2004 - 2006 MY Ford Expedition
Steel Wheel Rim Fractures

OWNER REPORTS

As the agency is aware, within FCSD's North American Customer Service Operations, there is a Customer Relationship Center (CRC) that is responsible for facilitating communication between customers, dealerships and Ford Motor Company. Among other things, the CRC handles telephonic, electronic, and written inquiries, suggestions, informational requests, and concerns ("contacts") from Ford and Lincoln-Mercury vehicle owners about their vehicles or sales and service experience. The contacts are handled by CRC customer service representatives who enter a summary of the customer contact into a database known as CuDL (Customer Data Link). Certain contacts, such as letters from customers, are entered into the CuDL database. Those that were entered into the earlier MORS II system were also microfilmed. More recently, the records in MORS III/CuDL are imaged and stored electronically.

The CRC assigns to each vehicle-related contact report a "symptom code" or category that generally reflects the nature of the customer contact or vehicle concern, as described by the owner. The CRC does not undertake to confirm the accuracy of the description provided by the owner; they simply record what is reported. Therefore, given the complexity of the modern motor vehicle, it is Ford's experience that a significant percentage of owner contacts do not contain sufficient information to make a technical assessment of the condition of the vehicle or the cause of the event reported. Accordingly, although MORS contact reports may be useful in identifying potential problems and trends, the records are not the empirical equivalent of confirmed incidents and/or dealership's diagnosis. In the interest of responding promptly to this inquiry, Ford has not undertaken to gather the electronic images related to these contacts because of the largely duplicative nature of the information contained in the images, as well as the time and the burden associated with locating and producing those documents. The pertinent information related to those contacts generally would be included in the contact reports obtained from the CuDL system. To the extent that those documents exist, they are reflected in the comments of MORS III contact reports. Upon request, Ford will attempt to locate any specific items that are of interest to the agency.

In responding to this information request, Ford electronically searched CuDL using the following criteria:

Model Year:	2004 - 2006
Subject Vehicle:	Ford Expedition vehicles manufactured for sale or lease in the United States, District of Columbia, Puerto Rico, Northern Mariana Islands, Guam, American Samoa and the Virgin Islands.
Date Parameters:	January 1, 2003 through January 5, 2009 (the date of this inquiry)
Types of Contacts:	All, including suspended data, canceled contacts and inquiries

MORS III Symptom Code(s):

Symptom Category	Symptom Code	Symptom Description
Tires/Wheels	306	All

MORS III Reason Code(s):

Reason Code	Description
07	Legal Contacts

VIN Matching:
In order to isolate those vehicles produced with steel wheels, the VINs listed in MORS III were matched to vehicles produced with steel wheels as identified in Appendix A.

LEGAL CONTACTS
Beginning in early 2008, most consumer complaints and all legal claim processing has been centralized in OGC within the Consumer Litigation team. A transition has occurred such that all legal contacts (including those formerly handled by "Litigation Prevention") are coordinated through this team.

Prior to the transition, there was a Consumer Affairs Department within FCSD that managed customer concerns, which could not be resolved by the Customer Relationship Center (CRC). Among other things, the Consumer Affairs Department had a section, known as "Litigation Prevention," that handled a variety of informal (i.e., non-litigation) claims, such as property damage claims or attorney demand claims.

The Litigation Prevention section had been centralized in the Consumer Affairs Department since 1995, in Dearborn, Michigan. Prior to that time, Litigation Prevention personnel operated on a regional basis. For matters that the Litigation Prevention section handled, there were typically paper files that reflected the handling, investigation and resolution of property damage claims.

The claims, known as "Legal Contacts" are entered into the CuDL database that the CRC uses to enter other customer communications. When a customer contact is designated as a Legal Contact, it is so indicated near the top of the contact report.

FIELD REPORTS
Within FCSD, there is a Vehicle Service & Programs Office that has overall responsibility for vehicle service and technical support activities, including the administration of field actions. That Office is the primary source within Ford of vehicle concern information originating from Ford and Lincoln-Mercury dealerships, field personnel, and other sources. The information is maintained in a database known as the Global Common Quality Indicator System (GCQIS). The GCQIS database includes reports compiled from more than 40 Company sources (e.g., Company-owned vehicle surveys, service technicians, field service and quality engineers, and technical hot line reports, etc.) providing what is intended to be a comprehensive concern identification resource. As with MORS contact reports, GCQIS reports are assigned a "symptom code" or category that generally reflects the nature of the concern.

In responding to this information request, Ford electronically searched GCQIS using the following criteria:

Model Year: 2004 - 2006

Subject Vehicle: Ford Expedition vehicles manufactured for sale or lease in the United States, District of Columbia, Puerto Rico, Northern Mariana Islands, Guam, American Samoa and the Virgin Islands.

Date Parameters: January 1, 2003 through January 5, 2009 (the date of this inquiry)

Symptom Code(s):

Symptom Category	Symptom Code	Symptom Description
Tires/Wheels	306	All

Base Part Number: 1015

VIN Matching:
In order to isolate those vehicles produced with steel wheels, the VINs listed in MORS III were matched to vehicles produced with steel wheels as identified in Appendix A.

OASIS MESSAGES
FCSD is responsible for communicating a variety of vehicle and service information, such as warranty information for up to the past 360 days, Extended Service Plan part coverage information, and technical repair information, to North American Ford and Lincoln Mercury dealers. This information is communicated primarily through OASIS, which serves as an electronic link between Ford Motor Company and the dealers. OASIS covers all North American Ford and Lincoln Mercury cars and light trucks, and medium and heavy-duty Ford trucks, for the ten most current model years. Technical diagnostic and repair information on OASIS is contained in Special Service Messages (SSMs) and Technical Service Bulletin (TSBs) titles and brief summaries. It should be noted that dealers cannot access brief summaries.

SSMs and TSB titles are coded in OASIS by model year and vehicle line, and may be coded to other specific vehicle attributes (body style, engine code, or vehicle identification number) and one or more OASIS Service Code(s). The dealers with access to OASIS usually search for information on the database by entering a VIN and the applicable Service Codes. SSMs and TSB titles that become inactive or superseded continue to be accessible by Ford employees, but no longer are accessible by the dealers. Dealers also are able to determine the recalls applicable to a particular vehicle by searching a particular VIN in OASIS. Recall information available on OASIS cannot be searched by Service Codes.

In 1998, the OASIS system was upgraded from the "OASIS 2" system to the new "Global OASIS." At that time, OASIS 2 was removed from service and is no longer used to communicate with dealers. During the upgrade, inactive information (such as inactive SSMs or superseded TSB titles) was not transferred to Global OASIS.

In responding to this information request, Ford searched Global OASIS for active, inactive, and superceded TSB titles and SSMs using the following search criteria:

Model Year: 2004 - 2006

Subject Vehicle: Ford Expedition vehicles manufactured for sale or lease in the United States, District of Columbia, Puerto Rico, Northern Mariana Islands, Guam, American Samoa and the Virgin Islands.

Date Parameters: January 1, 2003 through January 5, 2009 (the date of this inquiry)

OASIS Service Code(s):

Code	Description	Description
306	Tires/Wheels	All

OASIS 2 and Global OASIS are not capable of performing electronic word searches, so the search results are reviewed manually to determine their applicability to the alleged defect in the subject vehicles.

The OASIS database also contains Broadcast Messages. Typically, these messages are directed to all dealerships and either are notifications of new SSMs/TSBs, or announcements with non-technical information (for example, "the Dealer Hotline will be closed today"). Broadcast Messages cannot be searched by OASIS service codes, and can be retrieved only while active (approximately 2 to 4 days). Ford has not undertaken to search for Broadcast Messages because Ford expects that any responsive information obtained with such a search generally would be non-substantive in nature or duplicative of the information obtained with the TSB title and SSM search described above.

INTERNAL SERVICE MESSAGES

FCSD, as part of its technical support activities, maintains fleet and technical telephone "hotlines." During the early stages of Ford's efforts to identify and resolve potential vehicle concerns, hotline personnel may draft Internal Service Messages (ISMs) on GCQIS for their internal use. The ISMs are assigned a GCQIS "symptom code" or category that generally reflects the nature of the concern. An ISM can form the basis for an oral response over the technical hotline to an inquiry from an individual dealer or fleet technician. The ISMs, however, are not made available electronically to fleets and dealers. Therefore, although ISMs are not "issued" to dealers like OASIS messages, Ford is construing this request broadly to include ISMs that may be related to the alleged defect in the subject vehicles.

In responding to this information request, Ford searched GCQIS for active ISMs using the following search criteria:

Model Year: 2004 - 2006

Subject Vehicle: Ford Expedition vehicles manufactured for sale or lease in the United States, District of Columbia, Puerto Rico, Northern Mariana Islands, Guam, American Samoa and the Virgin Islands.

Date Parameters: January 1, 2003 through January 5, 2009 (the date of this inquiry)

GCQIS Symptom Code(s):

Code	Description	Description
306	Tires/Wheels	All

The GCQIS database in which the ISMs reside is not capable of performing word searches, so the search results were reviewed manually to determine their applicability to the alleged defect in the subject vehicles.

FIELD REVIEW COMMITTEE

Ford's Field Review Committee reviews all potential field service actions, including safety recalls and customer satisfaction programs, and recommends appropriate actions to corporate management. A Vehicle Service & Programs representative serves as Secretary to the Field Review Committee. Following approval of a field service action, the Vehicle Service & Programs Office prepares and launches the action. A representative copy of the communication to Ford's dealers, fleets, and Regional offices announcing the field service action is maintained in the Field Review Committee files.

WARRANTY

Ford's Analytical Warranty System (AWS) contains warranty claims and vehicle information for model years 1991 and forward for North America, and model years 1992 and forward for Europe.

Ford performed a search of AWS for potentially responsive reports using the following search criteria:

Model Year: 2004 - 2006

Subject Vehicle: Ford Expedition vehicles manufactured for sale or lease in the United States, District of Columbia, Puerto Rico, Northern Mariana Islands, Guam, American Samoa and the Virgin Islands.

Base Part Number: 1015

Warranty Component Classification:

WCC	Description
5K01	Wheels – Steel
5K02	Wheels Covers & Misc. Parts
5K04	Tire/Wheel Balance
5K06	Tire Defects
5K07	Tire Pressure Monitoring

VIN Matching:

In order to isolate those vehicles produced with steel wheels, the VINs listed in MORS III were matched to vehicles produced with steel wheels as identified in Appendix A.

APPENDIX D

NHTSA Request for 2004 to 2006 Expedition (wheels).xls

Base Part Number: 1015 (Wheels)

2004 - 2006 New Ford Expeditions Parts Coverage

Coverage		Plan Years					
Time	Mileage	2002*	2004	2005	2006	2007**	2009
Premiumcare							
3 years	48000	X	X	X	X	X	X
	49000	X	X	X	X	X	X
	60000	X	X	X	X	X	X
	62500	X	X	X	X	X	X
	75000	X	X	X	X	X	X
	100000	X	X	X	X	X	X
4 years	48000	X	X	X	X	X	X
	60000	X	X	X	X	X	X
	75000	X	X	X	X	X	X
	100000	X	X	X	X	X	X
5 years	36000	X	X	X	X	X	X
	48000	X	X	X	X	X	X
	60000	X	X	X	X	X	X
	75000	X	X	X	X	X	X
	100000	X	X	X	X	X	X
6 Years	36000	X	X	X	X	X	X
	48000	X	X	X	X	X	X
	60000	X	X	X	X	X	X
	75000	X	X	X	X	X	X
	100000	X	X	X	X	X	X
7 Years	36000	X	X	X	X	X	X
	48000	X	X	X	X	X	X
	60000	X	X	X	X	X	X
	75000	X	X	X	X	X	X
	100000	X	X	X	X	X	X

Base Part Number: 1015 (Wheels)

2004 - 2006 New Ford Expeditions ESP Contracts

Coverage		Plan Years						
Time	Mileage	2002*	2004	2005	2006	2007**	2009	Sum:
Premiumcare								
3 years	48000	3	238	97	26	4	0	**368**
	49000	0	0	23	33	0	0	**56**
	60000	6	215	150	64	8	0	**443**
	75000	4	220	181	98	16	0	**519**
	76000	0	1	0	0	0	0	**1**
	100000	11	164	200	72	11	0	**458**
4 years	48000	3	242	102	47	12	0	**406**
	60000	10	386	219	135	34	1	**785**
	75000	21	487	430	270	63	0	**1271**
	100000	30	587	593	283	70	0	**1563**
5 years	36000	0	31	36	20	20	0	**107**
	48000	2	96	87	31	19	3	**238**
	60000	37	2141	1460	634	256	12	**4540**
	75000	230	6357	5476	2819	801	14	**15697**
	100000	139	3155	3112	1599	483	7	**8495**
6 Years	36000	2	72	63	36	45	4	**222**
	48000	4	123	105	28	47	4	**311**
	60000	43	1927	1683	996	552	22	**5223**
	75000	129	4194	4412	2781	1455	58	**13029**
	100000	52	1504	1625	1323	689	24	**5217**
7 Years	36000	2	21	25	7	15	0	**70**
	48000	1	32	30	17	19	2	**101**
	60000	2	101	123	67	74	10	**377**
	75000	12	489	477	264	319	12	**1573**
	100000	6	390	416	336	269	31	**1448**
	New Sum:	**749**	**23173**	**21126**	**11986**	**5281**	**204**	**62519**

2004 - 2006 Used Ford Expeditions Parts Coverage

Coverage		Plan Years					
Time	Mileage	2002*	2004	2005	2006	2007**	2009
Premiumcare							
1 Year	12000	X	X	X	X	X	X
2 Years	24000	X	X	X	X	X	X
3 Years	36000	X	X	X	X	X	X
4 Years	48000	X	X	X	X	X	X

2004 - 2006 Used Ford Expeditions ESP Contracts

Coverage		Plan Years						
Time	Mileage	2002*	2004	2005	2006	2007**	2009	Sum:
Premiumcare								
1 Year	12000	0	0	3	8	47	4	**62**
2 Years	24000	0	4	21	147	575	58	**805**
3 Years	36000	0	8	61	352	1237	100	**1758**
4 Years	48000	0	7	38	167	339	139	**690**
	Used Sum:		**19**	**123**	**674**	**2198**	**301**	**3315**
	Total Sum:	**749**	**23192**	**21249**	**12660**	**7479**	**505**	**65834**

**2002 Plan year includes 2002 and 2003 Contracts.*
***2007 Plan year includes 2007 and 2008 Contracts.*

Created by Ford/ESP/Reporting/Al Broome/January 28, 2009

APPENDIX G

FORD MOTOR COMPANY ("FORD")
PRIVILEGE LOG - NHTSA SUBMISSION IN RESPONSE TO PE08-070

Reference Number	Document Date	Document Author(s)	Document Recipient(s)	Document Type	Document Description	Privilege (Basis of Claim)
1	5/2/2007	1) Thompson, Lena, Ford Employee; 2) Nelson, Eric, Ford Employee; 3) Barrett, Aaron, Ford Employee; 4) Nelson, Eric, Ford Employee; 5) David Caudill, Lithia Ford of Tri-Cities Employee	1) Logel, Jay, Ford's Office of the General Counsel (OGC), Attorney; 2) Thompson, Lena, Ford Employee; Barrett, Aaron, Ford Employee; Kimmerle, Troy, Ford Employee; (cc) Henderson, Jerry, Ford Employee; 3) Nelson, Eric, Ford Employee; 4) Nowaczyk, Rick, Ford Employee; (cc) Henderson, Jerry, Ford Employee; (cc) Barrett, Aaron, Ford Employee; 5) Nelson, Eric, Ford Employee; (cc) Smith, Cliff, Unknown	E-mail Communication	Confidential communication from Ford Employee to OGC attorney requesting legal advice.	Attorney-Client Privilege

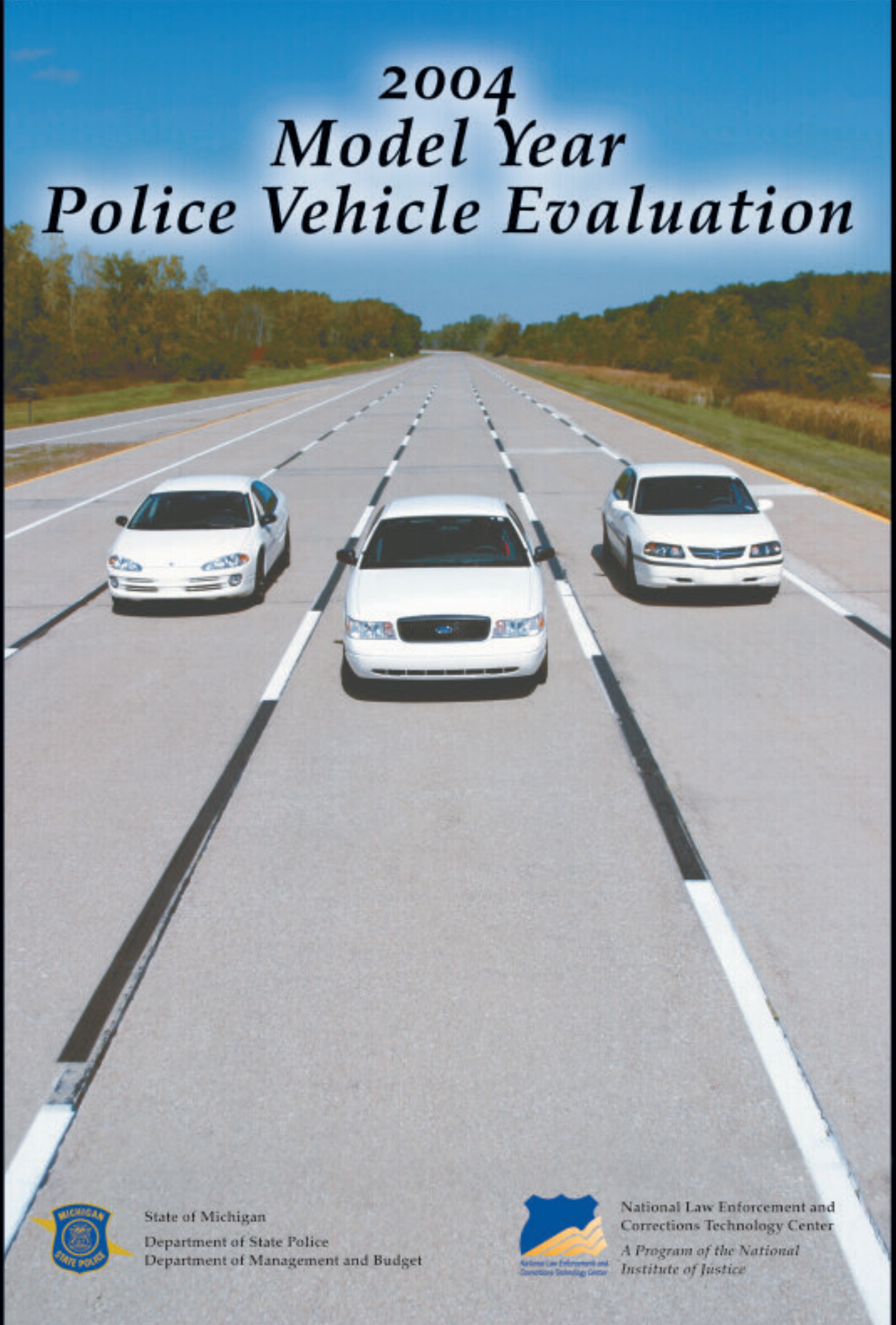
APPENDIX H

Change Log
PE08-070: 2004-2006 Expedition Steel Wheel Fracture

	Question #9										
	A	B	C	D		E		F		G	H
Part Name	Incorporated Into Vehicle Production	Description of Change	Reasons for Change	Original		Modified		Disposition of Original Parts		New Component Availability Date	New Component Interchangeable With Old (Y/N - Intended versus Possible)
				Ford Engineering Part Number	Ford Service Part Number	Ford Engineering Part Number	Ford Service Part Number	Withdrawn from Ford Production Inventory (Scrap/ Consume/ Rework)	Effective Date		
Chrome Clad Wheel											
Chrome Clad Wheel 17x7.5" Full Face Steel Wheel Expedition/F-150	Service Only	Update w/shot peen weld	Improved durability	4L14-1015-AB	4L1Z-1015-AA	5L34-1015-EA	5L3Z-1015-E	Consume	3/4/2003	Job #1 2004 MY	Y
Painted Wheel											
Painted Wheel 17x7.5" Full Face Steel Wheel Expedition SSV	Job #1 2007 MY	Update w/shot peen weld	Improved durability	7L14-1015-BA	7L1Z-1015-B	7L14-1015-BB	7L1Z-1015-B	Scrap	7/31/2006	May 2006 Running Change	Y

APPENDIX K

2004 Model Year Police Vehicle Evaluation



State of Michigan
Department of State Police
Department of Management and Budget

National Law Enforcement and Corrections Technology Center
A Program of the National Institute of Justice

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

2004 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 2004 model year Police Vehicle Evaluation. This year nine vehicles were tested including one non-published vehicle.

