	0:17:43:46	0:00:15:03	408	1.40%
Parks	0:10:33:40	0:00:09:24	396	1.50%
Supervisor	0:05:53:16	0:00:05:18	239	1.50%
Engineering	0:02:07:35	0:00:01:59	86	1.50%
Forestry	0:05:16:17	0:00:05:31	139	1.70%
Bylaws	0:09:18:12	0:00:10:40	252	1.90%
Engineering	0:04:04:23	0:00:05:01	144	2.00%
Water	0:14:37:45	0:00:18:09	407	2.00%
Supervisor	0:05:08:32	0:00:06:24	303	2.00%
Works	0:15:00:03	0:00:19:35	560	2.10%
Water	0:13:21:45	0:00:19:34	350	2.40%
Parks	0:08:29:53	0:00:13:11	201	2.50%
Forestry	0:13:36:26	0:00:22:01	428	2.60%
Supervisor	0:06:33:35	0:00:10:37	289	2.60%
Roads	0:19:38:31	0:00:31:55	341	2.60%
Waste Packer	0:17:53:09	0:00:33:14	188	3.00%
Parks	0:07:10:08	0:00:15:00	140	3.40%
Parks	0:15:03:05	0:00:31:38	418	3.40%
Parks	1:02:33:18	0:00:56:36	433	3.40%
Water	0:10:15:20	0:00:22:25	257	3.50%
Bylaws	0:23:23:20	0:00:55:11	609	3.80%
Parks	0:08:48:51	0:00:21:28	262	3.90%
Service Technician	0:06:58:05	0:00:29:26	129	4.00%
Parks	0:05:55:15	0:00:15:28	135	4.20%
Roads	0:19:46:56	0:01:00:01	513	4.80%
Parks	0:08:08:09	0:00:26:04	175	5.10%
Roads	0:10:35:14	0:00:44:01	152	6.50%
Parks	0:18:29:08	0:01:20:18	447	6.80%
Parks	0:09:38:02	0:00:44:00	225	7.10%
Roads	0:09:35:42	0:00:52:17	227	8.30%
Waste Packer	0:23:38:46	0:02:12:15	186	8.50%
Waste Packer	1:01:06:05	0:02:20:28	292	8.50%
Waste Packer	0:22:26:20	0:02:28:40	188	9.90%
Water	0:14:47:05	0:02:07:54	360	12.60%
Waste Packer	0:23:38:54	0:03:45:40	211	13.70%
Cemetary	0:12:29:55	0:01:59:58	199	13.80%
Parks	0:12:22:12	0:02:26:36	511	16.50%
Roads	0:19:35:49	0:03:53:33	364	16.60%
Street Sweeper	0:12:31:05	0:03:11:33	285	20.30%
Parks	0:10:11:06	0:02:39:09	244	20.70%
Street Sweeper	1:11:29:15	0:09:48:35	323	21.70%
Roads	0:06:18:43	0:01:53:04	121	23.00%
Roads	0:14:26:40	0:04:38:09	409	24.30%
Parks	0:13:01:15	0:07:01:42	183	35.10%
Service Technician	0:07:47:53	0:07:14:25	179	41.00%

Following is the GEOTAB Fleet Fuel Savings Calculator.

GEOTAB guarantees complete and full payback in less than 12 months or GEOTAB will balance your purchase.



GEOTAB

FLEET FUEL SAVINGS CALCULATOR

The GEOTAB fleet solution will result in payback in under 12 months. Payback is even faster when more time during the day is found for invoiced projects. In addition, GEOTAB alerts risk management of harsh braking and over-speeding. GEOTAB improves maintenance scheduling and provides an audit trail of driving activity as required by government.

TARGET 10% to 15% FUEL COST SAVINGS

What does one mile of driving cost your operation? Use the calculator below to find savings by reducing miles driven.
Keep tires properly inflated, rotated and replaced. Proper tire inflation increases fuel economy by as much as 5%.
Don't Idle when stopped. 1 gallon of fuel is burned when an engine idles for approximately 1 hour at rest (900 RPM).
Watch your speed. At speeds above 60 mph, the fuel loss is about 1% for every 2 mph increase in speed.
Keep your car tuned. Proper tuning not only increases fuel economy by up to 10%, but it also reduces air pollution.
Use your air conditioner wisely. Air conditioners can increase your fuel consumption by up to 12% in stop-and-go traffic.
Unnecessary weight wastes fuel. Every 100 lbs (45 kg) of extra weight consumes 1% more fuel.

