California State University

NORTHRIDGE

Department of Police Services University Police Division



LESSON PLAN

SUBJECT: Ford Utility Police Interceptor Familiarization

LENGTH: 1 hour

PREPARED BY: Steven Kai, Training Coordinator

DATE PREPARED: November 6, 2015

APPROVED BY:

DATE APPROVED:

I. <u>Performance Objectives/Job-Related Objectives:</u>

The purpose of this training is to familiarize sworn personnel with the knowledge and operation of the CSUN DPS Ford Utility Police Interceptor patrol vehicle and related equipment.

! Gfrin, Chief

II. Type of Instruction:

The instructor will review the emergency vehicle safety equipment, vehicle controls, and SUV driving/handling characteristics as noted on the attached training checklist.

III. Course Outline: See attached checklist.

IV. Practical Exercise

The trainee will operate the Ford Utility Police Interceptor patrol vehicle through a series of cone patterns to familiarize her/him with the backing/back-up camera, turning radius, visibility/blind spots, braking, and all-wheel drive aspects of the vehicle.

V. Closing: Questions & Comments

Training Completion Record

Trainee			Instructor				
EMERGENCY VEHICLE SAFETY EQUIPMENT			Competency Demonstrated by Trainee (Initials, ID & Date)	Discussed and Demonstrated by Instructor (Initials, ID & Date)			
Unitrol Overview							
- Emergency Vehicle Lights							
- Arrow Stick Lights				r			
- Take-Down Lights							
- Spot Lamps (Front & Side)			7				
- Siren							
- Air Horn							
Police Radio Overview							
- On/Off Volume Control Knob							
- Channel Selector Knob							
- Zone / Scan / Power Buttons							
- Microphones (Radio & P.A.)							
Weapon Rack Release Overview							
- Rifle		ė					
- Shotgun							
- 40mm Launcher							

Training Completion Record

Ford Utility Police Interceptor Familiarization

Fill in the description box next to each symbol with the meaning of the symbol. Refer to the Training Supplement as needed.

Symilool	Description	Symbol	Description	Symbol	Description
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Training Completion Record

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Training Completion Record

VEHICLE CONTROLS	Training Supplement Page(s)	Training Supplement Read by Trainee (Initials)	Competency Demonstrated by Trainee (Initials, ID & Date)	Discussed and Demonstrated by Instructor (Initials, ID & Date)
Driver's Adjustments				
- Seat				
- Steering Wheel				
- Mirrors	4-5			
Seat Belts (driver and passenger)				
Vehicle Horn				
Air Bag Locations and Precautions				
Cruise Control				
Lighting Overview	-			
- Headlamps				
- Turn Signals				
- Parking Lights				
- Interior Lights				
- Hazard Lights				

Training Completion Record

	Competency Demonstrated by Trainee (Initials, ID & Date)	Discussed and Demonstrated by Instructor (Initials, ID & Date)
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		,
		by Trainee (Initials, ID & Date)

Training Completion Record

SUV DRIVING/HANDLING CHARACTERISTICS	Training Supplement Page(s)	Training Supplement Read by Trainee (Initials)	Competency Demonstrated by Trainee (Initials, ID & Date)	Discussed and Demonstrated by Instructor (Initials, ID & Date)
All-Wheel Drive (AWD)	6-14 18-19			
Brakes	15-16			
Vehicle Height/Clearance	19			
Driving on Roadways	20-22			
Backing and Back-Up Camera				
Turns and Turning Radius				
Visibility				
- Forward				
- Rear				
- Sides				
Cone Patterns				
- Pattern #1				
- Pattern #2				
- Pattern #3				

