

## New Technology / New Evidence

Jan Blacklock-Matthews  
Municipal Court Judge  
City of Lubbock, Texas

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## Event Data Recorder

- Originally conceived and designed to gather air bag deployment information
- Information is now being used for other purposes
- Currently General Motors and Ford have contracted with Bosch Diagnostics to provide the reading unit and software

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### EDR Locations

Under the Driver or Front Passenger Seats



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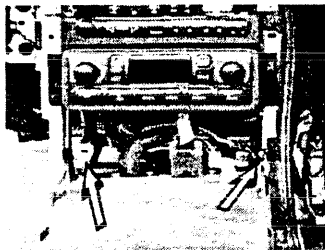
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Under the center console behind the dashboard controls



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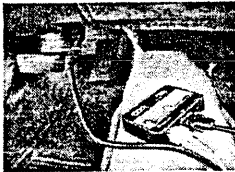
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Collecting the data



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### What Type of Data is Collected?

- Vehicle Speed
- Engine Speed
- Brake status
- Throttle Position
- State of Driver's Seat Belt Switch
- Passenger's Air Bag Enabled or Disabled
- Air bag Deployment Information

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Event	Time (ms)	Speed (km/h)	Engine (RPM)	Brake	Throttle	Seat Belt	Air Bag
1	0	0	0	0	0	0	0
2	10	10	1000	0	0	0	0
3	20	20	2000	0	0	0	0
4	30	30	3000	0	0	0	0
5	40	40	4000	0	0	0	0
6	50	50	5000	0	0	0	0
7	60	60	6000	0	0	0	0
8	70	70	7000	0	0	0	0
9	80	80	8000	0	0	0	0
10	90	90	9000	0	0	0	0
11	100	100	10000	0	0	0	0
12	110	110	11000	0	0	0	0
13	120	120	12000	0	0	0	0
14	130	130	13000	0	0	0	0
15	140	140	14000	0	0	0	0
16	150	150	15000	0	0	0	0
17	160	160	16000	0	0	0	0
18	170	170	17000	0	0	0	0
19	180	180	18000	0	0	0	0
20	190	190	19000	0	0	0	0
21	200	200	20000	0	0	0	0
22	210	210	21000	0	0	0	0
23	220	220	22000	0	0	0	0
24	230	230	23000	0	0	0	0
25	240	240	24000	0	0	0	0
26	250	250	25000	0	0	0	0
27	260	260	26000	0	0	0	0
28	270	270	27000	0	0	0	0
29	280	280	28000	0	0	0	0
30	290	290	29000	0	0	0	0
31	300	300	30000	0	0	0	0
32	310	310	31000	0	0	0	0
33	320	320	32000	0	0	0	0
34	330	330	33000	0	0	0	0
35	340	340	34000	0	0	0	0
36	350	350	35000	0	0	0	0
37	360	360	36000	0	0	0	0
38	370	370	37000	0	0	0	0
39	380	380	38000	0	0	0	0
40	390	390	39000	0	0	0	0
41	400	400	40000	0	0	0	0
42	410	410	41000	0	0	0	0
43	420	420	42000	0	0	0	0
44	430	430	43000	0	0	0	0
45	440	440	44000	0	0	0	0
46	450	450	45000	0	0	0	0
47	460	460	46000	0	0	0	0
48	470	470	47000	0	0	0	0
49	480	480	48000	0	0	0	0
50	490	490	49000	0	0	0	0
51	500	500	50000	0	0	0	0
52	510	510	51000	0	0	0	0
53	520	520	52000	0	0	0	0
54	530	530	53000	0	0	0	0
55	540	540	54000	0	0	0	0
56	550	550	55000	0	0	0	0
57	560	560	56000	0	0	0	0
58	570	570	57000	0	0	0	0
59	580	580	58000	0	0	0	0
60	590	590	59000	0	0	0	0
61	600	600	60000	0	0	0	0
62	610	610	61000	0	0	0	0
63	620	620	62000	0	0	0	0
64	630	630	63000	0	0	0	0
65	640	640	64000	0	0	0	0
66	650	650	65000	0	0	0	0
67	660	660	66000	0	0	0	0
68	670	670	67000	0	0	0	0
69	680	680	68000	0	0	0	0
70	690	690	69000	0	0	0	0
71	700	700	70000	0	0	0	0
72	710	710	71000	0	0	0	0
73	720	720	72000	0	0	0	0
74	730	730	73000	0	0	0	0
75	740	740	74000	0	0	0	0
76	750	750	75000	0	0	0	0
77	760	760	76000	0	0	0	0
78	770	770	77000	0	0	0	0
79	780	780	78000	0	0	0	0
80	790	790	79000	0	0	0	0
81	800	800	80000	0	0	0	0
82	810	810	81000	0	0	0	0
83	820	820	82000	0	0	0	0
84	830	830	83000	0	0	0	0
85	840	840	84000	0	0	0	0
86	850	850	85000	0	0	0	0
87	860	860	86000	0	0	0	0
88	870	870	87000	0	0	0	0
89	880	880	88000	0	0	0	0
90	890	890	89000	0	0	0	0
91	900	900	90000	0	0	0	0
92	910	910	91000	0	0	0	0
93	920	920	92000	0	0	0	0
94	930	930	93000	0	0	0	0
95	940	940	94000	0	0	0	0
96	950	950	95000	0	0	0	0
97	960	960	96000	0	0	0	0
98	970	970	97000	0	0	0	0
99	980	980	98000	0	0	0	0
100	990	990	99000	0	0	0	0