MONTHLY FUEL SAVINGS - REDUCE DISTANCE DRIVEN BY MONITORING ROUTE AND PERSONAL TRIPS

Step 1: Calculate Fuel Cost per Mile

Average Gallons Purchased Per Month	118
Average Cost per Gallon	$1.85
Average Monthly Fuel Purchases	$218
Average Miles Driven per Month	1,750
Average Running Cost Per Mile	$0.125

Step 2: Distance Driven per Vehicle and Guaranteed Savings

Estimated Miles Driven Per Vehicle Per Month	1,750	21000 *annual*
If Estimated Monthly Miles are < 1000 then		5%
if Monthly Miles are > 1000 and <1500 then		7%
if Monthly Miles are > 1500 then	210	12%
Guaranteed Distance Savings	**210**	**miles**
Guaranteed Monthly Fuel Savings Per Vehicle	**$26.20**	

MONTHLY FUEL SAVINGS - REDUCE ENGINE IDLING - SAVE GREENHOUSE GAS EMISSIONS

Idling gets you nowhere…turn off your engine…save fuel, save engine wear, save maintenance, reduce SMOG

Step 3: Calculate Engine Idle Time

Estimated engine hours are based on miles driven divided by an estimated average of 22 mph speed

Engine hours 80

Vehicle Type	Savings	Idle Savings (Hours)
Light Duty Vehicles	6%	4.8
Medium Duty Vehicles	12%	9.5
Heavy Duty Vehicles	20%	15.9

Guaranteed Monthly Fuel Savings Per Vehicle by Reducing Idle time $8.83 Light Duty Vehicle

MONTHLY FUEL SAVINGS - REDUCE HIGHWAY SPEEDING - REDUCE ACCIDENT CLAIMS

Fuel loss is about 1% for every 2 miles per hour increase in speed over 60 mph

Additional benefit of reducing highway speed is reducing accident claims and traffic violations primarily due to rear end collisions. The GEOTAB system reports harsh braking to notify managers of drivers that require driving training. Harsh braking and over-speeding equals higher fuel expense and higher risk of collision and the resulting personal injury.

WHAT IS TIME WORTH TO YOU?

You've just saved each driver 30 minutes each day through more efficient routing, driving and less idling.

What is that time worth to you? ...an extra invoiced sale per day, less overtime paid, one less vehicle you need to buy? We'll show you that simply based on the conservative numbers we've provided on this sheet that the GEOTAB system pays for itself in less than 12 months or, if leased, payback is realized immediately.

What is the value of 30 extra minutes per vehicle each day to you? $10 **$210.00** 21 days/month

