

CHAPTER 7

NEGOTIATING INTERSECTIONS

7.1 SEARCHING INTERSECTIONS

7.2 CONTROLLED INTERSECTIONS

7.3 UNCONTROLLED INTERSECTIONS

7.4 DETERMINING RIGHT OF WAY AND
JUDGING GAPS



**This is Not A Permit
To Drive**

Customer's Name _____ Date of Birth _____
 Address _____
Street or Route SS# Town State
 I.D. Used _____ DL# _____
 Customer's Signature _____
 Physical Condition _____ Vision _____
 Reason for Drive Test _____ Supplemental Reports _____

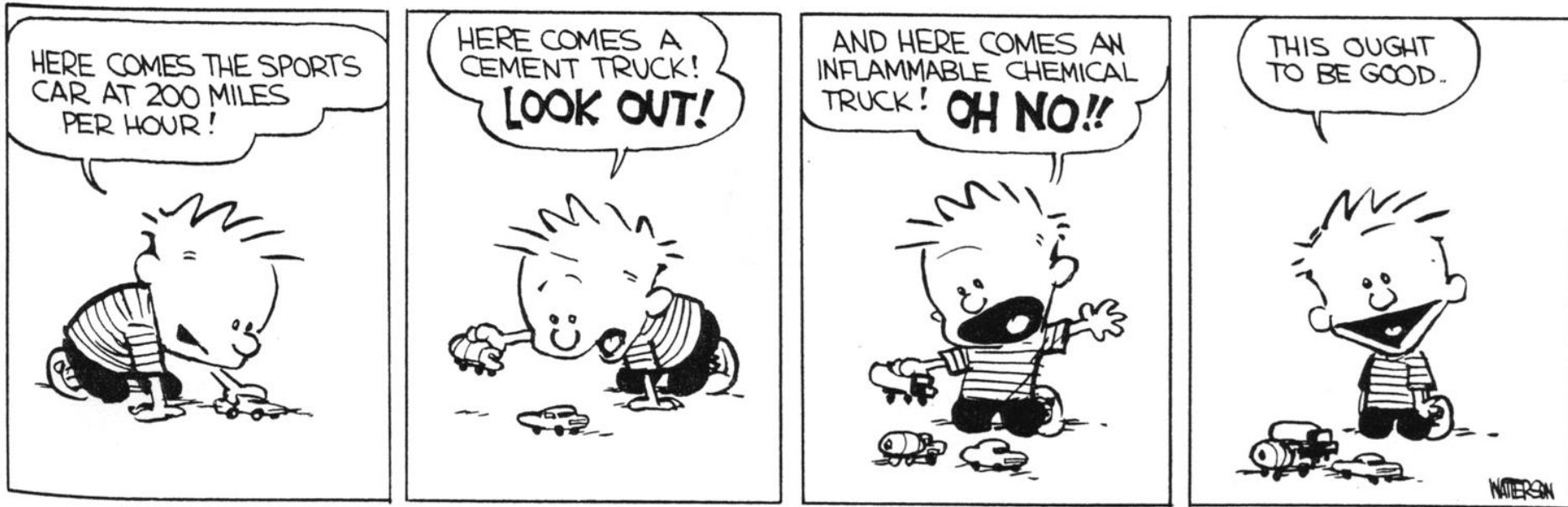
Vehicle Make:	Vehicle Plate:	Vehicle (GVWR):	Trailer Plate:	Trailer (GVWR):
Vehicle Condition:				

36 or more points deducted is not a passing score. Refer to Score Sheet below for your score.

		Good	Fair	Poor			Good	Fair	Poor
Starting		0	3	6	Traffic light		0	3	6
Truck Backing		0	5	10	Traffic light		0	3	6
Backing		0	4	8	Stop sign		0	3	6
Parking		0	3	6	Stop sign		0	3	6
Park on upgrade		0	2	4	Other signs		0	2	4
Start on upgrade		0	2	4	Lane observance		0	3	6
Driver Position		0	1	2	Lane changes		0	3	6
Park on down grade		0	2	4	Expressway merge		0	3	6
Start on down grade		0	2	4	Expressway exit		0	3	6
Shifting		0	2	4	Overtaking		0	1	2
Use of horn		0	1	2	Being overtaken		0	1	2
Intersection speed		0	4	8	Following		0	3	6
Intersection observance		0	4	8	Use of mirror		0	2	4
Distraction		0	2	4	Right of way		0	5	10
Curve		0	2	4	Control of speed		0	3	6
Bridge / Underpass		0	2	4	Starting and stopping		0	2	4
RR Crossing		0	4	8					
LEFT TURNS	Signal	0	1	2	RIGHT TURNS	Signal	0	1	2
	Speed	0	1	2		Speed	0	1	2
	Approach lane	0	2	4		Approach lane	0	2	4
	Enter lane	0	1	2		Enter lane	0	1	2
	Intersection observance	0	4	8		Intersection observance	0	4	8
	Signal	0	1	2		Signal	0	1	2
	Speed	0	1	2		Speed	0	1	2
	Approach lane	0	2	4		Approach lane	0	2	4
	Enter lane	0	1	2		Enter lane	0	1	2
	Intersection observance	0	4	8		Intersection observance	0	4	8
	Signal	0	1	2		Signal	0	1	2
	Speed	0	1	2		Speed	0	1	2
Approach lane	0	2	4	Approach lane	0	2	4		
Enter lane	0	1	2	Enter lane	0	1	2		
Intersection observance	0	4	8	Intersection observance	0	4	8		

Note how much emphasis the Iowa driving test places on intersections and turns

Deductions _____
 Pass for Class _____ Endorsements _____
 Restrictions _____
 Fail Reason _____
 Date _____ DL District # _____ DL Station# _____ Examiner _____



TWO BODIES CANNOT OCCUPY THE SAME SPACE AT THE SAME TIME. INTERSECTIONS ARE THE MOST DANGEROUS PLACES IN THE ROADWAY SYSTEM.

ADD EXCESSIVE SPEED OR INATTENTIVENESS BY THE DRIVER AND INTERSECTIONS ARE NOT ONLY DANGEROUS BUT POTENTIALLY DISASTEROUS PLACES.



MANIAC!!

© JOHN
99 BELL

The chances of a collision are greater at intersections than at any other point on a roadway. Intersections are dangerous because many drivers' paths cross there, and many unexpected stops occur there. More than one-third of all collisions and one-fourth of all fatal collisions take place at intersections.

One reason for the large number of collisions at intersections is the driver's failure to identify a safe path of travel through the intersection. In order to identify a safe path of travel you first need to locate the intersection.

Look for these clues to identify an intersection ahead:

- street signs and street lights
- roadway markings
- crossing traffic
- parked vehicles on cross streets
- turning traffic
- rows of fences and mailboxes
- traffic stopping
- power lines

Intersections can be found in various designs. Most are simply two roadways crossing or a railroad crossing a roadway in a **+** or an **X** pattern. Others may form a **Y** when one roadway divides into two or when two join to form one. Some meet to form a **T**. A few are formed when several roadways meet at a circle—commonly called a **traffic circle**. A driver needs to know how to identify and be able to safely negotiate each design.

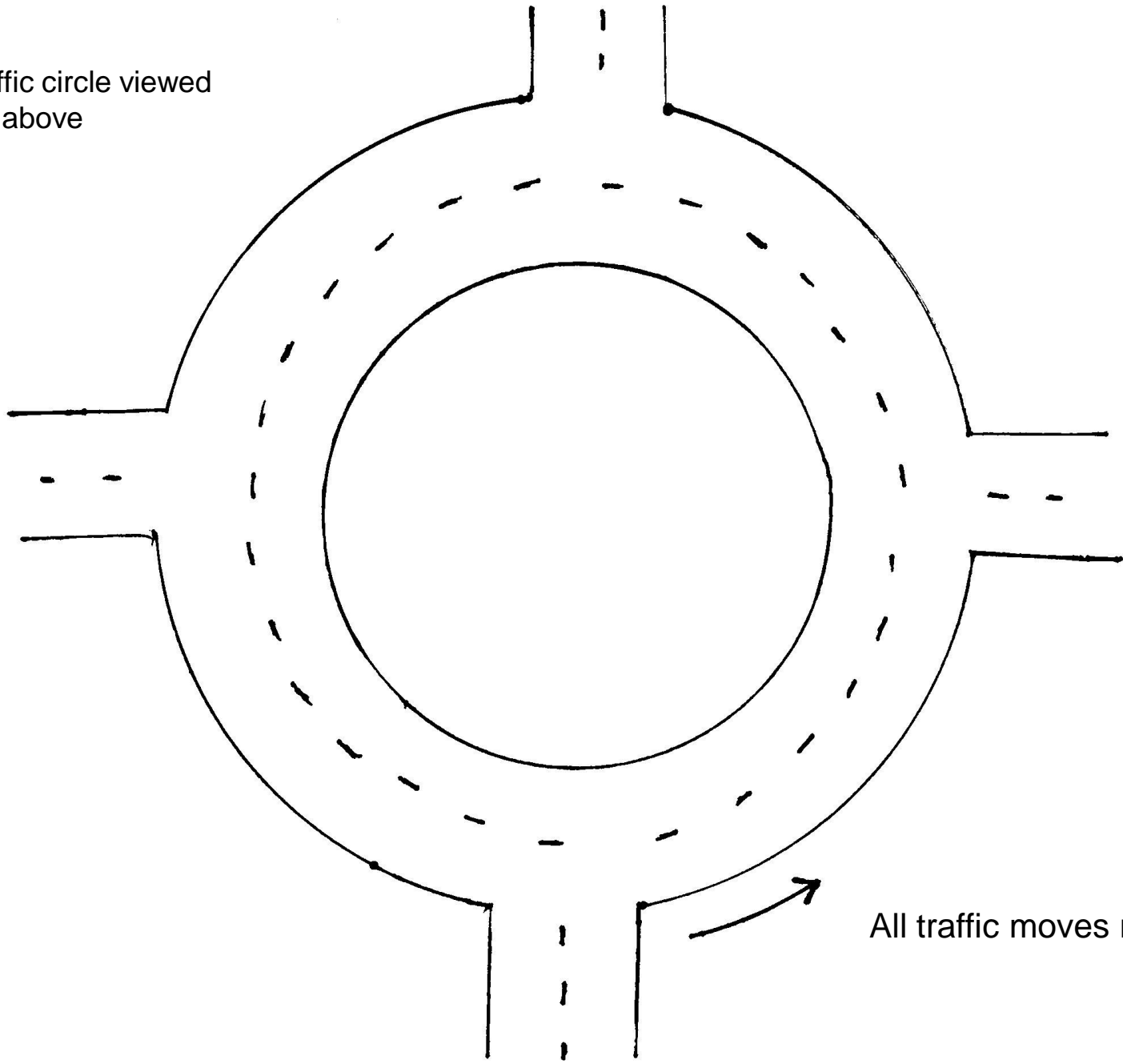


Columbus Circle in New York City. America's first traffic circle, 1905



Route 34 in New Jersey (US 34)

A traffic circle viewed from above



All traffic moves right

Approaching an Intersection

After identifying an intersection, you will need to determine if you have an open zone for your intended path of travel into and through the intersection. You will need to search the left-front, front, and right-front zones to be certain that they are open. You also need to look for line-of-sight restrictions that will prevent you from seeing if your intended path of travel is going to be safe. You should search for changes in those zones that could make them closed for your travel as shown in the top picture on the next page.

