



**Ohio Bureau of Criminal Identification & Investigation**  
**INVESTIGATIVE REPORT**



**12/14/2012 REPORT RECEIVED FROM H. LYN SMITH, FORENSIC MECHANIC**

**Summary**

On December 14, 2012, Special Agent (SA) Mark Kollar received a report from H. Lyn Smith, Forensic Mechanic, regarding the ongoing investigation into the officer involved shooting in East Cleveland, Ohio.

**Details**

On December 14, 2012, Special Agent (SA) Mark Kollar received a report from H. Lyn Smith, Forensic Mechanic, regarding the ongoing investigation into the officer involved shooting in East Cleveland, Ohio. The report (see attachment) video recordings in both TV and Windows Media versions, and photo disk (Exhibit #140) have been added to the case file.

<b>File Number: SI-18-12-82-1493</b>	<b>File Title: Timothy R. Russell (S) Malissa A. Williams (S)</b>
<b>Case Agent: Mark Kollar</b>	<b>Authoring Agent: Mark E. Kollar</b> <i>MK</i>
<b>Date of Report: 01/31/2013</b>	<b>Exhibit #: 140</b>
<b>Investigative Activity: Report Received from H. Lyn Smith, Forensic Mechanic</b>	<b>Supervisor Approval: Dennis Sweet</b> <i>Dennis Sweet</i>

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**FEB 01 2013**

December 14, 2012

Dennis Sweet, Special Agent Supervisor  
BCI  
4055 Highlander Parkway  
Richfield, Ohio 44286

Re: BCI – CPD Shooting

Dear Spl. Agent Sweet:

As you requested, I inspected a vehicle that was involved in a Cleveland Police Department shooting. I was asked to see if there was evidence of the vehicle being prone to back-firing. Additionally, could the position of the front doors side windows be determined? I inspected the unit on December 12, 2012 at the BCI facility in Richfield, Ohio. The following is my report of that inspection.

**Identification:**

1979 Chevrolet Malibu Classic 4 Door Sedan  
VIN: 1W19J91485352  
267CID V8, Automatic, 2.29:1 Rear Axle Ratio  
Lic. #: FSA 3495, County 18

**Inspection:**

Vehicle damage:  
Multiple gun shots  
Rear quarter panels  
Rear bumper/trunk  
All windows broken/missing  
Measure front door regulators locations  
Windows were open (down from top of opening): LF – 10 ½", RF – 4"  
Raise vehicle on frame contact lift  
Inspect under carriage:  
Chassis rusted / deteriorated badly  
Brake lines rusted badly (some replaced)  
Fuel line rusted partially replaced  
Exhaust System:  
Multiple hangers missing and replaced with wire  
Catalytic Converter removed (replaced with pipe)  
Pipe very loose and leaking  
Muffler – hole, rusted/blown-outward right lower area  
Tail pipe outlet soot filled (rich run condition)

**Lower vehicle**

Charge battery (discharged – headlights and wipers “on”)

Visual inspection of engine compartment:

remove air cleaner assembly

ignition wires out of routing looms, wrapped/tied together

HEI (High Energy Ignition) ignition system connector latches broken

HEI supply wire not properly installed

Connect oscilloscope/engine analyzer

Start engine

Access/note test patterns:

Primary Pattern – normal

Secondary Pattern - normal

Plug Parade – rich run condition

Dynamic Comparison of Cylinders (1000 rpm):

#2,6,8 – no effect when deactivated – internal wear issues

Shut off engine

Remove/view distributor cap – no tracking, good condition, fairly new

View/remove distributor rotor – carbon/rust accumulation – signs of arcing

**Conclusions:**

Back firing is a engine operating problem generally described as a loud sharp noise/report from the units exhaust system. The conditions required for this to occur is: available fuel, oxygen and an ignition source. Mechanically, we look for fuel from an unburned source in the engine caused by a “rich run” condition, misfiring, defective ignition parts and/or worn internal components. This unburned fuel is pushed into the exhaust system during normal engine operation. Once there and with the presence of air/oxygen, any heat source may cause the fuel charge to explode causing the backfire. Generally this causes damage to the exhaust system in the form of deformed pipes, mufflers, catalytic converters, and/or connectors.

To a very high degree of mechanical probability, I find:

The vehicle is in poor condition by rusting and deterioration.