SAVINGS SUMMARY

	Distance	Idling	Productivity	Total
Monthly Savings	$26.20	$8.83	$210.00	$245

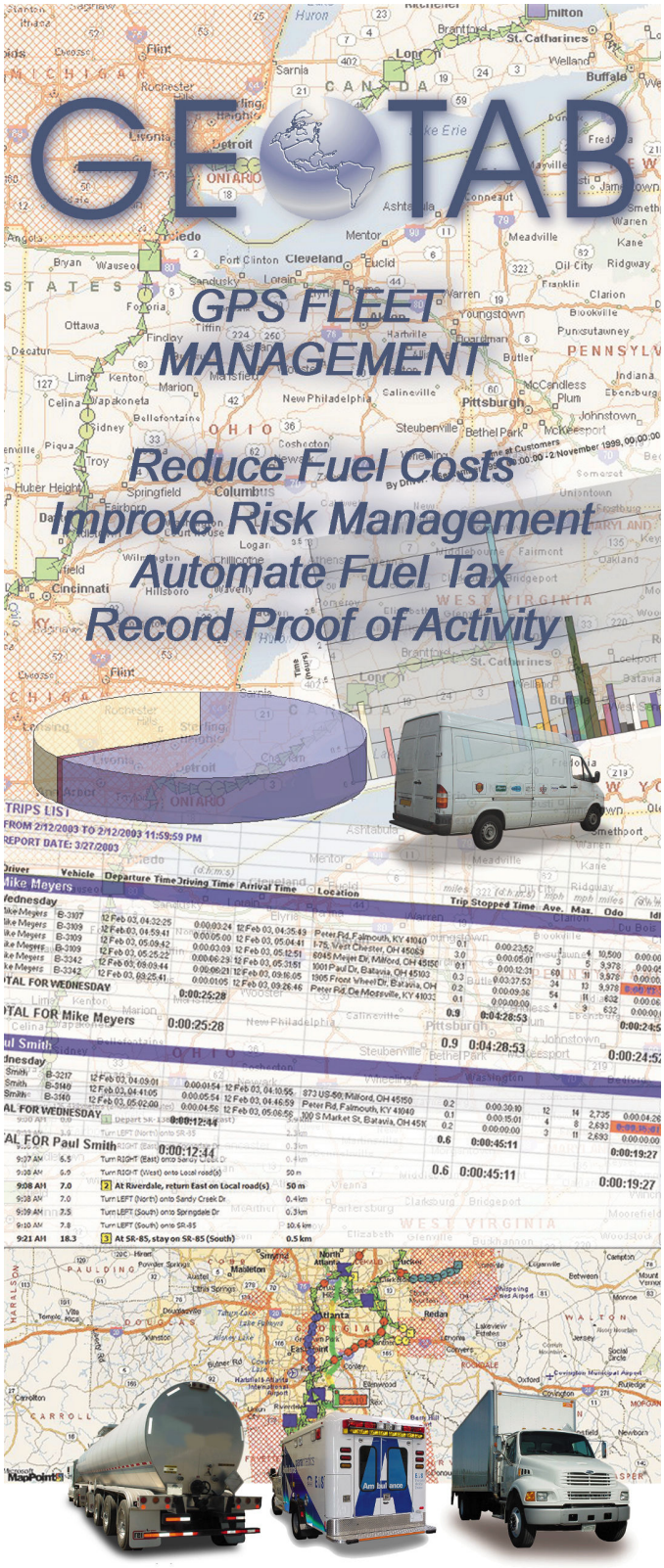
Total Number of Vehicles/Drivers	25	Estimated Monthly Savings	$6,126
Number of Branches	1		
Total Estimated Cost of the GEOTAB Solution	$21,985	Estimated Cost of Financing Per Vehicle Per Month	$42

There are NO monthly fees with GEOTAB - so the savings below are REAL and NET SAVINGS that have a positive impact on your budget!

	PURCHASE SAVINGS		*LEASE FINANCED SAVINGS*	
Estimated Gross Annual Savings	$73,508	Gross Savings Per vehicle Per Month	$245	Qualifying fleets must complete a leasing application and be approved.
Estimated Net Savings in Year 1	$51,523	Net Savings Per Vehicle Per Month	$203	
Estimated Net Savings in Year 2	$125,030	Net Savings Per Year	$60,908	

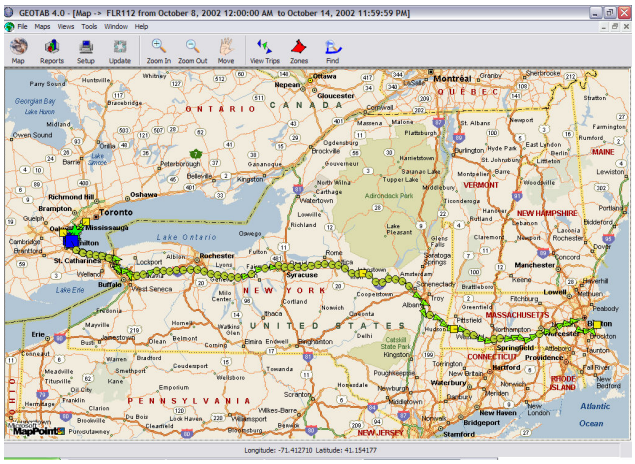
Contact GEOTAB for the name of an authorized partner representative in your area who will complete your payback calculator and discuss your specific objectives for recording fleet activities.

For more information on GEOTAB or discussing setting up a fleet challenge in your organization, please contact Colin Sutherland, Director of GEOTAB at 1-800-227-3716 or colins@geotab.com.



GEOTAB fleet management solutions start with a high resolution perspective of exactly how assets are being used in the field.

GEOTAB is an essential fleet and staff productivity tool that is designed for easy, practical use by small and large businesses.



Businesses are facing increasing costs of doing business including escalating fuel costs, rising insurance rates and low residual value of leased vehicles.

GEOTAB has created a leading business solution that accurately reports where and how field staff spend their time, saves fuel costs through driver behavior monitoring of speed, idling and route planning, and reduces vehicle or cargo theft and vehicle abuse.