Saturday we enjoyed warm temperatures and bright blue skies at DaimlerChrysler Proving Grounds. Grattan Raceway, our vehicle dynamics test site, was a total washout on Monday due to rain. We came back Tuesday as scheduled, but the track was still wet with standing water in some areas. We sent out our practice cars and dried the track in 3 hours, which allowed us to complete testing by mid afternoon Tuesday. We appreciate your continued support and encouragement. The vehicles evaluated this year included:

POLICE CATEGORY

Chevrolet Impala 9C1	3.8L SPFI
Dodge Intrepid	3.5LSPFI
Ford Police Interceptor (3.27:1)	4.6L SPFI
Ford Police Interceptor (3.55:1)	4.6L SPFI

SPECIAL SERVICE CATEGORY

Ford Explorer*	4.6L SFI	(2 Wheel Drive)
Ford Expedition*	5.4L SMFI	(4 Wheel Drive)
Chevrolet Tahoe*	5.3L SPFI	(2 Wheel Drive)
Chevrolet Tahoe*	5.3L SPFI	(4 Wheel Drive)

Special Service Package vehicles are not suitable for high speed, pursuit or emergency driving. (According to the manufacturers).

NON-PUBLISHED VEHICLES (PROTOTYPES)

2005 Chevrolet Police Tahoe
**Any test data concerning the non-published vehicle is available from the manufacturer only.*

GENERAL INFORMATION

All of the vehicles 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 cars 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.

DaimlerChrysler Proving Grounds - Acceleration, Top Speed, & Braking Tests

All vehicles listed in this report were equipped with electronic speed limiters.

Grattan Raceway - Vehicle Dynamics (High Speed Handling) Test

Prior to testing we were approached by Ford Motor Company, asking if they could remove an underbody air deflector behind the front bumper fascia. The deflector is forward of each front wheel and is mounted parallel to the pavement. Ford advised that this deflector is not on the 2004 model year car and should have been removed prior to delivery. We had a technician from Vehicle and Travel Services assist and monitor the removal of this part.

*The Chevrolet Tahoes, Ford Explorer, and Ford Expedition are "special service" vehicles and are not driven through the vehicle dynamics (high-speed handling) test. These vehicles are not recommended for high-speed emergency driving or pursuit applications.

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.

Lt. David Halliday
Michigan State Police
Precision Driving Unit
7426 North Canal Road
Lansing, Michigan 48913

Phone: 517-322-1787 Fax: 517-322-0725 E-mail: hallidd@michigan.gov

ACKNOWLEGEMENTS

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 Tadarial J. Sturdivant, Director, Michigan Department of State Police
Lt. Colonel Peter C. Munoz, Deputy Director, Uniform 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, and Aspen Systems

Mr. Terry Packer and personnel from DaimlerChrysler Proving Grounds
Mr. Sam Faasen and personnel from Grattan Raceway Park

Michigan State Police Volunteers – Ernie and Hazel Schutter, Denny Steendam, Austin Waldron, Clayton Babcock, and Al Burnett

Michigan State Police Ergonomic Evaluators –Tpr Brian Keely, Tpr. Kevin Beasley, MC Sgt. Mike McLaughlin, Tpr. Ernie Felkers, Tpr. Scott Carlson, Tpr. Bennie Boyd, Tpr. Eric Jorge, Tpr. Carl Brice, Tpr. Pat Pengelly, Tpr. Scott Wilber

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Sgt. Jim Flegel
Sgt. Ron Gromak
Sgt. Doug Schutter
Sgt. Rick Stevens
Ofc. Rob Johnson
Dep. Loren Lee
F/Lt. Howard Powers
Capt. Gene Hoekwater
Retired Sgt. Bob Ring
Retired Sgt. Bill McFall

Special thanks to General Motors, Ford Motor Company, and DaimlerChrysler Motors vehicle manufacturers for their hard work in building and preparing the test cars. 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

TEST EQUIPMENT

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

DATRON TECHNOLOGY, INC., 21654 Melrose Ave., Building 16, Southfield, Michigan 48075

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

BELL HELMETS, Box 927, Rantol, Illinois 61866

Nascar Helmet – Model MC – 400

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

TEST VEHICLE DESCRIPTIONS AND PHOTOGRAPHS

DODGE INTREPID
3.5L SPFI

TEST VEHICLE DESCRIPTION

MAKE Dodge	**MODEL** Intrepid		**SALES CODE NO.** 25E		
ENGINE DISPLACEMENT	**CUBIC INCHES** 214		**LITERS**	3.5	
FUEL SYSTEM	Sequential Port Fuel Injection		**EXHAUST**	Single	
HORSEPOWER (SAENET)	242 @ 6400 RPM		**ALTERNATOR**	160 amp	
TORQUE	248 lbs-ft		**BATTERY**	600 cca	
COMPRESSION RATIO	9.9:1				
TRANSMISSION	**MODEL** 42LE	**TYPE** 4-Speed Electronic Automatic			
	LOCKUP TORQUE CONVERTER? Yes				
	OVERDRIVE? Yes				
AXLE RATIO	3.66:1				
STEERING	Power Rack & Pinion				
TURNING CIRCLE (CURB TO CURB)	37.6 ft				
TIRE SIZE, LOAD & SPEED RATING	P225/60R 16 97V Goodyear Eagle RS-A				
SUSPENSION TYPE (FRONT)	Independent Macpherson Strut, Coil Springs & Sway Bar				
SUSPENSION TYPE (REAR)	Independent Macpherson Strut, Coil Springs & Sway Bar				
GROUND CLEARANCE, MINIMUM	5.7 in	**LOCATION** Sway Bar			
BRAKE SYSTEM	Power, Single Piston, Anti-lock				
BRAKES, FRONT	**TYPE**	Vented Disc	**SWEPT AREA**	287.2 sq in	
BRAKES, REAR	**TYPE**	Solid Disc	**SWEPT AREA**	184.6 sq in	
FUEL CAPACITY	**GALLONS**	17.0	**LITERS**	64.4	
GENERAL MEASUREMENTS	**WHEELBASE**	113.0	**LENGTH**	203.7	
	TEST WEIGHT	3567 lbs	**HEIGHT**	55.9 in	
HEADROOM	**FRONT**	38.3 in	**REAR**	37.5 in	
LEGROOM	**FRONT**	42.2 in	**REAR**	39.1 in.	
SHOULDER ROOM	**FRONT**	59.0 in	**REAR**	58.1 in	
HIPROOM	**FRONT**	56.3 in	**REAR**	56.6 in	
INTERIOR VOLUME	**FRONT**	55.0 cu ft	**REAR**	49.5 cu ft	
	COMB	104.5 cu ft	**TRUNK**	18.4 cu ft	
EPA MILEAGE EST. (MPG)	**CITY** 19	**HIGHWAY** 27	**COMBINED** 22		

FORD POLICE INTERCEPTOR
4.6L SPFI AXLE RATIO 3.27:1

TEST VEHICLE DESCRIPTION

MAKE Ford	**MODEL** Police Interceptor		**SALES CODE NO.** P71		
ENGINE DISPLACEMENT	**CUBIC INCHES** 281		**LITERS** 4.6		
FUEL SYSTEM	Sequential Port Fuel Injection		**EXHAUST** Dual		
HORSEPOWER (SAENET)	250 @ 5000 RPM		**ALTERNATOR** 200		
TORQUE	297 ft-lbs @ 4000 RPM		**BATTERY** 750 CCA		
COMPRESSION RATIO	9.4:1				
TRANSMISSION	**MODEL** 4R70W	**TYPE** 4-Speed Electronic Automatic			
	LOCKUP TORQUE CONVERTER? Yes				
	OVERDRIVE? Yes				
AXLE RATIO	3.27:1				
STEERING	Power Rack and Pinion, variable ratio				
TURNING CIRCLE (CURB TO CURB)	40.3 ft				
TIRE SIZE, LOAD & SPEED RATING	P225/60R16 97V Goodyear Eagle Plus RS-A				
SUSPENSION TYPE (FRONT)	Independent SLA with ball joint & coil spring				
SUSPENSION TYPE (REAR)	4 bar link with Watts Linkage				
GROUND CLEARANCE, MINIMUM	6.0 in	**LOCATION** Transmission			
BRAKE SYSTEM	Power, dual front piston, single rear piston, 4 circuit and ABS				
BRAKES, FRONT	**TYPE** Vented Disc		**SWEPT AREA** 273 sq in		
BRAKES, REAR	**TYPE** Vented Disc		**SWEPT AREA** 176 sq in		
FUEL CAPACITY	**GALLONS** 19.0		**LITERS** 71.9		
GENERAL MEASUREMENTS	**WHEELBASE** 114.7		**LENGTH** 212.0		
	TEST WEIGHT 4200		**HEIGHT** 58.5 in		
HEADROOM	**FRONT** 39.4 in		**REAR** 38.0 in		
LEGROOM	**FRONT** 42.5 in		**REAR** 39.6 in		
SHOULDER ROOM	**FRONT** 60.8 in		**REAR** 60.3 in		
HIPROOM	**FRONT** 57.1 in		**REAR** 59.0 in		
INTERIOR VOLUME	**FRONT** 58.2 cu ft		**REAR** 51.1 cu ft		
	COMB 109.3 cu ft		**TRUNK** 20.6 cu ft		
EPA MILEAGE EST. (MPG)	**CITY** 16	**HIGHWAY** 21	**COMBINED** 18		

FORD POLICE INTERCEPTOR
4.6L SPFI AXLE RATIO 3.55:1

TEST VEHICLE DESCRIPTION

MAKE Ford	**MODEL** Police Interceptor		**SALES CODE NO.** P71		
ENGINE DISPLACEMENT	**CUBIC INCHES** 281		**LITERS** 4.6		
FUEL SYSTEM	Sequential Port Fuel Injection		**EXHAUST** Dual		
HORSEPOWER (SAENET)	250 @ 5000 RPM		**ALTERNATOR** 200		
TORQUE	297 ft-lbs @ 4000 RPM		**BATTERY** 750 CCA		
COMPRESSION RATIO	9.4:1				
TRANSMISSION	**MODEL** 4R70W	**TYPE** 4-Speed Electronic Automatic			
	LOCKUP TORQUE CONVERTER? Yes				
	OVERDRIVE? Yes				
AXLE RATIO	3.55:1				
STEERING	Power Rack and Pinion, variable ratio				
TURNING CIRCLE (CURB TO CURB)	40.3 ft				
TIRE SIZE, LOAD & SPEED RATING	P225/60R16 97V Goodyear Eagle Plus RS-A				
SUSPENSION TYPE (FRONT)	Independent SLA with ball joint & coil spring				
SUSPENSION TYPE (REAR)	4 bar link with Watts Linkage				
GROUND CLEARANCE, MINIMUM	6.0 in	**LOCATION** Transmission			
BRAKE SYSTEM	Power, dual front piston, single rear piston, 4 circuit and ABS				
BRAKES, FRONT	**TYPE** Vented disc		**SWEPT AREA** 273 sq in		
BRAKES, REAR	**TYPE** Vented disc		**SWEPT AREA** 176 sq in		
FUEL CAPACITY	**GALLONS** 19.0		**LITERS** 71.9		
GENERAL MEASUREMENTS	**WHEELBASE** 114.7 in		**LENGTH** 212.0 in		
	TEST WEIGHT 4185		**HEIGHT** 58.5 in		
HEADROOM	**FRONT** 39.4 in		**REAR** 38.0 in		
LEGROOM	**FRONT** 42.5 in		**REAR** 39.6 in		
SHOULDER ROOM	**FRONT** 60.8 in		**REAR** 60.3 in		
HIPROOM	**FRONT** 57.1 in		**REAR** 59.0 in		
INTERIOR VOLUME	**FRONT** 58.2 cu ft		**REAR** 51.1 cu ft		
	COMB 109.3 cu ft		**TRUNK** 20.6 cu ft		
EPA MILEAGE EST. (MPG)	**CITY** 16	**HIGHWAY** 21	**COMBINED** 18		

CHEVROLET IMPALA (9C1)
3.8L SPFI

TEST VEHICLE DESCRIPTION

MAKE Chevrolet	**MODEL** Impala 9C1		**SALES CODE NO.** 1WF19		
ENGINE DISPLACEMENT	**CUBIC INCHES** 231		**LITERS** 3.8		
FUEL SYSTEM	Sequential Port Fuel Injection		**EXHAUST** Single		
HORSEPOWER (SAENET)	200 @ 5200 RPM		**ALTERNATOR** 125 amp.		
TORQUE	200 ft. lbs. @ 4000 RPM		**BATTERY** 690 CCA		
COMPRESSION RATIO	9.4:1				
TRANSMISSION	**MODEL** 4T65E	**TYPE** 4 – Speed automatic			
	LOCKUP TORQUE CONVERTER? Yes				
	OVERDRIVE? Yes				
AXLE RATIO	3.29:1				
STEERING	Power Rack and Pinion				
TURNING CIRCLE (CURB TO CURB)	38.0 ft				
TIRE SIZE, LOAD & SPEED RATING	P225/60R16 Goodyear Eagle RSA				
SUSPENSION TYPE (FRONT)	Independent McPherson Strut, coil springs & stabilizer bar				
SUSPENSION TYPE (REAR)	Independent Tri-Link coil springs over strut & stabilizer bar				
GROUND CLEARANCE, MINIMUM	6.1 in	**LOCATION** Engine Cradle			
BRAKE SYSTEM	Power, dual hydraulic, anti-lock				
BRAKES, FRONT	**TYPE** Vented Disc		**SWEPT AREA** 235.4 sq in		
BRAKES, REAR	**TYPE** Solid Disc		**SWEPT AREA** 160.3 sq in		
FUEL CAPACITY	**GALLONS** 17.0		**LITERS** 64.3		
GENERAL MEASUREMENTS	**WHEELBASE** 110.5 in		**LENGTH** 200.1 in		
	TEST WEIGHT 3563		**HEIGHT** 57.3 in		
HEADROOM	**FRONT** 39.2 in		**REAR** 36.8 in		
LEGROOM	**FRONT** 42.2 in		**REAR** 38.4 in		
SHOULDER ROOM	**FRONT** 59.0 in		**REAR** 58.9 in		
HIPROOM	**FRONT** 56.5 in		**REAR** 55.7 in		
INTERIOR VOLUME	**FRONT** 56.5 cu ft		**REAR** 48.2 cu ft		
	COMB 104.7 cu ft		**TRUNK** 18.6 cu ft w/ compact spare		
EPA MILEAGE EST. (MPG)	**CITY** 20	**HIGHWAY** 29	**COMBINED** 23		

TEST VEHICLE DESCRIPTION SUMMARY

	Dodge Intrepid	Ford Police Interceptor 3.27:1
ENGINE DISPLACEMENT – CU. IN.	214	281
ENGINE DISPLACEMENT – LITERS	3.5	4.6
ENGINE FUEL SYSTEM	SPFI	SPFI
HORSEPOWER (SAE NET)	242	250
TORQUE (FT. LBS.)	248	297
COMPRESSION RATIO	9.9:1	9.4:1
AXLE RATIO	3.66:1	3.27:1
TURNING CIRCLE – FT. CURB TO CURB	37.6	40.3
TRANSMISSION	4 Speed elec. auto	4 Speed elec. auto
TRANSMISSION MODEL NUMBER	42LE	4R70W
LOCKUP TORQUE CONVERTER	Yes	Yes
TRANSMISSION OVERDRIVE	Yes	Yes
TIRE SIZE	P225/60R	P225/60R
WHEEL RIM SIZE – INCHES	16	16
GROUND CLEARANCE – INCHES	5.7	6.0
BRAKE SYSTEM	Power, ABS	Power, ABS
BRAKES – FRONT TYPE	Vented Disc	Vented Disc
BRAKES – REAR TYPE	Solid Disc	Vented Disc
FUEL CAPACITY – GALLONS	17	19
FUEL CAPACITY – LITERS	64.4	71.9
OVERALL LENGTH – INCHES	203.7	212.0
OVERALL HEIGHT – INCHES	55.9	58.5
TEST WEIGHT – LBS.	3567	4200
WHEELBASE – INCHES	113.0	114.7
HEADROOM FRONT – INCHES	38.3	39.4
HEADROOM REAR – INCHES	37.5	38.0
LEGROOM FRONT – INCHES	42.2	42.5
LEGROOM REAR – INCHES	39.1	39.6
SHOULDER ROOM FRONT – INCHES	59.0	60.8
SHOULDER ROOM REAR – INCHES	58.1	60.3
HIPROOM FRONT – INCHES	56.3	57.1
HIPROOM REAR – INCHES	56.6	59.0
INTERIOR VOLUME FRONT – CU. FT.	55.0	58.2
INTERIOR VOLUME REAR – CU. FT.	49.5	51.1
INTERIOR VOLUME COMB. – CU. FT.	104.5	109.3
TRUNK VOLUME – CU. FT.	18.4	20.6
EPA MILEAGE – CITY – MPG	19	15
EPA MILEAGE – HIGHWAY – MPG	27	22
EPA MILEAGE – COMBINED – MPG	22	18

TEST VEHICLE DESCRIPTION SUMMARY

	Ford Police Interceptor 3.55:1	Chevrolet Impala
ENGINE DISPLACEMENT – CU. IN.	281	231
ENGINE DISPLACEMENT – LITERS	4.6	3.8
ENGINE FUEL SYSTEM	SPFI	SPFI
HORSEPOWER (SAE NET)	250	200
TORQUE (FT. LBS.)	297	220
COMPRESSION RATIO	9.4:1	9.4:1
AXLE RATIO	3.55:1	3.29:1
TURNING CIRCLE – FT. CURB TO CURB	40.3	38.0
TRANSMISSION	4 Speed elec. auto	4 Speed elec. Auto
TRANSMISSION MODEL NUMBER	4R70W	4T65E
LOCKUP TORQUE CONVERTER	Yes	Yes
TRANSMISSION OVERDRIVE	Yes	Yes
TIRE SIZE	P225/60R	P225/60R
WHEEL RIM SIZE – INCHES	16	16
GROUND CLEARANCE – INCHES	6.0	6.1
BRAKE SYSTEM	Power, ABS	Power, ABS
BRAKES – FRONT TYPE	Vented Disc	Vented Disc
BRAKES – REAR TYPE	Vented Disc	Solid Disc
FUEL CAPACITY – GALLONS	19	17
FUEL CAPACITY – LITERS	71.9	64.3
OVERALL LENGTH – INCHES	212.0	200.1
OVERALL HEIGHT – INCHES	58.5	57.3
TEST WEIGHT – LBS.	4185	3563
WHEELBASE – INCHES	114.7	110.5
HEADROOM FRONT – INCHES	39.4	39.2
HEADROOM REAR – INCHES	38.0	36.8
LEGROOM FRONT – INCHES	42.5	42.2
LEGROOM REAR – INCHES	39.6	38.4
SHOULDER ROOM FRONT – INCHES	60.8	59.0
SHOULDER ROOM REAR – INCHES	60.3	58.9
HIPROOM FRONT – INCHES	57.1	56.5
HIPROOM REAR – INCHES	59.0	55.7
INTERIOR VOLUME FRONT – CU. FT.	58.2	56.5
INTERIOR VOLUME REAR – CU. FT.	51.1	55.7
INTERIOR VOLUME COMB. – CU. FT.	109.3	104.7
TRUNK VOLUME – CU. FT.	20.6	18.6
EPA MILEAGE – CITY – MPG	15	20
EPA MILEAGE – HIGHWAY – MPG	22	29
EPA MILEAGE – COMBINED – MPG	18	23

VEHICLE DYNAMICS TESTING

TEST OBJECTIVE

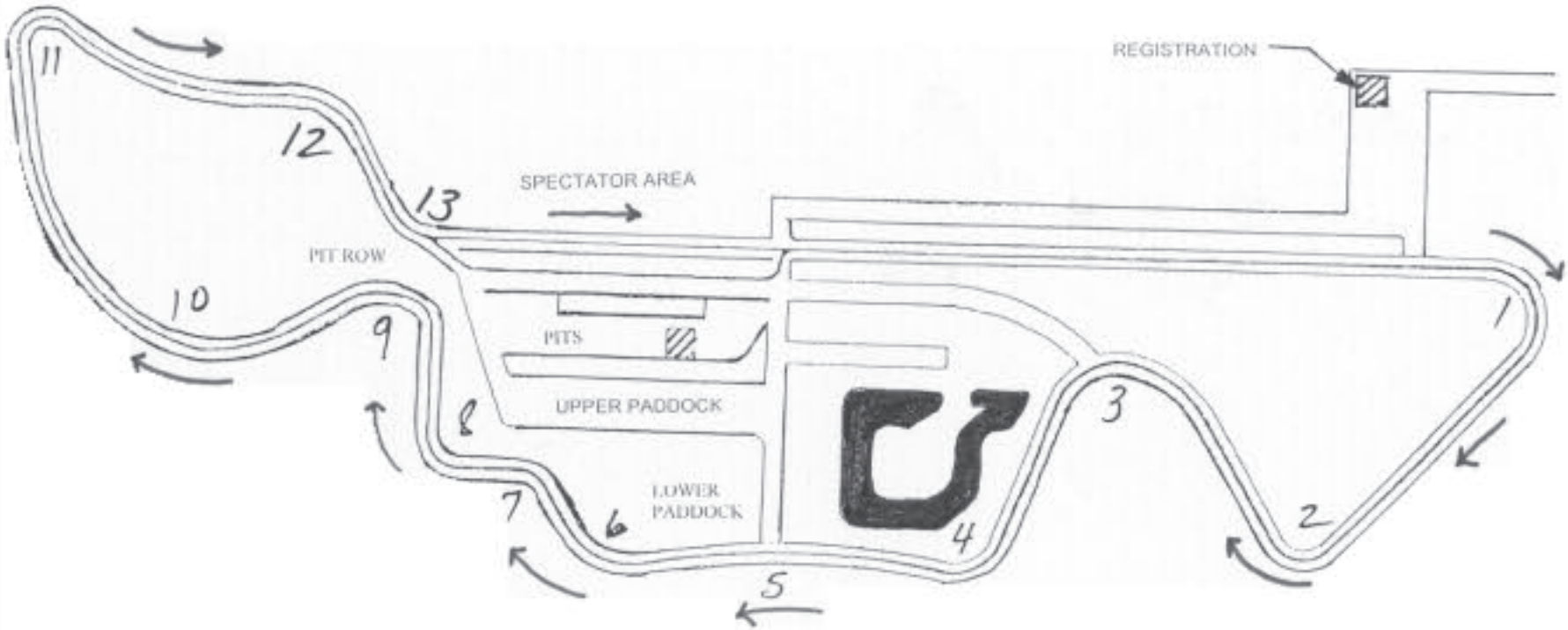
Determine each vehicle's high-speed pursuit or emergency handling characteristics and performance in comparison to the other vehicles in the test group. The course used is a 2-mile road-racing type configuration, containing hills, curves, and corners. The course simulates actual conditions encountered in pursuit or emergency driving situations in the field, with the exception of other traffic. The evaluation will be a true test of the success or failure of the vehicle manufacturers to offer vehicles that provide the optimum balance between handling (suspension components), acceleration (usable horsepower), and braking characteristics.

