



your partners in safety & security...



January, 2012
Review www.onstar.com/publicsafety for the most up to date training materials.

Agenda

We're proud to present:

- **How OnStar Works**
 - A brief overview (15 min)
- **How OnStar Helps:**
 - Emergency Services (30 min)
 - Automatic Crash Response (15-40 min*)
 - Security Services (10 min)
 - Stolen Vehicle Assistance (15 min)
 - Crisis Assist (5 min)
 - OnStar FMV (5 min)
 - Staying Connected (5 min)
 - Questions?

HOW ONSTAR WORKS



GPS satellites orbit earth at 12,000 miles continuously streaming navigational data...

Upon OnStar button press or automatically in a crash, vehicle data is sent via wireless connection...

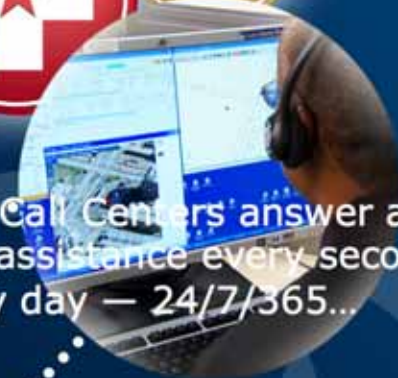


The OnStar receiver calculates data from at least 3 of those satellites...



Cellular transmission connects Subscriber to one of our Call Centers...

HOW ONSTAR WORKS



OnStar Call Centers answer a call for assistance every second of every day — 24/7/365...

Trained Advisors work in special teams (Emergency Services, Stolen Vehicle Assistance, Crisis Assist, etc.) to better handle subscriber requests...

In an emergency, Advisor contacts Public Safety with location, crash data and injury status for emergency responders.



Service Requirements

- Connectivity to the wireless network
- Battery power to operate the wireless system
- An active OnStar subscription

1996

...it all began

2009

...launched in China

2000+
\$100+

Advisors

Stolen Vehicle advisors

Emergency advisors

6million+
global subscribers

a day in the life of OnStar...

365/24/7 command center



365/24/7 call centers





How OnSeagene's services

Emergency Services by the numbers...

2,500 monthly automatic crash responses



5,600 monthly emergency services



7,000 monthly Good Samaritan calls



søsvinepfelely  koncærtusieyit

HOW ONSTAR HELPS:

With a *human* connection...

- **Live Advisors**
 - Able to assess the situation
 - Specifically trained for emergency calls
- **Extensive Training**
 - General OnStar training (4 wks)
 - Non emergency assignment (3 months)
 - Emergency training including APCO (6 wks)
 - ALL Emergency Advisors are EMD certified
 - Stolen Vehicle Assistance training (4 wks)
 - Ongoing education



HOW ONSTAR HELPS:

At the push of a button...



- **Personal in-vehicle emergencies**
 - Similar to 9-1-1 Calls
 - Understanding of medical problems
 - Knowing routes to hospitals & service
- **Good Samaritan calls**
 - Vehicle crashes
 - Road hazards
 - Criminal/suspicious activity
 - Amber Alert information

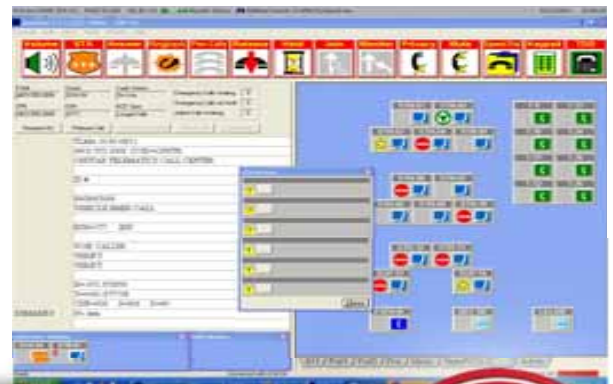
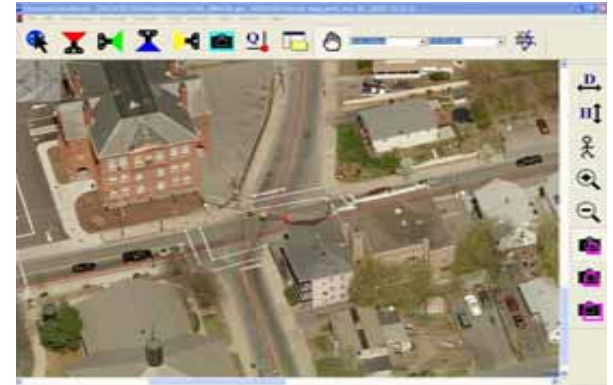


HOW ONSTAR HELPS:

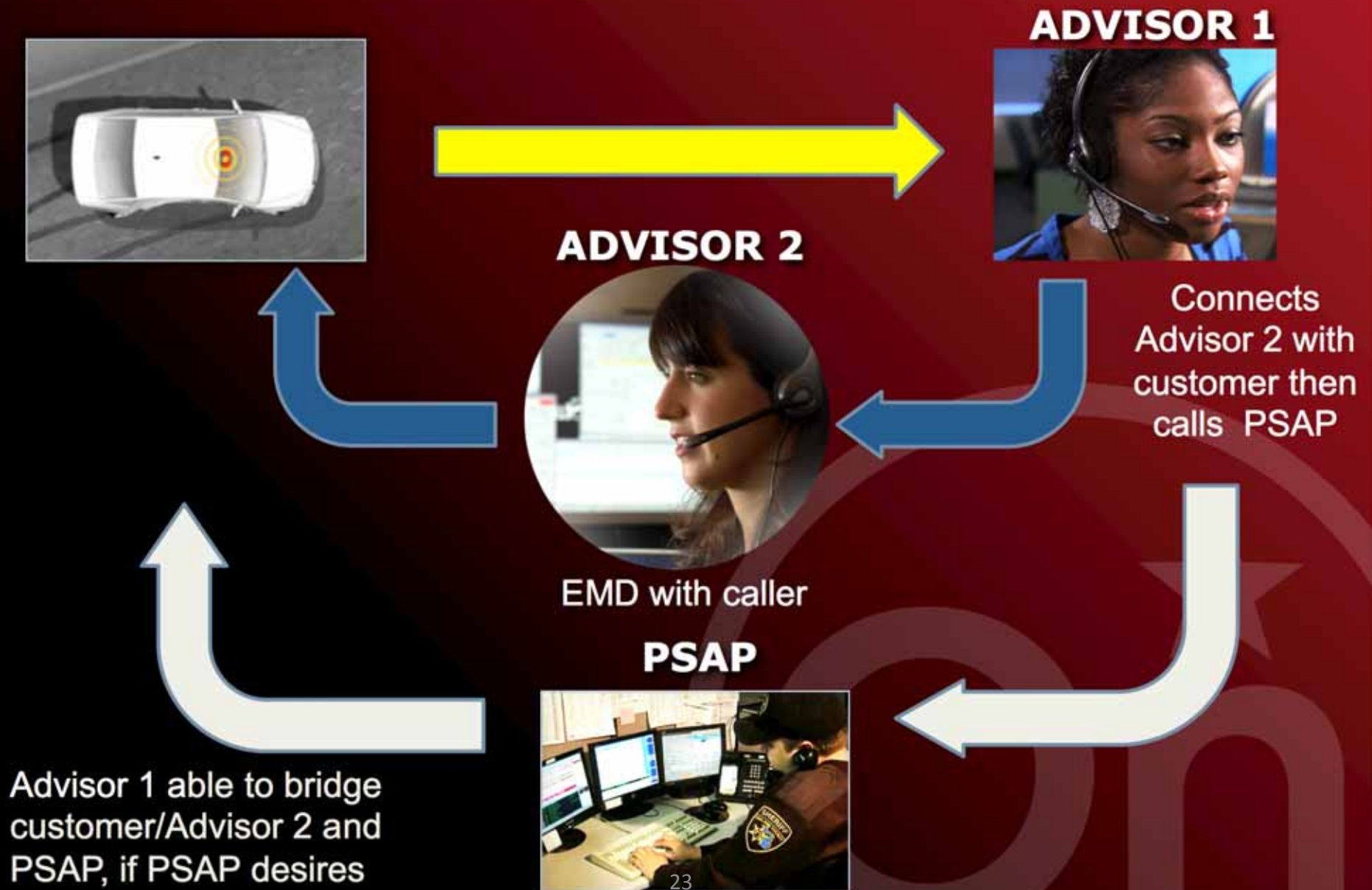
With *advanced* tools & training...

- **Sophisticated support**

- Data / Voice link to vehicle
- GPS location / Aerial imagery
- Priority access to Public Safety
- Real-time info (weather, Amber Alerts)
- Bilingual Advisors / Language Line support
- TTY*
- Command Center
- Poison Control
- Suicide Prevention Hotline
- Emergency Medical Dispatch



OnStar now provides EMD using MPDS protocol



when every second counts...



automation crash response

Comprehensive, Continuous Safety: Protection Before, During, and After Vehicle Collisions

BEFORE



Available Crash Avoidance & Driver Assistance Technologies

- Stabilitrak
- Rear Video Monitor
- Lane Departure Warning
- Side Blind Zone Alert
- Adaptive Cruise Control
- Anti-Lock Braking System
- Daytime Running Lights