Remember, line-of-sight restrictions can be caused by the environment or by other highway users. When your line of sight is restricted, your zone checks should become more frequent. You should still primarily be checking your front zone to make sure it is still open for your intended path of travel.

Your search will change when you have identified a closed zone caused by a line-of-sight restriction. That is also true when you make a left turn, make a right turn, or continue through an intersection.

Once you are within 4–6 seconds of the intersection, your searching pattern should widen to include more information from the right and left of your path of travel. If your front zone is clear, you can keep moving. If it is not clear, you will need to prepare to stop or change your path of travel.

When you identify a line-of-sight restriction, you should perform a search of that area. Search for such things as a car stopped on the left, a parked vehicle on the right, or a double-parked delivery truck. Turn your head 45 degrees to the right or left in an attempt to see beyond the line-of-sight restriction as shown in the picture on the right. When searching, you need to briefly pause at each zone to detect objects in that location. Do not move your eyes in a constant scan. If you do not pause at each zone, you could miss objects as large as a car.

Note that this is different advice than “Keep your eyes moving” from IPDE and the Smith System

Deciding to Stop

You may have to stop at an intersection when you identify or predict a closed zone or a line-of-sight restriction ahead. By reducing your speed you can more easily check the zone having a line-of-sight restriction.

A closed front zone is identified by the presence of a yellow or red traffic light, a YIELD sign, or something moving into your intended path of travel. All of these situations would give you less than 10 seconds of an available path of travel and make it a closed zone.

If you have identified a closed zone at an intersection, you will need to prepare to reduce speed or stop. As soon as you identify a closed zone, check your rear zone. If it is open, begin to brake. If the rear zone is closed, tap your brake lights a few times to communicate to the driver to the rear that you are stopping.

REDUCE YOUR SPEED.

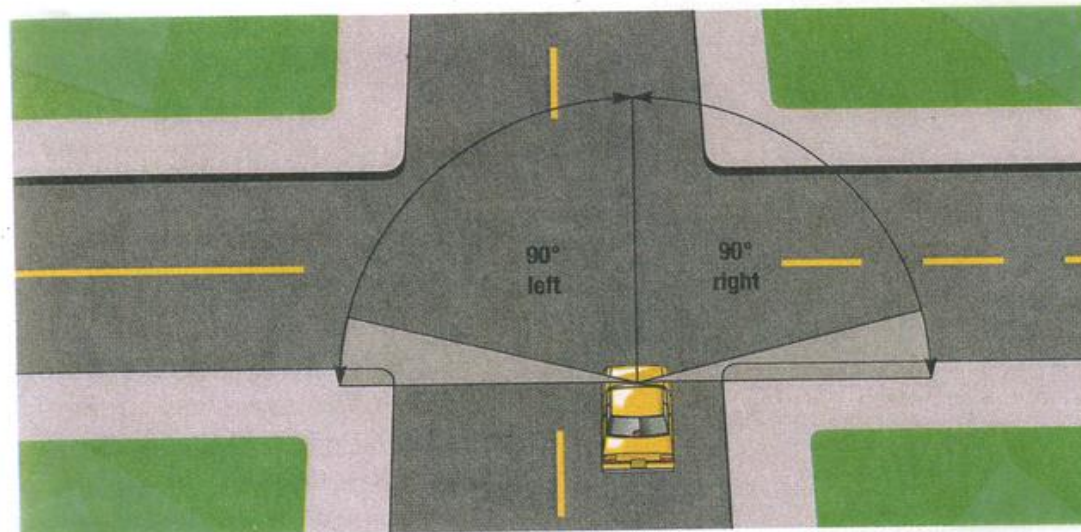
MAKE SURE YOU HAVE
CONTROL OF YOUR
VEHICLE

Moving After a Stop

After you have stopped and your front zone is clear, search at 90-degree angles to the right and left before you begin moving. Pause briefly at each target area to get a clear view of possible conflicts.

When turning, your last check should be in the direction of your intended path of travel. You need to know if your intended path of travel is open before you enter an intersection.

If you are stopped behind another vehicle, wait one second after it begins to move before you move. This gives you room to respond to any sudden stop made by the vehicle ahead.



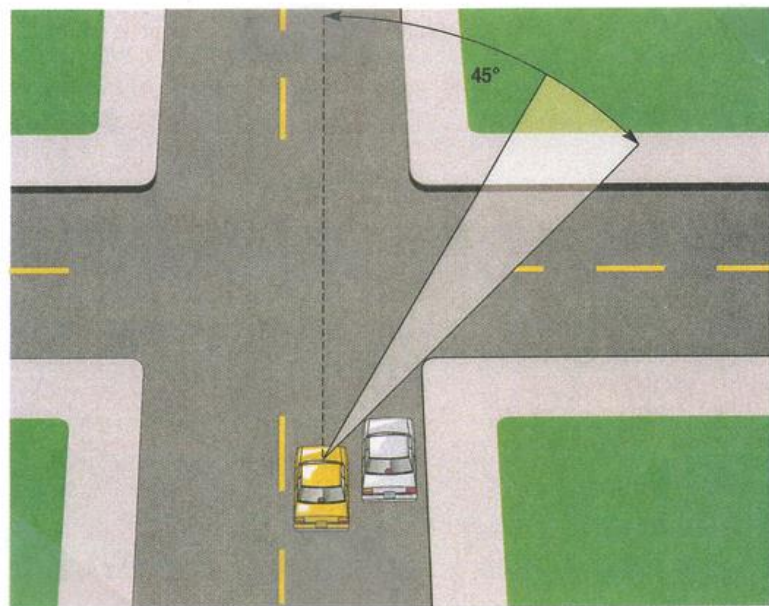
After you have stopped, check your front zone and search 90 degrees to your left and right.

Continue Moving Ahead

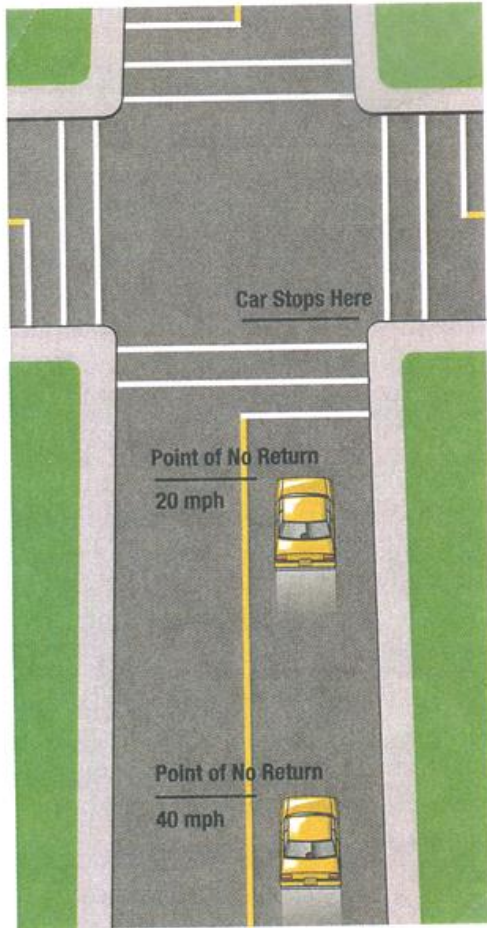
You may continue ahead if the traffic light is green, or if the intersec-

tion has no signals or signs, and the front, right-front, and left-front zones are open. At an intersection a driver needs to locate open front zones to move ahead safely. Many times it takes numerous checks of a zone because of a line-of-sight restriction.

If your path of travel is clear, continue searching the left-front, front, and right-front zones for a path-of-travel change or a line-of-sight restriction.



Move your head to see beyond line-of-sight restrictions.



Every intersection has a point of no return.

Once you have passed the point-of-no-return, you should continue through the intersection. The **point-of-no-return** is the point beyond which you can no longer stop safely without entering the intersection. Under normal conditions, that point is two seconds from the intersection as shown in the picture on the left.

If you do have a line-of-sight restriction, you may want to change your lane position and reduce your speed. This will give you more time to see what is hidden. If the restriction is on the right and you have an open left-front zone, move to the left side of your lane into lane position 2 and reduce your speed. If the restriction is on the left and you have an open right-front zone, move to lane position 3 and reduce speed. When your left-front and right-front zones are closed, stay in lane position 1 and further reduce speed. By improving your position and reducing your speed, you will have more time to see as well as be seen by others.

When your path of travel is closed and there is a line-of-sight restriction, a lane change may be needed. *Remember, you are not allowed to make lane changes within an intersection.* Therefore, you should select the best path of travel before entering an intersection. You must check your new path of travel before you change your lane position or change lanes.

Car Stops Here

Point of No Return

20 mph



Point of No Return

40 mph



YOU HAVE TO
LEARN TO JUDGE
THE POINT OF
NO RETURN.

PRACTICE AND
EXPERIENCE WILL
HELP

A controlled intersection is one at which traffic signals or signs determine the right of way. Obey all signs and traffic signals when you approach a controlled intersection. Yield the right of way to through traffic.

Controlled Intersections with Signs

Two kinds of signs control intersections: STOP and YIELD. You must come to a **full stop** for a STOP sign, crosswalk, or stop line. At a YIELD sign, slow and yield the right of way to vehicles on the through street.

Blocked View at Stop Sign

Sometimes parked vehicles or other objects cause a line-of-sight restriction. Follow these steps to cross intersections safely and merge with traffic after stopping.