TEST METHODOLOGY

All vehicles will be driven over the course a total of 32 timed laps, using four separate drivers, each driving an 8 lap series. The final score for the vehicle will be the combined average (from the 4 drivers) of the 5 fastest laps for each driver during the 8 lap series.

Grattan Raceway Park

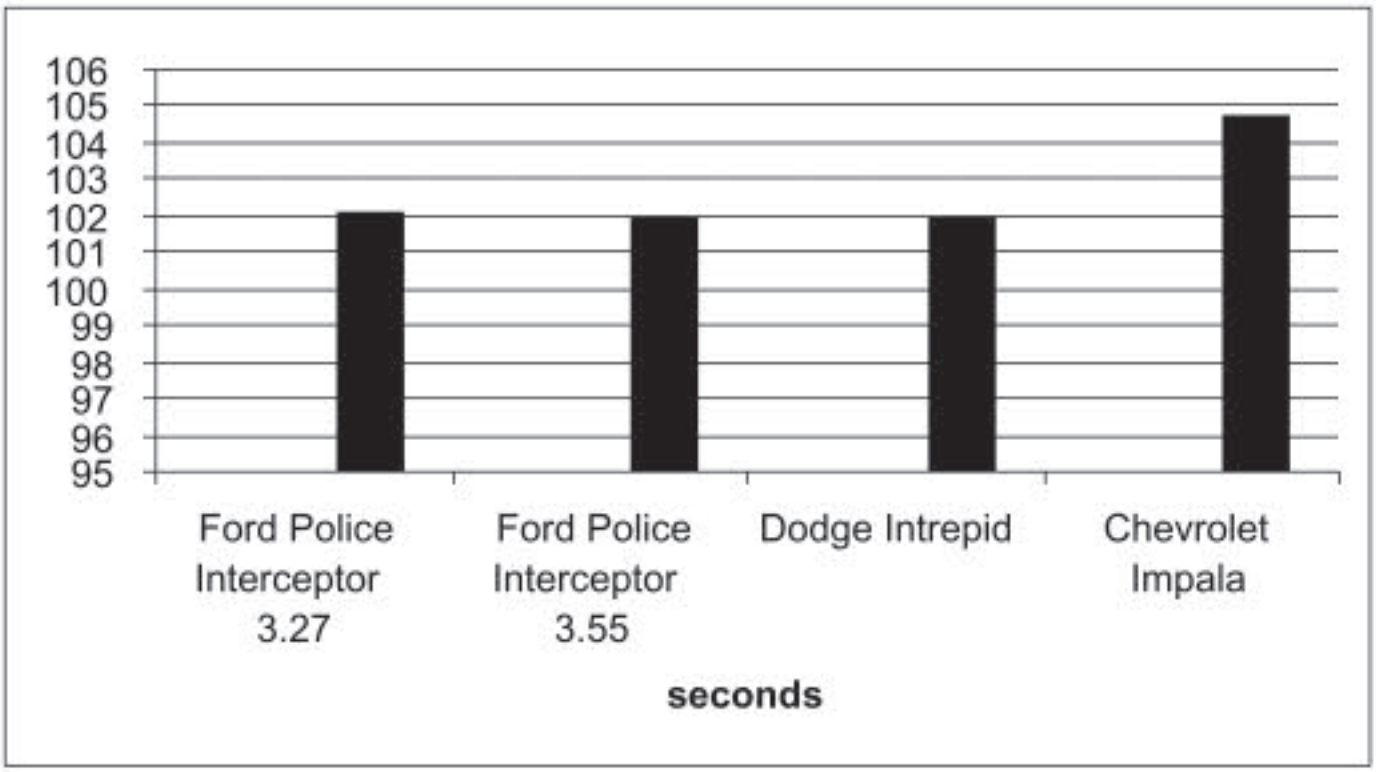
7201 Lessiter
Belding, Michigan 48809



Arrows indicate Michigan State Police Road Test Course and Direction of Travel.

VEHICLE DYNAMICS TESTING

Ford Police Interceptor 3.27:1 SPFI 4.6 L	WILSON	01:42.20	01:42.42	01:42.56	01:42.76	01:42.87	01:42.56
	GROMAK	01:41.69	01:41.82	01:42.02	01:42.32	01:42.46	01:42.06
	FLEGEL	01:41.05	01:41.06	01:41.14	01:41.52	01:41.59	01:41.27
	CLARK	01:42.21	01:42.33	01:42.38	01:42.65	01:42.70	01:42.45
Overall Average							**01:42.09**
Ford Police Interceptor 3.55:1 SPFI 4.6 L	WILSON	01:42.53	01:42.68	01:42.76	01:42.86	01:42.90	01:42.75
	GROMAK	01:41.14	01:41.52	01:41.65	01:42.13	01:42.30	01:41.75
	FLEGEL	01:40.54	01:40.92	01:41.34	01:41.52	01:41.61	01:41.19
	CLARK	01:41.95	01:42.10	01:42.25	01:42.39	01:42.46	01:42.23
Overall Average							**01:41.98**
Chevrolet Impala 9C1 3.8L SPFI	WILSON	01:44.78	01:44.91	01:45.15	01:45.59	01:45.60	01:45.21
	GROMAK	01:44.24	01:44.46	01:44.48	01:44.67	01:44.73	01:44.52
	FLEGEL	01:43.84	01:43.98	01:44.21	01:44.33	01:44.35	01:44.14
	CLARK	01:44.74	01:44.79	01:44.93	01:45.02	01:45.27	01:44.95
Overall Average							**01:44.70**
Dodge Intrepid 3.5L SPFI	WILSON	01:42.85	01:43.25	01:43.26	01:43.34	01:43.43	01:43.23
	GROMAK	01:41.48	01:41.56	01:41.65	01:41.94	01:42.36	01:41.80
	FLEGEL	01:41.04	01:41.11	01:41.16	01:41.29	01:41.41	01:41.20
	CLARK	01:41.63	01:41.76	01:41.89	01:41.97	01:42.05	01:41.86
Overall Average							**01:42.02**



ACCELERATION AND TOP SPEED TESTING

ACCELERATION TEST OBJECTIVE

Determine the ability of each test vehicle to accelerate from a standing start to 60 mph, 80 mph, and 100 mph, and determine the distance to reach 110 mph and 120 mph.

ACCELERATION TEST METHODOLOGY

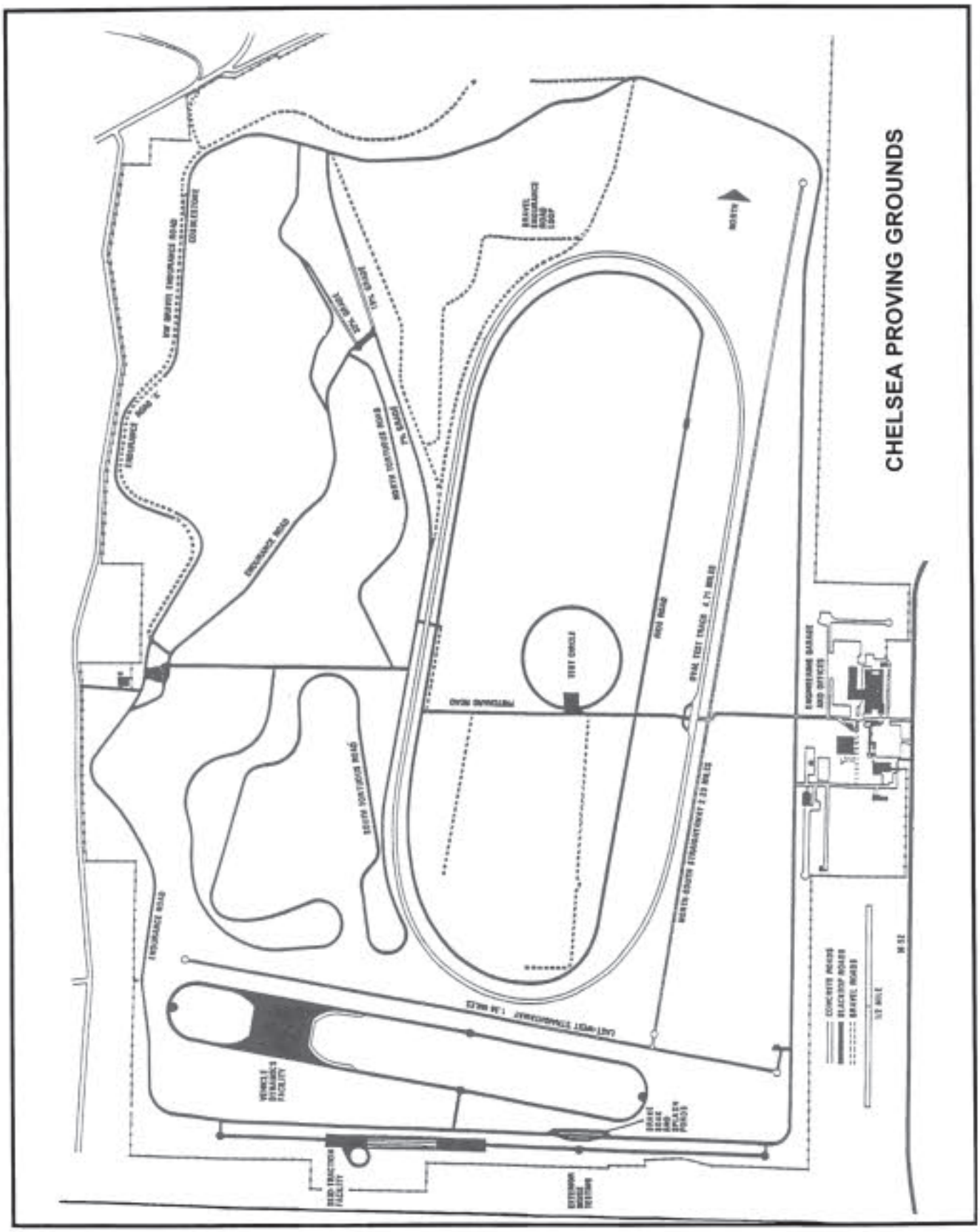
Using a DLS Smart Sensor – Optical non-contact Speed and Distance Sensor in conjunction with a lap top computer, each vehicle is driven through four acceleration sequences, two northbound and two southbound, to allow for wind direction. The four resulting times for each target speed are averaged and the average times used to derive scores on the competitive test for acceleration.

TOP SPEED TEST OBJECTIVE

Determine the actual top speed attainable by each test vehicle within a distance of 14 miles from a standing start.

TOP SPEED TEST METHODOLOGY

Following the fourth acceleration run, each test vehicle will continue to accelerate to the top speed attainable within 14 miles from the start of the run. The highest speed attained within the 14-mile distance will be the vehicle's score on the competitive test for top speed.


CHELSEA PROVING GROUNDS

ACCELERATION AND TOP SPEED TESTS

TEST LOCATION: DaimlerChrysler Proving Grounds **DATE:** September 20, 2003

MAKE & MODEL: Ford Interceptor 4.6L 3.27 **BEGINNING TIME:** 9:23 a.m.

WIND VELOCITY: 2.6 mph **WIND DIRECTION:** 240° **TEMPERATURE:** 56.9°

ACCELERATION

SPEEDS	TIME REQUIREMENTS*	RUN#1	RUN#2	RUN#3	RUN#4	AVERAGE
0 – 60	**9.6 sec**	8.45	8.36	8.47	8.49	**8.44**
0 – 80	**16.4 sec.**	14.02	13.74	13.90	13.86	**13.88**
0 – 100	**27.1 sec.**	23.48	23.17	23.52	23.03	**23.30**

DISTANCE TO REACH: **110 MPH** .61 mile **120 MPH** .93 mile

TOP SPEED ATTAINED: 128 mph

MAKE & MODEL: Ford Police Interceptor 4.6L 3.55 **BEGINNING TIME:** 9:48 a.m.

WIND VELOCITY: 3.8 mph **WIND DIRECTION:** 218° **TEMPERATURE:** 59.3°

ACCELERATION

SPEEDS	TIME REQUIREMENTS*	RUN#1	RUN#2	RUN#3	RUN#4	AVERAGE
0 – 60	**9.6 sec**	8.40	8.21	8.23	8.17	**8.25**
0 – 80	**16.4 sec.**	13.92	13.75	13.62	13.66	**13.74**
0 – 100	**27.1 sec.**	22.99	22.41	22.43	22.24	**22.52**

DISTANCE TO REACH: **110 MPH** .59 mile **120 MPH** N/A

TOP SPEED ATTAINED: 118 mph

*Michigan State Police minimum requirement.

ACCELERATION AND TOP SPEED TESTS

TEST LOCATION: DaimlerChrysler Proving Grounds **DATE:** September 20, 2003

MAKE & MODEL: Dodge Intrepid 3.5L SPFI **BEGINNING TIME:** 8:58 a.m.

WIND VELOCITY: 3.6 mph **WIND DIRECTION:** 210° **TEMPERATURE:** 55.1°

ACCELERATION

SPEEDS	TIME REQUIREMENTS*	RUN#1	RUN#2	RUN#3	RUN#4	AVERAGE
0 – 60	**9.6 sec**	8.79	8.47	8.54	8.45	**8.56**
0 – 80	**16.4 sec.**	14.43	14.15	14.17	13.86	**14.15**
0 – 100	**27.1 sec.**	24.09	23.40	23.48	23.25	**23.56**

DISTANCE TO REACH: **110 MPH** .61 mile **120 MPH** .87 mile

TOP SPEED ATTAINED: 135 mph

MAKE & MODEL: Chevrolet Impala 3.8L SPFI **BEGINNING TIME:** 8:34 a.m.

WIND VELOCITY: 1.3 mph **WIND DIRECTION:** 111° **TEMPERATURE:** 49.1°

ACCELERATION

SPEEDS	TIME REQUIREMENTS*	RUN#1	RUN#2	RUN#3	RUN#4	AVERAGE
0 – 60	**9.6 sec**	9.21	9.02	8.98	8.78	**9.00**
0 – 80	**16.4 sec.**	15.69	15.14	15.16	14.98	**15.24**
0 – 100	**27.1 sec.**	27.30	26.25	26.33	25.78	**26.42**

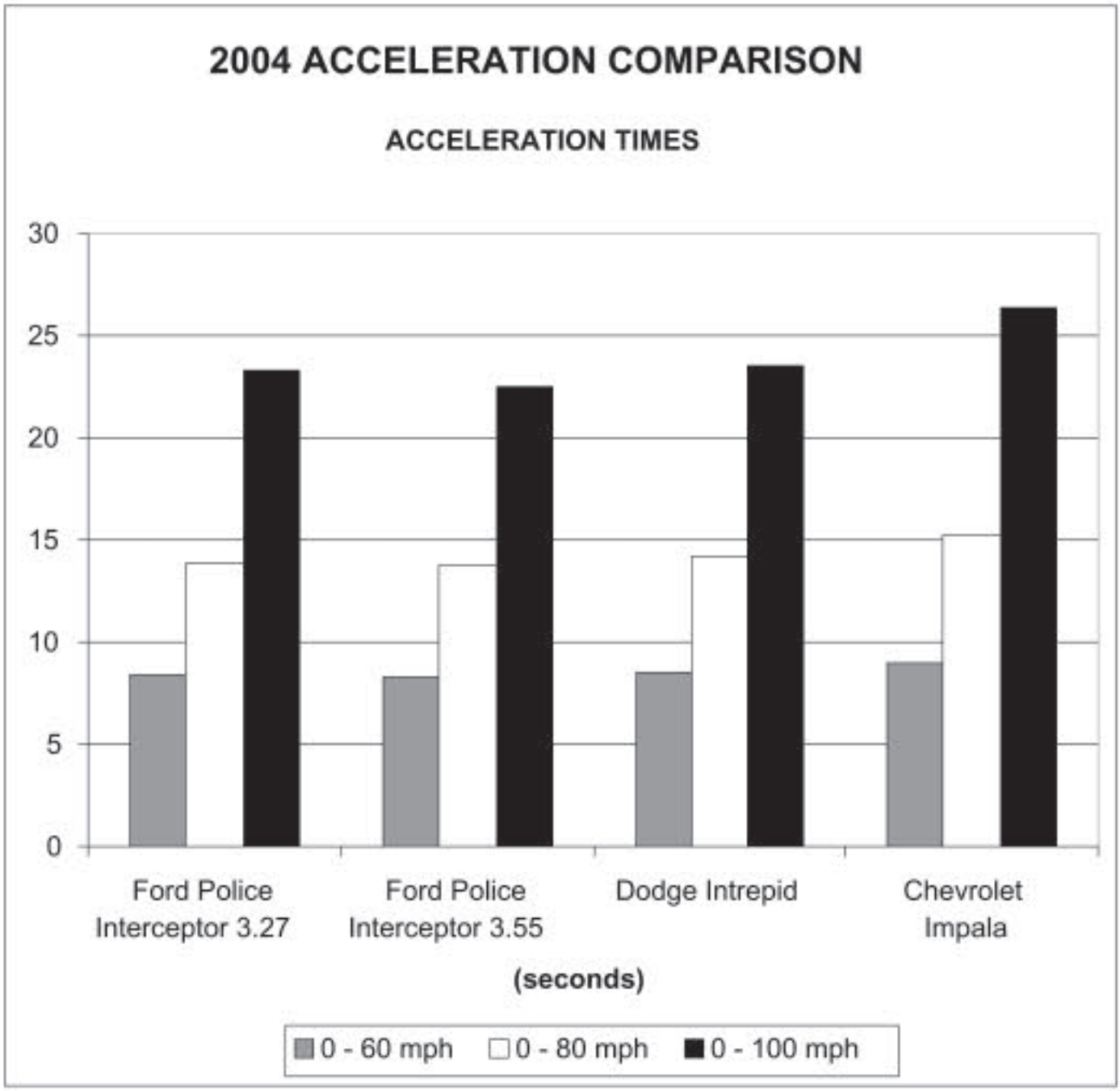
DISTANCE TO REACH: **110 MPH** .71 mile **120 MPH** 1.20 mile