Hands-Free Calling
Vehicle Diagnostics

DURING



Systems Help Absorb Energy from Impact



AFTER



• Automatic Crash Response

• Automatic High-Voltage Shutoff



• Automatic Fuel Sender Shutoff



• Automatic Door Unlock

• Automatic Flashers

Post-Crash Occupant Protection

Crash victim helped by OnStar:

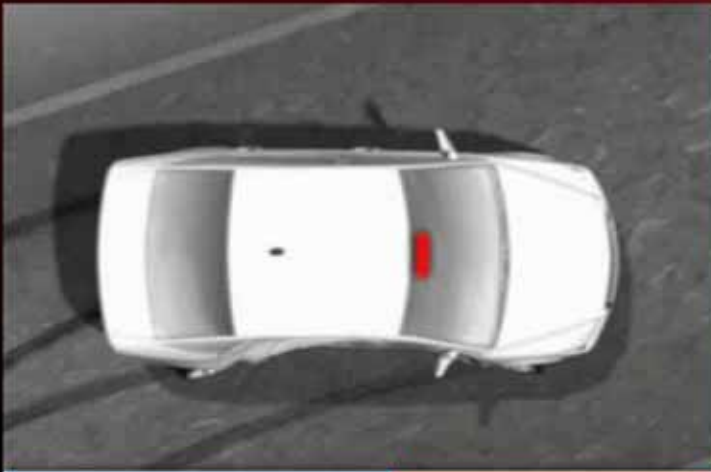
A friend of my wife's was involved in an accident last week. She knew nothing about or how On Star worked until it was activated by the crash. Badly shaken but not hurt... She didn't know what to do... But the OnStar person took care of everything... Reassuring a shaken older lady that things were O.K. and help was on the way. Thank You.



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INJURY SEVERITY PREDICTION	
HIGH	
Advisor Crash Input	
Female	YES
Over 55 Years Old	YES
UPDATE PREDICTION	UPDATE

VEHICLE INFORMATION	
Owner's Name	Patty Smith
Make	Chevrolet
Model	Malibu Hybrid
Manuf. Year	2009
Color	Imperial Blue
License Plate	AKL3890
Emergency Contact	Jim Smith
Emergency Contact Phone Number	313-555-0001

PSAP LOCATION		
Name	Type	Connect/Transmit Data
District of Columbia	Primary Emergency No.	TRANSMIT
Comments		
Secondary emergency no. is (202) 555-5556. This value is plotted from the latitude 28.2172 and the longitude -81.6883.		

TIME OF ALERT: 20:04:39

AUTOMATIC CRASH RESPONSE STATUS

Air Bag Status	Airbag Deployed
Maximum Reported Delta V	28 mph from the left
Direction of Impact	Left Side (30°)
Multiple Impacts	No
Rollover	No

Map showing the location of the crash in the Washington, D.C. area. The marker is located near Potomac and Silver Spring, close to the intersection of I-495 and I-270.

LOCATION	
Washington, D.C.	
Georgetown Pike	Ridge Dr
Latitude	Longitude
38° 53' 9" N	77° 02' 51" W



INJURY SEVERITY PREDICTION	HIGH
	Advisor Crash Input
Female	YES
Over 55 Years Old	YES
UPDATE PREDICTION	UPDATE

VEHICLE INFORMATION	
Owner's Name	Patty Smith
Make	Chevrolet
Model	Malibu Hybrid
Manuf. Year	2007
Color	Imperial Blue
License Plate	AKL3880
Emergency Contact	Jim Smith
Emergency Contact Phone Number	313-555-0001

