

Effective Counter-Measure Standards

Auto Theft Prevention Standard Facts You Need to Know!

LDI Conference 2022

Presenter: Reg Phillips

Effective Counter-Measure Standards

- Who is Reg Phillips:
 - Active in theft prevention technologies since 1992
 - Own three companies that provide automotive solutions for theft prevention and investigation
 - International technical trainer
 - Chair of ULC Committee to update OEM/Aftermarket Standard used by Transport Canada and adopted by NHTSA 2016
 - Currently volunteering:
 - International IAATI Executive Board 2nd Vice President
 - NAEC Director
 - VSIB Director (NFP Corporation)
 - IACP Vehicle Crimes Committee Member
 - Committee Chair: IAATI Auto Theft Prevention Authority/IAATI Counter-Measure Standards/IAATI Education and Certification
 - Committee Member: Cyber Security, Intelligence Analyst, Scholarly Research, Leadership Development

Effective Counter-Measure Standards



South Africa 2017

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- Question: Why are security Standards needed?
- Answer: Security needs are constantly changing!

What insurance companies need to know:

1. When a new unknown security products comes into the marketplace are they fit for purpose?
2. Who has the expertise to evaluate these products/solutions?
3. When the product does not stand alone, what is needed for the installation requirements?

Standards answer all these questions!

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What are standards?

- *Standards ensure consistency of essential features of goods and services, such as quality, ecology, safety, economy, reliability, compatibility, interoperability, efficiency and effectiveness. *www.iso.org*
- *International Standards contain technical specifications or other precise criteria, which ensure that materials, products, processes, services, systems, or persons are fit for their intended purpose.*

*Ref: * www.iso.org*

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Standards Are created Using

- A “standard” is a document, established by a consensus of subject matter experts and approved by a recognized body that provides guidance on the design, use or performance of materials, products, processes, services, systems or persons. *Ref: * www.iso.org*

Conclusion: Standards Answer The Questions...

- Security standards provide an expert third-party, non-bias approved quality/safe product... and what is just a sales pitch!

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What do you need to know about standards?

- *The important distinction between standards and legislation is that standards are voluntary, whereas legislation is mandatory. Only when regulatory authorities use standards as a basis for legislation, do they become mandatory, and then only within the jurisdiction covered by the legislation.*
- *But, insurance companies can adopt them as needed for any theft prevention solutions needed to offset risk exposure.*

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1. How standards have been utilized:

Vehicle Immobilization or Vehicle Hardening

- **Canadian Examples**

In 1998 we developed our “Standard for Automotive Theft Deterrent Equipment and Systems: Electronic Immobilization” CAN/ULC S-338-98 (Aftermarket and OEM solutions included)

- **Case Reviews:**

- **Insurance Aftermarket Application**
- **Governmental OEM Application**

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Example One:

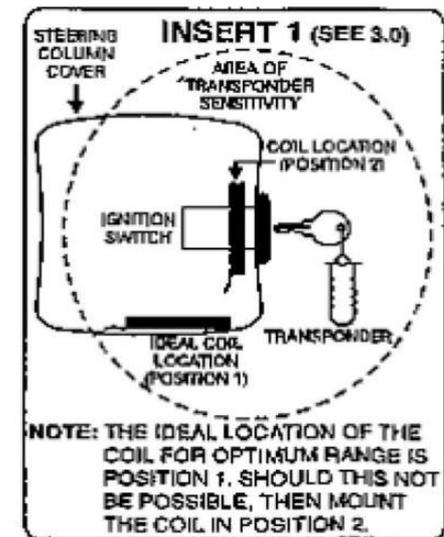
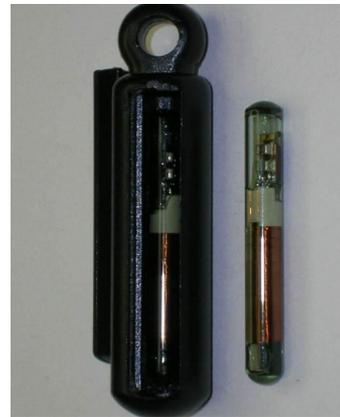
Aftermarket Security for Ineffective OEM Security

- 2004 Manitoba Public Insurance (MPI) launched the Winnipeg Auto Theft Suppression Strategy – which included the utilization of a CAN/ULC S-338-98 vehicle modification immobilizer solution into almost 200,000 high risk vehicles
- 2018 – RESULT: Their automotive theft dropped by over 80% (84% in 2016) Ref: *2018_GRA

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Sample of Vehicle Hardening or Immobilizer Products

- **Aftermarket Transponder Security**



Dual key ignition authentication for the vehicle operator prevents “hot wiring” theft!

