

\$BILLIONS IN THEFT LOSSES ARE PAID ANNUALLY

The Problem -- 737,142 Vehicles Stolen A Year Costing \$4.5 Billion¹

Vehicle Theft Statistics – The NEED!:

- A motor vehicle was stolen in the United States every 43 seconds during 2010 totaling 737,142 vehicles and causing an estimated property losses of \$4.5 billion in the US alone¹
- 47,791 motorcycles were also stolen in 2010 -- many costing over \$20,000 each^{2,3}
- Only 11.8 percent of 2010 thefts were cleared by arrests or by other means.³ As a result, individual insures funded over \$4.5 billion in potentially avoidable 2010 insurance costs.
- "Comprehensive," (covering thefts) averaged \$143.38 per vehicle in 2006 (latest data) and runs "substantially" higher (\$250 - \$300) on big ticket and targeted vehicles³
- Annually rising claim costs reflect: a) rising new car values; b) the value of "select" cars targeted for theft; and, c) rising costs in damage done in a theft attempts and repairs²
- The top five theft hot spot areas showed a 2010 increase in thefts over the previous year³
- Of the top 25 US metro areas for vehicle theft, nearly half are ports or areas with border access. Hundreds of thousands of stolen vehicles are exported this way each year¹
- Carjacking accounted for 3.0 percent of vehicle thefts, some involved injury or death too³
- Beyond the \$4.5 billion stolen vehicle costs, additional related costs included:³
 - a The total vehicle replacement costs borne by individuals, if no comprehensive coverage
 - b All or part of vehicle rental costs until a replacement is purchased, if not so insured
 - c Paying applicable deductible costs of \$500 to \$1000 related to the event
 - d Absorbing any increase in insurance premium following a large comprehensive payout
 - e The cost of time spent dealing with police, shopping for replacement, and lost work time
 - f Physical injury and recovery costs in carjacking or a death benefit payout
- The top states with the most 2010 thefts highest to lowest:
 - a 59% of 737,142 vehicles included: CA, TX, FL, GA, IL, MI, WA, AZ, OH, and NY²
 - b 39% of 47,791 motorcycles included: CA, TX, FL, NC, and IN²Note: VT, WY, SD, ND, NH, ID, MT, AK, & DE losses totaled only 1.5% of the total²
- The top 10 metropolitan areas for vehicle thefts were:⁴
 - a San Francisco – Oakland -- Fremont, CA – 26,374
 - b Fresno, CA – 5,875 + Bakersfield, CA – 5,530 + Stockton, CA – 4,479 + Modesto, CA – 3,712 + Visalia-Porterville, CA – 2,440, totaling another 22,036 in CA
 - c Las Vegas – Paradise, NV – 10,706
 - d Albuquerque, NM – 4,815

Current Status:

- Vehicles stolen near ports, borders, or auto strip shops must be located and law enforcement intercept occur within 1 - 2 hours for successful recovery.¹

¹ The latest FBI published data is from 2010 at http://www.rmiia.org/auto/auto_theft/statistics.asp

² Insurance Information Institute at <http://www.iii.org/>

³ National Insurance Crime Bureau (NICB) at <https://www.nicb.org/newsroom/news-releases/motorcycle-thefts-and-recoveries-in-the-u-s->

⁴ The top 4 Newest Trends for Car Thieves, <http://autos.aol.com/article/new-car-theft-trends/>

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- GPS wirelessly features already exists on high end vehicles via BMW Assist, GM OnStar, Lexus Enform, Hyundai Blue Link, Mercedes-Benz TeleAid, Toyota Safety Connect but these separate systems don't get needed info to law enforcement in the 1 - 2 hour window
- Subscribers to the current built-in GPS equipment pay \$139 - \$265 per year for this service
- Law enforcement presently has NO universal tools to effectively combat stolen vehicle situations. Systems such as Lo-Jack (\$700) and others are user purchased and require special, unique law enforcement equipment utilized in cruisers to track a stolen vehicle.
- Insurance companies are NOT inclined to promote any "corrective actions" to reduce vehicle thefts since their profits from subscriber "comprehensive" payments minus subscriber paid deductibles far exceed the incurred theft costs, even at the \$4.5 billion staggering sum.
- Trucks and trade equipment such as semi-trucks, bull dozers, tractors, cranes, loaders, etc. are usually removed from a geographic area before an organized visual search can begin

\$Billions Can Be Saved!