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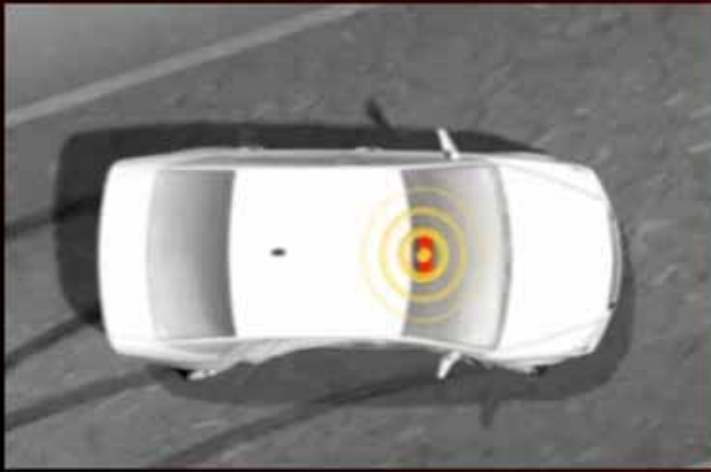
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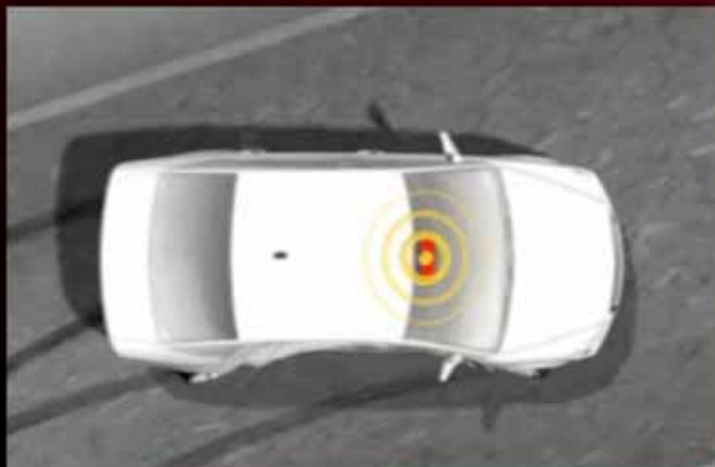
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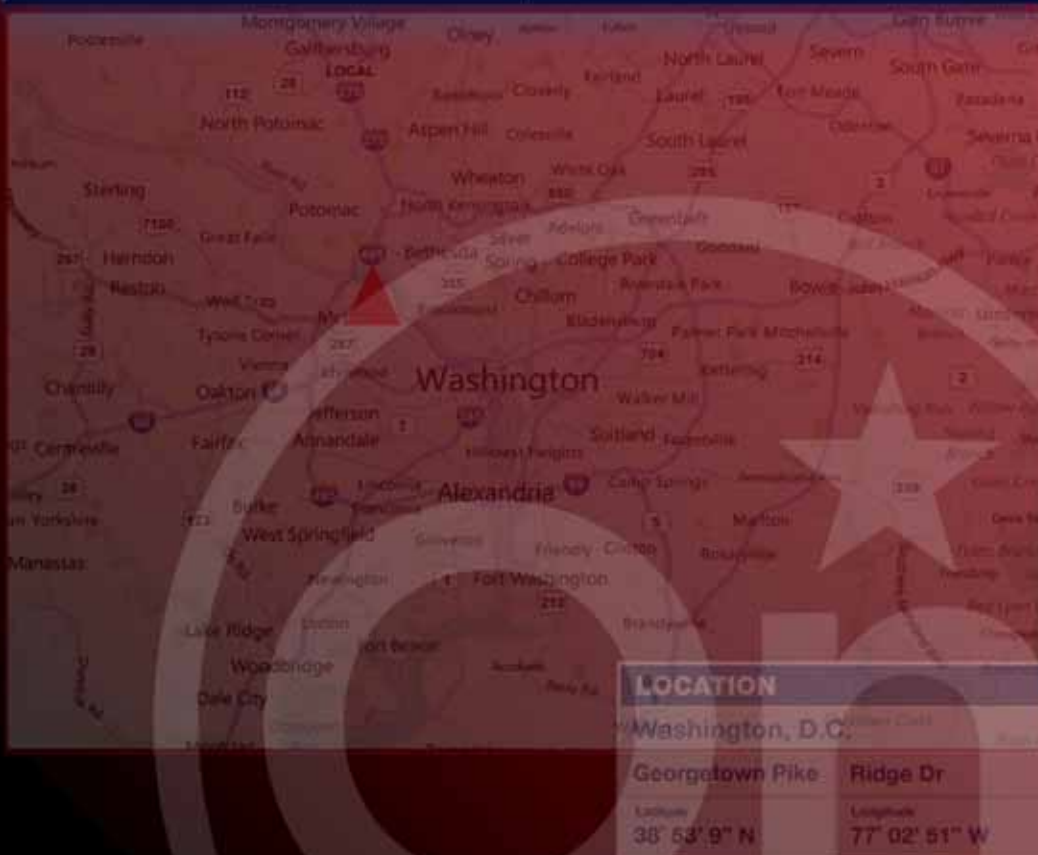
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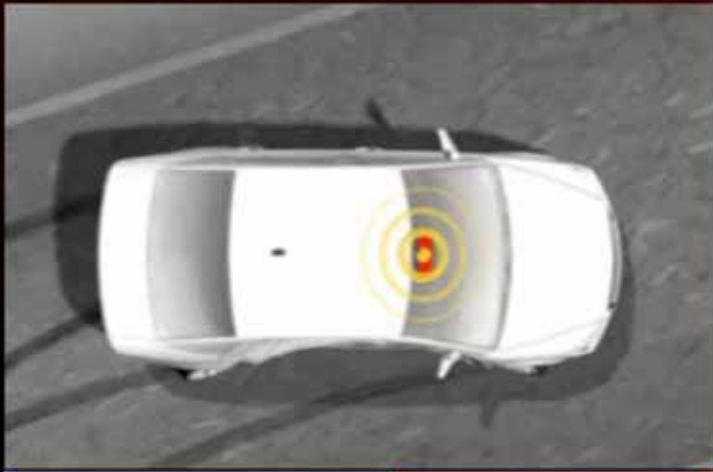