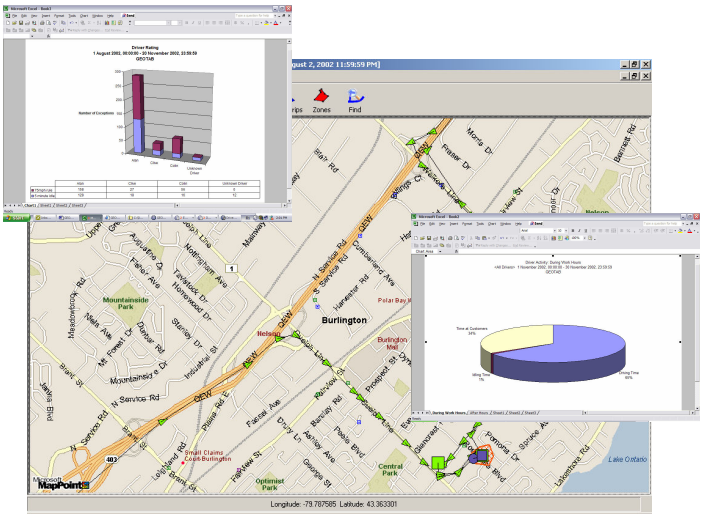
No Monthly Cost

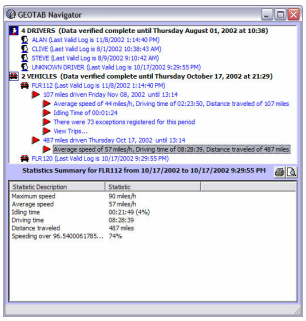
Fleets now have a great cost savings option – a powerful high resolution reporting solution versus expensive real time cellular or satellite.

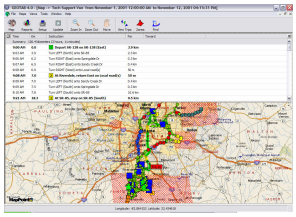
94% of fleets, who initially ask for a real-time tracking system, are really looking for the low cost GEOTAB alternative to cut costs. GEOTAB makes financial and great business.

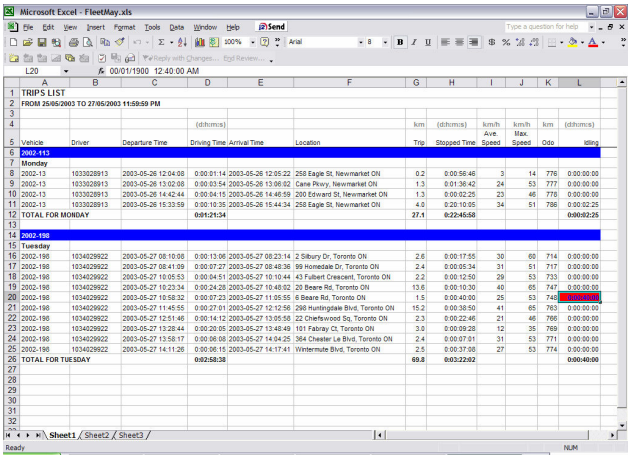
Customer Integrated Solutions

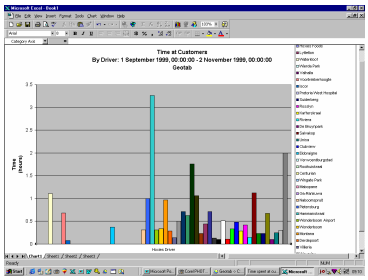
GEOTAB is committed to continuing our tradition of cost saving fleet solutions that exceed the expectations of our customers. As a Microsoft Product Integration Partner, GEOTAB software works on most office desktop workstations.











How to improve vehicle safety record and reduce liability risk

GEOTAB monitors vehicle use and aggressive driver behavior that can lead to premature vehicle maintenance and vehicle accidents. GEOTAB records aggressive braking and acceleration, speeding and route traveled. GEOTAB can be installed with a starter inhibitor that prevents the vehicle from being driven by an unauthorized driver. GEOTAB monitors vehicle entry into unauthorized regions or unauthorized use during time of day.

How to reduce product/cargo theft to improve safety and reduce costs and insurance

GEOTAB records opening of cargo doors, valves or switches with activity and GPS location. GEOTAB maps show managers exactly where and when product was loaded and unloaded from vehicles. GEOTAB zones layered over maps are labeled as known customers or authorized zones enabling report generation of authorized or unauthorized activity.