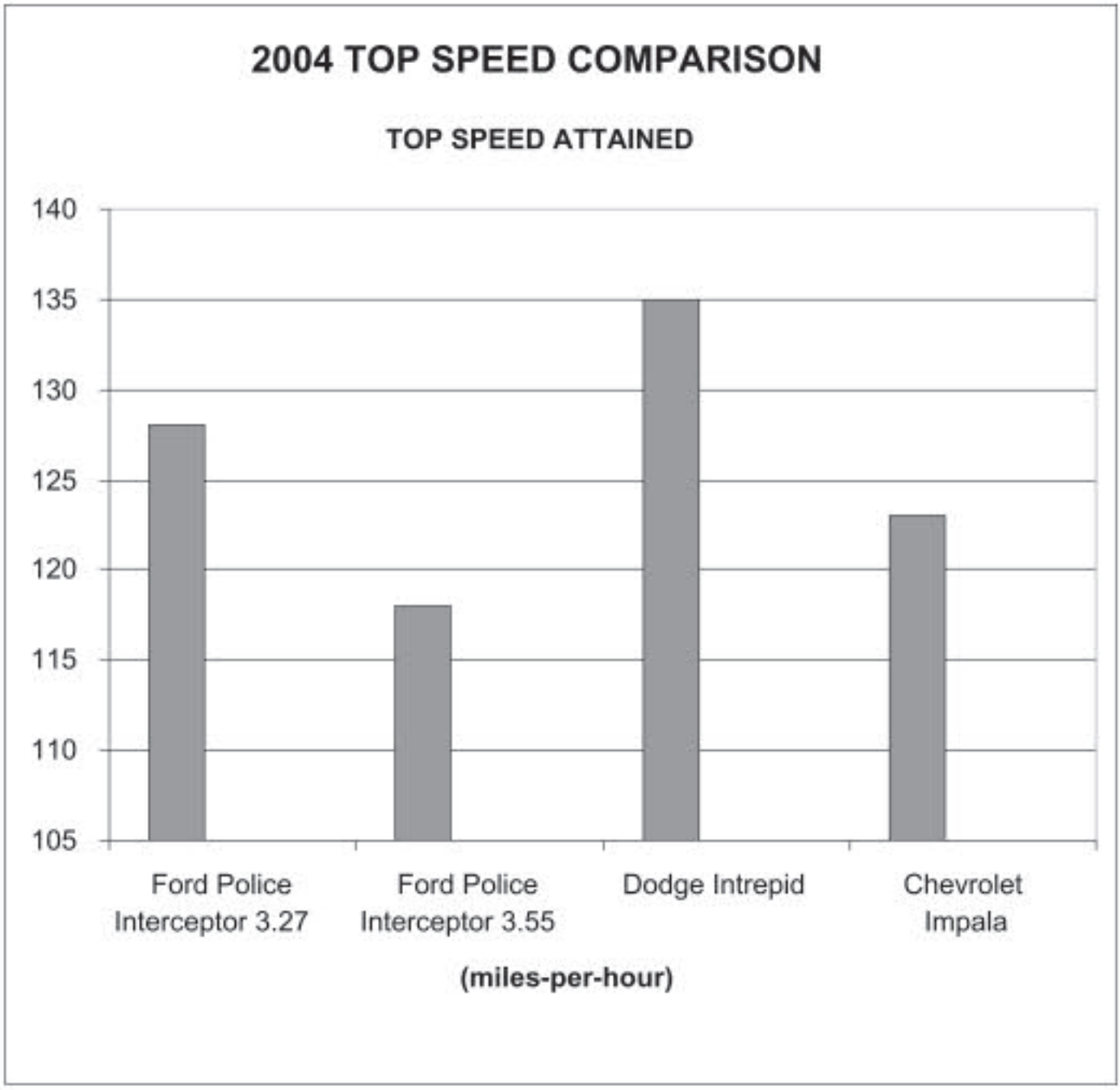
TOP SPEED ATTAINED: 123 mph

*Michigan State Police minimum requirement.

SUMMARY OF ACCELERATION AND TOP SPEED

ACCELERATION*		Ford Police Interceptor 4.6 L 3.27	Ford Police Interceptor 4.6 L 3.55	Dodge Intrepid 3.5 L	Chevrolet Impala 9C1 3.8 L
0 – 20 mph	(sec.)	1.78	1.78	1.91	2.00
0 – 30 mph	(sec.)	3.09	2.99	3.13	3.20
0 – 40 mph	(sec.)	4.47	4.42	4.50	4.58
0 – 50 mph	(sec.)	6.20	6.15	6.37	6.51
0 – 60 mph	(sec.)	8.44	8.25	8.56	9.00
0 – 70 mph	(sec.)	10.89	10.63	11.12	11.76
0 – 80 mph	(sec.)	13.88	13.74	14.15	15.24
0 – 90 mph	(sec.)	18.15	17.90	18.40	20.31
0 – 100 mph	(sec.)	23.30	22.52	23.56	26.42
TOP SPEED	**(mph)**	128	118	135	123
DISTANCE TO REACH					
110 mph	(miles)	.61	.59	.61	.71
120 mph	(miles)	.93	N/A	.87	1.20
QUARTER MILE					
Time	(sec.)	16.44	16.34	16.56	16.89
Speed	(miles)	86.58	86.43	86.03	83.58


2004 ACCELERATION COMPARISON
ACCELERATION TIMES
30
25
20
15
10
5
0
Ford Police Interceptor 3.27
Ford Police Interceptor 3.55
Dodge Intrepid
Chevrolet Impala
(seconds)
0 - 60 mph
0 - 80 mph
0 - 100 mph


2004 TOP SPEED COMPARISON
TOP SPEED ATTAINED
140
135
130
125
120
115
110
105
Ford Police Interceptor 3.27
Ford Police Interceptor 3.55
Dodge Intrepid
Chevrolet Impala
(miles-per-hour)

BRAKE TESTING

BRAKE TEST OBJECTIVE

Determine the deceleration rate attained by each test vehicle on twelve 60 – 0 mph impending skid (threshold) stops, with ABS in operation if the vehicle is so equipped. Each vehicle will be scored on the average deceleration rate it attains.

BRAKE TEST METHODOLOGY

Each vehicle will make two decelerations at specific predetermined points on the test road from 90 – 0 mph at 22 ft/s^2, with the driver using a decelerometer to maintain the deceleration rate. Immediately after these "heat-up" stops are completed, the vehicle will be turned around and will make six measured 60 – 0 mph impending skid (threshold) stops with ABS in operation, if so equipped, at specific predetermined points. Following a four 4-minute heat soak, the entire sequence will be repeated. The exact initial velocity at the beginning of each of the 60 – 0 mph decelerations, and the exact distance required to make each stop will be recorded by means of a non contact optical sensor in conjunction with electronic speed and distance meters. The data resulting from the twelve total stops will be used to calculate the average deceleration rate which is the vehicle's score for this test.

DECELERATION RATE FORMULA

$$\text{Deceleration Rate (DR)} = \frac{\text{Initial Velocity*(IV) squared}}{\text{2 times Stopping Distance (SD)}} = \frac{(IV)^2}{2\,(SD)}$$

EXAMPLE:

Initial Velocity =89.175 ft/s (60.8 mph x 1.4667*)
Stopping Distance =171.4 ft.

$$DR = \frac{(IV)^2}{2(SD)} = \frac{(89.175)^2}{2(171.4)} = \frac{7952.24}{342.8} = 23.198 \text{ ft/s}^2$$

Once a vehicle's average deceleration rate has been determined, it is possible to calculate the stopping distance from any given speed by utilizing the following formula:

Select a speed; translate that speed into feet per second; square the feet per second figure by multiplying it by itself; divide the resultant figure by 2; divide the remaining figure by the average deceleration rate of the vehicle in question.

EXAMPLE:

60 mph = 88.002 ft/s x 88.002 = 7744.352 / 2 = 3872.176 / 23.198 ft/s^2 = 166.9 ft.

*Initial velocity must be expressed in terms of feet per second, with 1 mile per hour being equal to 1.4667 feet per second.

BRAKE TESTING

TEST LOCATION: DaimlerChrysler Proving Grounds **DATE:** September 20, 2003

BEGINNING Time: 12:07 p.m. **TEMPERATURE:** 64.2° F

MAKE & MODEL: Ford Police Interceptor 4.6L 3.27 **BRAKE SYSTEM:** Anti-lock

Phase I

BRAKE HEAT-UP: (Two 90 –0 mph decelerations @ 22 ft.sec.^{2})
TEST: (Six 60 – mph impending skid (ABS) maximum deceleration rate stops)

	Initial Velocity	Stopping Distance	Deceleration Rate
Stop #1	60.3 mph	155.5 feet	25.15 ft/s^2
Stop #2	59.9 mph	153.6 feet	25.13 ft/s^2
Stop #3	59.5 mph	153.4 feet	24.82 ft/s^2
Stop #4	60.0 mph	150.0 feet	25.81 ft/s^2
Stop #5	59.5 mph	148.4 feet	25.66 ft/s^2
Stop #6	59.7 mph	144.8 feet	26.47 ft/s^2

AVERAGE DECELERATION RATE **25.51 ft/s^2**

HEAT SOAK (4 minutes)

Phase II

BRAKE HEAT-UP: (Two 90 –0 mph decelerations @ 22 ft.sec.^{2})
TEST: (Six 60 – mph impending skid (ABS) maximum deceleration rate stops)

	Initial Velocity	Stopping Distance	Deceleration Rate
Stop #1	59.3 mph	142.7 feet	26.51 ft/s^2
Stop #2	60.1 mph	148.6 feet	26.14 ft/s^2
Stop #3	60.0 mph	148.3 feet	26.11 ft/s^2
Stop #4	59.7 mph	145.8 feet	26.29 ft/s^2
Stop #5	59.7 mph	145.6 feet	26.33 ft/s^2
Stop #6	59.6 mph	145.7 feet	26.22 ft/s^2

AVERAGE DECELERATION RATE **26.27 ft/s^2**

Phase III

	Yes/No
Evidence of severe fading?	No
Vehicle stopped in straight line?	Yes
Vehicle stopped within correct lane?	Yes

OVERALL AVERAGE DECEL. RATE: **25.89 ft/s^2**

Projected Stopping Distance from 60.0 mph **149.6**

BRAKE TESTING

TEST LOCATION: DaimlerChrysler Proving Grounds **DATE:** September 20, 2003

BEGINNING Time: 12:36 p.m. **TEMPERATURE:** 64.7° F

MAKE & MODEL: Ford Police Interceptor 4.6L 3.55 **BRAKE SYSTEM:** Anti-lock

Phase I

BRAKE HEAT-UP: **(Two 90 –0 mph decelerations @ 22 ft.sec.$^{2)}$**
TEST: **(Six 60 – mph impending skid (ABS) maximum deceleration rate stops)**

	Initial Velocity	Stopping Distance	Deceleration Rate
Stop #1	59.7 mph	145.6 feet	26.33 ft/s^2
Stop #2	60.1 mph	154.1 feet	25.21 ft/s^2
Stop #3	60.2 mph	153.9 feet	25.33 ft/s^2
Stop #4	59.7 mph	151.9 feet	25.24 ft/s^2
Stop #5	60.6 mph	151.8 feet	26.02 ft/s^2
Stop #6	60.5 mph	150.8 feet	26.11 ft/s^2

AVERAGE DECELERATION RATE **25.71 ft/s^2**

HEAT SOAK (4 minutes)

Phase II

BRAKE HEAT-UP: **(Two 90 –0 mph decelerations @ 22 ft.sec.$^{2)}$**
TEST: **(Six 60 – mph impending skid (ABS) maximum deceleration rate stops)**

	Initial Velocity	Stopping Distance	Deceleration Rate
Stop #1	60.0 mph	149.9 feet	25.83 ft/s^2
Stop #2	60.4 mph	152.6 feet	25.71 ft/s^2
Stop #3	59.7 mph	146.9 feet	26.10 ft/s^2
Stop #4	60.1 mph	151.6 feet	25.63 ft/s^2
Stop #5	60.3 mph	151.0 feet	25.90 ft/s^2
Stop #6	59.5 mph	149.5 feet	25.47 ft/s^2

AVERAGE DECELERATION RATE **25.77 ft/s^2**

Phase III

	Yes/No
Evidence of severe fading?	No
Vehicle stopped in straight line?	Yes
Vehicle stopped within correct lane?	Yes

OVERALL AVERAGE DECEL. RATE: **25.74 ft/s^2**

Projected Stopping Distance from 60.0 mph **150.4**

BRAKE TESTING

TEST LOCATION: DaimlerChrysler Proving Grounds **DATE:** September 20, 2003

BEGINNING Time: 10:01 a.m. **TEMPERATURE:** 59.6° F

MAKE & MODEL: Dodge Intrepid 3.5L **BRAKE SYSTEM:** Anti-lock

Phase I

BRAKE HEAT-UP: (Two 90 –0 mph decelerations @ 22 ft.sec.$^{2)}$
TEST: (Six 60 – mph impending skid (ABS) maximum deceleration rate stops)

	Initial Velocity	Stopping Distance	Deceleration Rate
Stop #1	60.1 mph	140.5 feet	27.65 ft/s^2
Stop #2	60.0 mph	138.4 feet	27.98 ft/s^2
Stop #3	59.5 mph	139.2 feet	27.36 ft/s^2
Stop #4	59.7 mph	135.2 feet	28.35 ft/s^2
Stop #5	59.4 mph	137.0 feet	27.70 ft/s^2
Stop #6	60.1 mph	139.2 feet	27.91 ft/s^2

AVERAGE DECELERATION RATE **27.83 ft/s^2**

HEAT SOAK (4 minutes)

Phase II

BRAKE HEAT-UP: (Two 90 –0 mph decelerations @ 22 ft.sec.$^{2)}$
TEST: (Six 60 – mph impending skid (ABS) maximum deceleration rate stops)

	Initial Velocity	Stopping Distance	Deceleration Rate
Stop #1	59.9 mph	136.1 feet	28.36 ft/s^2
Stop #2	59.4 mph	134.4 feet	28.24 ft/s^2
Stop #3	59.5 mph	137.3 feet	27.73 ft/s^2
Stop #4	59.9 mph	132.7 feet	29.08 ft/s^2
Stop #5	59.8 mph	135.7 feet	28.34 ft/s^2
Stop #6	59.9 mph	131.0 feet	29.46 ft/s^2

AVERAGE DECELERATION RATE **28.54 ft/s^2**

Phase III

	Yes/No
Evidence of severe fading?	No
Vehicle stopped in straight line?	Yes
Vehicle stopped within correct lane?	Yes

OVERALL AVERAGE DECEL. RATE: 28.18 ft/s^2

Projected Stopping Distance from 60.0 mph **137.4**

BRAKE TESTING

TEST LOCATION: DaimlerChrysler Proving Grounds **DATE:** September 20, 2003

BEGINNING Time: 9:25 a.m., **TEMPERATURE:** 56.9° F

MAKE & MODEL: Chevrolet Impala 9C1 3.8L **BRAKE SYSTEM:** Anti-lock

Phase I

BRAKE HEAT-UP: (Two 90 –0 mph decelerations @ 22 ft.sec.^{2})
TEST: (Six 60 – mph impending skid (ABS) maximum deceleration rate stops)

	Initial Velocity	Stopping Distance	Deceleration Rate
Stop #1	60.0 mph	128.7 feet	30.09 ft/s^2
Stop #2	59.6 mph	130.9 feet	29.19 ft/s^2
Stop #3	60.0 mph	134.7 feet	28.75 ft/s^2
Stop #4	59.6 mph	133.8 feet	28.56 ft/s^2
Stop #5	59.7 mph	133.9 feet	28.63 ft/s^2
Stop #6	59.8 mph	136.1 feet	28.26 ft/s^2

AVERAGE DECELERATION RATE **28.91 ft/s^2**

HEAT SOAK (4 minutes)

Phase II

BRAKE HEAT-UP: (Two 90 –0 mph decelerations @ 22 ft.sec.^{2})
TEST: (Six 60 – mph impending skid (ABS) maximum deceleration rate stops)

	Initial Velocity	Stopping Distance	Deceleration Rate
Stop #1	59.9 mph	134.9 feet	28.61 ft/s^2
Stop #2	59.9 mph	133.5 feet	28.91 ft/s^2
Stop #3	59.7 mph	135.5 feet	28.29 ft/s^2
Stop #4	60.1 mph	134.1 feet	28.97 ft/s^2
Stop #5	60.0 mph	131.7 feet	29.40 ft/s^2
Stop #6	59.5 mph	133.3 feet	28.57 ft/s^2

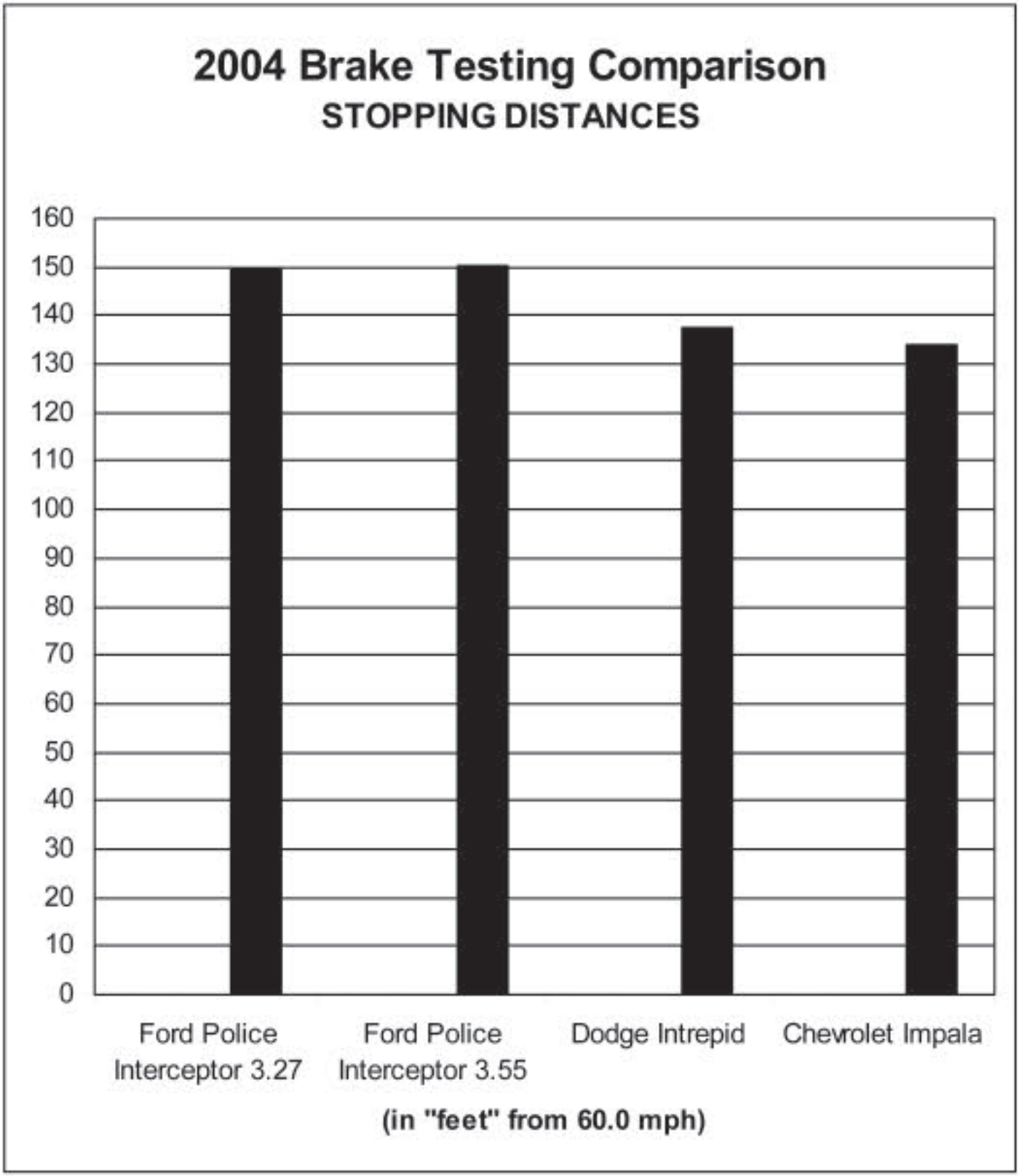
AVERAGE DECELERATION RATE **28.79 ft/s^2**