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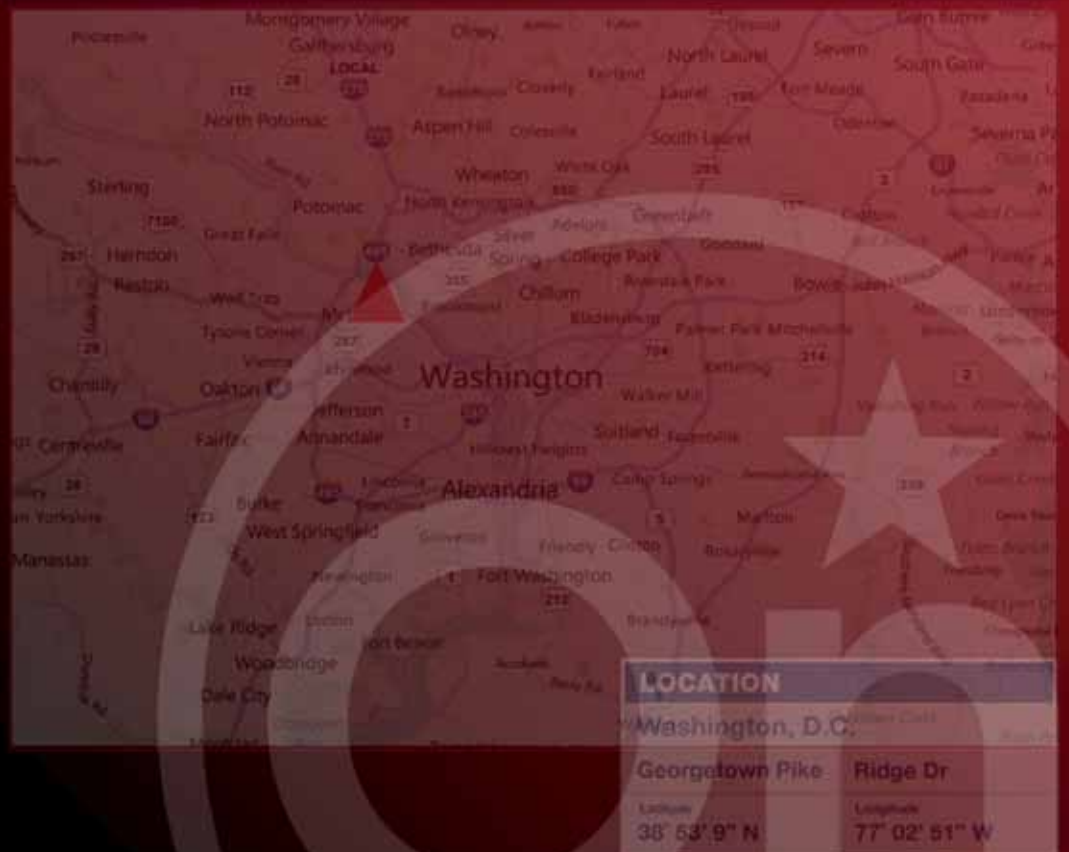
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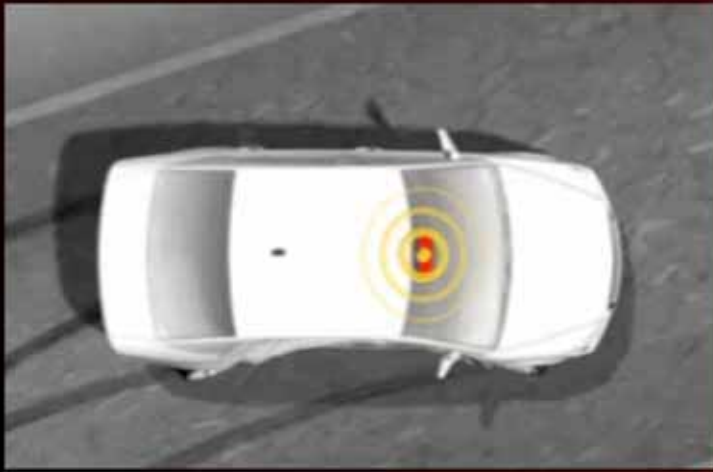
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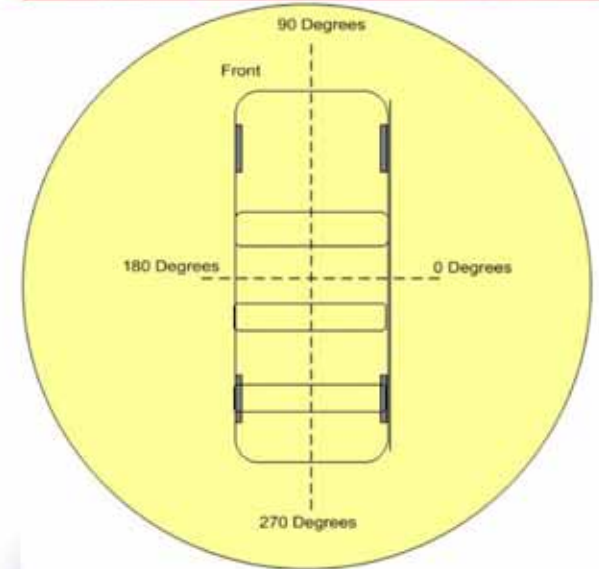
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HOW ONSTAR RELAYS INFORMATION