Note:
Search time for both systems is 60 seconds per trigger.

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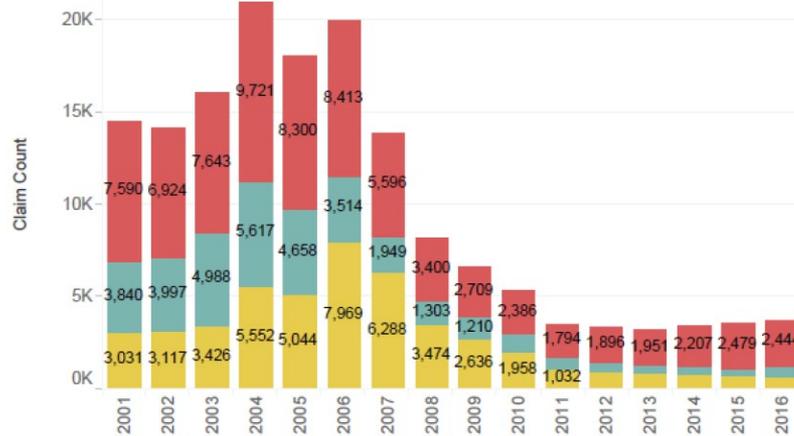
MPI's solution result:

- The vehicles that were getting stolen due to weak OEM antitheft solutions were modified using an approved immobilizer antitheft system

Trend by Loss Insurance Year

Theft: All

Vehicle Type: All



Ref: 2018_GRA

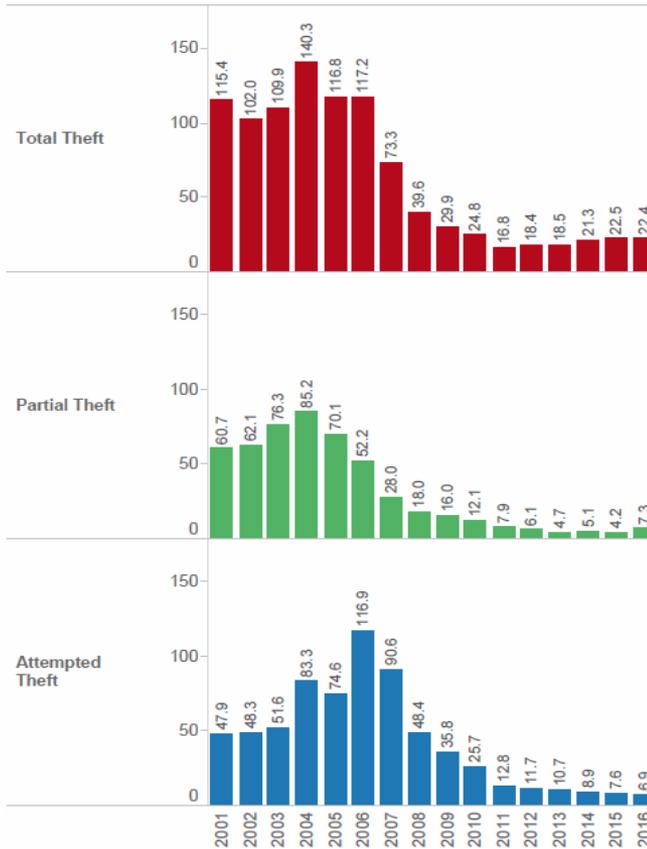
Thieves could not longer easily steal these high risk vehicles without their two ignition keys

Manitoba's theft culture changed!