Phase III

	Yes/No
Evidence of severe fading?	No
Vehicle stopped in straight line?	Yes
Vehicle stopped within correct lane?	Yes

OVERALL AVERAGE DECEL. RATE: **28.85 ft/s^2**

Projected Stopping Distance from 60.0 mph **134.2**


2004 Brake Testing Comparison
STOPPING DISTANCES
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
Ford Police Interceptor 3.27
Ford Police Interceptor 3.55
Dodge Intrepid
Chevrolet Impala
(in "feet" from 60.0 mph)

ERGONOMICS AND COMMUNICATIONS

TEST OBJECTIVE

Rate each test vehicle's ability to:

1. Provide a suitable environment for the patrol officer in the performance of his/her assigned tasks.

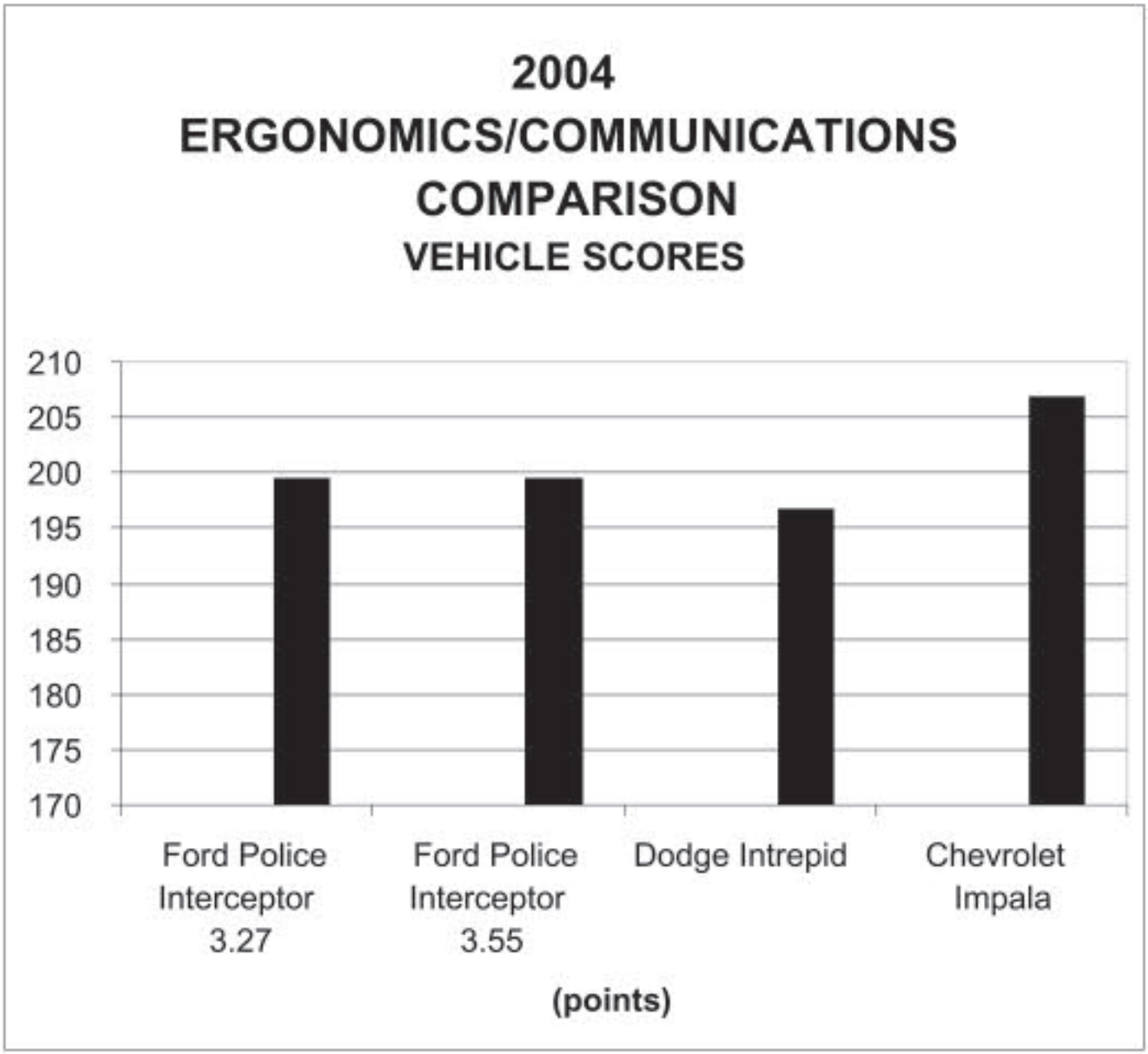
2. Accommodate the required communications and emergency warning equipment and assess the relative difficulty of such installations.

TEST METHODOLOGY

Utilizing the ergonomics portion of the form, a minimum of four officers (in this case 10) will individually and independently compare and score each test vehicle on the various comfort, instrumentation, and visibility items. The installation and communications portion of the evaluation will be conducted by personnel from the Michigan State Police Communications Division and Vehicle and Travel Services, based upon the relative difficulty of the necessary installations. Each factor will be graded on a 1 to 10 scale, with 1 representing "totally unacceptable," 5 representing "average," and 10 representing "superior." The scores will be averaged to minimize personal prejudice for or against any given vehicle.

ERGONOMICS AND COMMUNICATIONS

ERGONOMICS	Ford Police Interceptor 3.27	Ford Police Interceptor 3.55	Dodge Intrepid	Chevrolet Impala
FRONT SEAT				
Padding	6.80	6.80	6.70	7.30
Depth of Bucket Seat	7.00	7.00	6.90	7.60
Adjustability – Front to Rear	7.30	7.30	7.20	7.10
Upholstery	6.70	6.70	7.20	6.90
Bucket Seat Design	5.80	5.80	6.20	7.20
Headroom	7.80	7.80	7.30	7.40
Seatbelts	7.10	7.10	7.80	7.40
Ease of Entry and Exit	6.20	6.20	5.90	6.00
Overall Comfort Rating	7.00	7.00	6.80	6.90
REAR SEAT				
Leg room – Front seat back	5.60	5.60	6.40	5.50
Ease of Entry and Exit	4.60	4.60	5.50	5.20
INSTRUMENTATION				
Clarity	8.30	8.30	8.20	8.30
Placement	7.70	7.70	8.10	8.30
VEHICLE CONTROLS				
Pedals, Size and Position	7.90	7.90	7.90	7.90
Power Window Switch	8.00	8.00	7.50	8.10
Inside Door Lock Switch	6.00	6.00	7.80	7.70
Automatic Door Lock Switch	7.20	7.20	6.80	7.10
Outside Mirror Controls	6.90	6.90	6.80	8.78
Steering Wheel, Size, Tilt Release, and Surface	6.70	6.70	7.90	8.10
Heat/AC Vent Placement and Adjustability	8.10	8.10	7.60	7.30
VISIBILITY				
Front (Windshield)	8.10	8.10	8.00	8.10
Rear (Back Window)	7.40	7.40	6.30	6.30
Left Rear Quarter	7.40	7.40	5.70	7.40
Right Rear Quarter	7.60	7.60	6.10	7.70
Outside Rear View Mirrors	6.30	6.30	4.10	7.60
COMMUNICATIONS				
Dashboard Accessibility	8.00	8.00	8.00	7.60
Trunk Accessibility	8.00	8.00	8.00	8.00
Engine Compartment	8.00	8.00	8.00	8.00
TOTAL SCORES	**199.50**	**199.50**	**196.70**	**206.78**


2004
ERGONOMICS/COMMUNICATIONS
COMPARISON
VEHICLE SCORES
210
205
200
195
190
185
180
175
170
Ford Police Interceptor 3.27
Ford Police Interceptor 3.55
Dodge Intrepid
Chevrolet Impala
(points)

FUEL ECONOMY

TEST OBJECTIVE

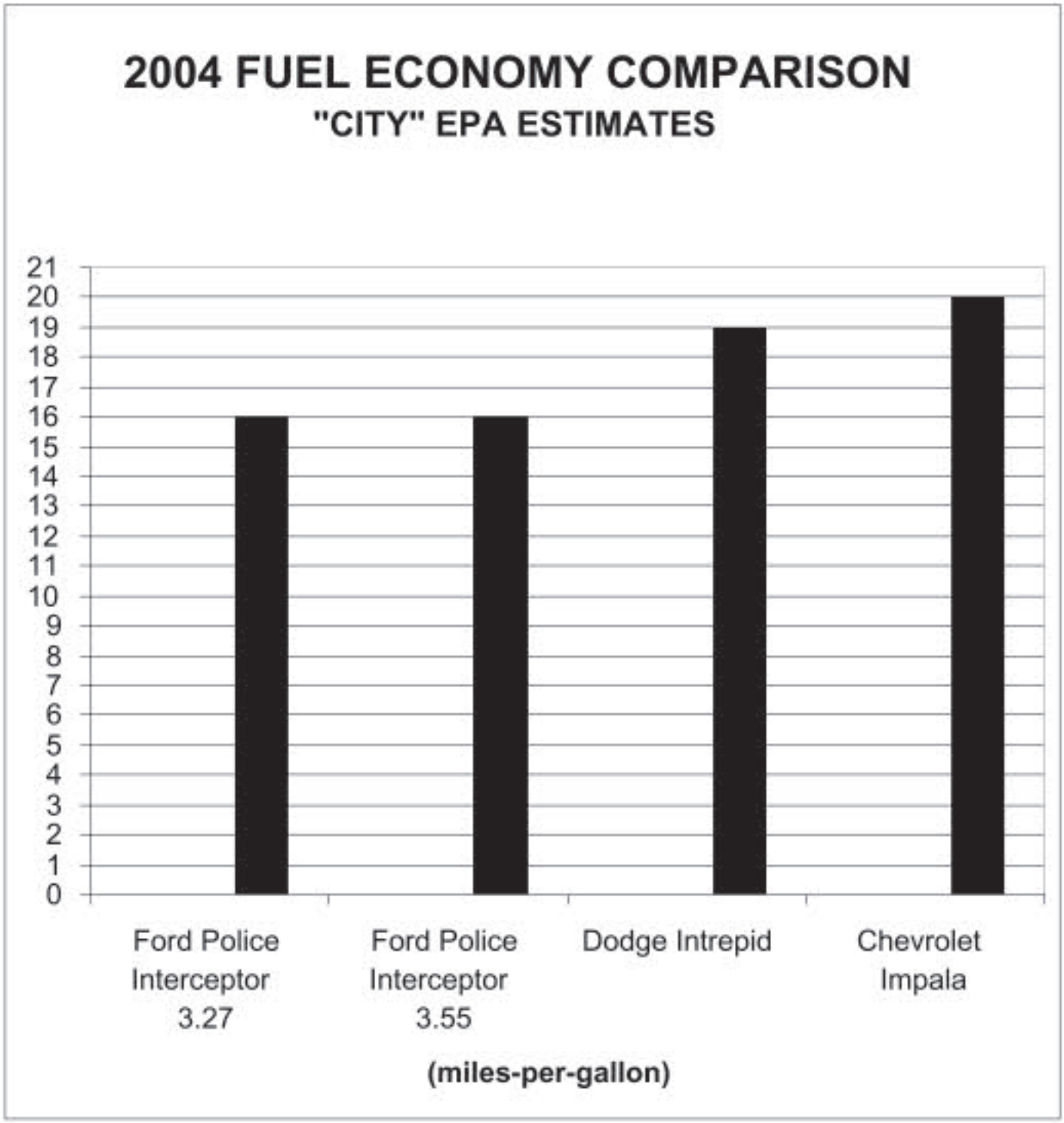
Determine the fuel economy potential of all vehicles being evaluated. The data used for scoring are both valid and reliable in a comparison sense, while not necessarily being an accurate predictor of actual fuel economy in police patrol service.

TEST METHODOLOGY

The vehicles will be scored based on estimates for city fuel economy to the nearest 1/10th mile per gallon (mpg) developed from data supplied by the vehicle manufacturer and certified by the Environmental Protection Agency.

Vehicles Make/Model/Engine	E.P.A. Miles Per Gallon		
	City*	Highway	Combined
Ford Police Interceptor 3.27 4.6L SPFI	16.0 (17.7)	21	18
Ford Police Interceptor 3.55 4.6L SPFI	16.0 (17.7)	21	18
Dodge Intrepid 3.5L SPFI	19 (20.9)	27	22
Chevrolet Impala 3.8L SPFI	20 (19.5)	29	23

*Scored on city mileage only to the nearest 1/10 mpg.


2004 FUEL ECONOMY COMPARISON
"CITY" EPA ESTIMATES
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
Ford Police Interceptor 3.27
Ford Police Interceptor 3.55
Dodge Intrepid
Chevrolet Impala
(miles-per-gallon)

MICHIGAN STATE POLICE SCORING AND BID ADJUSTMENT METHODOLOGY*

STEP I: RAW SCORES

Raw scores are developed, through testing, for each vehicle in each of six evaluation categories. The raw scores are expressed in terms of seconds, feet per second^2, miles-per-hour, points, and miles-per-gallon.

VEHICLE DYNAM. (seconds)	BRAKING RATE (ft/sec^2)	ACCEL. (seconds)	TOP SPEED (mph)	ERGONOMICS & COMMUN. (points)	FUEL ECONOMY (mpg)
92.210	26.380	45.790	115.000	173.900	14.300

STEP II: DEVIATION FACTOR

In each evaluation category, the best scoring vehicle's score is used as the benchmark against which each of the other vehicles' scores are compared. (In the Vehicle Dynamics and Acceleration categories the lowest score is best, while in the remainder of the categories the highest score is best.) The best scoring vehicle in a given category received a deviation factor of "0." The "deviation factor" is then calculated by determining the absolute difference between each vehicle's raw score and the best score in that category. The absolute difference is then divided by the best score, with the result being the "deviation factor."

CAR MAKE MODEL	TOP SPEED
CAR "A"	115.000 **.042**
CAR "B"	118.800 **.010**
CAR "C"	117.900 **.018**
CAR "D"	120.000 **0**

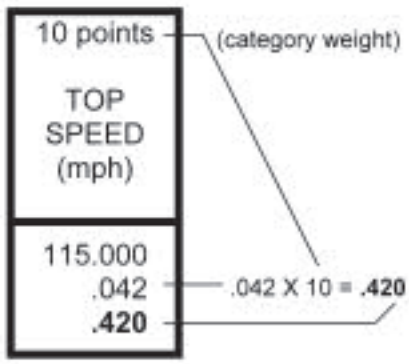
EXAMPLE:

Best Score (Car "D")		Other Vehicle Score (Car "A")		Absolute Difference		Best Score		Deviation Factor (Car "A")
120.000	-	115.000	=	5	/	120.000	=	**.042**

STEP III: WEIGHTED CATEGORY SCORE

Each vehicle's weighted category score is determined by multiplying the deviation factor (as determined in Step II) by the category weight.

RAW SCORE
DEVIATION FACTOR
WEIGHTED CATEGORY SCORE



*All mathematical computations are to be rounded to the third decimal place.

STEP IV: TOTAL WEIGHTED SCORE

Adding together the six (6) weighted category scores for that vehicle derives the total weighted score for each vehicle.

EXAMPLE:

CAR	30 pts. VEH. DYN. (seconds)	25 pts. BRAKE DECEL. (ft/sec^2)	20 pts. ACCEL. (seconds)	10 pts. TOP SPEED (mph)	10 pts. ERGO/ COMM. (points)	5 pts. FULE ECON. (mpg)	TOTAL WEIGHTED SCORE
Car "A"	92.210 .018 .540	45.790 .163 4.075	26.380 0 0	115.000 .042 .420	173.900 .184 1.840	14.300 0 0	**6.875**

STEP V: BID ADJUSTMENT FIGURE

The bid adjustment figure that we have chosen to use is one percent (1%) of the lowest bid price received. As an example, in this and the following two steps, the lowest bid price received was $15,238.00, which results in a bid adjustment figure of **$152.38**.

STEP VI: ACTUAL DOLLAR ADJUSTMENT

The actual dollar adjustment for a vehicle is determined by multiplying that vehicle's total weighted score by the bid adjustment figure as shown at right.

TOTAL WTD. SCORE	BID ADJ. FIGURE	ACTUAL DOLLAR ADJ.
	X	=
6.875	$152.38	**$1,047.61**

STEP VII: ADJUSTED BID PRICE

The actual dollar adjustment amount arrived at for each vehicle is added to that vehicle's bid price. Provided other necessary approvals are received, the vehicle with the lowest adjusted bid price will be the vehicle purchased. (The amount paid for the purchased vehicles will be the actual bid price.)

ACTUAL DOLLAR ADJ.	ACTUAL BID PRICE	ADJ. BID PRICE
	+	=
$955.42	$15,473.00	**$16,520.61**

PERFORMANCE COMPARISONS OF 2003 AND 2004 TEST VEHICLES

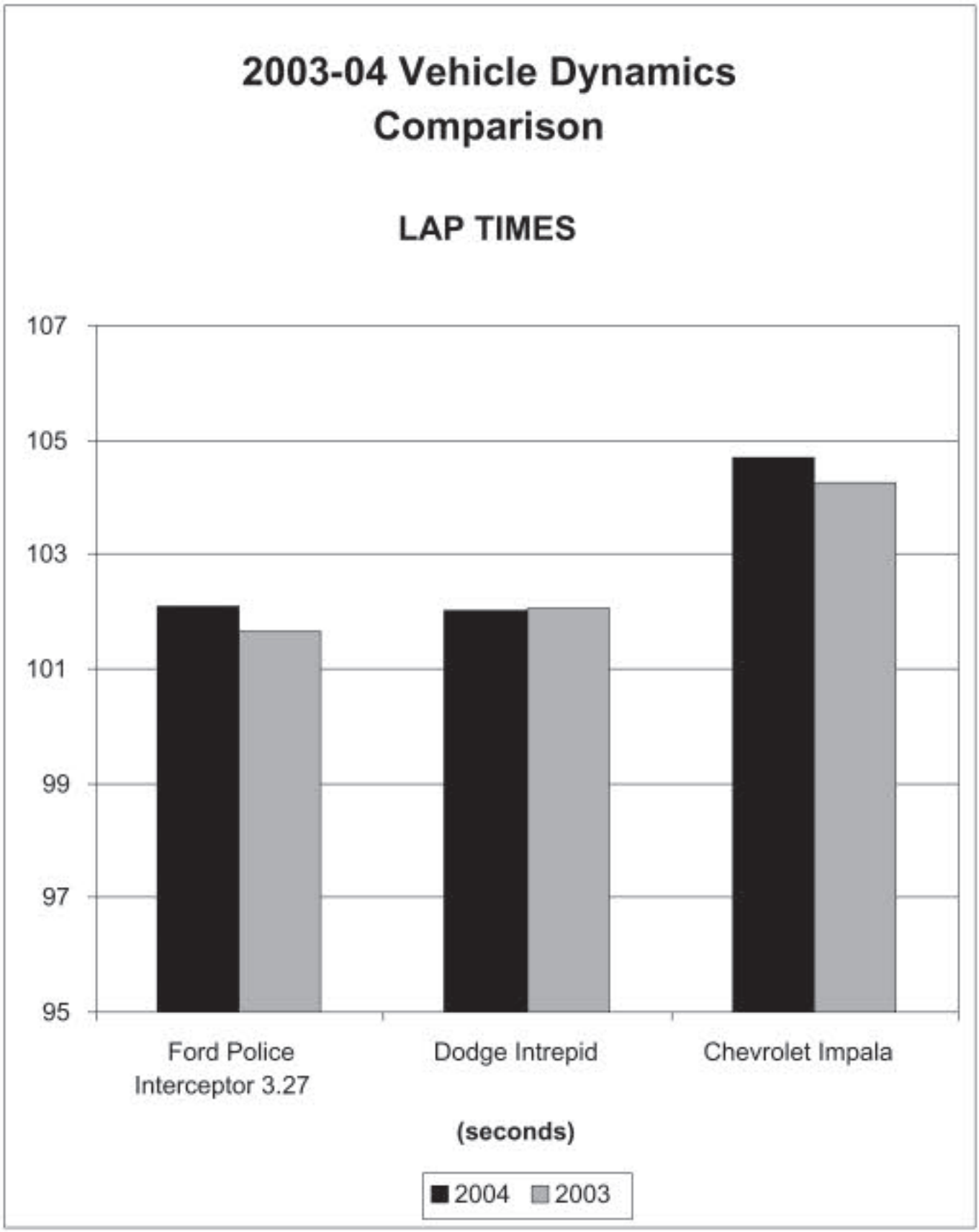
The following charts illustrate the scores achieved by each make and model of vehicle tested for model years 2003 and 2004. The charts presented are for the following performance categories:

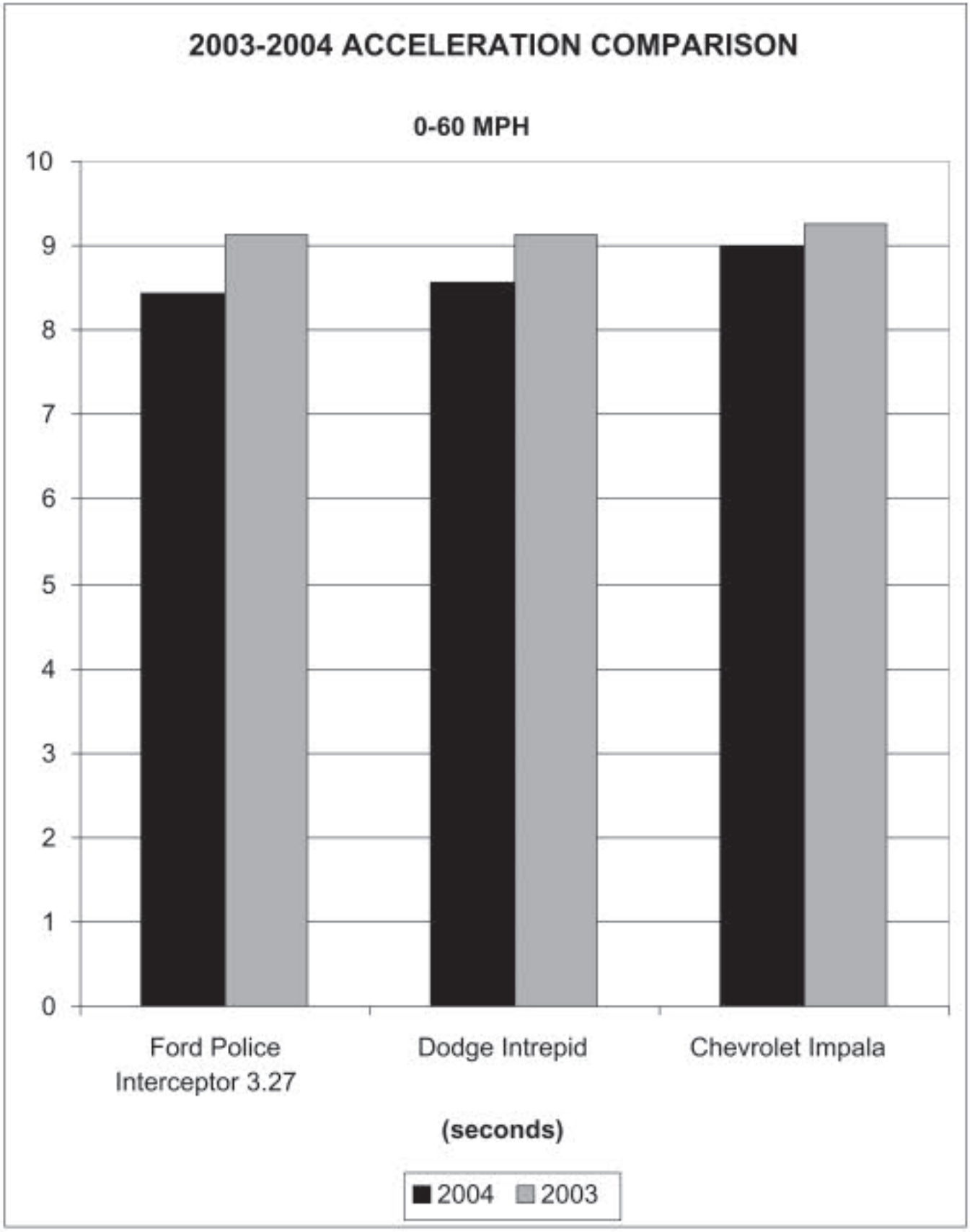
Vehicle Dynamics
Acceleration 0 – 60 mph
Acceleration 0 – 80 mph
Acceleration 0 – 100 mph
Top Speed
Braking (Calculated 60 – 0 mph Stopping Distance)

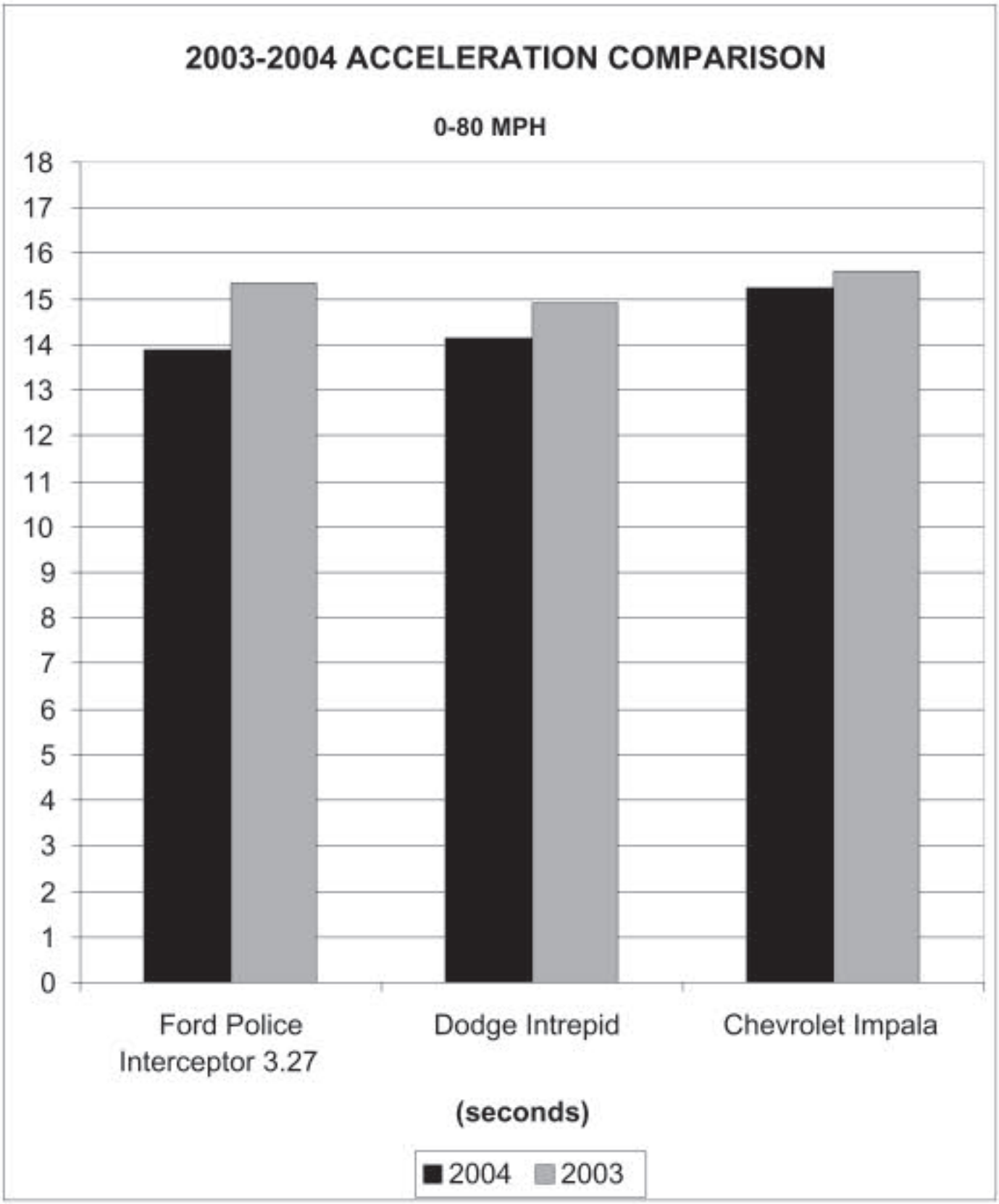
The reader should bear in mind the following information regarding variables when reviewing the 2003 – 2004 performance comparison charts. While as many variables as possible are eliminated from a given year's testing, those that occur over the span of a full year are sometimes impossible to eliminate.

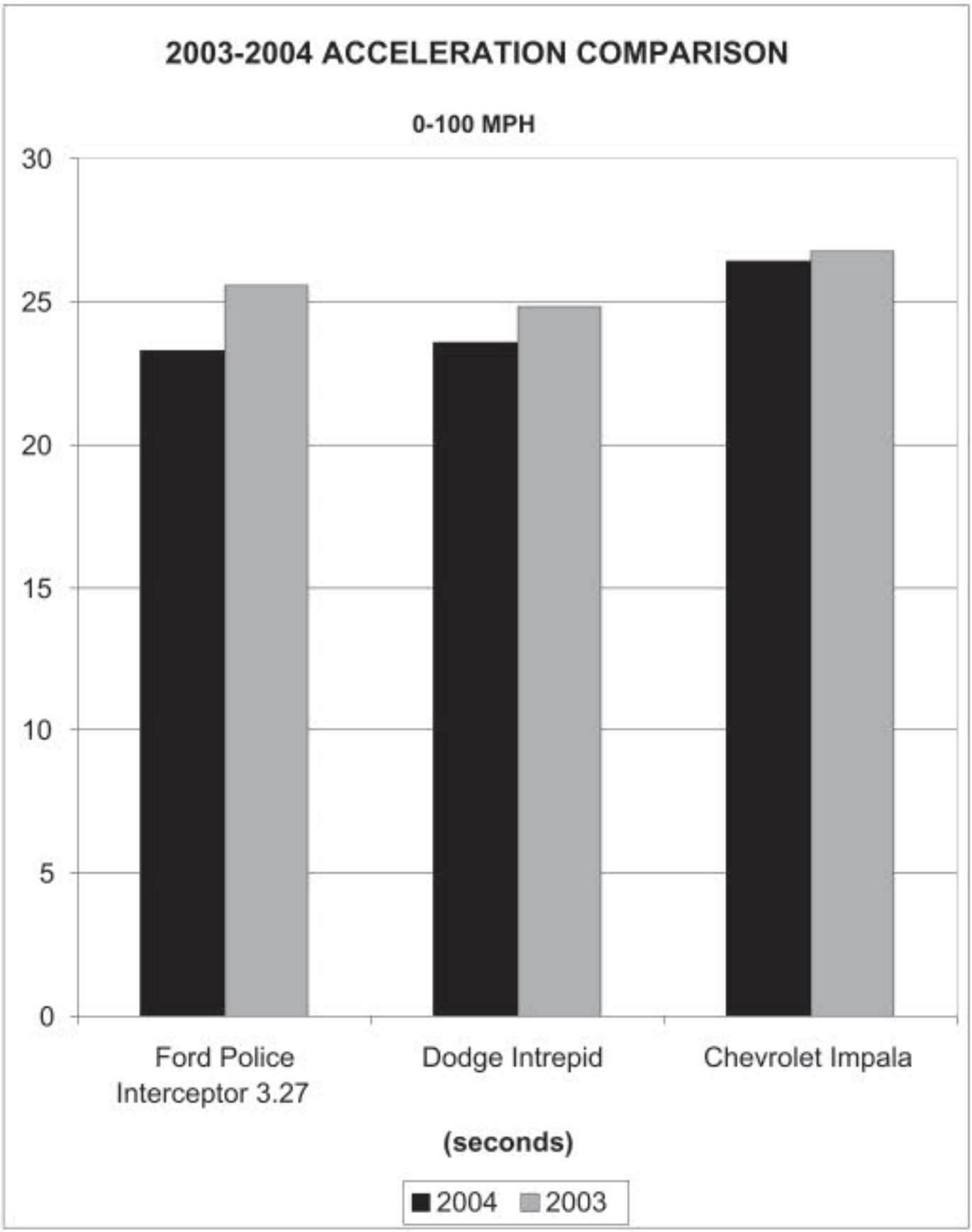
The acceleration, top speed, and brake testing of both the 2003 and 2004 model year vehicles were conducted in the latter half of September. Temperatures on the test day in September of 2002 ranged between 60.9° F at the start of testing to a high of approximately 79.5° F during the afternoon. Temperatures during the testing this year varied, ranging between 44.7° F when testing started, to an afternoon high of 69.1° F. Such things as temperature, humidity, and barometric pressure affect the performance of internal combustion engines and brake components, and may cause minor differences from one year's evaluation to the next.

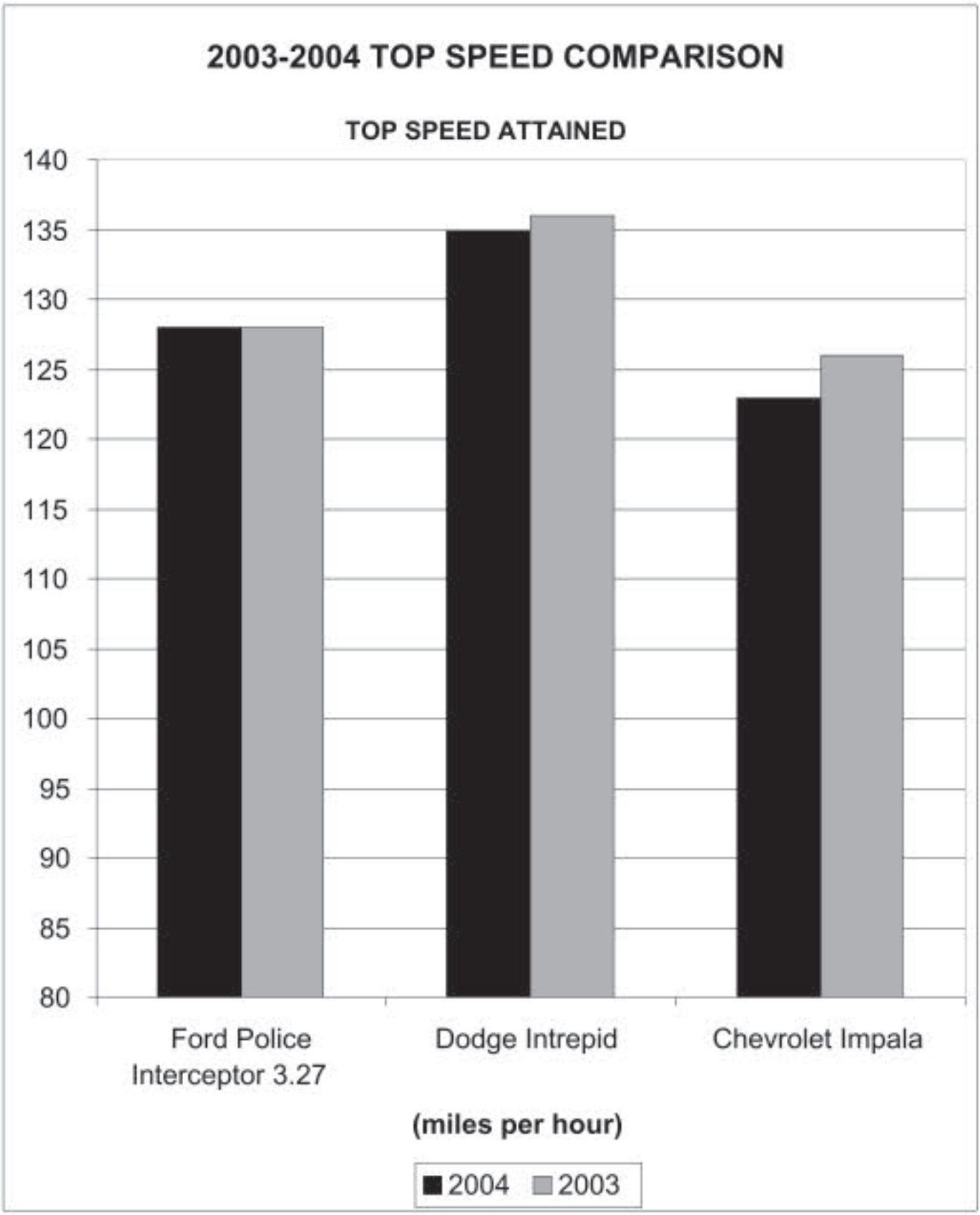
Another factor to be considered is the individual differences between two cars of the same make and model. The test cars that we evaluate are representative of their given make and model. Other cars of the same make and model will not, however, be exactly the same, particularly when it comes to performance. (It is well known that two consecutive cars off the same assembly line will perform slightly differently from each other.) Minor differences in performance from year to year within the same make and model are not only possible, but are to be expected.

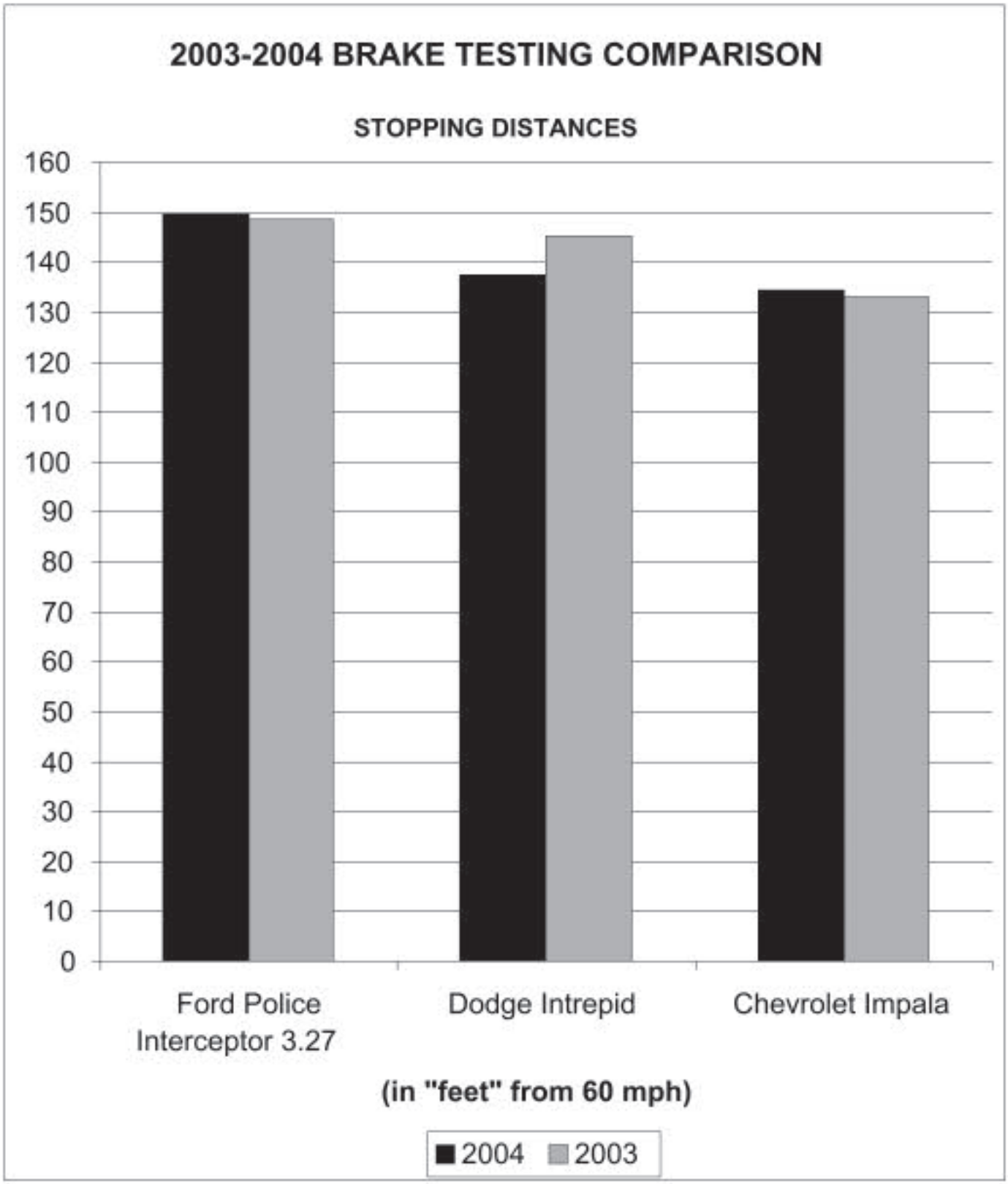

2003-04 Vehicle Dynamics Comparison
LAP TIMES
107
105
103
101
99
97
95
Ford Police Interceptor 3.27
Dodge Intrepid
Chevrolet Impala
(seconds)
2004
2003


2003-2004 ACCELERATION COMPARISON
0-60 MPH
10
9
8
7
6
5
4
3
2
1
0
Ford Police Interceptor 3.27
Dodge Intrepid
Chevrolet Impala
(seconds)
2004
2003


2003-2004 ACCELERATION COMPARISON
0-80 MPH
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
Ford Police Interceptor 3.27
Dodge Intrepid
Chevrolet Impala
(seconds)
2004
2003


2003-2004 ACCELERATION COMPARISON
0-100 MPH
30
25
20
15
10
5
0
Ford Police Interceptor 3.27
Dodge Intrepid
Chevrolet Impala
(seconds)
2004
2003


2003-2004 TOP SPEED COMPARISON
TOP SPEED ATTAINED
140
135
130
125
120
115
110
105
100
95
90
85
80
Ford Police Interceptor 3.27
Dodge Intrepid
Chevrolet Impala
(miles per hour)
2004
2003


2003-2004 BRAKE TESTING COMPARISON
STOPPING DISTANCES
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
Ford Police Interceptor 3.27
Dodge Intrepid
Chevrolet Impala
(in "feet" from 60 mph)
2004
2003

SPECIAL SERVICE VEHICLES

The issue of what makes a police vehicle a "police package" is a matter that will be with us for some time. Many law enforcement agencies still require a police vehicle to be capable of participating in high speed emergency and pursuit application, and look to the manufacturers to put their engineering talents towards that goal. At the same time some law enforcement agencies need a vehicle that has cargo capacity and other attributes, but does not require pursuit capabilities. For this, the manufacturers offer "special service" vehicles.