Crash Data – what does it mean?

- Available since 2004
- Verbally relayed to the PSAP
- In raw form is difficult to interpret
- Need to keep it simple
- Delta V – What is it?



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HOW ONSTAR HELPS

Partnering for a solution

Partnership between GM Foundation, GM Safety Engineering and the Centers for Disease Control and Prevention (CDC) to:

- Analyze crash data – can it predict severity of injury?
- Develop guidelines/algorithm
- Use real-time crash data and algorithm to communicate to responders
- Ultimately provide more targeted emergency response and treatment for automotive crash victims.



RECOMMENDATIONS FROM THE EXPERT PANEL:
ADVANCED AUTOMATIC
COLLISION NOTIFICATION AND
TRIAGE OF THE INJURED PATIENT



—PREPARED BY THE—
CENTERS FOR DISEASE CONTROL AND PREVENTION
NATIONAL CENTER FOR INJURY PREVENTION AND CONTROL, DIVISION OF INJURY RESPONSE
—WITH SUPPORT FROM—
ONSTAR, THE GENERAL MOTORS FOUNDATION, AND THE CDC FOUNDATION

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Centers for Disease Control and Prevention



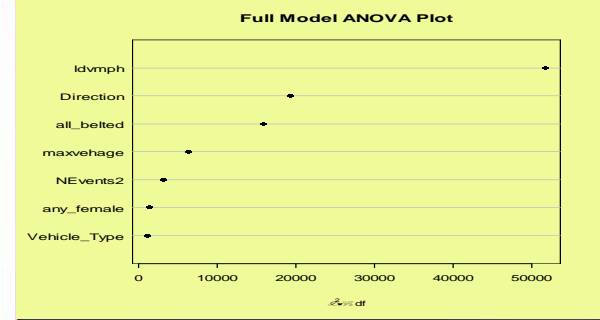
HOW ONSTAR RELAYS INFORMATION

Injury Severity Prediction

Injury Severity Prediction

Data Points (in order of importance) include:

- Delta V
- Principal Direction of Force
- Seatbelt use
- Age
- Multiple events (impacts)
- Vehicle type



AUTOMATIC CRASH RESPONSE STATUS	
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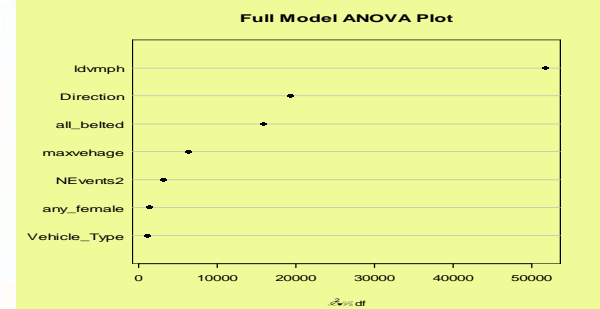
Injury Severity Prediction

Injury Severity Score (ISS)

- Maximum score 75
- Sum of the squares of the single highest Abbreviated Injury Score (AIS) (1-6) in each of the three most severely injured body regions.

Injury Severity Prediction of High means:

- **Probability** is greater than 20% of an ISS greater than 15 (major trauma)



Injury Severity Prediction



Crash

Delta V, Mph	35
Impact Direction	Front
Multiple Events	No
Seatbelt Use	No
Age (over 55)	Unk
Gender	Unk
Vehicle Type	Car

Probability?

24%

HIGH

Injury Severity Prediction



Crash	
Delta V, Mph	35
Impact Direction	Left
Multiple Events	No
Seatbelt Use	No
Age (over 55)	Unk
Gender	Unk
Vehicle Type	Car

Probability?

66%
HIGH

Injury Severity Prediction



Crash	
Delta V, Mph	35
Impact Direction	Front
Multiple Events	Yes
Seatbelt Use	No
Age (over 55)	Unk
Gender	Unk
Vehicle Type	Car

Probability?

38%

HIGH

Injury Severity Prediction



Crash	
Delta V, Mph	35
Impact Direction	Front
Multiple Events	No
Seatbelt Use	Yes
Age (over 55)	Unk
Gender	Unk
Vehicle Type	Car

Probability?