NOT COMING TO A COMPLETE STOP IS ONE OF THE MOST COMMON VIOLATIONS DRIVERS MAKE

FULL STOP = STOP AND COUNT ONE THOUSAND ONE, ONE THOUSAND TWO BEFORE MOVING.

THOSE TWO SECONDS WILL GIVE YOU AN OPPORTUNITY TO SEE WHAT YOU MIGHT HAVE MISSED AND WILL MAKE YOUR STOP LEGAL

ERIKA SCHWAGER COLLISION

ERIKA WAS DRIVING WESTBOUND
ON WESTOWN PARKWAY IN WEST
DES MOINES WHEN HER VEHICLE
COLLIDED WITH A FIRETRUCK
NORTHBOUND ON VALLEY WEST
DRIVE

Teen in crash may have tried to outrun truck

A witness says that as a firetruck approached a West Des Moines intersection, Erika Schwager 'gunned it.'

By **MELISSA WALKER**
REGISTER STAFF WRITER

Investigators on Tuesday tried to determine if a critically injured West Des Moines teenager tried to beat a firetruck through an intersection before her car was broadsided in a chain-reaction collision.

Rescuers used special equipment to free Erika Schwager, 16, from her mangled car Monday night. Three firefighters aboard the West Des Moines firetruck escaped injury.

Police said Schwager, a junior at Des Moines Christian School, was on her way home after shopping at Valley West Mall when the accident happened shortly before 9 p.m. at Valley West Drive and Westown Parkway.

The firetruck was headed

to the mall, where an alarm had sounded at the Younkers department store. It turned out to be a false alarm.

"It looked like she was trying to beat the firetruck," said Craig Clark, whose vehicle was struck by another as a result of the collision. "Two police cars had already gone through. She came up to the intersection and slowed down, and then she gunned it trying to beat the firetruck."

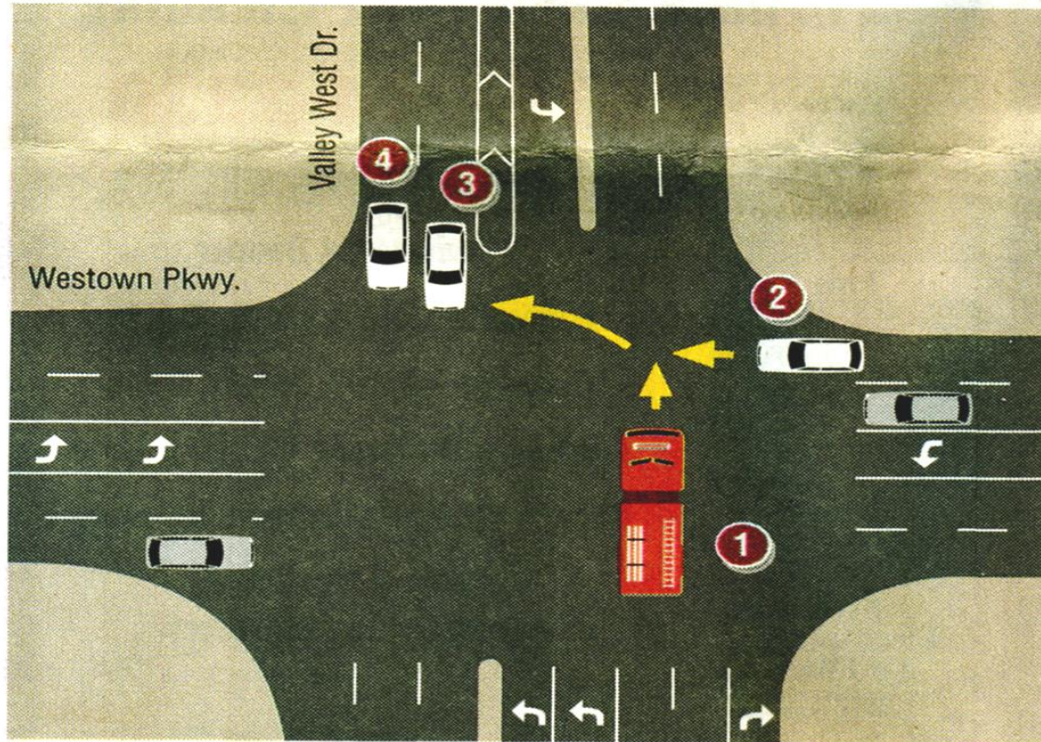
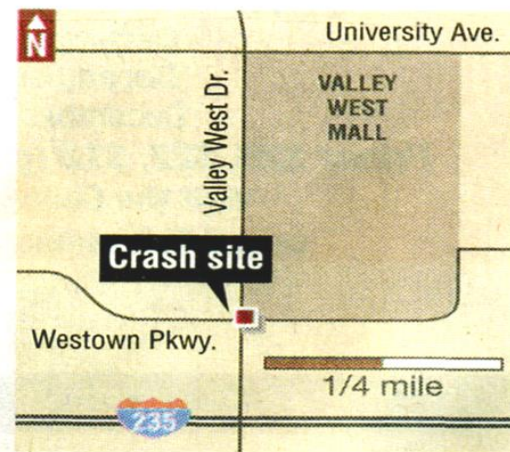
No charges have been filed. A Mercy Medical Center spokeswoman said Tuesday that Schwager, of 4120 Lexington Plaza, was in intensive care. The hospital would not make public information about her injuries.



Schwager

Firetruck/vehicle collision

A West Des Moines firetruck struck a car driven by 16-year-old Erika Schwager Monday night while passing through the intersection of Valley West Drive and Westtown Parkway. Schwager remained in critical condition Tuesday.



The firetruck (1) entered the intersection traveling north on Valley West Drive. Schwager's vehicle (2) collided with the truck, resulting in the truck being pushed into vehicle 3, which then hit vehicle 4.

November 27, 2006

Teen involved in firetruck crash dies after days in coma

By MEGHAN V. MALLOY
REGISTER STAFF WRITER

Family and friends will gather at services today and Tuesday to remember a popular 16-year-old who died Sunday after spending more than five days in critical condition at Mercy Medical Center.

Erika Schwager, of Bondurant, a Des Moines Christian School student, died at 12:23 a.m. from injuries suffered when her car was struck by a West Des Moines firetruck responding to an alarm at Valley West Mall.

A visitation for Schwager will be held from 5 to 8 p.m. today at Valley Church, 4343 Fuller Road, West Des Moines. Funeral services are scheduled



Schwager

for 10 a.m. Tuesday, a pastor from the Schwager family's church said on Sunday.

On Friday night, according to the family, doctors decided to remove Schwager from a chemically induced coma. The next day, Schwager's family said "her physical body can no longer fight."

"Erika is going home," they wrote in a Web site entry dated 7:28 p.m. Saturday.

"We imagine her dancing, joking and laughing; joyful in her new home," her family wrote at caringbridge.org, an

Internet site used by families and friends during a health crisis.

Many of the CaringBridge Web site entries written by the family were messages of hope, but also of acceptance and peace.

Family members and friends were asked to "quietly and humbly rejoice with us for Erika's new freedom and entrance into Heaven."

"Erika and her family are completely dedicated followers of Jesus Christ," said Jordon Korell, a pastor at Valley Church, where the Schwagers attend services.

Erika was a donor and was able
To donate her vital organs

Local News

> News > Local News

Memorials offer tributes to two WC teens killed in crash

By Tracy Runneberg & Anne Blankenship Daily Freeman-Journal Staff Writers

POSTED: December 12, 2007

Webster City residents and students at Webster City High School are mourning the loss of two young men who died in a two-vehicle accident Monday evening, about a mile south of Highview at the intersection of Highway 17 and Stage Coach Road.

Richard Goettsch, a 16 year-old sophomore and Michael Carpenter, a 17 year-old junior, both of Webster City, were killed in the accident. Two other Webster City students, Jamie Johnson, a 15 year-old freshman from Webster City, and Nevin Reed, a 16 year-old sophomore from Duncombe, were both injured in the accident. Johnson was transported to Mary Greeley in Ames, and Reed was transported to Hamilton Hospital. There has been no word on their condition.

According to Iowa State Patrol reports, Goettsch, who was operating the vehicle, reportedly failed to stop at a stop sign at the intersection, and struck the side of a semi trailer operated by Tom Fredricksen of Fort Dodge, who was southbound on Highway 17.

An impromptu memorial was constructed at the Webster City High School, where students could leave messages for the young men, and condolences for each other. Memorials have also been set up online at MySpace and other Internet sites. Still other students have visited the site of the crash as they attempt to come to grips with the tragedy.

Remember the 16 year old on the cell phone?

Taken from the website of the Webster City Daily Freeman-Journal.

Remember what can happen when a motorcyclist is inattentive as he approaches an intersection and may be speeding?

Observe the color of the lights above the intersection



Remember from Chapter 1 the motorcyclist killed on Highway 330 by an impaired driver who failed to stop for a stop sign?

Bondurant man charged in accident on Highway 330

By **KEN BLACK**

TIMES-REPUBLICAN

RHODES — A man authorities say is responsible for an accident on Highway 330 in southern Marshall County has been charged with vehicular homicide.

The Iowa State Patrol says Johnathan Dowd, 21, of Bondurant, failed to yield at a stop sign and was crossing the highway when his vehicle was struck by two motorcycles near The Harvester golf course April 28.

The full accident report released by the Iowa State Patrol lists Dowd as under the influence of drugs or alcohol at the time of the accident.

Gregory Teasley, 47, of Omaha, Neb., was killed

because of the impact.

Also injured was another man on a different motorcycle, Horace Bethea, 55, of Bellevue, Neb. He was taken to Marshalltown Medical & Surgical Center, where he was treated and released. Both men were wearing helmets at the time of the accident.

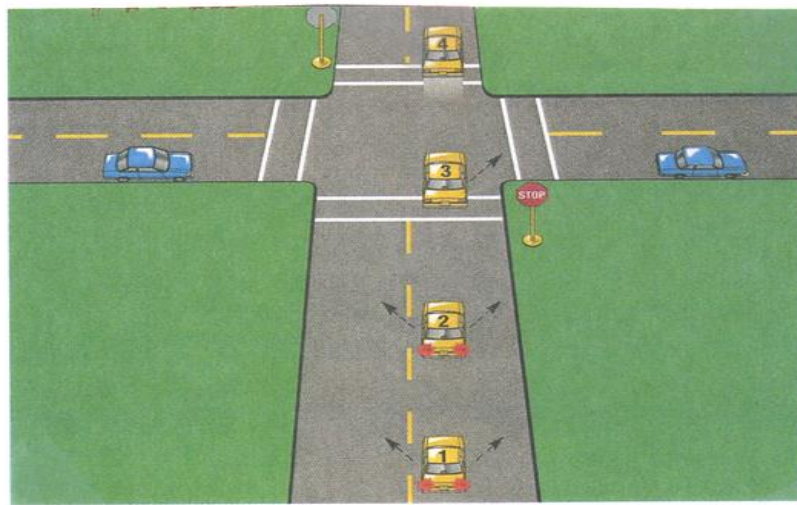
Dowd and a passenger in his vehicle, John Kimberley, 30, of Collins, were also listed as injured on the state patrol's accident report, but neither was transported to a hospital.