The Michigan Department of State Police presents this information on "special service" vehicles with the caveat that the reader is aware that these vehicles are not engineered for high speed or pursuit driving. The vehicles were tested in all the categories except vehicle dynamics, which is high-speed handling and represents pursuit applications.

The special service vehicles were tested in the following: Acceleration, Top Speed, Braking, Fuel Economy, and Ergonomics & Communications.

SPECIAL SERVICE VEHICLES ARE NOT ENGINEERED FOR HIGH SPEED AND PURSUIT APPLICATIONS.

CHEVROLET TAHOE
5.3L SPFI 2WD

TEST VEHICLE DESCRIPTION

MAKE Chevrolet	**MODEL** Tahoe 2WD		**SALES CODE NO.** CC15706
ENGINE DISPLACEMENT	**CUBIC INCHES** 327		**LITERS** 5.3 Note: 4.8L Engine is standard
FUEL SYSTEM	Sequential Port Fuel Injection		**EXHAUST** Single
HORSEPOWER (SAENET)	285 @ 5200 RPM		**ALTERNATOR** 130 amp.
TORQUE	325 ft. lbs. @ 4000 RPM		**BATTERY** 600 CCA
COMPRESSION RATIO	9.5:1		
TRANSMISSION	**MODEL** 4L60E	**TYPE** 4-Speed Automatic Overdrive	
	LOCKUP TORQUE CONVERTER? Yes		
	OVERDRIVE? Yes		
AXLE RATIO	3.42		
STEERING	Power-recirculating ball		
TURNING CIRCLE (CURB TO CURB)	38.3 ft.		
TIRE SIZE, LOAD & SPEED RATING	P245/75/R16 Goodyear Wrangler ST		
SUSPENSION TYPE (FRONT)	Independent, single lower arm with torsion bar		
SUSPENSION TYPE (REAR)	Multi-link with coil springs		
GROUND CLEARANCE, MINIMUM	9.7 in.	**LOCATION** Front cross member	
BRAKE SYSTEM	Hydro-Boost power anti-lock		
BRAKES, FRONT	**TYPE** Disc		**SWEPT AREA** 213 sq. in.
BRAKES, REAR	**TYPE** Disc		**SWEPT AREA** 133 sq. in.
FUEL CAPACITY	**GALLONS** 26.0		**LITERS** 98.4
GENERAL MEASUREMENTS	**WHEELBASE** 116 in.		**LENGTH** 198.9 in.
	TEST WEIGHT 5046		**HEIGHT** 76.3 in.
HEADROOM	**FRONT** 40.7 in.		**REAR** 39.4 in.
LEGROOM	**FRONT** 41.3 in.		**REAR** 38.6 in.
SHOULDER ROOM	**FRONT** 65.2 in.		**REAR** 65.1 in.
HIPROOM	**FRONT** 61.4 in.		**REAR** 61.3 in.
INTERIOR VOLUME ***MAX. CARGO IS W/ REAR SEATS FOLDED DOWN**	**FRONT** 94.3 in.		**REAR** 57.3 in
	COMB 151.6 cu. ft.		***MAX. CARGO** 108.2 cu. ft.
EPA MILEAGE EST. (MPG)	**CITY** 15	**HIGHWAY** 20	**COMBINED** 16.5

CHEVROLET TAHOE
5.3L SPFI 4WD

TEST VEHICLE DESCRIPTION

MAKE Chevrolet	**MODEL** Tahoe 4WD		**SALES CODE NO.** CK15706		
ENGINE DISPLACEMENT	**CUBIC INCHES** 327		**LITERS** 5.3 Note: 4.8L Engine is standard		
FUEL SYSTEM	Sequential Port Fuel Injection		**EXHAUST** Single		
HORSEPOWER (SAENET)	285 @ 5200 RPM		**ALTERNATOR** 130 amp.		
TORQUE	325 ft. lbs. @ 4000 RPM		**BATTERY** 600 CCA		
COMPRESSION RATIO	9.5:1				
TRANSMISSION	**MODEL** 4L60E	**TYPE** 4-Speed Automatic Overdrive			
	LOCKUP TORQUE CONVERTER? Yes				
	OVERDRIVE? Yes				
AXLE RATIO	3.73				
STEERING	Speed Sensitive, Power-recirculating ball				
TURNING CIRCLE (CURB TO CURB)	38.3 ft.				
TIRE SIZE, LOAD & SPEED RATING	P245/75/R16 Firestone SteelTek AT				
SUSPENSION TYPE (FRONT)	Independent, single lower arm with torsion bar				
SUSPENSION TYPE (REAR)	Multi-link with coil springs				
GROUND CLEARANCE, MINIMUM	10.7 in.	**LOCATION** Front differential			
BRAKE SYSTEM	Hydro-Boost power anti-lock				
BRAKES, FRONT	**TYPE** Disc		**SWEPT AREA** 213 sq. in.		
BRAKES, REAR	**TYPE** Disc		**SWEPT AREA** 133 sq. in.		
FUEL CAPACITY	**GALLONS** 26.0		**LITERS** 98.4		
GENERAL MEASUREMENTS	**WHEELBASE** 116 in.		**LENGTH** 198.9 in.		
	TEST WEIGHT 5370		**HEIGHT** 76.3 in.		
HEADROOM	**FRONT** 40.7 in.		**REAR** 39.4 in.		
LEGROOM	**FRONT** 41.3 in.		**REAR** 38.6 in.		
SHOULDER ROOM	**FRONT** 65.2 in.		**REAR** 65.1 in.		
HIPROOM	**FRONT** 61.4 in.		**REAR** 61.3 in.		
INTERIOR VOLUME ***MAX. CARGO IS W/REAR SEATS FOLDED DOWN**	**FRONT** 94.3 cu. ft.		**REAR** 57.3 cu. ft.		
	COMB 151.6 cu. ft.		***MAX. CARGO** 108.2 cu. ft.		
EPA MILEAGE EST. (MPG)	**CITY** 14	**HIGHWAY** 18	**COMBINED** 16.5		

FORD EXPLORER
4.6L SFI

TEST VEHICLE DESCRIPTION

MAKE Ford	**MODEL** Explorer		**SALES CODE NO.** U63		
ENGINE DISPLACEMENT	**CUBIC INCHES** 281		**LITERS** 4.6		
FUEL SYSTEM	Sequential Fuel Injection		**EXHAUST** Single		
HORSEPOWER (SAENET)	239 @ 4750 RPM		**ALTERNATOR** 130 amp.		
TORQUE	282 lb.-ft @ 4000 rpm		**BATTERY** 650 CCA		
COMPRESSION RATIO	9.0:1				
TRANSMISSION	**MODEL** 5R55W5	**TYPE** 5-Speed Automatic Overdrive			
	LOCKUP TORQUE CONVERTER? Yes				
	OVERDRIVE? Yes				
AXLE RATIO	3.55				
STEERING	Power Rack & Pinion				
TURNING CIRCLE (CURB TO CURB)	38.8 ft.				
TIRE SIZE, LOAD & SPEED RATING	P235/70R16 Michelin Cross Terrain M&S				
SUSPENSION TYPE (FRONT)	Independent SLA with coil spring				
SUSPENSION TYPE (REAR)	Independent SLA with coil spring				
GROUND CLEARANCE, MINIMUM	8.5 in.	**LOCATION** Transmission crossmember			
BRAKE SYSTEM	Power w/4-wheel disc, ABS				
BRAKES, FRONT	**TYPE** Disc		**SWEPT AREA** 234.60 sq. in.		
BRAKES, REAR	**TYPE** Disc		**SWEPT AREA** 170.80 sq. in.		
FUEL CAPACITY	**GALLONS** 22.5		**LITERS** 85.1		
GENERAL MEASUREMENTS	**WHEELBASE** 114.0 in.		**LENGTH** 189.5 in.		
	TEST WEIGHT 4421		**HEIGHT** 71.4 in.		
HEADROOM	**FRONT** 39.9 in.		**REAR** 38.9 in.		
LEGROOM	**FRONT** 35.9 in.		**REAR** 37.2 in.		
SHOULDER ROOM	**FRONT** 59.1 in.		**REAR** 58.9 in.		
HIPROOM	**FRONT** 55.0 in.		**REAR** 54.2 in.		
INTERIOR VOLUME *MAX. CARGO IS W/REAR SEATS FOLDED DOWN	**FRONT** 57.7 cu. ft.		**REAR** 48.7 cu. ft.		
	COMB 106.4 cu. ft.		***MAX. CARGO** 79.9 cu. ft.		
EPA MILEAGE EST. (MPG)	**CITY** 15	**HIGHWAY** 20	**COMBINED** 17		

FORD EXPEDITION
5.4L SMPFI

TEST VEHICLE DESCRIPTION

MAKE Ford	**MODEL** Expedition		**SALES CODE NO.** U15		
ENGINE DISPLACEMENT	**CUBIC INCHES** 330		**LITERS** 5.4		
FUEL SYSTEM	Sequential Multiport FI		**EXHAUST** Single		
HORSEPOWER (SAENET)	260 @ 4500 RPM		**ALTERNATOR** 110 amp.		
TORQUE	350 @ 2500 RPM		**BATTERY** 650 CCA		
COMPRESSION RATIO	9.0:1				
TRANSMISSION	**MODEL** 4R70W	**TYPE** 4-Speed Auto Overdrive			
	LOCKUP TORQUE CONVERTER? Yes				
	OVERDRIVE? Yes				
AXLE RATIO	3.73				
STEERING	Variable assist power rack & pinion				
TURNING CIRCLE (CURB TO CURB)	38.7 ft.				
TIRE SIZE, LOAD & SPEED RATING	P265/70R 17 Continental Contitrac SUV				
SUSPENSION TYPE (FRONT)	Double wishbone (SLA) coil-over-shock, gas filled				
SUSPENSION TYPE (REAR)	IRS, double wishbone (SLA) coil-over-shock, gas filled				
GROUND CLEARANCE, MINIMUM	8.9 in.	**LOCATION** Rear differential			
BRAKE SYSTEM	Power Disc w/4-wheel ABS				
BRAKES, FRONT	**TYPE** Disc		**SWEPT AREA** 259.6 sq. in.		
BRAKES, REAR	**TYPE** Disc		**SWEPT AREA** 238.1 sq. in.		
FUEL CAPACITY	**GALLONS** 28.0		**LITERS** 106.0		
GENERAL MEASUREMENTS	**WHEELBASE** 119.0		**LENGTH** 205.8 in.		
	TEST WEIGHT 5444		**HEIGHT** 77.4 in.		
HEADROOM	**FRONT** 39.7 in.		**REAR** 39.8 in.		
LEGROOM	**FRONT** 41.2 in.		**REAR** 38.7 in.		
SHOULDER ROOM	**FRONT** 63.4 in.		**REAR** 64.3 in.		
HIPROOM	**FRONT** 63.0 in.		**REAR** 62.4 in.		
INTERIOR VOLUME *MAX. CARGO IS W/REAR SEATS FOLDED DOWN	**FRONT** 60.0 cu. ft.		**REAR** 49.6 cu. ft.		
	COMB 109.6 cu. ft.		***MAX. CARGO** 110.5 cu. ft.		
EPA MILEAGE EST. (MPG)	**CITY** 13	**HIGHWAY** 17	**COMBINED** 15		

TEST VEHICLE DESCRIPTION SUMMARY

	Chevrolet 2WD Tahoe	Chevrolet 4WD Tahoe
ENGINE DISPLACEMENT – CU. IN.	327	327
ENGINE DISPLACEMENT – LITERS	5.3*	5.3*
ENGINE FUEL SYSTEM	SPFI	SPFI
HORSEPOWER (SAE NET)	285	285
TORQUE (FT. LBS.)	325	325
COMPRESSION RATIO	9.5:1	9.5:1
AXLE RATIO	3.42	3.73
TURNING CIRCLE – FT. CURB TO CURB	38.3	38.3
TRANSMISSION	4 Speed auto	4 Speed auto
TRANSMISSION MODEL NUMBER	4L60E	4L60E
LOCKUP TORQUE CONVERTER	Yes	Yes
TRANSMISSION OVERDRIVE	Yes	Yes
TIRE SIZE	P245/75R	P245/75R
WHEEL RIM SIZE – INCHES	16	16
GROUND CLEARANCE – INCHES	9.7	10.7
BRAKE SYSTEM	Power, ABS	Power, ABS
BRAKES – FRONT TYPE	Disc	Disc
BRAKES – REAR TYPE	Disc	Disc
FUEL CAPACITY – GALLONS	26	26
FUEL CAPACITY – LITERS	98.4	98.4
OVERALL LENGTH – INCHES	198.9	198.9
OVERALL HEIGHT – INCHES	76.3	76.3
TEST WEIGHT – LBS.	5046	5370
WHEELBASE – INCHES	116	116
HEADROOM FRONT – INCHES	40.7	40.7
HEADROOM REAR – INCHES	39.4	39.4
LEGROOM FRONT – INCHES	41.3	41.3
LEGROOM REAR – INCHES	38.6	38.6
SHOULDER ROOM FRONT – INCHES	65.2	65.2
SHOULDER ROOM REAR – INCHES	65.1	65.1
HIPROOM FRONT – INCHES	61.4	61.4
HIPROOM REAR – INCHES	61.3	61.3
INTERIOR VOLUME FRONT – CU. FT.	94.3	94.3
INTERIOR VOLUME REAR – CU. FT.	57.3	57.3
INTERIOR VOLUME COMB. – CU. FT.	151.6	151.6
REAR MAXIMUM CARGO – CU. FT.	108.2	108.2
EPA MILEAGE – CITY – MPG	15	14
EPA MILEAGE – HIGHWAY – MPG	20	18
EPA MILEAGE – COMBINED – MPG	16.5	16.5

*Vehicle tested with "optional" engine – standard engine is 4.8L, same as 2003 model for performance rating.

TEST VEHICLE DESCRIPTION SUMMARY

	Ford 2WD Explorer	Ford 2WD Expedition
ENGINE DISPLACEMENT – CU. IN.	281	330
ENGINE DISPLACEMENT – LITERS	4.6	5.4
ENGINE FUEL SYSTEM	SPFI	SMPFI
HORSEPOWER (SAE NET)	239	260
TORQUE (FT. LBS.)	282	350
COMPRESSION RATIO	9.0:1	9.0:1
AXLE RATIO	3.55	3.73
TURNING CIRCLE – FT. CURB TO CURB	38.8	38.7
TRANSMISSION	5 Speed Auto	4 Speed auto
TRANSMISSION MODEL NUMBER	5R55W5	4R70W
LOCKUP TORQUE CONVERTER	Yes	Yes
TRANSMISSION OVERDRIVE	Yes	Yes
TIRE SIZE	P235/70R	P265/70R
WHEEL RIM SIZE – INCHES	16	17
GROUND CLEARANCE – INCHES	8.5	8.9
BRAKE SYSTEM	Power, ABS	Power, ABS
BRAKES – FRONT TYPE	Disc	Disc
BRAKES – REAR TYPE	Disc	Disc
FUEL CAPACITY – GALLONS	22.5	28
FUEL CAPACITY – LITERS	85.1	106
OVERALL LENGTH – INCHES	189.5	205.8
OVERALL HEIGHT – INCHES	71.4	77.4
TEST WEIGHT – LBS.	4421	5444
WHEELBASE – INCHES	114	119
HEADROOM FRONT – INCHES	39.9	39.7
HEADROOM REAR – INCHES	38.9	39.8
LEGROOM FRONT – INCHES	35.9	41.2
LEGROOM REAR – INCHES	37.2	38.7
SHOULDER ROOM FRONT – INCHES	59.1	63.4
SHOULDER ROOM REAR – INCHES	58.9	64.3
HIPROOM FRONT – INCHES	55.0	63.0
HIPROOM REAR – INCHES	54.2	62.4
INTERIOR VOLUME FRONT – CU. FT.	57.7	60.0
INTERIOR VOLUME REAR – CU. FT.	48.7	49.6
INTERIOR VOLUME COMB. – CU. FT.	106.4	109.6
REAR MAXIMUM CARGO – CU. FT.	79.9	110.5
EPA MILEAGE – CITY – MPG	15	13
EPA MILEAGE – HIGHWAY – MPG	20	17
EPA MILEAGE – COMBINED – MPG	17	15

SUMMARY OF ACCELERATION AND TOP SPEED

ACCELERATION*		Chevrolet Tahoe 2WD	Chevrolet Tahoe 4WD	Ford Explorer	Ford Expedition
0 – 20 mph	(sec.)	1.88	2.02	1.72	1.96
0 – 30 mph	(sec.)	3.13	3.33	2.93	3.40
0 – 40 mph	(sec.)	4.43	4.71	4.41	5.00
0 – 50 mph	(sec.)	6.36	6.76	6.30	7.44
0 – 60 mph	(sec.)	8.58	9.20	8.90	10.11
0 – 70 mph	(sec.)	10.97	11.81	11.79	13.24
0 – 80 mph	(sec.)	14.72	16.00	15.54	17.64
0 – 90 mph	(sec.)	19.50	21.46	21.10	23.67
0 – 100 mph	(sec.)	N/A	N/A	28.25	125.87
TOP SPEED	**(mph)**	99**	99**	107**	100**
QUARTER MILE					
Time	(sec.)	16.59	17.01	16.77	17.55
Speed	(miles)	83.93	81.85	82.40	79.88

*Four run average
**Vehicle equipped with an electronic speed limiter

BRAKE TESTING

TEST LOCATION: DaimlerChrysler Proving Grounds **DATE:** September 20, 2003

BEGINNING Time: 1:33 p.m. **TEMPERATURE:** 67.5° F

MAKE & MODEL: Chevrolet Tahoe 2WD 5.3L **BRAKE SYSTEM:** Anti-lock

Phase I

BRAKE HEAT-UP: **(Two 90 –0 mph decelerations @ 22 ft.sec.[2])**
TEST: **(Six 60 – mph impending skid (ABS) maximum deceleration rate stops)**

	Initial Velocity	Stopping Distance	Deceleration Rate
Stop #1	60.4 mph	141.4 feet	27.75 ft/s^2
Stop #2	60.0 mph	142.7 feet	27.14 ft/s^2
Stop #3	60.1 mph	143.3 feet	27.11 ft/s^2
Stop #4	59.7 mph	143.0 feet	26.81 ft/s^2
Stop #5	60.0 mph	144.0 feet	26.89 ft/s^2
Stop #6	59.7 mph	139.1 feet	27.56 ft/s^2

AVERAGE DECELERATION RATE **27.21 ft/s^2**

HEAT SOAK (4 minutes)

Phase II

BRAKE HEAT-UP: **(Two 90 –0 mph decelerations @ 22 ft.sec.[2])**
TEST: **(Six 60 – mph impending skid (ABS) maximum deceleration rate stops)**

	Initial Velocity	Stopping Distance	Deceleration Rate
Stop #1	59.2 mph	138.8 feet	27.16 ft/s^2
Stop #2	59.5 mph	142.4 feet	26.74 ft/s^2
Stop #3	59.2 mph	138.9 feet	27.14 ft/s^2
Stop #4	59.6 mph	138.8 feet	27.53 ft/s^2
Stop #5	59.1 mph	137.6 feet	27.30 ft/s^2
Stop #6	59.5 mph	140.3 feet	27.14 ft/s^2