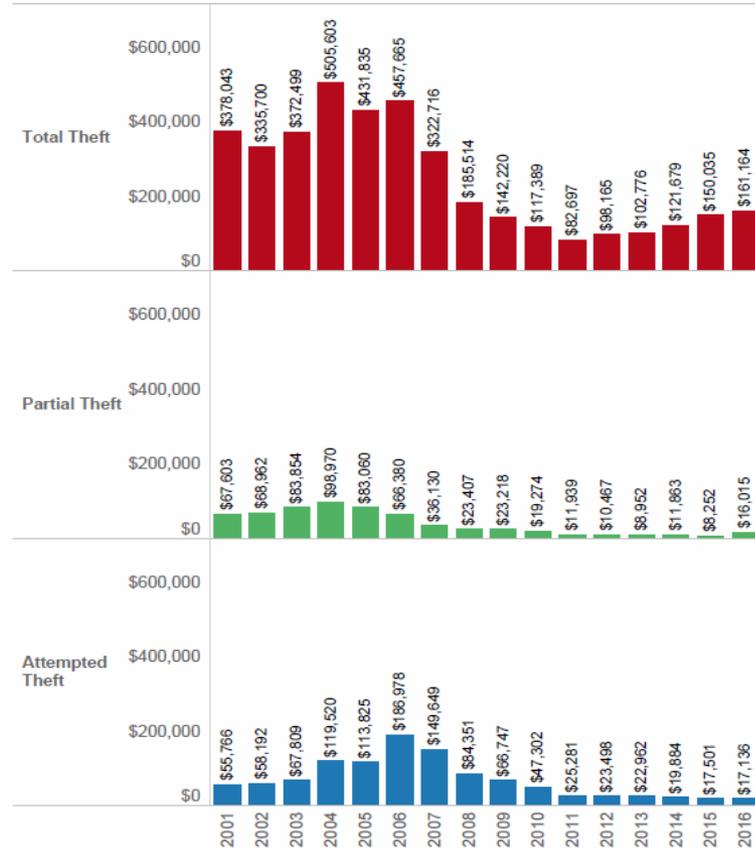
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Rate of Theft per 10,000 Vehicles (Counts and Costs)
 Vehicle Major Use 1, Trucks and Passenger Vehicles

Claim Counts



Claim Costs



Ref: *2018_GRA

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Example Two:

Governmental OEM New Fleet Requirements

- Transport Canada requires every new passenger vehicle, multipurpose passenger vehicle (MPV), truck and three-wheeled vehicle manufactured after **September 1, 2007** and with a Gross Vehicle Weight Rating (GVWR) less than 4,536 kg (10,000 lbs), except an emergency vehicle or a walk-in van, **to be equipped with an electronic immobilizer system.**
 - All vehicles, when built for the Canadian marketplace, must include a OEM security solution built into their vehicle's system.
 - This solution must meet or exceed the standards that have been established, supported and communicated to the industry stakeholders.

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RESULT:

- Insurance Bureau Canada

2015 Top ten stolen vehicles across Canada

Dominated by older vehicles with weaker OEM security

Top 10 Stolen Vehicles

Years: 2015 ▾

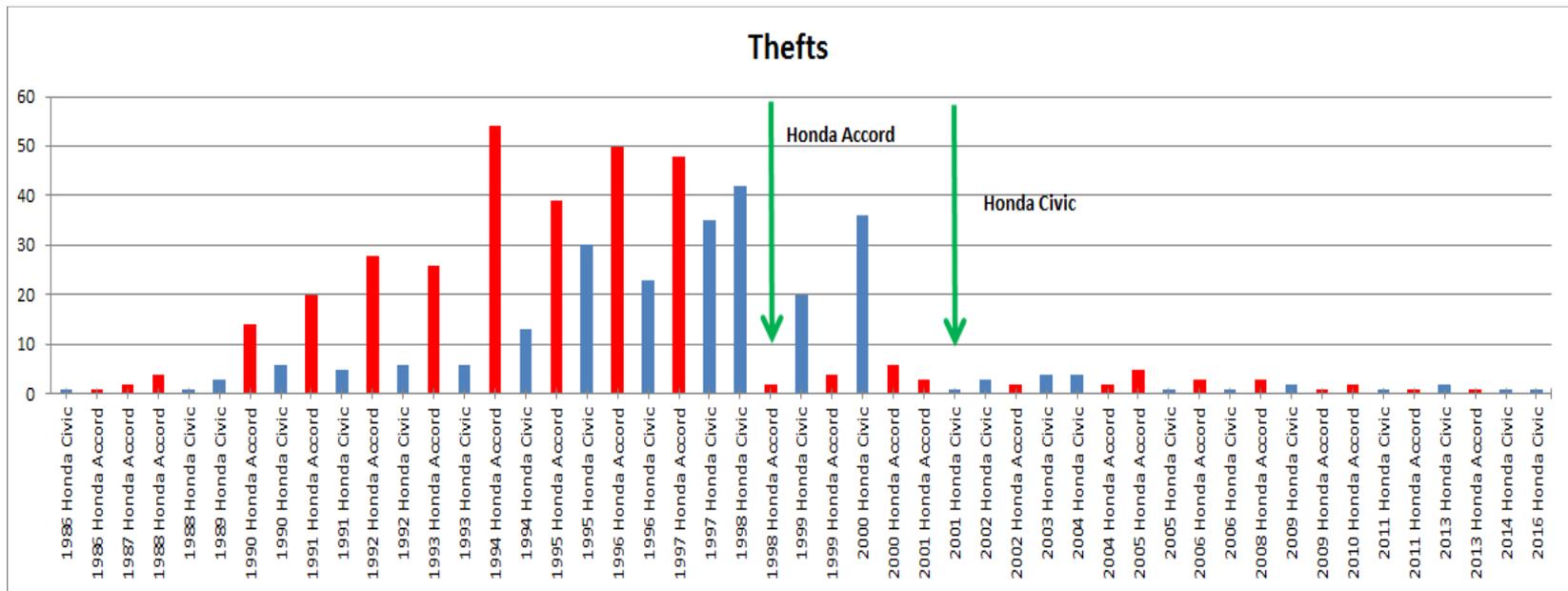
Provinces: Canada ▾

Rank	Model
1	2005 FORD F350 SD 4WD PU
2	2006 FORD F350 SD 4WD PU
3	2007 FORD F350 SD 4WD PU
4	2006 CADILLAC ESCALADE 4DR 4WD SUV
5	2003 FORD F350 SD 4WD PU
6	2006 FORD F250 SD 4WD PU
7	2001 FORD F350 SD 4WD PU
8	2004 FORD F250 SD 4WD PU
9	2007 FORD F250 SD 4WD PU
10	2001 FORD F250 SD 4WD PU

*<http://www.ibc.ca/on/auto/theft/top-ten-stolen-cars?y=2015#stolen-cars>

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OEM security changed the theft risk of Hondas*



Green Arrows Indicate:

- Factory Immobilizer Enhanced Security Became Available for Honda Accord in 1998
- Factory Immobilizer Enhanced Security Became Available for Honda Civic in 2001

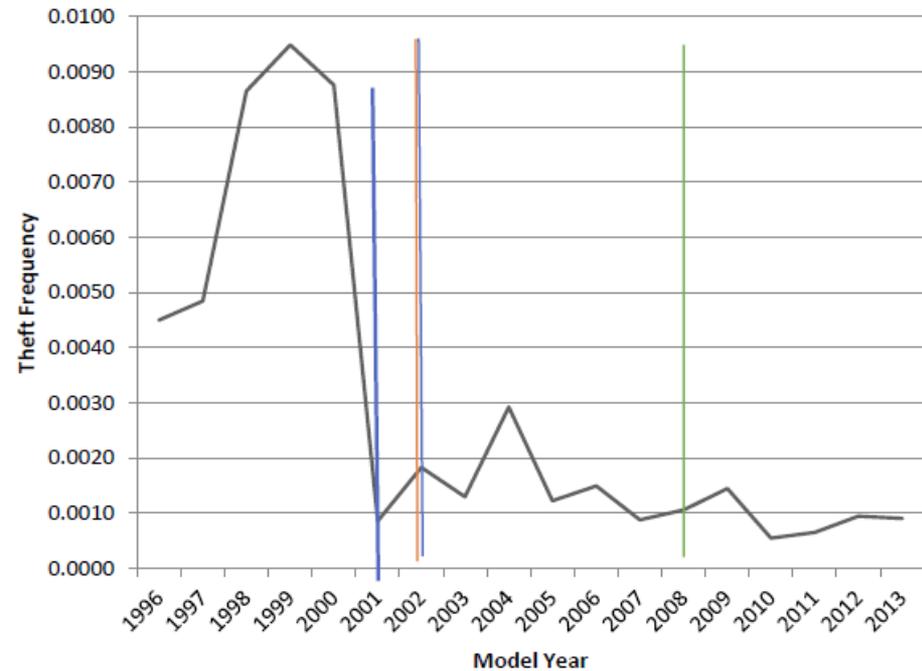
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RESULT:

Redacted information

OEM immobilizer security
dropped Chrysler/Dodge
theft rates

**Theft Frequency
Chrysler/Dodge
Town & Country/Grand Caravan**

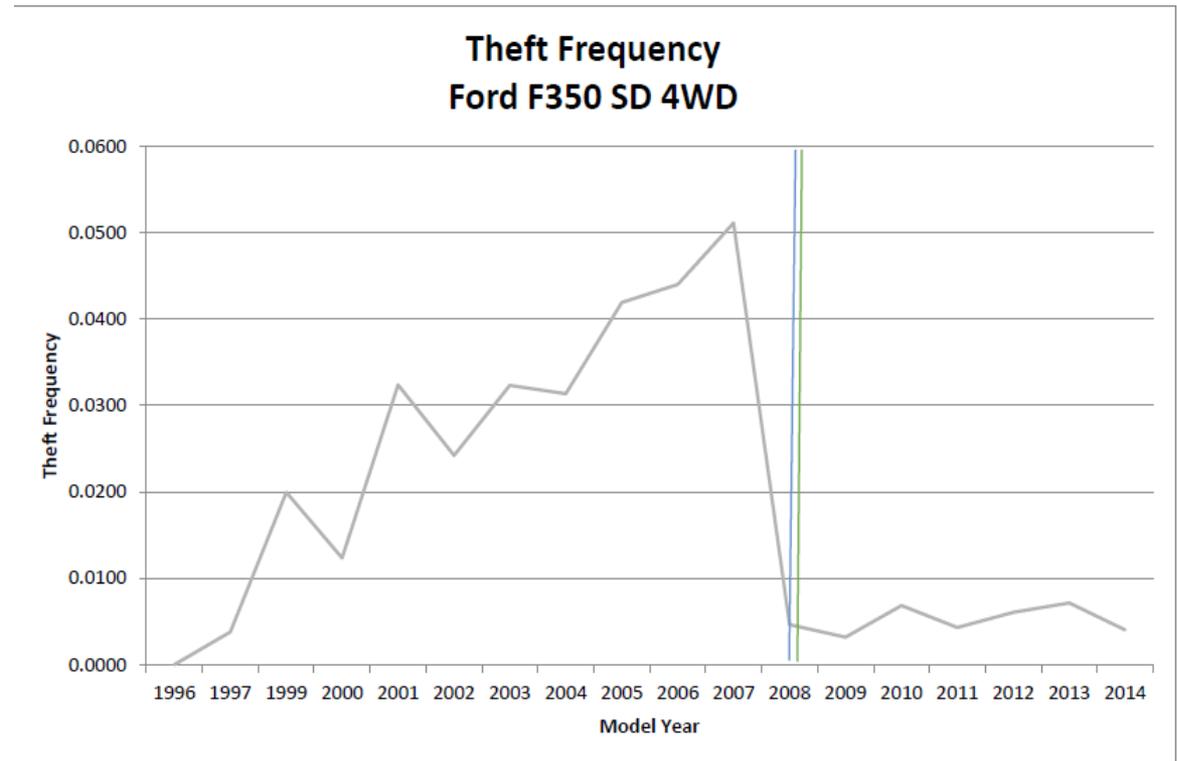


- IMM (OPT)
- IMM (STD)
- IBC TDS
- TC TDS

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Redacted information

OEM immobilizer security dropped Ford F350 truck theft rates



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Harmonizes Security Standards - NHTSA/Transport Canada

- **49 CFR Part 543 - [Docket No. NHTSA–2014–0007] RIN 2127–AL08** *Effective Date:* This rule is effective November 28, 2016
 - “NHTSA has finalized the procedures for obtaining an exemption from the vehicle theft prevention standard for vehicles equipped with transponder immobilizers.”
 - “Adopting these performance criteria for immobilizers bring the U.S. anti-theft requirements more into line with those of Canada.”

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RESULT:

- Insurance Bureau Canada

2016 Top ten stolen vehicles across Canada

Notice the shift on line 6 and 10!