Proposed Remedial Actions:⁵

A Rapid Access Information Database (RAID) system providing law enforcement with a vehicle's GPS location specifics within minutes of a reported vehicle theft.

- Establish a "common" RAID system for ALL vehicles to log their GPS RF signature, herein an On-Board Identity (OBI), plus VIN, license number and perhaps make, model, color, etc.
- Progressively work with manufacturers to define a timetable for having a GPS based wireless addressable OBI on all new vehicles within five years, if not there already
- Create a communication link to interface the RAID and the National Crime Information Center (NCIC) system used by all US federal, state and local law enforcement agencies
- Work on a state by state basis to RAID record the VIN and state issued license tags, etc.
- Consider linking discrete vehicle GPS wireless OBI information to an owner's cell phone so immediate info handoff to authorities can occur when the stolen car is reported
- When a vehicle theft occurs, all local, state, or federal law enforcement can RAID retrieve the OBI via the license tags, launch a multi-state NCIC broadcast, and active GPS search
- A successful RAID launch in the US could grow to a worldwide business.

Initial Launch Thoughts:

- Numerous high ticket vehicles with built in OBI's already exist and could jump start a RAID system of OBI's if the owners agreed, enticed by the added theft protection they achieve
- Pilot testing in a high theft area/municipality would quickly build RAID success recognition.

- Work with auto manufacturers to:

⁵ Any and all proposed actions and activities throughout this work must be lawfully permitted in the area where activities will occur

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- a Encourage sharing of current OBI characteristics and discuss future tamper-proofing the On-Board Identity Module (OBIM), remote owner shutdown of OBIM by cell phone, etc.
- b Determine if any current OBIM's allow remote shutdown, if vehicle owner approved
- c Identify if any OBIM's are tamper proof, i.e., vehicle will not operate if tampering sensed
- If pilot testing in problem locals yields impressive success, ask municipality for funding help, e.g., \$1-\$5 could be added to every vehicle registration/renewal for RAID monitoring
- If municipalities won't fund RAID monitoring, approach OBI equipped vehicle owners to subscribe to monitoring at a \$1-\$3 per month and perhaps pay their deductible if RAID fails to track down their vehicle if stolen
- RAID tracking of an OBI of interest (potential stolen vehicle) might initially have to be managed either remotely or via an area system but later might be licensed to states, municipalities, or subcontractors and progressing to eventual GPS tracking capability police cruisers for coordinated team track down efforts

Additional Future Aspects:⁵

- Using built-in and retrofit OBI's, could reduce insurance industry payouts for stolen vehicles by several billion dollars annually in just a 5-8 years (vs. 2010's \$4.5 billion). This could lead to industry-wide comprehensive cost reductions for 80-100 million for insurance subscribers
- As OBI tracking leads to successful RAID guided recoveries:
 - a A portion of collected comprehensive insurance costs might be paid by insurance companies to support the RAID system; and,
 - b States or municipalities could raise vehicle registrations/renewals \$1-\$5 to support RAID
- Stationary (bridge, tunnel, toll road) or mobile police cruiser GPS signal trackers could locate OBI's of interest and execute immediate pursuit, intercept and/or vehicle retrieval
- If lawful, the RAID system might have an XX hours "look-back" capability for retrieving either the movement of a missing OBI or a list of all OBI equipped vehicles in the vicinity of a crime
- RAID tracking of specific OBI's could greatly enhance law enforcement's ability to locate and intercept stolen and/or fleeing vehicles immediately upon notification of the event
- Vehicle theft related physical injury, materialistic damage, and a wide variety of losses associated with theft situations could be avoided or reduced via OBI tracking capabilities
- As the population of vehicles with built-in OBI's increases, establishing a retrofit OBI module (OBIM) for older, non-OBI vehicles for RAID register and tracking would broaden the gains⁶
- At state vehicle inspections, stationary stopping points (bridge, tunnel, toll road), etc. conduct periodic checks to confirm GPS broadcasting of the OBI
- Should the RAID become broadly used in self-powered vehicles and nationwide, it could:
 - a Expose "car cloning" where multiple stolen cars are re-identified with a VIN number of a legitimate vehicle then sent to distant states for (lost title) re-registration and re-sale.⁴
 - b Effectively conduct broad based searches for vehicles having had time to flee specific areas before being detected or identified