AVERAGE DECELERATION RATE **27.17 ft/s^2**

Phase III

	Yes/No
Evidence of severe fading?	No
Vehicle stopped in straight line?	Yes
Vehicle stopped within correct lane?	Yes

OVERALL AVERAGE DECEL. RATE: 27.19 ft/s^2

Projected Stopping Distance from 60.0 mph **142.4**

BRAKE TESTING

TEST LOCATION: DaimlerChrysler Proving Grounds **DATE:** September 20, 2003

BEGINNING Time: 10:38 a.m. **TEMPERATURE:** 61.6° F

MAKE & MODEL: Chevrolet Tahoe 4WD 5.3L **BRAKE SYSTEM:** Anti-lock

Phase I

BRAKE HEAT-UP: **(Two 90 –0 mph decelerations @ 22 ft.sec.[2])**
TEST: **(Six 60 – mph impending skid (ABS) maximum deceleration rate stops)**

	Initial Velocity	Stopping Distance	Deceleration Rate
Stop #1	59.5 mph	144.2 feet	26.41 ft/s^2
Stop #2	59.7 mph	146.8 feet	26.11 ft/s^2
Stop #3	60.3 mph	142.2 feet	27.50 ft/s^2
Stop #4	60.3 mph	148.5 feet	26.34 ft/s^2
Stop #5	60.2 mph	151.6 feet	25.71 ft/s^2
Stop #6	60.4 mph	145.1 feet	27.04 ft/s^2

AVERAGE DECELERATION RATE **26.52 ft/s^2**

HEAT SOAK (4 minutes)

Phase II

BRAKE HEAT-UP: **(Two 90 –0 mph decelerations @ 22 ft.sec.[2])**
TEST: **(Six 60 – mph impending skid (ABS) maximum deceleration rate stops)**

	Initial Velocity	Stopping Distance	Deceleration Rate
Stop #1	59.9 mph	141.6 feet	27.25 ft/s^2
Stop #2	60.1 mph	146.5 feet	26.52 ft/s^2
Stop #3	59.8 mph	143.2 feet	26.86 ft/s^2
Stop #4	59.5 mph	143.3 feet	26.57 ft/s^2
Stop #5	60.3 mph	148.3 feet	26.37 ft/s^2
Stop #6	59.7 mph	144.3 feet	26.57 ft/s^2

AVERAGE DECELERATION RATE **26.69 ft/s^2**

Phase III

	Yes/No
Evidence of severe fading?	No
Vehicle stopped in straight line?	Yes
Vehicle stopped within correct lane?	Yes

OVERALL AVERAGE DECEL. RATE: **26.61 ft/s^2**

Projected Stopping Distance from 60.0 mph **145.5**

BRAKE TESTING

TEST LOCATION: DaimlerChrysler Proving Grounds **DATE:** September 20, 2003

BEGINNING Time: 11:13 a.m. **TEMPERATURE:** 63.1° F

MAKE & MODEL: Ford Explorer 4.6L **BRAKE SYSTEM:** Anti-lock

Phase I

BRAKE HEAT-UP: (Two 90 –0 mph decelerations @ 22 ft.sec.$^{2)}$
TEST: (Six 60 – mph impending skid (ABS) maximum deceleration rate stops)

	Initial Velocity	Stopping Distance	Deceleration Rate
Stop #1	61.1 mph	144.0 feet	27.89 ft/s^2
Stop #2	59.5 mph	141.8 feet	26.85 ft/s^2
Stop #3	60.2 mph	144.8 feet	26.92 ft/s^2
Stop #4	60.0 mph	142.3 feet	27.21 ft/s^2
Stop #5	60.0 mph	141.7 feet	27.33 ft/s^2
Stop #6	60.8 mph	144.2 feet	27.57 ft/s^2

AVERAGE DECELERATION RATE **27.30 ft/s^2**

HEAT SOAK (4 minutes)

Phase II

BRAKE HEAT-UP: (Two 90 –0 mph decelerations @ 22 ft.sec.$^{2)}$
TEST: (Six 60 – mph impending skid (ABS) maximum deceleration rate stops)

	Initial Velocity	Stopping Distance	Deceleration Rate
Stop #1	59.5 mph	140.4 feet	27.12 ft/s^2
Stop #2	59.9 mph	143.5 feet	26.89 ft/s^2
Stop #3	60.6 mph	145.8 feet	27.09 ft/s^2
Stop #4	60.3 mph	139.4 feet	28.06 ft/s^2
Stop #5	60.0 mph	141.5 feet	27.37 ft/s^2
Stop #6	60.4 mph	143.7 feet	27.31 ft/s^2

AVERAGE DECELERATION RATE **27.31 ft/s^2**

Phase III

	Yes/No
Evidence of severe fading?	No
Vehicle stopped in straight line?	Yes
Vehicle stopped within correct lane?	Yes

OVERALL AVERAGE DECEL. RATE: 27.30 ft/s^2

Projected Stopping Distance from 60.0 mph **141.8**

BRAKE TESTING

TEST LOCATION: DaimlerChrysler Proving Grounds **DATE:** September 20, 2003

BEGINNING Time: 1:58 p.m. **TEMPERATURE:** 67.5° F

MAKE & MODEL: Ford Expedition 5.4L **BRAKE SYSTEM:** Anti-lock

Phase I

BRAKE HEAT-UP: (Two 90 –0 mph decelerations @ 22 ft.sec.$^{2)}$
TEST: (Six 60 – mph impending skid (ABS) maximum deceleration rate stops)

	Initial Velocity	Stopping Distance	Deceleration Rate
Stop #1	59.7 mph	140.7 feet	27.25 ft/s^2
Stop #2	60.4 mph	144.4 feet	27.17 ft/s^2
Stop #3	60.1 mph	142.8 feet	27.21 ft/s^2
Stop #4	60.6 mph	147.2 feet	26.83 ft/s^2
Stop #5	60.2 mph	147.2 feet	26.48 ft/s^2
Stop #6	59.6 mph	137.9 feet	27.71 ft/s^2

AVERAGE DECELERATION RATE **27.11 ft/s^2**

HEAT SOAK (4 minutes)

Phase II

BRAKE HEAT-UP: (Two 90 –0 mph decelerations @ 22 ft.sec.$^{2)}$
TEST: (Six 60 – mph impending skid (ABS) maximum deceleration rate stops)

	Initial Velocity	Stopping Distance	Deceleration Rate
Stop #1	60.1 mph	143.4 feet	27.09 ft/s^2
Stop #2	59.8 mph	141.6 feet	27.16 ft/s^2
Stop #3	59.3 mph	137.5 feet	27.51 ft/s^2
Stop #4	59.5 mph	143.2 feet	26.59 ft/s^2
Stop #5	60.2 mph	145.2 feet	26.85 ft/s^2
Stop #6	59.6 mph	140.4 feet	27.21 ft/s^2

AVERAGE DECELERATION RATE **27.07 ft/s^2**

Phase III

	Yes/No
Evidence of severe fading?	No
Vehicle stopped in straight line?	Yes
Vehicle stopped within correct lane?	Yes

OVERALL AVERAGE DECEL. RATE: **27.09 ft/s^2**

Projected Stopping Distance from 60.0 mph **142.9**

ERGONOMICS AND COMMUNICATIONS

ERGONOMICS	Chevrolet Tahoe 2WD	Chevrolet Tahoe 4WD	Ford Explorer	Ford Expedition
FRONT SEAT				
Padding	8.20	8.20	6.90	7.80
Depth of Bucket Seat	8.00	8.00	6.80	7.60
Adjustability – Front to Rear	7.50	7.50	6.10	7.80
Upholstery	7.90	7.90	6.90	7.80
Bucket Seat Design	8.10	8.10	6.30	7.30
Headroom	9.20	9.20	8.40	9.10
Seatbelts	6.60	6.60	7.00	7.90
Ease of Entry and Exit	7.60	7.60	7.30	7.40
Overall Comfort Rating	8.40	8.40	6.67	8.20
REAR SEAT				
Leg room – Front seat back	7.30	7.30	5.80	8.30
Ease of Entry and Exit	6.40	6.40	5.70	6.70
INSTRUMENTATION				
Clarity	8.30	8.30	6.90	7.00
Placement	7.90	7.90	6.70	6.70
VEHICLE CONTROLS				
Pedals, Size and Position	8.30	8.30	7.40	8.20
Power Window Switch	7.80	7.80	7.30	7.50
Inside Door Lock Switch	7.30	7.30	5.70	7.30
Automatic Door Lock Switch	7.70	7.70	7.10	7.50
Outside Mirror Controls	7.90	7.90	5.50	6.78
Steering Wheel, Size, Tilt Release, and Surface	8.40	8.40	6.30	6.40
Heat/AC Vent Placement and Adjustability	8.10	8.10	7.00	6.80
VISIBILITY				
Front (Windshield)	8.40	8.40	7.60	8.60
Rear (Back Window)	6.80	6.80	6.00	6.80
Left Rear Quarter	6.40	6.40	6.33	6.60
Right Rear Quarter	6.90	6.90	6.90	7.80
Outside Rear View Mirrors	8.00	8.00	5.70	9.10
COMMUNICATIONS				
Dashboard Accessibility	8.00	8.00	7.00	7.00
Trunk Accessibility	8.00	8.00	8.00	8.00
Engine Compartment	8.00	8.00	7.00	7.00
TOTAL SCORES	**217.40**	**217.40**	**188.30**	**210.98**

About the National Institute of Justice

NIJ is the research, development, and evaluation agency of the U.S. Department of Justice. The Institute provides objective, independent, evidence-based knowledge and tools to enhance the administration of justice and public safety. NIJ's principal authorities are derived from the Omnibus Crime Control and Safe Streets Act of 1968, as amended (see 42 USC §§ 3721–3723).

The NIJ Director is appointed by the President and confirmed by the Senate. The Director establishes the Institute's objectives, guided by the priorities of the Office of Justice Programs, the U.S. Department of Justice, and the needs of the field. The Institute actively solicits the views of criminal justice and other professionals and researchers to inform its search for the knowledge and tools to guide policy and practice.

Strategic Goals

NIJ has seven strategic goals grouped into three categories:

Creating relevant knowledge and tools

1. Partner with State and local practitioners and policymakers to identify social science research and technology needs.

2. Create scientific, relevant, and reliable knowledge—with a particular emphasis on terrorism, violent crime, drugs and crime, cost-effectiveness, and community-based efforts—to enhance the administration of justice and public safety.

3. Develop affordable and effective tools and technologies to enhance the administration of justice and public safety.

Dissemination

4. Disseminate relevant knowledge and information to practitioners and policymakers in an understandable, timely, and concise manner.

5. Act as an honest broker to identify the information, tools, and technologies that respond to the needs of stakeholders.

Agency management

6. Practice fairness and openness in the research and development process.

7. Ensure professionalism, excellence, accountability, cost-effectiveness, and integrity in the management and conduct of NIJ activities and programs.

Program Areas

In addressing these strategic challenges, the Institute is involved in the following program areas: crime control and prevention, including policing; drugs and crime; justice systems and offender behavior, including corrections; violence and victimization; communications and information technologies; critical incident response; investigative and forensic sciences, including DNA; less-than-lethal technologies; officer protection; education and training technologies; testing and standards; technology assistance to law enforcement and corrections agencies; field testing of promising programs; and international crime control.

In addition to sponsoring research and development and technology assistance, NIJ evaluates programs, policies, and technologies. NIJ communicates its research and evaluation findings through conferences and print and electronic media.

About the Law Enforcement and Corrections Standards and Testing Program

The Law Enforcement and Corrections Standards and Testing Program is sponsored by the Office of Science and Technology of the National Institute of Justice (NIJ), U.S. Department of Justice. The program responds to the mandate of the Justice System Improvement Act of 1979, which directed NIJ to encourage research and development to improve the criminal justice system and to disseminate the results to Federal, State, and local agencies.

The Law Enforcement and Corrections Standards and Testing Program is an applied research effort that determines the technological needs of justice system agencies, sets minimum performance standards for specific devices, tests commercially available equipment against those standards, and disseminates the standards and the test results to criminal justice agencies nationwide and internationally.

The program operates through the following:

• The **Law Enforcement and Corrections Technology Advisory Council** (LECTAC), consisting of nationally recognized criminal justice practitioners from Federal, State, and local agencies, assesses technological needs and sets priorities for research programs and items to be evaluated and tested.

• The **Office of Law Enforcement Standards** (OLES) at the National Institute of Standards and Technology develops voluntary national performance standards for compliance testing to ensure that individual items of equipment are suitable for use by criminal justice agencies. The equipment standards developed by OLES are based on laboratory evaluation of commercially available products in order to devise precise test methods that can be universally applied by any qualified testing laboratory and to establish minimum performance requirements for each attribute of a piece of equipment that is essential to how it functions. OLES-developed standards can serve as design criteria for manufacturers or as the basis for equipment evaluation. The application of the standards, which are highly technical in nature, is augmented through the publication of equipment performance reports and user guides. Individual jurisdictions may use the standards in their own laboratories to test equipment, have equipment tested on their behalf using the standards, or cite the standards in procurement specifications.

• The **National Law Enforcement and Corrections Technology Center** (NLECTC), operated by a grantee, supervises a national compliance testing program conducted by independent laboratories. The standards developed by OLES serve as performance benchmarks against which commercial equipment is measured. The facilities, personnel, and testing capabilities of the independent laboratories are evaluated by OLES prior to testing each item of equipment. In addition, OLES helps NLECTC staff review and analyze data. Test results are published in consumer product reports designed to help justice system procurement officials make informed purchasing decisions.

Publications are available at no charge through NLECTC. Some documents are also available online through the Justice Technology Information Network (JUSTNET), the center's Internet/World Wide Web site. To request a document or additional information, call 800–248–2742 or 301–519–5060, or write:

National Law Enforcement and Corrections Technology Center
2277 Research Boulevard
Mail Stop 8J
Rockville, MD 20850
E-mail: *asknlectc@nlectc.org*
World Wide Web address: *http://www.justnet.org*

About the National Law Enforcement and Corrections Technology Center System

The National Law Enforcement and Corrections Technology Center (NLECTC) system exists to support the Nation's structure of State and local law enforcement and corrections. The United States has more than 18,000 law enforcement agencies, 50 State correctional systems, and thousands of prisons and jails. The fragmented nature of law enforcement and corrections impedes the dissemination of valuable new information, fosters a patchwork marketplace that discourages the commercialization of new technologies, and underscores the need for uniform performance standards for equipment and technologies.

The National Institute of Justice's (NIJ's) Office of Science and Technology (OS&T) created NLECTC in 1994 as a national system of technology centers that are clearinghouses of information and sources of technology assistance and that also attend to special needs, including technology commercialization and standards development.

The NLECTC system's purpose is to determine the needs of the law enforcement and corrections communities and assist them in understanding, using, and benefitting from new and existing technologies that, increasingly, are vital levers of progress in criminal justice. NIJ/OS&T and the NLECTC system are the only current programs developed by the Federal Government that focus solely on the development and transfer of technologies to State and local law enforcement and corrections.

NLECTC is a program of NIJ, the research and development arm of the U.S. Department of Justice. The system currently consists of a national center, five regional centers, and several speciality offices. Also contributing to the initiatives of the center system is the Office of Law Enforcement Standards. The centers are co-located with a host organization or agency that specializes in one or more areas of technology research and development.

The National Center, located in Rockville, Maryland, is the system's information hub. Regional centers are currently located in Alaska, California, Colorado, New York, and South Carolina. Speciality centers located around the country deal with border matters (California), commercialization of law enforcement and corrections technologies (West Virginia), rural law enforcement issues (Kentucky), and standards and testing (Maryland).

Each center shares roles with the other centers and has distinctive characteristics. All are focused on helping law enforcement and corrections take full advantage of technology's rapidly growing capacity to serve the purposes of crime control and the criminal justice system.

A national body of criminal justice professionals, the Law Enforcement and Corrections Technology Advisory Council (LECTAC), helps identify research and development priorities, thereby influencing the work of the NLECTC system. In addition, each NLECTC center has a regional advisory council of law enforcement and corrections officials. Together, LECTAC and the advisory councils help to keep the NLECTC system attentive to technological priorities and the needs of law enforcement and corrections. They help to link the end user with the developer to create technologies that adequately meet operational requirements and establish which potential technologies should be pursued for development.

All of the current regional centers have distinctive roles or focus areas, that, in many cases, are aligned with the expertise of host organizations and agencies. The centers are currently operated under cooperative agreements or interagency agreements with host organizations and agencies whose employees staff the centers.

To receive more information or to add your name to the NLECTC mailing list, call 800–248–2742 or 301–519–5060, or write:

National Law Enforcement and Corrections Technology Center
2277 Research Boulevard
Mail Stop 8J
Rockville, MD 20850
E-mail: *asknlectc@nlectc.org*
World Wide Web address: *http://www.justnet.org*

The following is a list of NLECTC regional and affiliated facilities that assist NIJ in fulfilling its mission.

NLECTC–Northeast
26 Electronic Parkway
Rome, NY 13441–4514
(p) 888–338–0584
(f) 315–330–4315
E-mail: *nlectc_ne@rl.af.mil*

NLECTC–Southeast
5300 International Boulevard
North Charleston, SC 29418
(p) 800–292–4385
(f) 843–760–4611
E-mail: *nlectc-se@nlectc-se.org*

NLECTC–Rocky Mountain
2050 East Iliff Avenue
Denver, CO 80208
(p) 800–416–8086
(f) 303–871–2500
E-mail: *nlectc@du.edu*

NLECTC–West
c/o The Aerospace Corporation
2350 East El Segundo Boulevard
El Segundo, CA 90245–4691
(p) 888–548–1618
(f) 310–336–2227
E-mail: *nlectc@law-west.org*

NLECTC–Northwest
3000 C Street
Suite 304
Anchorage, AK 99503–3975
(p) 866–569–2969
(f) 907–569–6939
E-mail: *nlectc_nw@ctsc.net*

Border Research and Technology Center
1010 Second Avenue
Suite 1920
San Diego, CA 92101–4912
(p) 888–656–2782
(f) 888–660–2782
E-mail: *info@brtc.nlectc.org*

Rural Law Enforcement Technology Center
101 Bulldog Lane
Hazard, KY 41701
(p) 866–787–2553
(f) 606–436–6758
E-mail: *ruletc@aol.com*

Office of Law Enforcement Technology Commercialization
2001 Main Street
Suite 500
Wheeling, WV 26003
(p) 888–306–5382
(f) 304–230–2310
E-mail: *oletc@oletc.org*

Office of Law Enforcement Standards
100 Bureau Drive
Stop 8102
Gaithersburg, MD 20899–8102
(p) 301–975–2757
(f) 301–948–0978
E-mail: *oles@nist.gov*

About the Office of Law Enforcement Standards

The Office of Law Enforcement Standards (OLES) was established as a matrix management organization in 1971 through a Memorandum of Understanding between the U.S. Departments of Justice and Commerce based on the recommendations of the President's Commission on Crime. OLES's mission is to apply science and technology to the needs of the criminal justice community, including law enforcement, corrections, forensic science, and the fire service. While its major objective is to develop minimum performance standards, which are promulgated as voluntary national standards, OLES also undertakes studies leading to the publication of technical reports and user guides.

The areas of research investigated by OLES include clothing, communication systems, emergency equipment, investigative aids, protective equipment, security systems, vehicles, weapons, and analytical techniques and standard reference materials used by the forensic science community. The composition of OLES's projects varies depending on priorities of the criminal justice community at any given time and, as necessary, draws on the resources of the National Institute of Standards and Technology.

OLES assists law enforcement and criminal justice agencies in acquiring, on a cost-effective basis, the high-quality resources they need to do their jobs. To accomplish this, OLES:

- Develops methods for testing equipment performance and examining evidentiary materials.
- Develops standards for equipment and operating procedures.
- Develops standard reference materials.
- Performs other scientific and engineering research as required.

Since the program began in 1971, OLES has coordinated the development of nearly 200 standards, user guides, and advisory reports. Topics range from performance parameters of police patrol vehicles, to performance reports on various speed-measuring devices, to soft body armor testing, to analytical procedures for developing DNA profiles.

The application of technology to enhance the efficiency and effectiveness of the criminal justice community continues to increase. The proper adoption of the products resulting from emerging technologies and the assessment of equipment performance, systems, methodologies, etc., used by criminal justice practitioners constitute critical issues having safety and legal ramifications. The consequences of inadequate equipment performance or inadequate test methods can range from inconvenient to catastrophic. In addition, these deficiencies can adversely affect the general population when they increase public safety costs, preclude arrest, or result in evidence found to be inadmissible in court.

NATIONAL LAW ENFORCEMENT AND CORRECTIONS TECHNOLOGY CENTER
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ROCKVILLE, MD 20850

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