**DEPLOYMENT DATA**

Time (ms)	Speed (km/h)	Engine (RPM)	Brake	Throttle	Seat Belt	Air Bag
0	0	0	0	0	0	0
10	10	1000	0	0	0	0
20	20	2000	0	0	0	0
30	30	3000	0	0	0	0
40	40	4000	0	0	0	0
50	50	5000	0	0	0	0
60	60	6000	0	0	0	0
70	70	7000	0	0	0	0
80	80	8000	0	0	0	0
90	90	9000	0	0	0	0
100	100	10000	0	0	0	0
110	110	11000	0	0	0	0
120	120	12000	0	0	0	0
130	130	13000	0	0	0	0
140	140	14000	0	0	0	0
150	150	15000	0	0	0	0
160	160	16000	0	0	0	0
170	170	17000	0	0	0	0
180	180	18000	0	0	0	0
190	190	19000	0	0	0	0
200	200	20000	0	0	0	0
210	210	21000	0	0	0	0
220	220	22000	0	0	0	0
230	230	23000	0	0	0	0
240	240	24000	0	0	0	0
250	250	25000	0	0	0	0
260	260	26000	0	0	0	0
270	270	27000	0	0	0	0
280	280	28000	0	0	0	0
290	290	29000	0	0	0	0
300	300	30000	0	0	0	0
310	310	31000	0	0	0	0
320	320	32000	0	0	0	0
330	330	33000	0	0	0	0
340	340	34000	0	0	0	0
350	350	35000	0	0	0	0
360	360	36000	0	0	0	0
370	370	37000	0	0	0	0
380	380	38000	0	0	0	0
390	390	39000	0	0	0	0
400	400	40000	0	0	0	0
410	410	41000	0	0	0	0
420	420	42000	0	0	0	0
430	430	43000	0	0	0	0
440	440	44000	0	0	0	0
450	450	45000	0	0	0	0
460	460	46000	0	0	0	0
470	470	47000	0	0	0	0
480	480	48000	0	0	0	0
490	490	49000	0	0	0	0
500	500	50000	0	0	0	0
510	510	51000	0	0	0	0
520	520	52000	0	0	0	0
530	530	53000	0	0	0	0
540	540	54000	0	0	0	0
550	550	55000	0	0	0	0
560	560	56000	0	0	0	0
570	570	57000	0	0	0	0
580	580	58000	0	0	0	0
590	590	59000	0	0	0	0
600	600	60000	0	0	0	0
610	610	61000	0	0	0	0
620	620	62000	0	0	0	0
630	630	63000	0	0	0	0
640	640	64000	0	0	0	0
650	650	65000	0	0	0	0
660	660	66000	0	0	0	0
670	670	67000	0	0	0	0
680	680	68000	0	0	0	0
690	690	69000	0	0	0	0
700	700	70000	0	0	0	0
710	710	71000	0	0	0	0
720	720	72000	0	0	0	0
730	730	73000	0	0	0	0
740	740	74000	0	0	0	0
750	750	75000	0	0	0	0
760	760	76000	0	0	0	0
770	770	77000	0	0	0	0
780	780	78000	0	0	0	0
790	790	79000	0	0	0	0
800	800	80000	0	0	0	0
810	810	81000	0	0	0	0
820	820	82000	0	0	0	0
830	830	83000	0	0	0	0
840	840	84000	0	0	0	0
850	850	85000	0	0	0	0
860	860	86000	0	0	0	0
870	870	87000	0	0	0	0
880	880	88000	0	0	0	0
890	890	89000	0	0	0	0
900	900	90000	0	0	0	0
910	910	91000	0	0	0	0
920	920	92000	0	0	0	0
930	930	93000	0	0	0	0
940	940	94000	0	0	0	0
950	950	95000	0	0	0	0
960	960	96000	0	0	0	0
970	970	97000	0	0	0	0
980	980	98000	0	0	0	0
990	990	99000	0	0	0	0
1000	1000	100000	0	0	0	0