Ford Utility Police Interceptor Familiarization Training Supplement

Police Interceptor Owner's Manual Excerpts

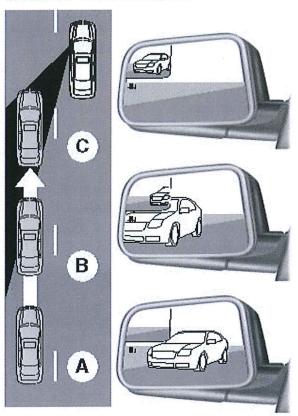
Symbol Glossary	2
Mirrors	4
All-Wheel Drive	
Using Your All-Wheel Drive (AWD) System Operating AWD Vehicles With Spare Tires Operating AWD Vehicles With Mismatched Tires How Utility Vehicles Differ from Other Vehicles Driving In Special Conditions With All-Wheel Drive Basic Operating Procedures in Special Conditions If Your Vehicle Goes Off the Edge of the Pavement If Your Vehicle Gets Stuck Emergency Maneuvers Sand Mud and Water Driving on Hilly or Sloppy Terrain	6 7 8 8 8 9 9 10 10 11 12
Driving on Snow and Ice Maintenance and Modifications	13 14
Brakes	
General Information Brake Over Accelerator Brake Assist Anti-Lock Brake System Hints on Driving with Anti-Lock Brakes Parking Brake	15 15 15 16 16
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Symbol	Description	Symbol	Description	Symbol	Description
	Safety alert	田	See Owner's Manual	(ABS)	Anti-lock braking system
⊗	Avoid smoking, flames, or sparks		Battery		Battery acid
	Brake fluid – non petroleum base		Brake system	**	Cabin air filter
₽*	Check fuel cap	(\$5)	Child Safety Door Lock and Unlock		Child seat lower anchor
£ L	Child seat tether anchor		Cruise control		Do not open when hot
□	Engine air filter		Engine coolant	™ {}	Engine coolant temperature

Symbol	Description	Symbol	Description	Symbol	Description
45%	Engine oil	A	Explosive gas	% \$	Fan warning
Ä	Fasten safety belt	Ž	Front airbag	≇D	Front fog lamps
₽ ₹	Fuel pump reset	多 UU	Fuse compartment		Hazard warning flasher
	Heated rear window		Interior luggage compartment release	\$	Jack
森	Lighting control	3	Low tire pressure warning		Maintain correct fluid level
小 》	Panic alarm	P∥ <u></u> ≜	Parking aid system		Parking brake system
	Power steering fluid	ØB	Power windows front and rear	級	Power window lockout
	Service engine soon	40	Side airbag	ŒΥ	Stability control
(M)	Windshield defrost and demist	₩	Windshield washer and wiper		

Check the main mirror first before a lane change, then check the blind spot mirror. If no vehicles are present in the blind spot mirror and the traffic in the adjacent lane is at a safe distance, signal that you are going to change lanes. Glance over your shoulder to verify traffic is clear, and carefully change lanes.



The image of the approaching vehicle is small and near the inboard edge of the main mirror when it is at a distance. The image becomes larger and begins to move outboard across the main mirror as the vehicle approaches (A). The image will transition from the main mirror and begin to appear in the blind spot mirror as the vehicle approaches (B). The vehicle will transition to your peripheral field of view as it leaves the blind spot mirror (C).

Blind Spot Information System (BLIS®) with Cross Traffic Alert (CTA) (If Equipped)

Refer to Blind Spot Information System (BLIS®) with Cross Traffic Alert (CTA) in the Driving Aids chapter.

INTERIOR MIRROR



WARNING: Do not adjust the mirror when your vehicle is moving.

Note: Do not clean the housing or glass of any mirror with harsh abrasives, fuel or other petroleum or ammonia based cleaning products.

You can adjust the interior mirror to your preference. Some mirrors also have a second pivot point. This lets you move the mirror head up or down and from side to side.

Pull the tab below the mirror toward you to reduce glare at night.

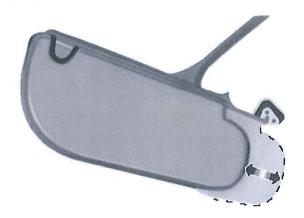
Auto-Dimming Mirror (If Equipped)

Note: Do not block the sensors on the front and back of the mirror. Mirror performance may be affected. A rear center passenger or raised rear center head restraint may also block light from reaching the sensor.

The mirror will dim automatically to reduce glare when bright lights are detected from behind your vehicle. It will automatically return to normal reflection when you select reverse gear to make sure you have a clear view when backing up.

SUN VISORS

Slide-On-Rod



Rotate the visor toward the side window and extend it rearward for extra sunlight coverage.

Retract the visor before moving it back toward the windshield and storing it.