⁶ Activation requires reading the internal OBI and SMS registering it electronically in the prescribed manner for ongoing monitoring

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- c Locate high ticket construction equipment worth five to six figure dollars and frequently stolen with NO current recovery methods, especially if moved cross-country for resale
- Rapid recovery of vehicles via OBI tracking could directly reduce insurance paid medical expenses resulting from related personal injuries, property damage and liability costs
- The OBI tracking concept could also be utilized on planes, boats, or any powered vehicle

Where's The Beef?:⁵

The "Proposed Remedial Actions" above plus the additional details to follow define a system: a) having LoJack-like capabilities (now paid for separately by a small population of LoJack "subscribers") available to all OBI vehicle owners at minimal or no cost; b) Immediate GPS tracking capabilities by all law enforcement agencies via RAID communication with NCIC (unlike LoJack tracking in a few, special equipped mobile units); c) Traceable by the existing vehicle manufacturer's OBI installed tracking systems (eliminating LoJack's expense); d) Immediate response capability could beat the 1-2 hour chop shop dismantling time window (unlike LoJack's multi step ramp-up action plan); e) Auto-disabling of the stolen vehicle can occur if the manufacturer's component is tampered with (unlike LoJack); f) Disabling of on-board control components can occur via GPS command from afar (unlike LoJack); g) Law enforcement staffed or monitored border crossings, bridges, tunnels, and toll roads could take immediate intercept actions (unlike LoJack); and, h) A universal system (eventually) utilized by all (land, sea, and air) law enforcement agencies for exposing and intercepting fleeing felons, terrorists, drug runners, etc. could potentially save billion by substantially reducing losses incurred through vehicle thefts today.

Key System Concepts:^{5,7}

- Defining a unique OBI for every self-powered vehicle (car, truck, motorcycle, motor scooter, boat, plane, snowmobile, jet ski, et al.)⁸
- Install tamperproof OBI at manufacturing and record OBI along with the VIN and cross tie to visible license tags, boat hull and plane tail registration numbers, etc.⁹
- Establish an tamperproof OBIM to OBI equip existing vehicles then RAID activate monitoring
- Integrally connect OBIM to vehicle's control system (engine controls) such that the vehicle will not operate if the OBIM is removed, disabled, jumpered, or tampered with in any way
- OBI's are monitored via their GPS signature by individual servers operated by or for corporations, municipalities, state, interstate, air, and marine networks expandable to a nationwide interlinked RAID system shared by and accessible to all authorized agencies

On-Board Identity Characteristics:⁵

⁷ For reducing vehicle thefts and much more

⁸ For simplicity, the description herein will focus on "vehicles" but applies to any motorized mobile entity where/as appropriate

⁹ Many vehicles produced in recent years have at least one OBI built in already

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- The OBI will be an electronic based identity with wireless broadcasting capability such as GPS and (should evolve to being) contained in the tamperproof OBIM for all applications
- The OBI will (at least) wirelessly broadcast constantly when the vehicle is powered, i.e., engine is running
- Alternatively, OBIM could be constantly GPS broadcasting its OBI whether the vehicle is powered or not, so intentionally hidden vehicles can be located
- Damaged OBIM replacement would be done through an authorized service agent then the replacement OBI RAID registered in all applicable systems consistent with the original OBI

Other OBI Identity Aspects:⁵

- Every OBIM equipped vehicle constantly GPS broadcasting its OBI could be tracked from factory, through the (potentially many steps of the) transport chain to its point of sale
- Individually OBI monitoring at each en route transport handoff point ensures no losses occur and permits immediate action if a GPS broadcasted OBI drops from RAID monitoring
- OBI's can be recorded along with the VIN in all databases presently used by authorities for state license tag registrations, boat and plane registrations and the like
- The RAID functional guidelines would define methods for cancelling system monitored OBI's where OBIM replacement was necessary, vehicles eventually are junked/scrapped, etc.