The Marshall County Sheriff's Office assisted at the scene, but the investigation and scene was under the jurisdiction of the state patrol.

Contact Ken Black at 641-753-6611 or kblack@timesrepublican.com

Marshalltown
Times Republican
Tuesday, May 6, 2008

Note how the word "accident" is used about 6 times but it is hard to tell the family of the dead motorcyclist that their loved one was killed in an accident when the Iowa State Patrol determined the driver was under the influence of drugs or alcohol when he drove through a stop sign.



Crossing traffic

Crossing Traffic Follow this procedure when you need to cross traffic through an intersection:

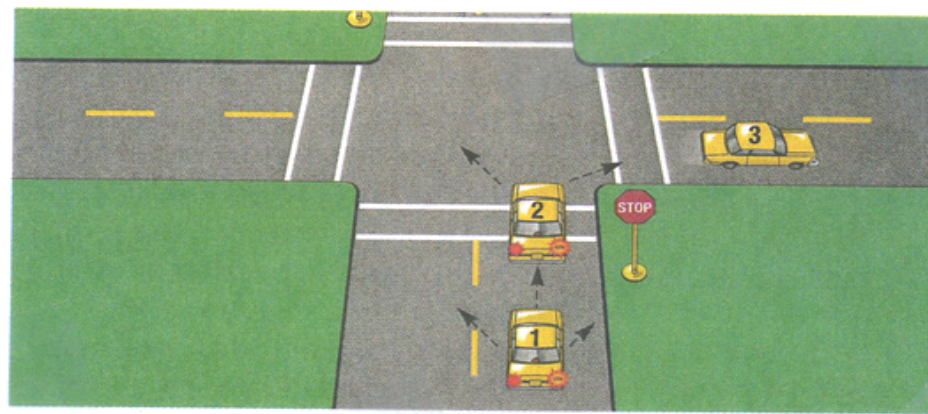
1. Look around and search at a 45-degree angle at location 1 in the picture on the top right. Continue to search left, front, and right as you creep forward. Check your rear zone.
2. Check your path of travel for pedestrians and prepare to make the legal stop before you move beyond location 2. Look for vehicles making turns into your path.
3. Stop with your front bumper even with the curb. Search 90 degrees to the left and right of your target area. When there are parked vehicles, your ideal searching location is when your front bumper is even with the left side of the parked cars, as in location 3.
4. When you have an open front zone and a clear gap of at least seven seconds from the left and right, proceed by accelerating to the proper speed. Once through the intersection, check your rear zone.



BEFORE PROCEEDING
LOOK LEFT, THEN RIGHT
THEN LEFT AGAIN.

WHY LOOK LEFT A
SECOND TIME?

Crossing traffic



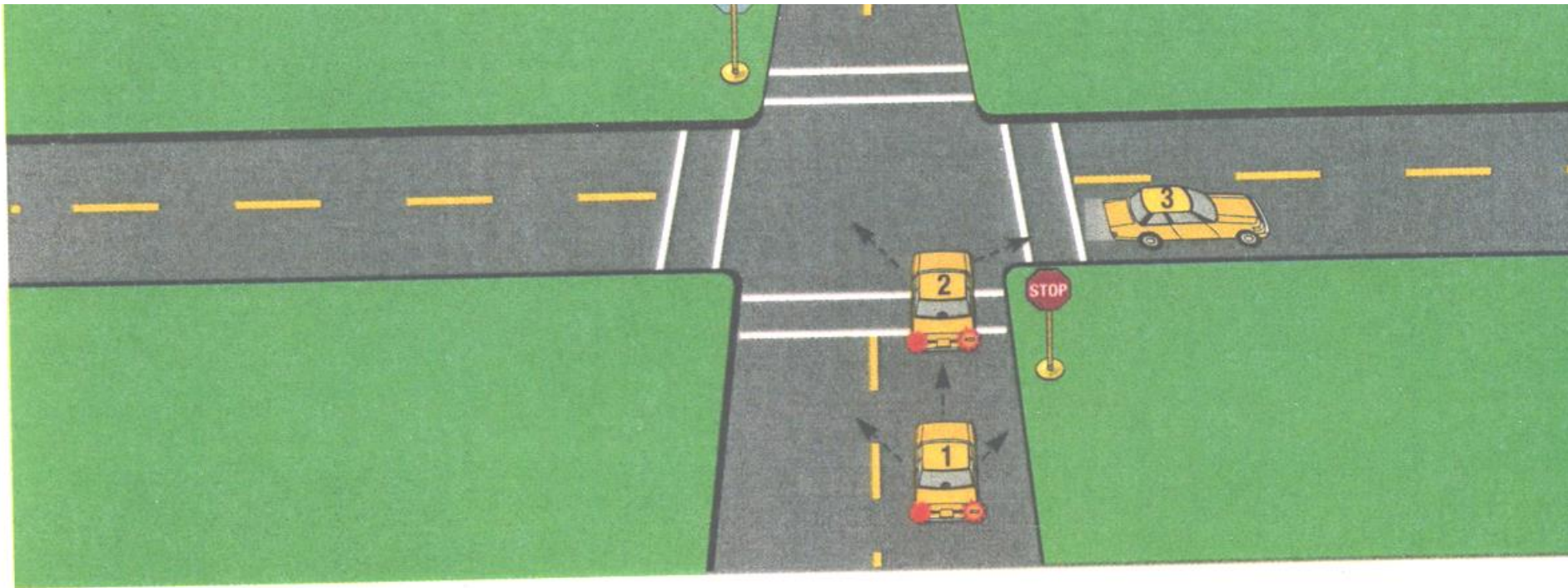
Joining Traffic—Right Turn

Joining Traffic—Right Turn Take these steps when turning right to join traffic:

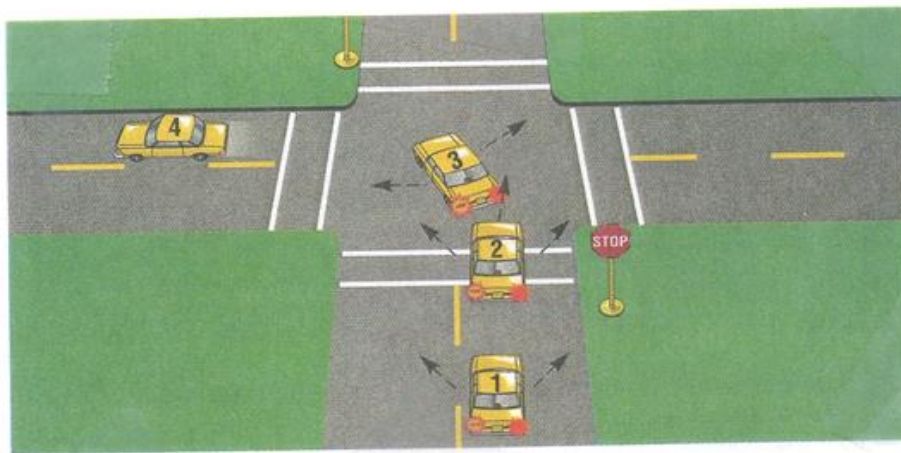
1. At location 1 in the picture in the middle on the right, search your front zones for pedestrians and vehicles turning onto your street. Check your rear zone, and stop.
2. Stop at location 2 where your front bumper is even with the curb. Search 90-degrees to the left and right. Evaluate the target path and your left-front, front, and right-front zones. When clear of any line-of-sight restrictions and with a gap of at least seven seconds, begin your turn. Turn your head toward your target, begin to accel-

erate, and turn the steering wheel. When you have a line-of-sight restriction to your left that prevents you from clearly seeing at a 90-degree angle, creep forward slightly to improve your view to the left. Turn your head toward your target path as you accelerate and turn.

3. At location 3, turn so that you end up no farther than three to four feet away from the curb. Accelerate to adjust to traffic and check the rear zone.



Joining traffic—Right turn



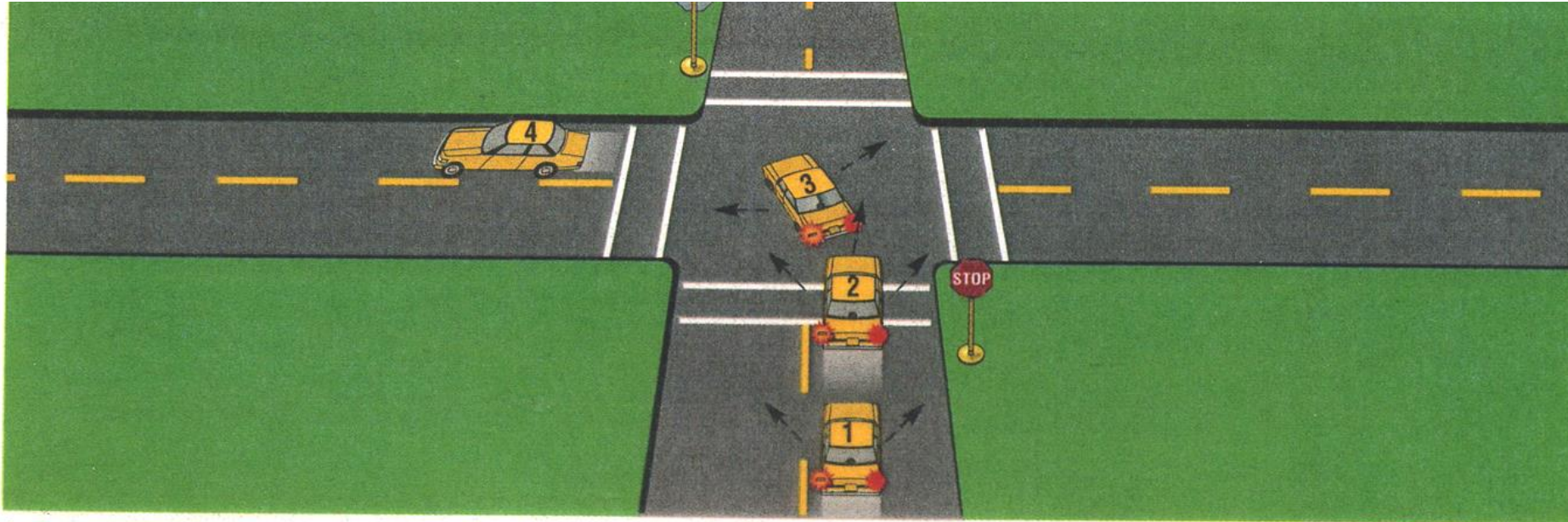
Joining Traffic—Left Turn

Joining Traffic—Left Turn Follow these steps when turning left:

1. Before moving beyond location 1 in the picture on the bottom right, your vehicle should be in lane position 2. Search front zones for pedestrians and vehicles turning onto your street. Check your rear zone and stop.
2. Stop when your front bumper is even with the curb. Evaluate your left-front, front, and right-front zones. When you are clear of any line-of-sight restrictions and have a gap of at least seven seconds, begin your turn. Move

forward slightly to where your body is even with the curbline. Check your front zones; turn your head toward your target area; accelerate; and turn the steering wheel.