Top 10 Stolen Vehicles

Years:

Provinces:

Rank	Model
1	2007 FORD F350 SD 4WD PU
2	2006 FORD F350 SD 4WD PU
3	2005 FORD F350 SD 4WD PU
4	2004 FORD F350 SD 4WD PU
5	2003 FORD F350 SD 4WD PU
6	2015 TOYOTA 4RUNNER 4DR 4WD SUV
7	2003 CADILLAC ESCALADE 4DR 4WD SUV
8	2002 FORD F350 SD 4WD PU
9	2006 FORD F250 SD 4WD PU
10	2010 ACURA ZDX 4DR AWD SUV

*<http://www.ibc.ca/on/auto/theft/top-ten-stolen-cars?y=2016#stolen-cars>

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RESULT:

- Insurance Bureau Canada

2020 Top ten stolen vehicles across Canada

The change is now dominate across many vehicle brands!

Conclusion: OEM anti-theft has been overridden!

What can be done?

Top 10 Stolen Vehicles

Years:

Provinces:

Rank	Model
1	2018 HONDA CR-V 4DR AWD
2	2017 LEXUS RX350/RX450h 4DR AWD
3	2017 HONDA CR-V 4DR AWD
4	2018 LEXUS RX350/RX350L/RX450h/RX450hL 4DR AWD
5	2018 FORD F150 4WD
6	2019 HONDA CR-V 4DR AWD
7	2018 TOYOTA HIGHLANDER 4DR 4WD
8	2017 TOYOTA HIGHLANDER 4DR 4WD
9	2019 LEXUS RX350/RX350L/RX450h/RX450hL 4DR AWD
10	2017 DODGE/RAM RAM 1500 4WD

*<http://www.ibc.ca/on/auto/theft/top-ten-stolen-cars?y=2020#stolen-cars>

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What can be done?

- Return of the aftermarket solution to address the OEM ineffective security.
- CAN/ULC S338-98-R2018 is being updated to a include “software immobilization” that will address these changes.
- We have a glitch... solution is currently under question!

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2. How standards have been utilized:

Microdots – Whole of Vehicle Parts Marking

- **South African Example**

In 2012 they adopted the SANS534-1 ED4 Standard for Whole of Vehicle Marking (WOVM) in South Africa.

- Microdots is the concept of the “whole of vehicle” or saturating a vehicle with identification labels and registering them into a Law Enforcement database

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Microdots – South Africa's Whole of Vehicle Marking Success

- **Results:**
 - Greater than a 50% reduction in theft of these vehicles
 - Greater than 55% recovery of stolen vehicles compared to the South African national average of 30% to 35%.
- Currently over 60,000 new vehicles are being marked each month in the program.

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MICRODOTS Standard

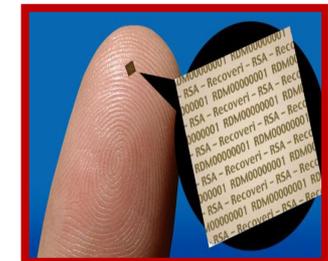
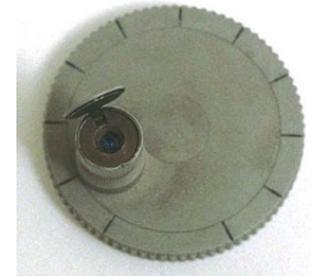
Anti-Cloning/Components Parts Marking Solution

- *The South African National Standard for Microdot Systems is a collaborative document written by a Standards Committee and maintained by the Standards Division of SABS (South African Bureau of Standards)*
- *SANS 534-1 also defines the minimum performance of the adhesive used to affix microdots to vehicles and makes recommendations regarding the security of the information systems that link the microdot data to the vehicle data.*
- Providing installation, investigation and database requirements.