Other Potential Controls Via OBI's:⁵

- If OBI is recorded with the VIN, authorities can passively monitor vehicles from afar if lawful
- If an OBI equipped vehicle is stolen, immediate electronic searching begins by retrieving the OBI via the vehicle's tags (boat bow registration number, plane tail number, etc.)
- Vehicle engines may not start if the OBI is set to OFF by the owner or others so authorized
- A group of vehicles could be RAID disabled to prevent theft, e.g., at a military or government site, construction site, auto dealership, rental car lot, equipment sales/rental center, etc.
- Where legal, a vehicle's OBI control might be controlled by law enforcement from a distance:
 - a Disabling a vehicle fleeing authorities in a law enforcement pursuit if the OBI element was remotely switched from ON to OFF by law enforcement, e.g., OJ's two hour Ford Bronco ride a few years ago
 - b Controlled stopping of a high speed fleeing vehicle with an externally addressable OBI via controlling its brake system to bring its travels to a safe stop thus avoiding risking injury or death to the vehicle's occupants and innocent bystanders
 - c Using an OBI override to disable vehicle's of a "suspect" nature (fleeing felons, stolen vehicles, Amber Alert, etc.) being screened at bridges, toll gates, or elsewhere
 - d Activating a fleeing vehicle's lights and horn via an externally addressable OBI to cause the lights to flash and horn to blow uncontrollably for alerting innocent bystanders
- Restricted access sites (airports, military, government, hospitals, refineries, chemicals, food processing, power generating, water purification, et al.) could be RAID identified and arrival time pre-scheduled to expect and past through only vehicles with pre-approved OBI's

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- For high security situations, inter-linked individual (military, government, secured) RAID systems can periodically communicate with in transit vehicles and revise their OBI's via GPS while on the move and update such changes to en route checkpoints (bridges, tunnels, etc.) and approved access sites along a vehicle's planned travel route, e.g., transport of hazardous waste, munitions, chemicals, etc.

Concept Potential & Related Aspects:

- In 2010, over 250 million registered vehicles existed in the US of which 200 million were cars or motorcycles and 50 million were trucks.¹⁰
- As the frequency of built-in OBI's increases and the potential for retrofit OBI's grows over the next 5 or more years, the number of RAID trackable US vehicles could approach 100 million.
- If a single entity, perhaps one of the vehicle manufacturers, could consolidate the efforts of the many programs (BMW Assist, Ford SYNC, GM OnStar, Lexus Link, Hyundai Blue Link, Mercedes TeleAid, Toyota Safety Connect), there could be:
 - a A more efficient, consolidated RAID function as well as notable savings to the individual manufacturers programs
 - b Significantly reduced stolen vehicle losses regardless of brand via an effective RAID tracking system able to lead law enforcement to any tracked vehicle's GPS signature
 - c Opportunities to significantly expand RAID subscribers via add-on OBIM devices to motorcycles, existing cars and trucks, boats, airplanes, or any motorized vehicle
- With a demonstrated high RAID driven recovery rate, states may allow adding a RAID funding fee to each vehicle registration/renewal event
- Public support for RAID recovery success may force insurance companies to reduce comprehensive insurance costs by the amount charged for RAID tracking and eventually force substantial comprehensive cost reductions due to RAID recovery successes
- Municipalities with the highest frequency of stolen vehicles may annually fund RAID monitoring in their area due to a demonstrated high success track and recovery record
- The opportunity to take RAID monitoring to developed countries and cities worldwide with the potential of locating previously stolen vehicle exported to locations around the world.

Parting Note:

As a management consultant for 20+ years to companies in the \$100 million to \$multi-billion dollar range, I know the opportunities exist to create real RAID recovery success. Spending \$4.5 billion on avoidable theft losses is a travesty in a world where people are starvation.

¹⁰ http://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/publications/national_transportation_statistics/html/table_01_11.html