USING YOUR ALL-WHEEL-DRIVE (AWD) SYSTEM

AWD uses all four wheels to power the vehicle. This increases traction, enabling you to drive over terrain and road conditions that a conventional two-wheel drive vehicles cannot. The AWD system is active all the time and requires no input from the operator.

Note: Your AWD vehicle is not intended for off-road use. The AWD feature gives your vehicle some limited off-road capabilities in which driving surfaces are relatively level, obstruction-free and otherwise similar to normal on-road driving conditions. Operating your vehicle under other than those conditions could subject the vehicle to excessive stress which might result in damage which is not covered under your warranty.

Note: When an AWD system fault is present, the warning Check AWD will display in the message center. The AWD system is not functioning correctly and defaulted to front-wheel drive. When this warning is displayed, have your vehicle serviced at an authorized dealer.

Note: The AWD Off message may also be displayed in the message center if the AWD system has overheated and defaulted to front-wheel drive. This condition may occur if the vehicle was operated in extreme conditions with excessive wheel slip, such as deep sand. To resume normal AWD function as soon as possible, stop the vehicle in a safe location and stop the engine for at least 10 minutes. After the engine has been restarted and the AWD system has adequately cooled, the AWD Off message will turn off and normal AWD function will return. In the event the engine is not stopped, the AWD Off message will turn off when the system cools and normal AWD function returns.

The Power Transfer Unit (PTU) in police vehicles does not require any normal scheduled maintenance. The system is electronically monitored and notifies the driver of required service by displaying the message Change AWD Power Transfer Unit Lube in the information display. The PTU lube will be more likely to require a fluid change if the vehicle has experienced extended periods of extreme/severe duty cycle driving. Do not check or change the PTU lubricant unless the unit has been submerged in water, shows signs of leakage or a message indicating required service is displayed. Contact your authorized dealer for service and to reset the PTU lube life monitor.

Operating AWD Vehicles With Spare Tires

A spare tire of a different size other than the tire provided should never be used. The AWD system may disable automatically and enter front-wheel drive only mode to protect driveline components if a non-full sized tire is installed. This condition may be indicated by an AWD Off message in the information display. If there is an AWD Off message in the message center from using a non-full sized spare tire, this indicator should turn off after reinstalling the repaired or replaced normal road tire and cycling the ignition off and on. It is recommended to reinstall the repaired or replaced road tire as soon as possible. Major dissimilar tire sizes between the front and rear axles could cause the AWD system to stop functioning and default to front-wheel drive or damage the AWD system.

Major dissimilar tire sizes between the front and rear axles (for example, 17 inch low profile tires on the front axle and 22 inch high profile tires on the rear axle) could cause the AWD system to stop functioning and default to front-wheel drive or damage the AWD system. However, the AWD system is capable of tolerating any combination of new and worn tires of the same original tire size. For example, using 3 worn tread tires and 1 new tread tire all of the same original tire size, can be tolerated by the AWD system.

Operating AWD Vehicles With Mismatched Tires

WARNING: Only use replacement tires and wheels that are the same size, load index, speed rating and type (such as P-metric versus LT-metric or all-season versus all-terrain) as those originally provided by Ford. The recommended tire and wheel size may be found on either the Safety Compliance Certification Label (affixed to either the door hinge pillar, door-latch post, or the door edge that meets the door-latch post, next to the driver's seating position), or the Tire Label which is located on the B-Pillar or edge of the driver's door. If this information is not found on these labels, then you should contact your authorized dealer as soon as possible. Use of any tire or wheel not recommended by Ford can affect the safety and performance of your vehicle, which could result in an increased risk of loss of vehicle control, vehicle rollover, personal injury and death. Additionally the use of non-recommended tires and wheels could cause steering, suspension, axle, transfer case or power transfer unit failure. If you have questions regarding tire replacement, contact your authorized dealer as soon as possible.

Major dissimilar tire sizes between the front and rear axles (for example, 17 inch low profile tires on the front axle and 22 inch high profile tires on the rear axle) could cause the AWD system to stop functioning and default to front-wheel drive or damage the AWD system. However, the AWD system is capable of tolerating any combination of new and worn tires of the same original tire size. For example, using 3 worn tread tires and 1 new tread tire all of the same original tire size, can be tolerated by the AWD system.