3. At location 3, turn so that you end up in lane position 2. Accelerate to adjust to traffic and check the rear zone.



Joining traffic—Left turn

Controlled Intersections with Signals

Traffic signals usually have three lights to each cycle—red, yellow, and green. Signals also can have a fourth or fifth light, such as a yellow arrow and a green arrow. Imagine you are

stopped at the red light in the picture above. Think of what is about to take place. Proceed with caution when your light turns green.

As you drive toward a signal-controlled intersection, consider if the signal is about to change. Treat each intersection as a separate problem. Searching 12–15 seconds ahead, evaluate the next intersection to see what color that light is. Look for any traffic moving on the cross street. Before you reach the point where you must brake to stop at an intersection, quickly check your front zones. If you predict the light is going to be red, or if cross traffic has closed your front zone, check your rear zone, reduce speed, and be prepared to stop.

Signals

Use the IPDE Process to handle traffic signals properly. Identify the color of a signal as soon as you see it. Predict that the color might change as you approach the intersection.

Stale Green Light A stale green light is a light that has been green for a long time. If a light remains green after you first identify it, be prepared to slow. Predict that it will turn yellow soon.

Fresh Green Light A fresh green light is a light that has just turned green. A fresh green light does not guarantee that you will have a safe path of travel. *Be sure that no driver on the cross street is running the red light.* Check for an open zone before you proceed.

Yellow Light When you approach an intersection as the light turns yellow, you must decide whether to stop or proceed. If the light turns yellow before you reach the point of no return, check in the rear zone.

If it is safe to stop, do so. Otherwise, go through the intersection.

Be very careful before making a left turn on a yellow light. Wait for all oncoming traffic to stop before you start your turn.

Red Light When the light is red, you must stop. Check your rear zone as you begin to slow.

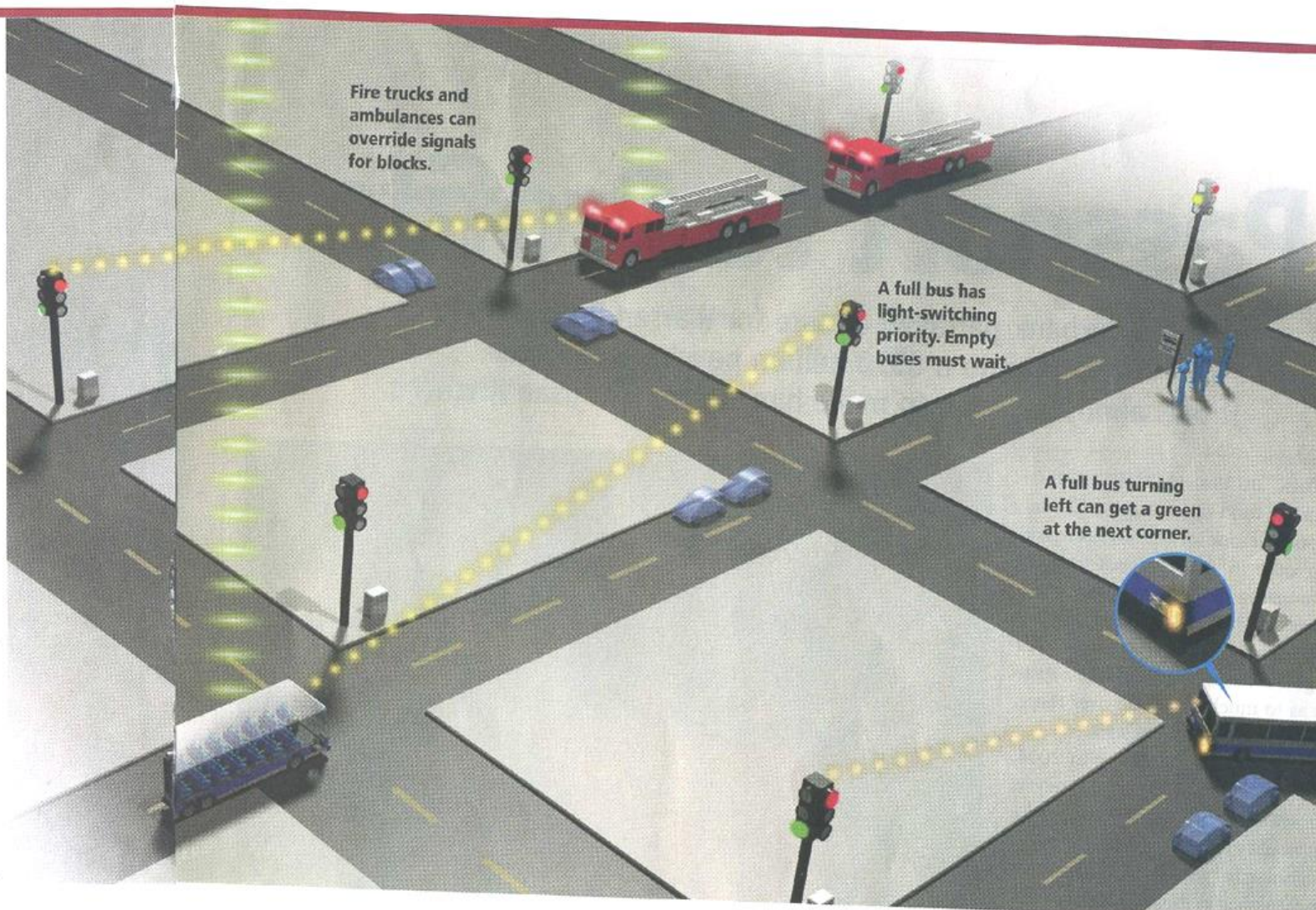
If you have a vehicle ahead of you, stop at a point where you can see its rear wheels touching the roadway. If you have no vehicles behind you, continue checking your rear zone often.

WHAT IS ONE WAY TO PREDICT A GREEN LIGHT MAY BE STALE?

Move It Along

The Opticom traffic system lets emergency vehicles and buses slice through intersections by turning red lights to green. Equipped with a GPS link and radio transmitter, a vehicle relays its location and speed to a computer controlling the traffic light. The light switches to green as the vehicle approaches. Emergency vehicles can set up more green lights farther down the road. The system can also maintain a red light if the bus is light on passengers, ahead of schedule or both, to avoid having car drivers sit at red lights unnecessarily.

—J.B.



The Opticom Traffic System is in use now in most major cities for emergency vehicles and is being phased in for buses as a fuel saving measure as well as a time saver.

“I’m the decider, and I decide what’s best.”

George W. Bush, on his role as president, in response to calls for Defense Secretary Donald Rumsfeld’s resignation

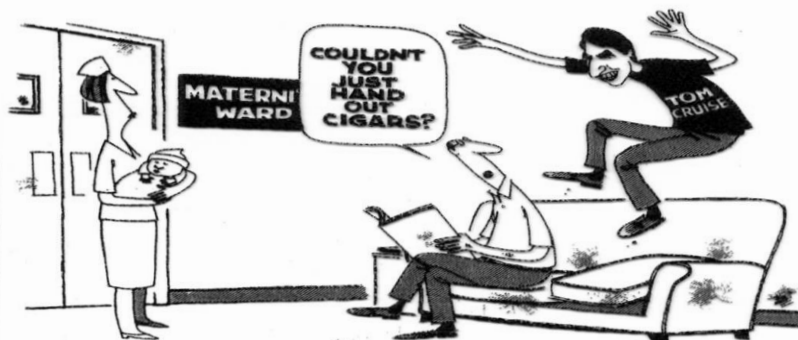


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“Destroy private American aircraft ... We call upon all Muslims to follow and identify private civilian American aircrafts in all airports of the world.” Portions of an Arabic Web posting from April 13. The Transportation Security Administration has since urged private-plane operators to take greater precautions.

“Everything is fine for the monarchy while she is alive. I am not sure it is fine when she is dead. I don’t think we want Charles to come to the throne in any real hurry.” Daily Mirror royal correspondent **James Whitaker**, on Queen Elizabeth’s 80th birthday. She is 12 years away from becoming Britain’s longest-reigning monarch.

“Three years would have been an awfully long time in this position ... I didn’t need much encouragement to make this decision, even though you all kept tempting me.” Bush Press Secretary **Scott McClellan**, telling the White House press corps, with whom he has had a contentious relationship, why he has chosen to resign



© 2006 KELLEY—TIMES-PICAYUNE

“In all honesty, I think they’re guilty.” Stripper **Kim Roberts**, one of two to dance at a Duke lacrosse party during which her colleague claims she was raped by team members. The defense says Roberts, who initially doubted the charges, wants favorable treatment in another criminal case.

“Long live democracy! The blood of the martyrs will not go to waste!” Nepalese protesters calling for King Gyanendra to cede the throne and make way for a constitutional democracy. The king seized total power in February 2005, saying he would crush the Maoist insurgency. It has since engulfed much of the countryside, spurring paralyzing protests.

“President Bush, stop him from killing.” **Wang Wenyi**, interrupting Chinese President Hu Jintao’s White House appearance to protest China’s crackdown on the spiritual movement Falun Gong. Wang has been charged with harassing, intimidating and threatening a foreign official.