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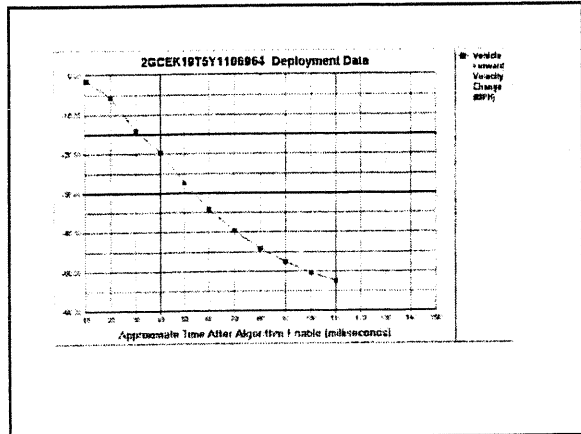
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### Where Can I Buy a Crash Data Retrieval Unit?

Bosch Diagnostics  
1-800-321-4889

Cost is \$4,493.00 plus software subscription  
of \$549.00 annually

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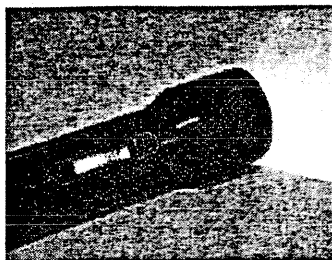
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### The "Sniffer"



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### Passive Alcohol Sensor

- Designed to formulate "probable cause" by functioning as an "extension" of the operator's nose
- Can detect alcohol in closed areas
- Can detect alcohol in open beverage containers

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### How does it work?

- Pump runs for 5 seconds and takes in a one cubic inch air sample
- Should be held 6-8 inches from the person's mouth
- Color coded bar graph with 9 LED bars

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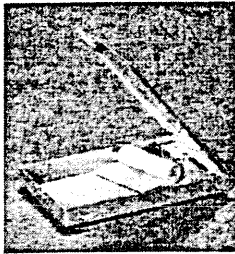
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### PAS "Clip Mate"



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### Where can it be used?

- Used at sobriety checkpoints
- School functions
- Workplace applications

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PAS sensors at sobriety checkpoints  
 increase officers effectiveness by 15-25%  
 in detecting illegally impaired drivers

» PAS Literature quoting studies by the National  
 Highway Traffic Safety Administration and the  
 Insurance Institute for Highway Safety

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- Frye hearing in Kane County Illinois
  - March 13, 2008
  - Scientific Principles were approved
  - Unit can be used for Probable Cause

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**Problems?**

- Admissibility in Court
- Residual mouth alcohol
- Environmental effects on the sample
- Can get false readings from other sources
- Illegal search?

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Where can I buy a PAS IV  
"Sniffer"?

PAS Systems International  
Fredericksburg, VA  
800/660-SNIF

Cost is \$695.00

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Global Positioning System

- GPS is funded by and controlled by the U. S. Department of Defense (DOD). While there are many thousands of civil users of GPS world-wide, the system was designed for and is operated by the U. S. military.
- GPS provides specially coded satellite signals that can be processed in a GPS receiver, enabling the receiver to compute position, velocity and time.