How Utility Vehicles Differ from Other Vehicles (If Equipped)

Truck and utility vehicles can differ from some other vehicles. Your vehicle may be higher to allow it to travel over rough terrain without getting hung up or damaging underbody components.

The differences that make your vehicle so versatile also make it handle differently than an ordinary passenger car.

Maintain steering wheel control at all times, especially in rough terrain. Since sudden changes in terrain can result in abrupt steering wheel motion, make sure you grip the steering wheel from the outside. Do not grip the spokes.

Drive cautiously to avoid vehicle damage from concealed objects such as rocks and stumps.

You should either know the terrain or examine maps of the area before driving. Map out your route before driving in the area. To maintain steering and braking control of your vehicle, you must have all four wheels on the ground and they must be rolling, not sliding or spinning.

Driving In Special Conditions With All-Wheel Drive

All-Wheel Drive (AWD) vehicles are equipped for driving on sand, snow, mud and rough roads and have operating characteristics that are somewhat different from conventional vehicles, both on and off the highway.

When driving at slow speeds in deep sand under high outside temperatures, use a low gear when possible. Lower gear operation will maximize the engine and transmission cooling capability.

Under severe operating conditions, the A/C may cycle on and off to protect overheating of the engine.

Basic operating principles in special conditions

- Drive slower in strong crosswinds which can affect the normal steering characteristics of your vehicle.
- Be extremely careful when driving on pavement made slippery by loose sand, water, gravel, snow or ice.

If your vehicle goes off the edge of the pavement

- If your vehicle goes off the edge of the pavement, slow down, but avoid severe brake application, ease the vehicle back onto the pavement only after reducing your speed. Do not turn the steering wheel too sharply while returning to the road surface.
- It may be safer to stay on the apron or shoulder of the road and slow down gradually before returning to the pavement. You may lose control if you do not slow down or if you turn the steering wheel too sharply or abruptly.
- It often may be less risky to strike small objects, such as highway reflectors, with minor damage to your vehicle rather than attempt a sudden return to the pavement which could cause the vehicle to slide sideways out of control or rollover. Remember, your safety and the safety of others should be your primary concern.

If your vehicle gets stuck

WARNING: Always set the parking brake fully and make sure the gearshift is latched in P (Park). Turn the ignition to the lock position and remove the key whenever you leave your vehicle.

WARNING: If the parking brake is fully released, but the brake warning lamp remains illuminated, the brakes may not be working properly. See your authorized dealer.



WARNING: Do not spin the wheels at over 35 mph (56 km/h). The tires may fail and injure a passenger or bystander.

Note: Do not rock the vehicle if the engine is not at normal operating temperature or damage to the transmission may occur.

Note: Do not rock the vehicle for more than a few minutes or damage to the transmission and tires may occur or the engine may overheat.

If your vehicle gets stuck in mud or snow it may be rocked out by shifting between forward and reverse gears, stopping between shifts, in a steady pattern. Press lightly on the accelerator in each gear.

If your vehicle is equipped with AdvanceTrac® with Roll Stability ControlTM, it may be beneficial to disengage the AdvanceTrac® with Roll Stability ControlTM system while attempting to rock the vehicle.

Emergency maneuvers

- In an unavoidable emergency situation where a sudden sharp turn must be made, remember to avoid "over-driving" your vehicle (i.e., turn the steering wheel only as rapidly and as far as required to avoid the emergency). Excessive steering will result in less vehicle control, not more. Additionally, smooth variations of the accelerator and/or brake pedal pressure should be utilized if changes in vehicle speed are called for. Avoid abrupt steering, acceleration or braking which could result in an increased risk of loss of vehicle control, vehicle rollover and/or personal injury. Use all available road surface to return the vehicle to a safe direction of travel.
- In the event of an emergency stop, avoid skidding the tires and do not attempt any sharp steering wheel movements.
- If the vehicle goes from one type of surface to another (i.e., from concrete to gravel) there will be a change in the way the vehicle responds to a maneuver (steering, acceleration or braking). Again, avoid these abrupt inputs.

Sand

When driving over sand, try to keep all four wheels on the most solid area of the trail. Avoid reducing the tire pressures but shift to a lower gear and drive steadily through the terrain. Apply the accelerator slowly and avoid excessive wheel slip.