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Introduction to Microdots:

- In 1870 during the Franco-Prussian war Carrier Pigeons first used microdots to carry messages
- Technology was further developed during WW1 and WW2 by all sides
- Microdots are fonts that have been “shrunk” to deliver messages on panels 1 millimetre across
- This almost invisibility provides the ability to achieve covert information transfer
- **The Microdot success continues today in providing a “Low Tech” = “Inexpensive” and “Quick Method” to ID microdotted items**



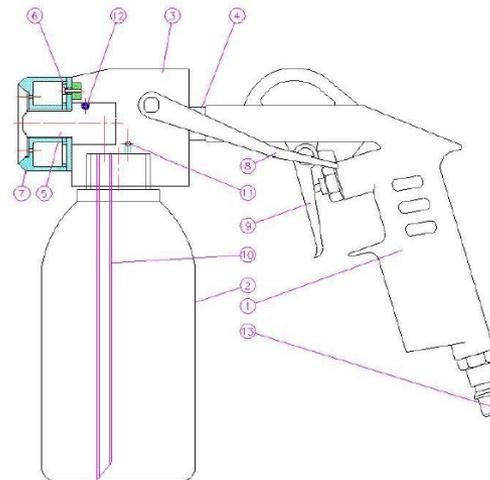
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Microdots Application

1. Application: Can be either sprayed or brushed



Recoveri Spray Applicator

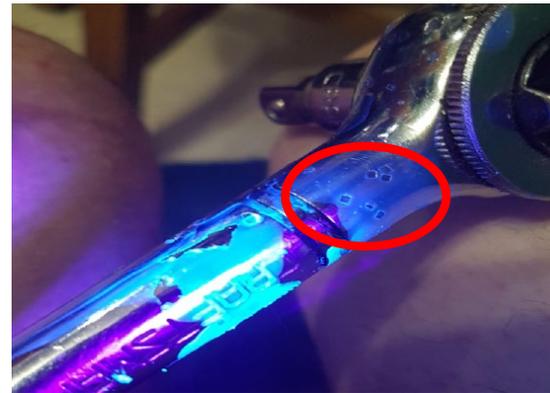


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Reading a Microdot

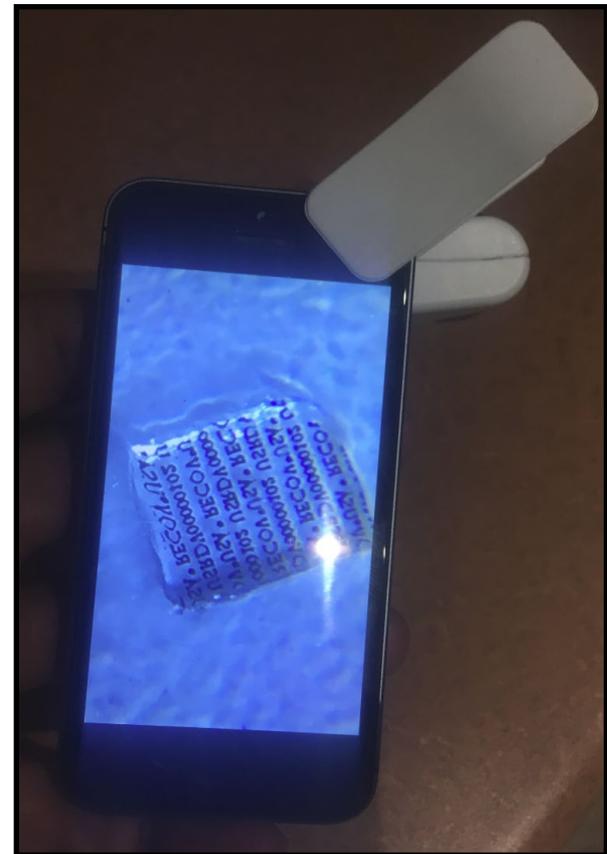
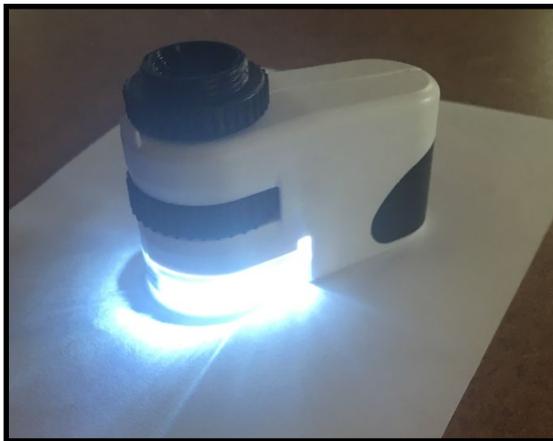
Harvest the dots:

1. Scrape off some dots and use the clear tape to affix them onto white paper
2. Use your 60 x microscope to see numbers
3. Photograph readable microdots
4. **Query database to verify original VIN**