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- Newer "receivers" also send a signal which allows for tracking and location data.

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If you determine that your vehicle has been stolen, contact an OnStar Advisor. OnStar will help the police determine its whereabouts.

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... the government also tracked them [defendants] using the OnStar global positioning system when they rented a vehicle with that equipment.

- U.S. vs Rorke, 2002 U.S. Dist. LEXIS 16258 (2002)

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### What other applications are possible?

- Determine speed of a vehicle
- Track probationers
- Track or Locate vehicles
  - Stolen vehicles
  - Fleet Services
  - Rented vehicles

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### Portable Breath Tests



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### Portable Breath Testers

- Generally contain a fuel cell
- When a sufficient sample enters the unit, alcohol is converted to acetic acid and electrons are released
- A signal is generated on the fuel cell as a result of the oxidation of any alcohol from the breath sample
- The resulting electric current is translated into digitally displayed concentration of alcohol

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### Lifeloc FC10 plus

- Passive mode
- Quick recovery
  - less than 30 seconds on positives
- Retail Price is \$535



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### Procedure

- Give clear instructions on blowing
- Give 15 minutes before testing
- Repeat taking note of significant changes

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### Applications

- Roadside
- Youth / Underage Drinking
- Probationers

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“Where the State does not attempt to use a portable intoximeter or Passive Alcohol sensor to establish a quantitative alcohol concentration factor, but only proffers the evidence qualitatively as another indicator of intoxication relied on by the officer, much like other field sobriety tests, it is not error to admit to admit that qualitative evidence of intoxication”

- George v. Texas, 1999 Tex App. LEXIS 738 (1999)

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### Limitations

- Admissibility?
- Residual Mouth Alcohol
- Illegal Search?

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### SCRAM Alcohol Monitor

- Secure Continuous Remote Alcohol Monitor
- Eight ounce ankle bracelet
- Measures sweat / non invasive
- Can test as frequently as every 30 minutes
- Bracelet radios the modem which dials in a report

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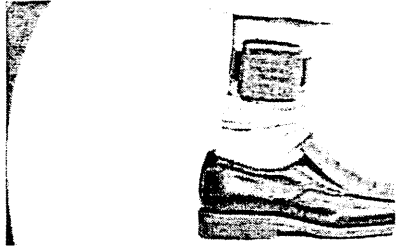
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### SCRAM II




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### Who is currently using?

- Probation/Parole
  - Driving While Intoxicated Defendants
  - Domestic Violence
  - Underage Drinking
- Bonding
- Drug/DUI Courts

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### Where can I buy a SCRAM system ?

Alcohol Monitoring Systems, Inc.  
 Highlands Ranch, Colorado  
 303/785-7821

Cost is approximately \$84 per week  
 plus \$50 - \$100 set up

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### Video Recorders



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### Video Sunglasses

- 640 x 480 resolution
- 30 frames per second
- 2.5 hour battery life
- Length of video depends on card
- \$120 - \$200
- I-Kam

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### Vehicle Alcohol Sensing

- DADSS – Driver Alcohol Detection System for Safety
  - Ignition Interlock
  - Optical Scan
  - Transdermal Test
  - Odor Sensors - Nissan
  - “Alcokey” – Saab

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Theft Retrieval

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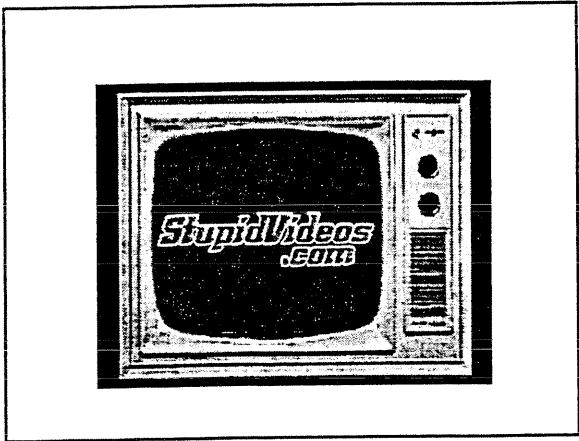
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