Do not drive your vehicle in deep sand for an extended period of time. This could cause the AWD system to overheat and default to front-wheel drive. If this occurs **AWD Off** will be displayed in the Information Display.

To resume normal AWD function as soon as possible, stop the vehicle in a safe location and stop the engine for at least 10 minutes. After the engine has been restarted and the AWD system has adequately cooled, the **AWD Off** message will turn off and normal AWD function will return. In the event the engine is not stopped, the **AWD Off** message will turn off when the system cools and normal AWD function returns.

When driving at slow speeds in deep sand under high outside temperatures, use L (Low) gear when possible. L (Low) gear operation will maximize the engine and transmission cooling capability.

Under severe operating conditions, the A/C may cycle on and off to protect overheating of the engine.

Avoid driving at excessive speeds, this could cause vehicle momentum to work against you and your vehicle could become damaged or stuck to the point that assistance may be required from another vehicle. Remember, you may be able to back out the way you came if you proceed with caution.

Mud and water

If you must drive through high water, drive slowly. Traction or brake capability may be limited.

When driving through water, determine the depth; avoid water higher than the bottom of the wheel rims (for cars) or the bottom of the hubs (for trucks) (if possible) and proceed slowly. If the ignition system gets wet, the vehicle may stall.

Once through water, always try the brakes. Wet brakes do not stop the vehicle as effectively as dry brakes. Drying can be improved by moving your vehicle slowly while applying light pressure on the brake pedal.

Be cautious of sudden changes in vehicle speed or direction when you are driving in mud. Even AWD vehicles can lose traction in slick mud. As when you are driving over sand, apply the accelerator slowly and avoid spinning your wheels. If the vehicle does slide, steer in the direction of the slide until you regain control of the vehicle.

After driving through mud, clean off residue stuck to rotating drive shafts and tires. Excess mud stuck on tires and rotating drive shafts causes an imbalance that could damage drive components.

Note: Driving through deep water may damage the transmission.

If the front or rear axle is submerged in water, the axle lubricant and PTU (power transfer unit) lubricant should be checked and changed if necessary.



"Tread Lightly" is an educational program designed to increase public awareness of land-use regulations and responsibilities in our nations wilderness areas. Ford Motor Company joins the U.S. Forest

Service and the Bureau of Land Management in encouraging you to help preserve our national forest and other public and private lands by "treading lightly."

Driving on hilly or sloping terrain

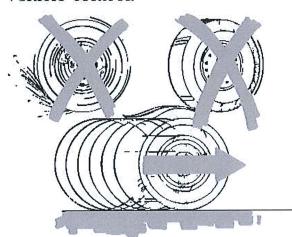
Note: Avoid driving crosswise or turning on steep slopes or hills. A danger lies in losing traction, slipping sideways and possibly rolling over. Whenever driving on a hill, determine beforehand the route you will use. Do not drive over the crest of a hill without seeing what conditions are on the other side. Do not drive in reverse over a hill without the aid of an observer.

Although natural obstacles may make it necessary to travel diagonally up or down a hill or steep incline, you should always try to drive straight up or straight down.

When climbing a steep slope or hill, start in a lower gear rather than downshifting to a lower gear from a higher gear once the ascent has started. This reduces strain on the engine and the possibility of stalling.

If you do stall out, do not try to turnaround because you might roll over. It is better to back down to a safe location.

Apply just enough power to the wheels to climb the hill. Too much power will cause the tires to slip, spin or lose traction, resulting in loss of vehicle control.



Descend a hill in the same gear you would use to climb up the hill to avoid excessive brake application and brake overheating. Do not descend in neutral; instead, disengage overdrive or manually shift to a lower gear. When descending a steep hill, avoid sudden hard braking as you could lose control. The front wheels have to be turning in order to steer the vehicle.

Your vehicle has anti-lock brakes, therefore apply the brakes steadily. Do not "pump" the brakes.

Driving on snow and ice

WARNING: If you are driving in slippery conditions that require tire chains or cables, then it is critical that you drive cautiously. Keep speeds down, allow for longer stopping distances and avoid aggressive steering to reduce the chances of a loss of vehicle control which can lead to serious injury or death. If the rear end of the vehicle slides while cornering, steer in the direction of the slide until you regain control of the vehicle.