7%

Injury Severity Prediction



Crash	
Delta V, Mph	35
Impact Direction	Front
Multiple Events	No
Seatbelt Use	No
Age (over 55)	Yes
Gender	Unk
Vehicle Type	Car

Probability?

38%

HIGH

Injury Severity Prediction



Crash	
Delta V, Mph	35
Impact Direction	Front
Multiple Events	No
Seatbelt Use	No
Age (over 55)	Unk
Gender	Female
Vehicle Type	Car

Probability?

34%
HIGH

Injury Severity Prediction



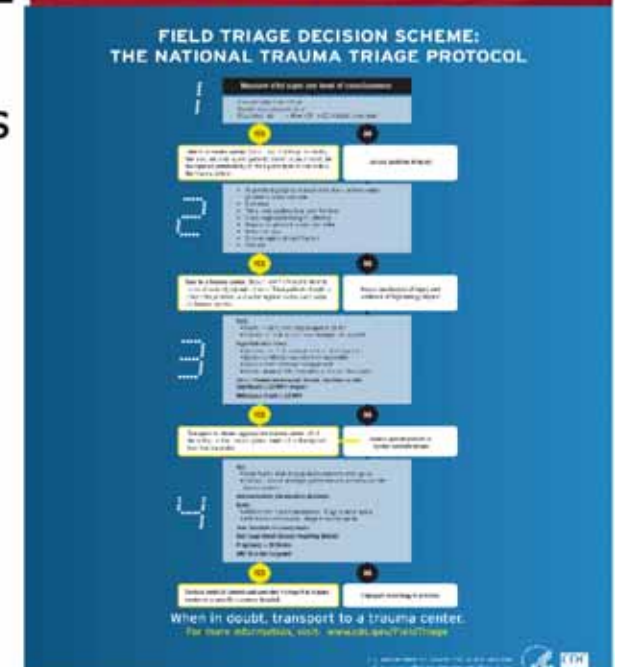
Crash	
Delta V, Mph	35
Impact Direction	Front
Multiple Events	No
Seatbelt Use	No
Age (over 55)	Unk
Gender	Unk
Vehicle Type	Van

Probability?
14%

HOW ONSTAR RELAYS INFORMATION

Injury Severity Prediction

- Next steps
 - Refine algorithm based on scientific analysis
 - Develop standards across the telematic industry
 - Next Gen 911 – capability to send crash data to PSAPs and then responding units
 - Develop plan to educate EMS Medical Directors and providers on why data is useful
 - Criteria based transport policies?
 - Develop plan to implement among EMS & 911 Medical Directors / Protocol Developers
 - How many and what type of resources should be sent to scene?
 - How should call be prioritized?



a day with Public Safety...



security services



Comprehensive, Continuous Security: Security Before, During, and After Vehicle Thefts



BEFORE



Available Enhanced Theft Deterrence Systems

- Keys
- Fobs
- Doors
- Remote start /valet provisions
- Radios with theft locks
- Wheel locks
- VIN security
- OnStar – Remote Locks and Unlocks



DURING

Alerts and Sensor



- Vehicle alarm system

AFTER



Recovery and Apprehension

- Vehicle Location
- Remote Ignition Block
- Stolen Vehicle Slowdown





2012 CADILLAC ESCALADE ENHANCED THEFT DETERRENCE

STEERING COLUMN LOCK SYSTEM

deters towing or push-away theft



PASS KEY 3+

encrypted ignition
lock and key



Available INCLINATION SENSOR
sets off alarm when vehicle angle
change is detected

Available WHEEL LOCK SYSTEM
prevents wheel and tire theft

Security Services by the numbers...

29,000 monthly roadside assists



67,000 monthly remote unlocks



517 monthly stolen vehicle assists



57,000+
stolen vehicles located

HOW ONSTAR HELPS:

With Stolen Vehicle Assistance...

Eliminate the dangers of high-speed chases:

- **Stolen Vehicle Slowdown**
 - Disables the accelerator
 - Service launch in September 2008
 - *Over 82 successful deployments*
- **Remote Ignition Block**
 - Prevents vehicle from restarting
 - Service launch in July 2009
 - *Over 3,700 successful deployments*



HOW ONSTAR HELPS:

With legal authority to assist...

In the normal course of business...

- **Stolen Vehicle Assistance requires:**
 - Subscriber's request (now presumed when Subscriber reports the vehicle as stolen)
 - Confirmation that law enforcement is treating the vehicle as stolen (verbal confirmation on a recorded line is accepted)



HOW ONSTAR HELPS:

With legal authority to assist...



Under other circumstances.....