How to minimize fuel cost expense

The primary factor in reducing fuel cost is reducing unauthorized miles driven. At a running cost of more than $.15/mile – simply reducing 6 miles of driving a day will save $20/month. Engine idling gets your no-where too – a gallon of fuel is burned during 1 hour of engine idling.

How to maximize asset use

GEOTAB reports time spent driving, time at customer locations and at the branch location. In addition, fleet managers can monitor vehicle use during work time and after hours.

When you communicate your fleet objectives to GEOTAB you are one step closer to finding your data mine.

COMPARE FEATURES AND COST – OVER 2 YEARS YOU'LL FIND REAL TIME SYSTEMS ARE TWICE AS EXPENSIVE AS GEOTAB AND OFFER LESS THAN HALF THE FEATURES. GEOTAB IS GUARANTEED TO PAY FOR ITSELF IN LESS THAN 1 YEAR.

FEATURES	GEOTAB	Real Time Systems
REPORTS		
View trips	Yes	Some
Activity report	Yes	Some
Risk Management report	Yes	No
Trips List report	Yes	Some
Vehicle details report	Yes	Some
Auxiliary PTO status	Yes	Some
Customer visits report	Yes	No
Exception Report and Pinpoint Location View	Yes	Some
Speeding Report	Yes	Some
Idle Report	Yes	Some
IFTA and IRP Fuel tax reports	Yes	No
Mileage report by state/PTO use for fuel tax reporting	Yes	Some
Fleet reminders (maintenance, lease and/or licensing)	Yes	Some
Unit Operation		
Standalone solution with no month cellular airtime costs	Yes	No
NO COST data access (wireless or flash memory key)	Yes	No
Data storage on-board vehicle	16,000 logs/10k+ miles	Some
Download time for full vehicle unit	7 seconds	cell/sat modem
Download connection	Memory Key or Wireless	cell/sat modem
Cost for data download	No cost	cell/sat costs
Power consumption - battery draw	60 days/sleep mode	~4 days
"Black box" accident data (second by second memory)	Yes	No
Secondary accident memory chip standard	Yes	No
On-board speeding driver alert buzzer	Yes	No
Weatherproof vehicle unit (tested to J1455)	Yes	Some
Advanced Exception Processor	Yes	Some
Customer and Territory Management		
Import customer database	Yes	Some
Multi-shaped operational zones/geo-fences	Yes	Some
Multi-shaped customer zones/geo-fences	Yes	No
Track general stop time	Yes	Some
Track stop time/wait time at customer location	Yes	Some
Data Management		
Data storage and availability	MS Access or SQL	Variety
Shared central database on network	MS SQL	Variety
Historical data storage (location/time frame)	on-site/forever	Variety
Mapping Support		
Microsoft MapPoint	Yes	No
ESRI, Vector, Shape Files	Yes	Some
NMEA GPS output to handheld devices	Yes	Some
Monitoring Auxiliary Events		
PTO inputs	Yes - 4 inputs	Some
Sensor inputs	3	Some
Monitor Seat Belt	Yes	Some
Monitor Aggressive Braking	Yes	Some
Idle time	Yes	Some
Automatic Vehicle Location (AVL/Telematics)		
Real-time location of vehicles	Future Upgrade to Base	Yes
Trailer location	Future Upgrade to Base	Some
Tethered trailer location	Future Upgrade to Base	Some
Pricing		
Hardware cost per truck	List Price: $828/vehicle	up to $7,000/vehicle
Monthly costs (communications)	$0	to $200/month
Software	Free Checkmate Lite	
Full Software Suite including MS MapPoint	List Price: $1149	to $5,000 + annual fees

Resources

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4145 N Service Road, Suite 200
Burlington, Ontario
Canada L7L 6A3

Internet: www.geotab.com
Sales Support: info@geotab.com
Toll Free: 1-800-227-3716

Colin Sutherland, Director of Sales & Marketing
Telephone: 905-467-5146
eMail: colinsutherland@geotab.com

Download Resources from www.geotab.com

a) GEOTAB Reporting Solutions Guide

b) GEOTAB CHECKMATE Setup Guide

c) GEOTAB CHECKMATE Advanced Setup Guide

d) GEOTAB GO Installation Guide

e) FUEL COST SAVINGS CALCULATOR

f) Case Study – GEOSPATIAL May 2004

g) Case Study – PEST CONTROL Magazine March 2004

h) CHECKMATE Lite Software – Free software user license

i) GEOTAB Technology Overview MS PowerPoint Presentation