Note: Excessive tire slippage can cause transmission damage.

AWD vehicles have advantages over 2WD vehicles in snow and ice but can skid like any other vehicle.

Should you start to slide while driving on snowy or icy roads, turn the steering wheel in the direction of the slide until you regain control.

Avoid sudden applications of power and quick changes of direction on snow and ice. Apply the accelerator slowly and steadily when starting from a full stop.

Avoid sudden braking as well. Although an AWD vehicle may accelerate better than a two-wheel drive vehicle in snow and ice, it won't stop any faster, because as in other vehicles, braking occurs at all four wheels. Do not become overconfident as to road conditions.

Make sure you allow sufficient distance between you and other vehicles for stopping. Drive slower than usual and consider using one of the lower gears. In emergency stopping situations, apply the brake steadily. Since your vehicle is equipped with a four wheel anti-lock brake system (ABS), do not "pump" the brakes. Refer to the *Brakes* section of this chapter for additional information on the operation of the anti-lock brake system.

Maintenance and modifications

The suspension and steering systems on your vehicle have been designed and tested to provide predictable performance whether loaded or empty and durable load carrying capability. For this reason, Ford Motor Company strongly recommends that you do not make modifications such as adding or removing parts (such as lift kits or stabilizer bars) or by using replacement parts not equivalent to the original factory equipment.

Any modifications to a vehicle that raise the center of gravity can make it more likely the vehicle will rollover as a result of a loss of control. Ford Motor Company recommends that caution be used with any vehicle equipped with a high load or device (such as ladder or luggage racks).

Failure to maintain your vehicle properly may void the warranty, increase your repair cost, reduce vehicle performance and operational capabilities and adversely affect driver and passenger safety. Frequent inspection of vehicle chassis components is recommended if the vehicle is subjected to off-highway usage.

GENERAL INFORMATION

Note: Occasional brake noise is normal. If a metal-to-metal, continuous grinding or continuous squeal sound is present, the brake linings may be worn out. Have them inspected by an authorized dealer. If your vehicle has continuous vibration or shudder in the steering wheel while braking, have your vehicle inspected by an authorized dealer.

Note: Brake dust may accumulate on the wheels, even under normal driving conditions. Some dust is inevitable as the brakes wear and does not contribute to brake noise. See the *Vehicle Care* chapter for wheel cleaning instructions.

This vehicle is equipped with heavy-duty front disc brake pads to meet the varying demands of different police service for fade resistance and other performance requirements.

Ford recommends brake system inspection and maintenance according to service manual procedures following high speed pursuits with heavy brake usage.



See the *Instrument Cluster* chapter for information on the brake system warning light.

Wet brakes result in reduced braking efficiency. Gently press the brake pedal a few times when driving from a car wash or standing water to dry the brakes.

Brake Over Accelerator

In the event the accelerator pedal becomes stuck or entrapped, apply steady and firm pressure to the brake pedal to slow your vehicle and reduce engine power. If you experience this condition, apply the brakes and bring your vehicle to a safe stop. Turn the engine off, shift to park (P) and apply the parking brake. Inspect the accelerator pedal and the area around it for any items or debris that may be obstructing its movement. If none are found and the condition persists, have your vehicle towed to the nearest authorized dealer.

Brake Assist

Brake assist detects when you brake heavily by measuring the rate at which you press the brake pedal. It provides maximum braking efficiency as long as you press the pedal. Brake assist can reduce stopping distances in critical situations.

Anti-Lock Brake System

This system helps you maintain steering control during emergency stops by keeping the brakes from locking.



This lamp momentarily illuminates when you turn the ignition on. If the light does not illuminate during start-up, remains on or flashes, the anti-lock brake system may be disabled and may

need to be serviced.



If the anti-lock brake system is disabled, normal braking is still effective. If the brake warning lamp illuminates with the parking brake released, have your brake system serviced immediately.

HINTS ON DRIVING WITH ANTI-LOCK BRAKES

When the system is operating, the brake pedal will pulse and may travel further. Maintain pressure on the brake pedal. You may also hear a noise from the system. This is normal.