- **Missing person cases* require:**
 - Confirmation that LE is treating person as missing
 - Certification: Sole purpose of request is to find missing person
 - Involves imminent threat to life or limb
- **Criminal matters* require:**
 - Court order with probable cause
 - Court order promissory in certain urgent circumstances
 - Subpoena for historical records



when every second counts...



go to [crisisassist](#) on OnStar.

HOW ONSTAR HELPS:
During a crisis...

**Central point of contact, assistance
& information for subscribers...**

Emergency Services plus:

- Evacuation routes
- Connection to loved ones
- Real-time hotel reservations
- Food, water & medical supply sites
- Targeted crisis messaging
- Hospital directions
- Fuel availability
- Special needs assistance
- Utility up-time information



Crisis victim helped by OnStar:

During the 5.8 earthquake in Baltimore...My sister called me stating "the building is shaking" hysterically... As we were talking the phone went dead and then I felt the earthquake... No phones were working and I was worried about her. As I sat in my car feeling helpless I looked up at the OnStar button and pushed it. A woman came on and I told her there had been an earthquake and I can't get a hold of my sister. She asked for my sister's number, contacted her and said she spoke to her and she is ok. I have got to tell you the peace of mind you gave me in the middle of a crisis.

Crisis victim helped by OnStar:

During the 5.8 earthquake in Baltimore...My sister called me stating "the building is shaking" hysterically... As we were talking the phone went dead and then I felt the earthquake... No phones were working and I was worried about her. As I sat in my car feeling helpless I looked up at the OnStar button and pushed it. A woman came on and I told her there had been an earthquake and I can't get a hold of my sister. She asked for my sister's number, contacted her and said she spoke to her and she is ok. I have got to tell you the peace of mind you gave me in the middle of a crisis.

in ways safely connecting to possible...



- Available for a broad range of vehicles (>90 M)
- Extends OnStar services outside GM family of vehicles
- Professional installation at consumer electronics stores
- Features accelerometer, GPS, OnStar services, Bluetooth, embedded cell phone

HOW ONSTAR HELPS:

Ongoing improvements to stay connected...

The screenshot displays the OnStar website interface. At the top left is the OnStar logo, and at the top right are links for 'FAQS' and 'CONTACT US'. The main heading reads 'ONSTAR AND THE EMERGENCY SERVICES COMMUNITY WORKING TOGETHER FOR PUBLIC SAFETY'. Below this, a sub-header asks 'Looking for how to get help from OnStar or training on specific OnStar services? Just choose your situation from the dropdown below to get started.' A 'Choose Situation' dropdown menu is visible. To the right, a 'GM VEHICLE EXTRICATION INFO' section is partially visible. Below the main heading is a large image featuring a firefighter, a damaged car, and two OnStar call center operators. A small inset image shows a woman with the text 'As an enhancement to Emergency Services, OnStar will now provide EMD. [Learn more](#) or read the [FAQs](#).' Below this, the 'AUTOMATIC CRASH RESPONSE' section explains that the built-in system can alert 9-1-1 if there is a high probability of severe injury, with a 'READ MORE' link. To the right of this section are three circular icons: a red one with a white cross, a gold one with a white padlock, and a blue one with the OnStar logo. Further right is the 'ONSTAR IN ACTION' section, which includes a video thumbnail and the text 'Watch video testimonials from other Emergency Services Professionals. [HEAR THEIR STORIES >](#)'. At the bottom, there are social media links for Facebook ('JOIN THE ONSTAR CONVERSATION ON FACEBOOK') and a link to connect with real subscribers at OnStar ('CONNECT WITH REAL SUBSCRIBERS AT ONSTAR CONNECTIONS'). The footer contains the OnStar.com website address and a link to the Privacy Statement, along with small legal disclaimers.



**ONSTAR & THE EMERGENCY
SERVICES COMMUNITY**

**WORKING TOGETHER FOR
PUBLIC SAFETY**



EMERGENCY SERVICES



AUTOMATIC CRASH RESPONSE



STOLEN VEHICLE ASSISTANCE

866.866.5006
emergencyassistance.onstar.com

Important Points to Remember

- **OnStar can be a valuable tool for Public Safety**
- **To help, OnStar needs:**
 - an active subscription
 - cellular connectivity and battery power
 - legal authorization if not stolen or emergency
- **To request OnStar's help:**
 - call 866-866-5006 for emergencies
 - Email: emergencyservices@onstar.com for non emergencies
 - contact Public Safety Outreach team members for further assistance and training

Cathy McCormick

Emergency Outreach & Strategy
Manager

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George Baker

Public Safety Outreach Manager

313.667.0794 (office)
248.515.0673 (mobile)

george.baker@onstar.com

thank you for your time...



and your service.

Sherry LeVeque

Public Safety Outreach Leader

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313.701.1854 (mobile)

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www.onstar.com/publicsafety

emergencyservices@onstar.com

866-866-5006