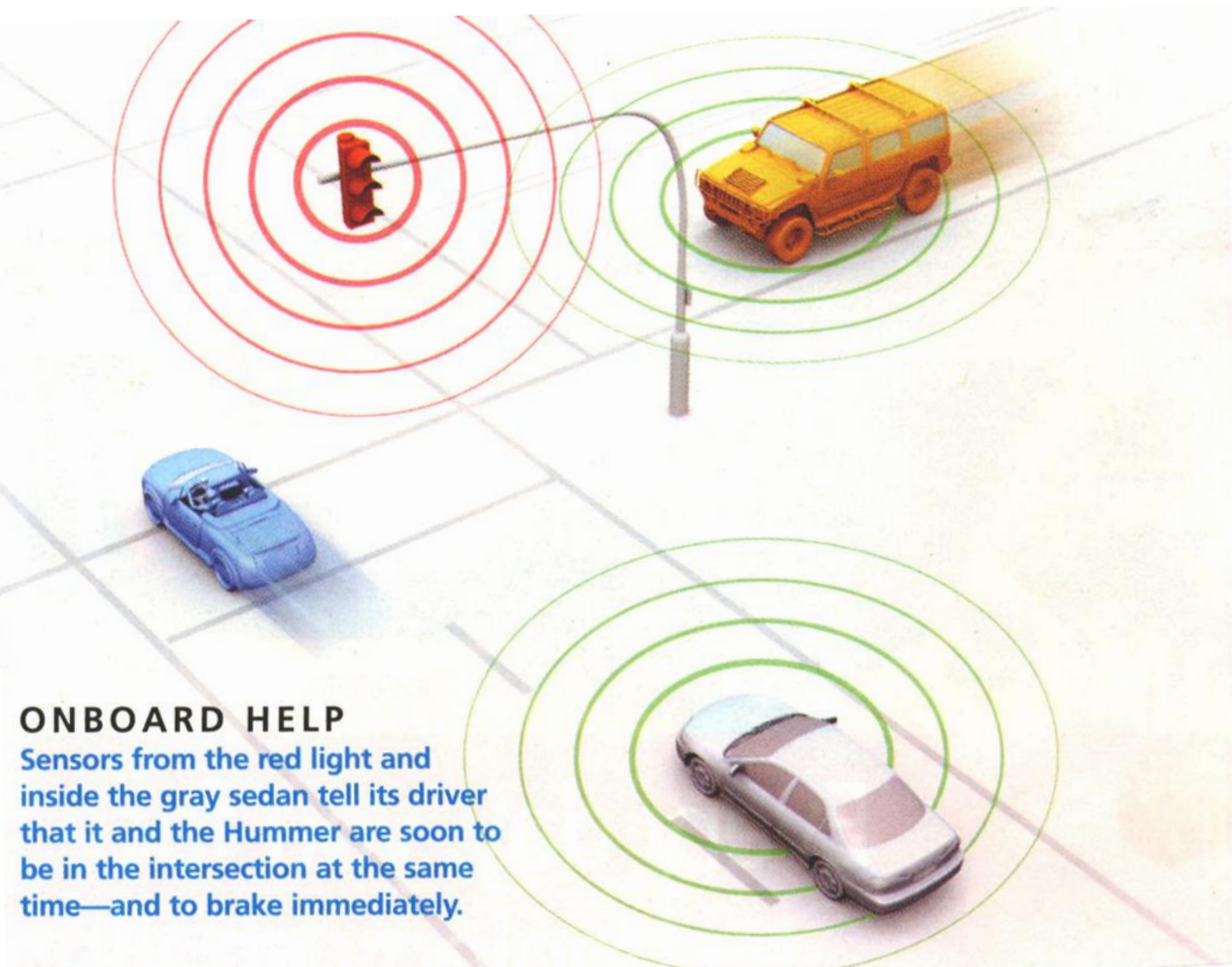
© 2006 PETERS—DAYTON DAILY NEWS

“We seem to have learned a new Hebrew word—and from Tom Cruise no less.” A TV anchorman on Israel’s Channel Two, on “Suri,” the name Cruise and fiancée Katie Holmes have chosen for their newborn daughter. Both Hebrew and Farsi speakers have disputed the Cruise camp’s claim that Suri “has its origins in Hebrew, meaning ‘princess,’ or in Persian, meaning ‘red rose.’”

Reader **Stephen G. Tibbetts** of Angelus Oaks, Calif., submitted this quote:

“I guess in the two years I had it, that thing paid for itself.” Longmont, Colo., resident **Jason Niccum**, on his Opticon, a device that uses infrared pulses to change traffic lights from red to green. Police recently gave Niccum a \$50 ticket and confiscated the gadget, which cost him \$100 on eBay and is typically used by ambulances.

Submit a quote you like and its source at Quotes.Newsweek.com. Next week, we’ll print our favorite and credit the reader who sent it.

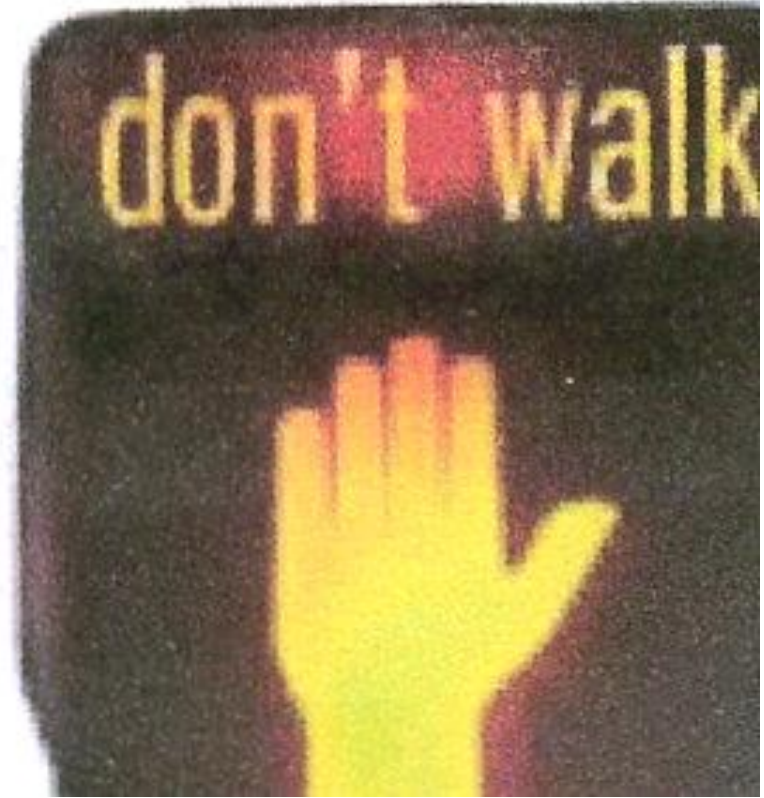


ONBOARD HELP
Sensors from the red light and inside the gray sedan tell its driver that it and the Hummer are soon to be in the intersection at the same time—and to brake immediately.

“No longer are we only reacting to what has already happened. We are anticipating,” says Kenneth Laberteaux, a Toyota researcher developing such technology at the company’s Ann Arbor, Mich. technical center.

The automakers still have a mountain of issues to sort out, including how to rank incoming signals by importance, how to minimize false alarms and how to make the networks secure. Automakers don’t want a roadside hoodlum to be able to bring traffic to a halt with a push of a button.

There are things to work out but the technology for this exists



AS YOU SAW IN CHAPTER 2, WHEN THERE IS A GREEN LIGHT AND A DON'T WALK SIGN, THE GREEN LIGHT IS ABOUT TO CHANGE

Unprotected Left Turns

An **unprotected left turn** is made at a signal-controlled intersection that does not have a special left-turn light. When you turn left, you must yield to oncoming traffic.

Protected Left Turns

You can make a **protected left turn** when a special left-turn light, green arrow, or delayed green light lets you turn left while oncoming traffic is stopped. Left turns might be prohibited when the protected left-turn signal ends by a sign or a red arrow. If the turn is allowed, respond to it as you would to an unprotected left turn.

Left-Turn Light A left-turn light provides a protected left turn. Some left-turn lights are located over the turn lane without using signs.

Green Arrow A green arrow can appear with the normal red, yellow, and green signals. In many places the green arrow simply turns off to indicate the protected turn has ended. Others

are followed with a yellow arrow as a warning. Watch for oncoming drivers who might proceed, thinking your green arrow is their green light.

Delayed Green Light A delayed green light indicates that one side of an intersection has a green light while the light for the oncoming traffic remains red. This light allows traffic from one side to turn or go straight before the light for oncoming traffic turns green. Obey your signal only. Do not assume that you can proceed when oncoming traffic proceeds.

Be aware as you turn left on a protected green light or green arrow, that the cars in the oncoming lane remain stopped.

Drivers that you have to turn in front of will sometimes go when they see the traffic in the opposite direction going.

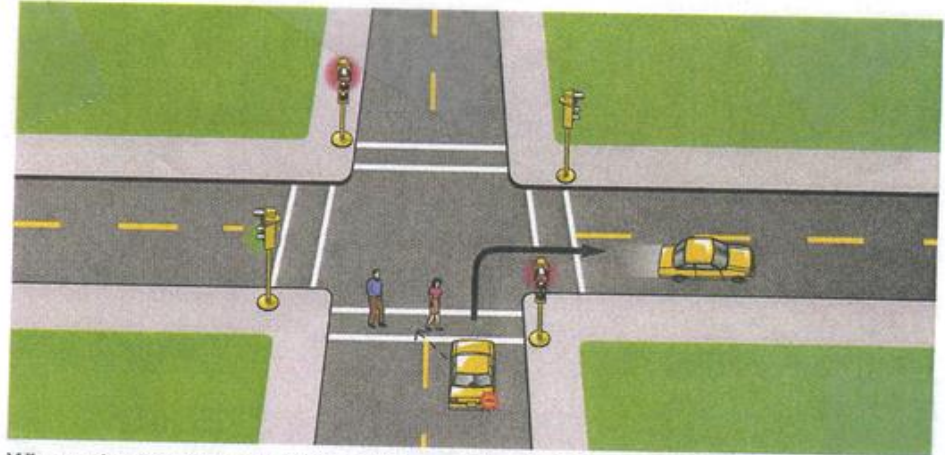
This happens when there are no cars turning left from the other direction (facing you and turning left)

Turns on Red

All states and the District of Columbia now permit turns on red. A few local governments may not. Watch for signs posted that prohibit turning on red.

Right on Red Before turning right on a red light, come to a full stop as you would at a STOP sign. Move to a position where you can see clearly. Search the front zones for openings. You must yield the right of way to any vehicle or pedestrian in, or approaching, the intersection. Complete your turn into the nearest right lane.