The anti-lock braking system will not eliminate the risks when:

- You drive too closely to the vehicle in front of you.
- Your vehicle is hydroplaning.
- You take corners too fast.
- The road surface is poor.

PARKING BRAKE

WARNING: If the parking brake is fully released, but the brake warning lamp remains illuminated, then driving your vehicle could result in reduced braking ability, increased stopping distances and potential loss of brakes. See your authorized dealer as soon as possible.

WARNING: Always set the parking brake fully and make sure that the transmission is securely latched in park (P). Failure to set the parking brake and engage park could result in vehicle roll-away, property damage or bodily injury.

To set the parking brake, press the parking brake pedal down to its fullest extent.

To release the parking brake, press the parking brake pedal down again.

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DRIVING YOUR SUV OR TRUCK Supplement

Vehicle Characteristics

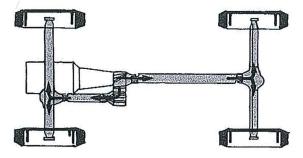
VEHICLE CHARACTERISTICS

4WD and AWD Systems

WARNING: Do not become overconfident in the ability of 4WD and AWD vehicles. Although a 4WD or AWD vehicle may accelerate better than two-wheel drive vehicle in low traction situations, it won't stop any faster than two-wheel drive vehicles. Always drive at a safe speed.

A vehicle equipped with AWD or 4WD (when you select the 4WD mode) has the ability to use all four wheels to power itself. This increases traction which may enable you to safely drive over terrain and road conditions that a conventional two-wheel drive vehicle cannot.

Power is supplied to all four wheels through a transfer case or power transfer unit. 4WD vehicles allow you to select different drive modes as necessary. Information on shifting procedures and maintenance can be found in your *Owner's Manual*. You should become thoroughly familiar



with this information before you operate your vehicle.

On some 4WD models, the initial shift from two-wheel drive to 4WD while the vehicle is moving can cause a momentary clunk and ratcheting sound. These sounds are normal as the front drivetrain comes up to speed and is not cause for concern.

Vehicle Characteristics

How your vehicle differs from other vehicles

SUVs and trucks can differ from some other vehicles in a few noticeable ways. Your vehicle may be:

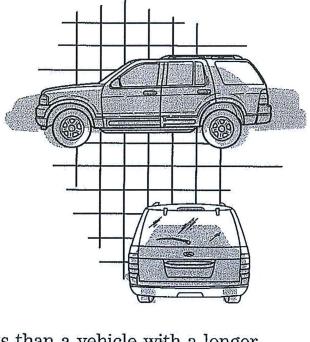
- Higher to allow higher load carrying capacity and to allow it to travel over rough terrain without getting hung up or damaging underbody components.
- Shorter to give it the capability to approach inclines and drive over the crest of a hill without getting hung up or damaging underbody components. All other things held equal, a shorter wheelbase may make your vehicle

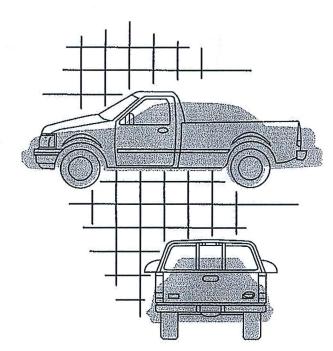
quicker to respond to steering inputs than a vehicle with a longer wheelbase.

 Narrower — to provide greater maneuverability in tight spaces, particularly in off-road use.

As a result of the above dimensional differences, SUVs and trucks often will have a higher center of gravity and a greater difference in center of gravity between the loaded and unloaded condition.

These differences that make your vehicle so versatile also make it handle differently than an ordinary passenger car.





Driving On Roadways

DRIVING ON ROADWAYS

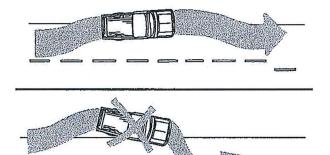
WARNING: Vehicles with a higher center of gravity such as utility vehicles and trucks handle differently than vehicles with a lower center of gravity. Utility vehicles and trucks are not designed for cornering at speeds as high as passenger cars any more than low-slung sports cars are designed to perform satisfactorily under off-road conditions. Avoid sharp turns, excessive speed or abrupt maneuvers in these vehicles. Failure to drive cautiously could result in an increased risk of loss of vehicle control, vehicle rollover, personal injury and death.

