

# Police Vehicle Evaluation Model Year 2011



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**STATE OF MICHIGAN**  
**Department of State Police**  
**and**  
**Department of Management and Budget**

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**2011 Model Year**  
**Police Vehicle**  
**Evaluation Program**

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## PREFACE

The Michigan State Police Vehicle Test Team is pleased to announce the results of the 2011 model year Police Vehicle Evaluation. This year we tested ten vehicles in total, and four motorcycles. We appreciate your continued support and encouragement. The vehicles evaluated this year included the following:

### POLICE CATEGORY

Ford Police Interceptor (3.27:1)	4.6L
Ford Police Interceptor (3.55:1)	4.6L
Chevrolet Caprice 9C1	6.0L
Chevrolet Caprice 9C1 E85	6.0L
Chevrolet Impala 9C1	3.9L
Chevrolet Impala 9C1 E85	3.9L
Chevrolet Tahoe PPV 2WD	5.3L
Chevrolet Tahoe PPV 2WD E85	5.3L
Dodge Charger	3.6L
Dodge Charger	5.7L

### MOTORCYCLES

Harley-Davidson Electra Glide FLHTP  
Harley-Davidson Road King FLHP  
BMW R 1200 RTP  
Kawasaki Concours 14 ABS Police



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## GENERAL INFORMATION

All of the cars were tested with a clean roof (no overhead light or lightbar) and without "A" pillar mount spotlights. We believe this is the best way to ensure all of the vehicles are tested on an equal basis. Remember that once overhead lights, spotlights, radio antennas, sirens, and other emergency equipment are installed, overall performance may be somewhat lower than we report.

Each vehicle was tested with the tires that are available as original equipment on the production model. Specific tire information for each vehicle is available in the Vehicle Description portion of this report. All vehicles listed in this report were equipped with electronic speed limiters.

Motorcycles were tested with equipment installed as provided by their respective manufacturer. Harley-Davidson chose to test their bikes with minimal equipment. BMW and Kawasaki chose to test their bike with the majority of the equipment installed.

### Chrysler Proving Grounds - Acceleration, Top Speed, & Braking Tests

We had a full line up of test vehicles. We would like to thank Mr. Craig Hageman for the assistance we received from the staff at the Chrysler Proving Grounds. We experienced a rain delay during this portion of testing. It was suspended from 9:15 am until 12:40 pm. However, all portions were completed by the end of the day.

We appreciate the support we received from General Motors, Ford, Chrysler, Harley-Davidson, BMW and Kawasaki Motors Corp. during testing. This also was the fourth year of motorcycle testing and we continue to get great feedback on this important component to the testing lineup. We expect other manufacturers that produce law enforcement motorcycles to participate in the future.

### Michigan State Police Precision Driving Unit- Motorcycle Dynamics

Sunday we completed the motorcycle dynamics testing with cool temperatures. This portion of the testing continues to grow. We had a large audience of observers, all interested in the new products being tested.

### Grattan Raceway - Vehicle Dynamics (High Speed Handling) Test

The weather was great and all the dynamics tests were completed. The vehicles were loaded up and returned to the Precision Driving Unit where they were made ready for the Ergonomics portion of the test.

After the second series of laps the Chevrolet Caprice 9C1 (regular fuel) was examined by GM personnel as the drivers expressed concern regarding the vehicles ability to remain stable while turning. The drivers experienced a floating sensation as the vehicle was driven at high speeds through various turns on the raceway. The drivers were also experiencing a noticeable vibration during heavy braking. GM engineers and technicians thoroughly checked the vehicle and found nothing of concern.

While driving the Chevrolet Caprice 9C1 (regular fuel) during the third series of laps, the driver aborted the run due to a reduction of engine power. The vehicle was examined by GM engineers and technicians with no problems identified. When restarted, the vehicle returned to full power. This series of laps were run again at the end of the day to complete the test. This vehicle did not exhibit this problem again during the remainder of testing.

After a thorough post test inspection, GM engineers discovered that pre-production, hand built, proto type front struts used on the Caprice 9C1 experienced internal parts failure and the rear suspension cradle required stiffer isolation bushings. On October 7<sup>th</sup>, the MSP Test Team met GM personnel at the Grattan Raceway for further evaluation of the Chevrolet Caprice 9C1. With these two issues resolved, the test team found the handling of the Caprice to be much improved.

The original times posted by the Chevrolet Caprice 9C1 on test day remain as the official results. The laps driven on October 7<sup>th</sup> were merely for determining handling issues have been resolved.

We recommend you review the information contained in this report and then apply it to the needs of your agency. This report is not an endorsement of products, but a means of learning what's available for your officers so they can do their job effectively and safely. If anything in this report requires further explanation or clarification, please call or write.

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## ACKNOWLEDGEMENTS

We would like to thank the following contributors. We are grateful for their support and encouragement toward our ultimate goal: a safe, successful testing program that benefits the law enforcement community nationwide and beyond.

Colonel Eddie L. Washington, Jr., Director, Michigan Department of State Police  
Lt. Colonel Gary Gorski, Deputy Director, Field Services Bureau  
Lt. Colonel Kriste K. Etue, Deputy Director, Administrative Services Bureau  
Personnel from the Michigan Department of Management & Budget, Vehicle and Travel Services

The National Institute of Justice, The National Law Enforcement and Corrections Technology Center, Mr. Lance Miller, Mr. Alex Sundstrom, Lockheed Martin Aspen Systems

Mr. Craig Hageman and personnel from Chrysler Proving Grounds  
Mr. Sam Faasen and personnel from Grattan Raceway Park

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The Michigan State Police Rockford Post for their assistance at Grattan Raceway.

Michigan State Police Ergonomic Evaluators – MC Officer Niki Brehm, Tpr. Ernie Felkers, Tpr. Scott Carlson, Tpr. Todd Price, Tpr. Mike Fink, Tpr. Bennie Boyd, Tpr. Dave Cope, Tpr. Pat Roti, and Tpr. Randy Phare.

Special thanks to General Motors, Ford Motor Company, Chrysler Motors, Harley-Davidson Motorcycle, BMW Motorrad USA, and Kawasaki Motors Corp. for their hard work in building and preparing the test cars and motorcycles. We are grateful for your dedication to law enforcement. Everyday law enforcement looks to these vehicles to do a list of duties varied and enduring.

Finally, thanks to all in the United States and Canada who represent law enforcement and purchasing agencies for your constant encouragement and support. We are proud to make a contribution to the law enforcement community.

Michigan State Police Vehicle Test Team:



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## TEST EQUIPMENT

The following test equipment is utilized during the acceleration, top speed, braking, and vehicle dynamics portion of the evaluation program.

**Corrsys Datron a Kistler Company**

**39205 Country Club Dr. Suite C20, Farmington Hills, Mi 48331**

DLS Smart Sensor – Optical non-contact speed and distance sensor

Correxit L-350 1 Axis Optical Sensor

**Shoei Helmets, 3002 Dow Ave., Suite 128, Tustin, CA 92780**

Law Enforcement Helmet – Model RJ-Air LE

Motorcycle Helmet – Multi Tech

**AMB i.t. US INC., 1631 Phoenix Blvd., Suite 11, College Park, GA 30349**

AMB TranX extended loop decoder

Mains adapter 230 V AC/12 V DC

AMB TranX260 transponders

**AMMCO TOOLS, Inc., 2100 Commonwealth Ave., North Chicago, IL 60064**

Decelerometer, Model 7350