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Reading a Microdot



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Reading a Microdot

Reading the Codes:

Number: **US**RDV00000102

- Country Code: **US** (United States)
- Microdot Manufacturer: RDV
- Unique Number: 00000102
- Features: Shape = Square
- Number repeated 8 times
- Polymer
- Size: 1 x 1 millimetres
- Features: States RECOVERI on dot
- **RECOVERI MICRODOT**



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Microdot Database

recoveri
tag what's yours



MICRODOT CERTIFICATE

THIS CERTIFIES THAT

The asset stipulated below has been fitted with the Recoveri Microdot system in terms of
**SANS 534-1:2011 SOUTH AFRICAN NATIONAL STANDARD
FOR WHOLE OF VEHICLE MARKING**

**With Microdot Number
ZARDV00173645**

OEM / Owner Details		Asset Details	
Email address	mobile@vrss.ca	Make	TOYOTA
Physical Address	198 St George St	Model	CAMRY V6 A/T
		Year	2007
City or Suburb	Bramford	Colour	Tan
Province		Vin #	4T1BK46K27U547529
Country	Canada	Engine #	547529
Postal Address	198 St George St Bramford, On	Registration #	
		Extra Comments	
Postal Code	N9R1W4		
Name	Reg		
Surname	Phillips		
ID # / Passport #	0000		
Driver's License #			
Tel # (Home)			
Tel # (Work)	519-757-8595		
Fax #			
Mobile #	905-512-5104		

Status tracking

Action	Date/Time	UserName	User Role
Microdot Imported	2019/04/12 04:40:43 PM	mobile@vrss.ca	User
Asset Captured Mobile Operator	2019/04/12 04:40:44 PM	REC066/17 RP	Mobile Operator

Recoveri Tag What's Yours (Pty) Ltd
P. O. Box 712020, Gardenview, 2047
0861 RECOVERI 0861 752 687
www.recoveri.com | info@recoveri.com

Certificate # 20194126958627AF04769A34C51738C3C2ADF Date 2019/04/12



Services

- Home
- Multi-Event Search
- Port Search
- Port Report
- Microdot Search
- Logout

Microdot Search

VIN or Microdot:

Search Results for ZARDV00173645

VIN	Dot Number	Engine Number	Year	Make	Model	Color
4T1BK46K27U547529	ZARDV00173645	547529	2007	TOYOTA	CAMRY V6 A/T	Tan

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3. Bragging on Colorado:

- First USA state for proofs of concepts using standards for Immobilization.
- First USA state for proofs of concepts using standards for Microdots.
- First statewide initiative for catalytic converter theft prevention.

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Colorado's Leading the Charge:

- Immobilization – Aftermarket Theft Prevention
 - Adding immobilizers to high risk easily stolen vehicles in Denver District Four.
- Results:
 - Motor vehicle theft was reduced by 30.2% in pilot area while all but one other areas in Denver increased. *Ref: Denver Hardening Project Final Report – Memo
 - Basic Return of Investment was 1,172% *Ref: Denver Vehicle Hardening Pilot Project – Final 12132019

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Colorado's Leading the Charge:

- Components Parts Marking – Microdot Trailer Secondary ID Marking.
 - In 2020 Colorado trailers thefts were close to 20 million in losses.
 - The ease of trailer thefts creates a criminal interest in the black market.
 - By adding 5,000 additional identification labels we are making it difficult to easily resell stolen trailers/parts.
 - Using the SANS534-1 standard for both a product and installation!

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Colorado's Leading the Charge:

- Catalytic Converter Theft Prevention Initiative
 - No standard available for catalytic converter theft prevention available.
 - Using OEM approved catalytic converter labels.
 - Etching the product identification number (PIN) into the metal along with a ID label.
 - Registration is automatically fed into NLETs for Law Enforcement search.

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Catalytic Converter ID Label:

- Kit includes catalytic converter labels, etching fluid, window warning stickers and registration.



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Additional Catalytic Converter News

Catalytic Converter Replacement Solution:

- Certified:
 - Non-stolen
 - OEM
 - EPA tested compliant
 - ID label/LE registration included
 - Roughly 60% reduction expected of OEM replacement cost
 - Usually no core charge



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Any Questions?

Thank you!

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