Basic operating principles

- Drive slower in strong crosswinds which can affect the normal steering characteristics of your vehicle.
- Be extremely careful when driving on pavement made slippery by loose sand, water, gravel, snow or ice.
- Do not use 4WD on dry, hard surfaced roads (except models equipped with Auto 4WD or AWD). This may damage the drivelines and axles.

If your vehicle goes off the edge of the pavement

• If your vehicle goes off the edge of the pavement, slow down and avoid severe brake application or aggressive steering. Ease the vehicle back onto the pavement only after reducing your speed. Do not turn the steering wheel too sharply while returning to the road surface.



- If you have the space, it may be safer to stay on the apron or shoulder of the road and slow down gradually before returning to the pavement. You may lose control if you do not slow down or if you turn the steering wheel too sharply or abruptly.
- It often may be less risky to strike small inanimate objects, (such as highway reflectors), and incur minor damage to your vehicle rather than attempt a sudden return to the pavement which could cause the vehicle to slide sideways out of control or rollover. Remember, your safety and the safety of others should be your primary concern.

Driving On Roadways

Emergency maneuvers

- In an emergency situation where a sudden sharp turn must be made, remember to avoid "over-driving" your vehicle, i.e., turn the steering wheel only as rapidly and as far as required to avoid the emergency. Avoid abrupt steering, acceleration or braking which could increase the risk of loss of vehicle control or vehicle rollover. Instead, smooth variations of the accelerator and/or brake pedal pressure should be utilized if changes in vehicle speed are called for. Use all available road surface to return the vehicle to a safe direction of travel.
- In the event of an emergency stop, avoid skidding the tires and do not attempt any sharp steering wheel movements.
- If the vehicle goes from one type of road surface to another (i.e., from concrete to gravel), there will be a change in the way the vehicle responds in steering, acceleration or braking. Again, avoid abrupt steering or braking inputs.

Snow and ice

Your 4WD or AWD vehicle will have advantages over two-wheel drive vehicles in snow and on ice by providing increased driving traction. However, if you suddenly change speed or direction, you may lose traction and in turn, control as is the case with all vehicles. 4WD and AWD vehicles can slide on slippery roads just like any other vehicle. Should the rear end of the vehicle start to slide while cornering on snowy or icy roads, turn the steering wheel in the direction of the slide until you regain control. Avoid sudden braking as well. Although a 4WD or AWD vehicle may accelerate better than a two-wheel drive vehicle in snow and ice, it won't stop any faster, because as in two-wheel drive vehicles, braking occurs at all four wheels. Do not become overconfident in the ability of 4WD and AWD vehicles to compensate for aggressive driving maneuvers in poor road conditions.

Make sure you allow sufficient distance between you and other vehicles for stopping. In emergency stopping situations, avoid locking the wheels.

- For vehicles without anti-lock brakes, use a "squeeze" technique: push on the brake pedal with a steadily increasing force which allows the wheels to brake yet continue to roll so that you may steer in the direction you want to travel. If you lock the wheels, release the brake pedal and repeat the squeeze technique.
- For vehicles with anti-lock brakes, apply and hold the brake firmly. Do not "pump" the brakes. During hard stopping or stopping on slippery surfaces, you may feel or hear a pulsing or vibration in the brake pedal. Do not be alarmed because this is your anti-lock brake system working. See your *Owner's Manual* for additional information on the operation of the anti-lock brake system.

Driving On Roadways

Parking

WARNING: Do not leave the vehicle unattended with the transfer case in N (Neutral) position. Always set the parking brake fully and turn off the ignition when leaving the vehicle. If you do not follow these precautions your vehicle may move unexpectedly and injure someone.

Before leaving the driver's seat, make sure that the gearshift is engaged in P (Park) with an automatic transmission or either 1 (First) or R (Reverse) with a manual transmission. Set the parking brake fully, shut off the ignition and remove the key.

Some 4WD vehicles include a Neutral mode. When the transfer case is in the N (Neutral) position, the engine and transmission are disconnected from the rest of the driveline. Therefore, the vehicle is free to roll even if the automatic transmission is in P (Park) or the manual transmission is in gear.