Left on Red Most states also permit a left turn on red if the turn is from a one-way street onto another one-way street. A few states also permit turning left on red from a left-turn lane on a two-way street onto a one-way street. Follow the same procedure as in a right turn on red, but look for traffic in your front and right-front zones. Then turn into the nearest left lane.



Where should you search for vehicles and pedestrians when turning right on red?

THE NEW YORK BOROUGH OF
MANHATTAN HAS SIGNS POSTED
AT THE ENTRANCE OF THE TUNNELS
AND BRIDGES INTO NEW YORK CITY
STATING THAT THERE IS NO TURN
ON RED PERMITTED ANYWHERE
IN THE CITY

An uncontrolled intersection has no signs or signals to regulate traffic. These intersections usually are found in areas of light traffic, such as residential areas. Although these streets usually are quiet, they can be dangerous because drivers might not be expecting cross traffic or pedestrians.

Sometimes a driver fails to identify an intersection as uncontrolled. The driver assumes the other driver will stop or, on a quiet street, assumes that no one is there. If you do not see a traffic sign or signal, assume that the intersection is uncontrolled. Predict that other traffic will not stop. Reduce speed, search aggressively, and always be prepared to stop.

Approaching Uncontrolled Intersections

Once an intersection has been identified, check your rear zone for following traffic. Then, you will need to determine if you have an open path of travel into and through the intersection. You will need to search the

left-front, front, and right-front zones to be certain that they are open for your use. You need to continue to look for line-of-sight restrictions that could prevent you from seeing if your path of travel is going to be safe.

Be certain that you can clearly see open space in your left-front, front, and right-front zones before entering the intersection. You must search for zone changes that could make them closed.

Your search pattern will change when you have identified a closed zone caused by a line-of-sight restriction. If you identify a closed zone in your path of travel, check your rear zone again. Remove your foot from the accelerator and cover or apply the brake.

If a vehicle is coming from the left or right, the driver on the left must yield to the driver on the right. However, predict the worst in each case. *Never assume that the other driver will yield.* The only safe action is to slow and be prepared to stop.

Treat an uncontrolled intersection as you would a YIELD sign and always be prepared to stop.

At a traffic circle you must yield to vehicles already in the circle. Vehicles in the traffic circle will be coming from your left. When you are in the circle, be alert for vehicles entering in your right-front zone.

Always let pedestrians go first—no matter where the pedestrian is crossing. As a driver, you must yield to pedestrians even if they are breaking a traffic law.

Procedures at Uncontrolled Intersections

When you search your target area and identify an uncontrolled intersection, there are three critical locations at which you must use the IPDE Process. Each location corresponds to a time period measured in seconds. When you approach an uncontrolled intersection, you must perform a series of steps at each of these locations.

IPDE Process at 12–15 Seconds from Intersection

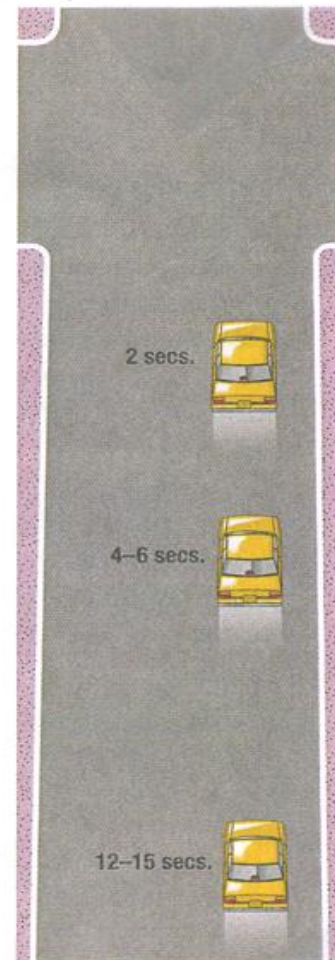
1. Check roadway conditions as you approach the intersection. Check for closed zones to the left front, front, and right front.
2. Identify whether or not the intersection is controlled.
3. Identify other roadway users in or near the intersection.
4. Search the view to each side. Look for line-of-sight restrictions. Check 45 degrees to each side. When you identify closed zones, solve the problems before you enter those spaces.
5. Locate your point of no return. You cannot stop after passing that point.
6. Check the rearview mirror for following traffic, and slow your vehicle. The more line-of-sight restrictions, the more time you need to use the IPDE Process.

IPDE Process at 4–6 Seconds from Intersection

1. Recheck your immediate path of travel.
2. Search left front and right front again for an open zone.
3. If a vehicle is coming from the left or right, prepare to stop.
4. Recheck traffic to the rear.

IPDE Process at 2 Seconds from Intersection

1. Pause your search briefly as you continue evaluating zones for potential conflicts. This is your last chance to stop safely—your point of no return.
2. Brake to a stop if your front zone in the intersection closes.
3. Search again to the left and right.
4. Proceed through the intersection when your path of travel is clear.



You should perform a series of steps at each of these three locations near uncontrolled intersections.

Controlled Railroad Crossings

A controlled railroad crossing usually has red lights along with crossing gates. Make a complete stop when the lights are flashing and/or the gates are down. Remain stopped until the lights stop flashing and the gates have raised. It is illegal, unsafe, and costly to drive around the gates. When the crossing is clear, proceed cautiously.

Uncontrolled Railroad Crossings

Trains warn others of their approach, but it is primarily up to the vehicle driver to avoid a collision. Stopping distances of trains will vary. You can be sure that a train's stopping distance will always be longer than that of a car.

An uncontrolled railroad crossing does not have flashing red lights or crossing gates. However, nearly

all are marked with a sign as you approach them. In towns and cities, a round, yellow railroad-crossing sign is posted about 250 feet from the actual crossing. In rural areas this warning sign is about 750 feet from the crossing. A crossbuck, a large white X-shaped sign, is located beside the crossing. Many times a large white X is painted on the roadway near the crossing.

Treat uncontrolled crossings the same as an intersection with a YIELD sign. Slow and be prepared to stop.

Crossing Railroad Tracks

Take these actions when you approach an uncontrolled railroad crossing:

1. Slow down. Check tracks to both sides and traffic to the rear as you approach the crossing sign.
2. Turn off the radio, air conditioner, or heater fan to listen for train sounds. Open the window if the area is noisy.
3. Reduce speed to handle a possible rough-road crossing or if there is a line-of-sight restriction. Note the number of track sets.

4. If a train is approaching, stop at a safe distance before the tracks.
5. Wait for the train to clear. Then carefully check the crossing. Be sure another train is not approaching on another set of tracks.
6. If it is safe to cross, increase your speed up to at least 20 mph. Then your vehicle can roll across the tracks should its engine stall.
7. If you have a stickshift vehicle, shift to a lower gear before crossing to prevent stalling on the tracks. Never shift while crossing tracks.
8. Drive onto the tracks only after you have enough space and speed to clear the tracks. Make sure any vehicles ahead clear the tracks before you start to cross. Never stop on railroad tracks while waiting for traffic ahead to move.
9. When you follow buses or trucks hauling flammable contents, be prepared to stop. Many states require such vehicles to stop before crossing railroad tracks.

NEVER RACE A TRAIN TO A CROSSING. TRAINS CAN TAKE UP TO A MILE OR MORE TO STOP

A SECOND TRAIN COULD BE PASSING THE TRAIN YOU ARE STOPPED FOR

A safe driver knows that conflicts often occur at intersections and is prepared to handle these conflicts. To be a safe driver, you need to know when to yield the right of way.

What Is Right of Way?

The term **right of way** describes the privilege of having immediate use of a certain part of a roadway. You have the right of way only when other drivers give it to you. It is not something you can take.

You will often have to **yield**, by letting others go first, to be safe. Letting others go first is called “yielding the right of way.” Sometimes you must yield to prevent a collision. At other times, yielding is an act of courtesy. Most of the time, laws determine who should yield the right of way.

Situations When You Must Yield

Remember these points in yield situations:

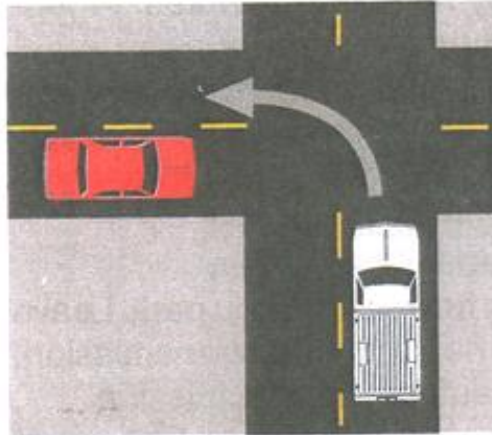
- Your action should not cause those to whom you should yield the right of way to slow, stop, or change their intended path of travel.
- Traffic signs and signals only show who should yield the right of way. They do not stop traffic for you.
- Others can give you the right of way. Do not assume others will always yield to you.
- Many times it is better to yield the right of way even when the law requires the other driver to yield.

- Failure to yield the right of way is one of the most frequent violations in fatal collisions.

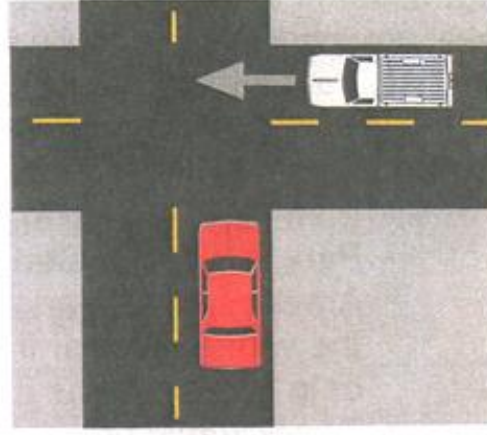
You must yield the right of way in many situations. Knowing right-of-way laws will help you make safe decisions. These drawings show the most common situations regarding yielding the right of way. In each situation the yellow car is required to yield.