The exhaust system piping is loose and leaking.

The exhaust system has been modified – improperly mounted, hangers missing, the catalytic converter has been removed and replaced with a loose fitting pipe.

The muffler displays a hole indicating internal pressure pushed the surrounding metal outward.

The exhaust system problems make it very likely "backfiring" would occur.

The removal of the catalytic converter exacerbates the probability of backfiring as there is no longer this chamber to control or suppress the pressure pulse.

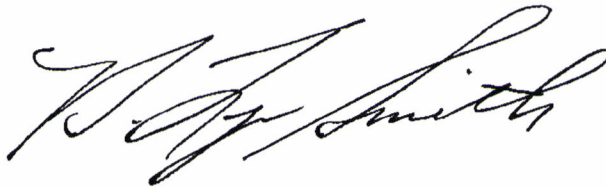
The engine's ignition wire incorrect routing will cause inductive spark plug "cross firing" contributing to random misfiring, rough running and/or backfiring.

The distributor rotor degradation is not uncommon and often a cause of random misfire, rough running and/or backfiring.

This vehicle has the necessary and multiple conditions to expect backfiring.

This vehicle exhibits expected signs that backfiring has occurred.

Respectfully submitted;

A handwritten signature in cursive script, appearing to read "H. Lyn Smith".

H. Lyn Smith, CMAT, CMTT

H. Lyn Smith, CMAT, CMTT

N.I.A.S.E. Certified Master Automobile Technician

N.I.A.S.E. Certified Master Heavy Duty Truck Technician

State of Ohio, Certified Vocational Education Instructor, Automotive Technology

Instructor, Automobile Technology:

University of Akron  
Stark Technical College

Instructor, Continuing Legal Education (CLE)

"Evidentiary Review of Accidents", University of Akron

Ohio Department of Highway Safety / Motorcycle Safety Foundation:

Certified Motorcycle Rider Instructor, (National Cert. # 82455)

Member, North Central Association of Colleges & Secondary Schools

Evaluation Team: Vocational Education & Guidance Services

Consultant, Akron Police Department

Chair, The Police Officer's Traffic Safety Council of Summit County

Special Examiner, The City of Akron Civil Service Commission

Chairman, Akron Regional Public Schools Advisory Committees for Automotive Technology

Advisor, Vocational Education, Automobile Technology:

Stark State College of Technical  
Akron Public Schools  
Portage Lakes Career Center  
Wadsworth Four Cities Compact

NATEF High School & Technical College Auto Tech Program Evaluator

Member, Akron Public Schools Strategic Planning & Business Advisory Committees

State of Ohio Career Education Association

Trustee, 1994 – 2000 (Executive Board, two terms)

Selected Outstanding Community Leader for 1997

IHRA All American Nationals, Champion, A/SR

AHRA Grand Nationals, Runner-up, A/G

Test Driver/Product Evaluation, Summit Racing Equipment

Producer, Instructional Video Tapes, Summit Racing Equipment

BCI – CPD Shooting  
 Photo Log  
 Vehicle Inspection  
 12/12/12

Num.	Description	Num.	Description
1-7	Unit walk around	31	RF door glass height
8	Engine compartment	32-34	Muffler, rusted/blown out hole
9	Interior, through LF window	35	Tail pipe, soot coated (rich run)
10	Interior, through RR window	36-38	Muffler, hole/failure
11	Engine, RF fender view	39-40	Catalytic Converter (Cat), removed
12-13	Federal emission tag	41-42	Muffler, rusted frame
14	Engine, LF view	43	Rusted brake lines & combination valve
15-16	Ignition wire routing, R side	44-46	Cat pipe, loose fit
17-18	HEI distributor wiring, broken tabs	47	Newer starter motor
19-21	LF door glass height mark	48-53	Transmission, Cat pipe, rusted lines
22-25	Removing air cleaner	54-59	Tires, rear identification
23	PCV inlet tube disconnected	60	Engine analyzer
25	PCV filter not mounted	61	Engine, L side
26	Carb, R side	62	Analyzer hook up
27	Carb, R idle plug removed	63-65	Distributor cap, good condition
28	Carb, L idle plug removed	66-75	Distributor rotor, poor condition
29-30	Manifold vacuum connectors	76-77	Distributor Advance mechanism, rusted