Yielding Situations

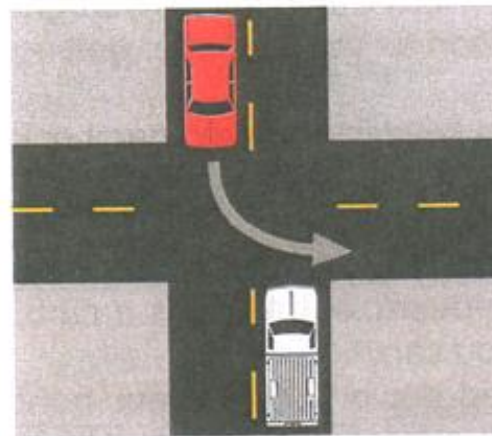
(red car shown here must yield to approaching vehicle)



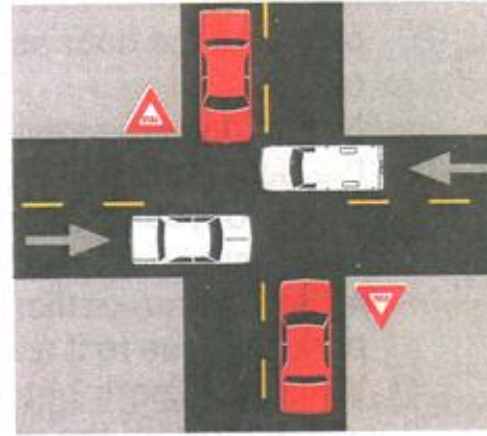
Car in intersection



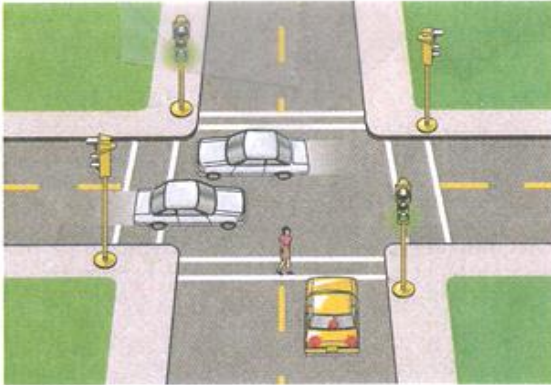
Car on right



Oncoming traffic

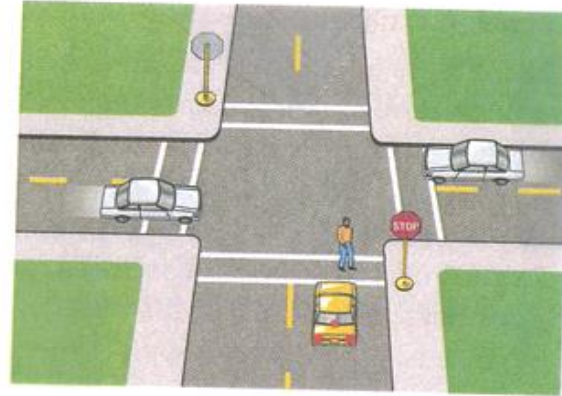


At yield sign



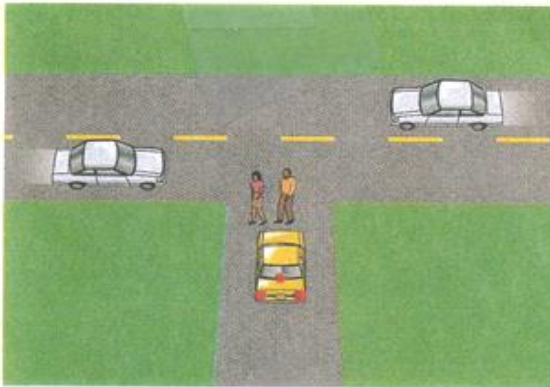
Yield at fresh green lights to

- pedestrians still in the crosswalk
- vehicles still in the intersection



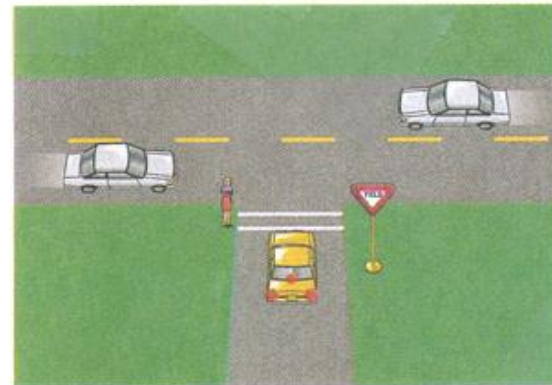
Yield at stop signs to

- pedestrians in or near the crosswalk
- all traffic on the through street



Yield coming from an alley, driveway, or private roadway to

- pedestrians before reaching the sidewalk
- all vehicles on the street (Make two stops.)



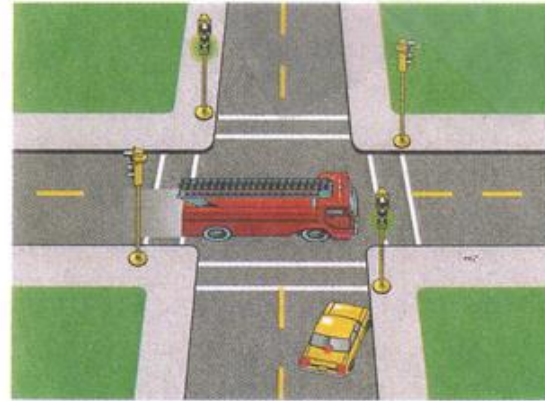
Yield at all YIELD signs to

- all pedestrians in or near crosswalks
- all vehicles on the cross street



Yield when turning left at any intersection to

- all pedestrians in your turn path
- all oncoming vehicles that are at all close



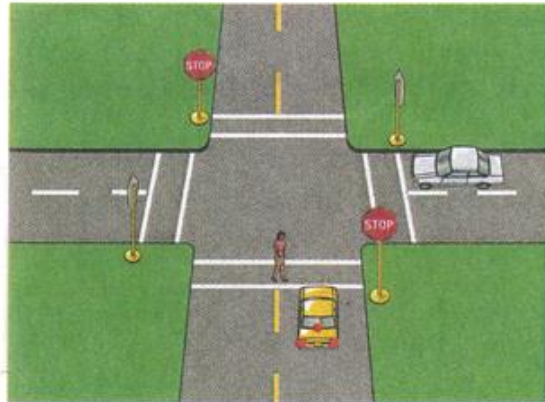
Yield to emergency vehicles

- sounding a siren or using a flashing light
(Stop clear of the intersection close to curb. Wait for emergency vehicle to pass.)



Yield at uncontrolled intersections to

- pedestrians in or near the crosswalk
- any vehicle that has entered the intersection
- a vehicle from the right if you both arrive at the same time



Yield at four-way stops to

- all pedestrians in or near crosswalks
- vehicles that arrive first
- a vehicle from the right if you arrive at the same time

Crossing and Joining Traffic

You must know how long it takes to turn right, to turn left, and to cross traffic at an intersection. Turning right or left into lanes of other vehicles is called *joining traffic*. Look at the picture to visualize situations that follow.

Crossing an intersection takes four to five seconds from a stop. If traffic on the through street is traveling 30 mph, you need a gap of about two-thirds of a block in each direction.

You need a larger gap to join traffic when turning right than when crossing. You need about six seconds to reach the speed of through-street traffic without interfering with the flow of traffic.

A left turn is more dangerous than a right turn. You cross the paths of traffic from the left before entering traffic from the right. The gap to the left should be greater than when you make a right turn. At 55 mph, you need a gap of more than three and one-half blocks.

Judging the Size of a Gap

You must be able to judge the gaps between vehicles and how long it takes to pass through or enter intersecting traffic lanes.

A gap is the distance between vehicles. When you enter a through street after stopping, you must judge the size of the gaps in traffic.

You need different size gaps depending on the maneuver you plan to make and the speed of traffic. From the picture above you see that crossing a two-lane street takes about four to five seconds. Turning right and accelerating to 30 mph takes about six seconds. Turning left and accelerating to 30 mph takes about seven seconds. The same process to judge following distance is adapted to judge gap sizes.

YOU WILL ONLY LEARN THE SKILL OF JUDGING THE SIZE OF THE GAP YOU NEED OR HOW LONG IT WILL TAKE TO MAKE A TURN BY EXPERIENCE. BE CAUTIOUS AS MISJUDGING A GAP COULD BE A FATAL MISTAKE.

IT IS NEARLY IMPOSSIBLE TO JUDGE THE SPEED OF A VEHICLE FROM THE FRONT



gap



STOP

STOP

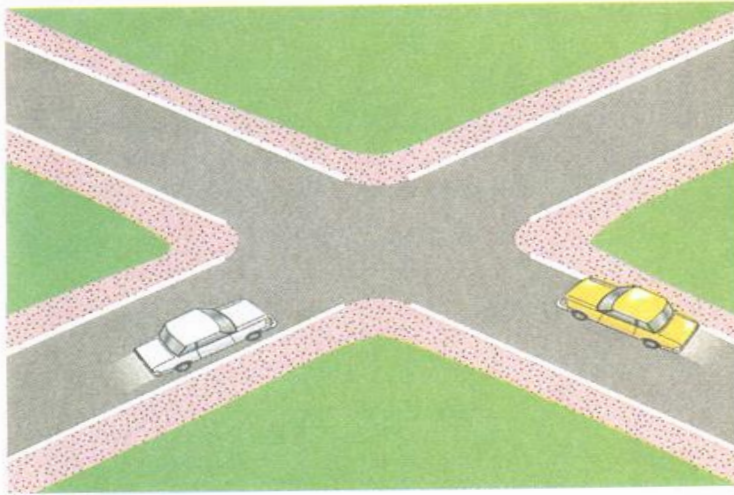
	To Cross Traffic 4–5 Seconds	Turn Right and Join Traffic 6 Seconds	Turn Left and Join Traffic 7 Seconds
20 mph	more than 1/2 block away	more than 1/2 block away	more than 2/3 block away
30 mph	more than 2/3 block away	1 block away	more than 1 block away
45 mph	more than 1 block away	more than 2 blocks away	more than 2 1/2 blocks away
55 mph	more than 1 1/2 blocks away	more than 3 blocks away	more than 3 1/2 blocks away

**WATCH AN EXAMPLE OF JUDGING THE
GAP TOO CLOSELY.**



SA WEHA 01

Decision Making



1. You are driving the yellow car and are approaching an uncontrolled intersection. You and the other car are the same distance from the intersection. What do you predict about the other car? What should you do?



2. You have just stopped at a red light. You wish to turn left. Is a left turn at this intersection legal on a red light? Where should you search before turning?



3. You are driving the red car. The light turns yellow just after the car in front of you crosses the railroad tracks. Where should you stop? What could happen in this situation?



4. You are driving this car that is stopped at the STOP sign. At what speed would you assume the cars on the through roadway would be traveling? How far away would the cars have to be for you to make a safe left turn?