BikeEd

Motorist Education

Instructor's Manual

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Motorist Education

Motorist Education is designed to improve the highway users' environment by educating motorists to better understand and interact with cyclists.

Other courses, such as Road I & II; Kids I & II; Commuting; address these problems from the cyclist's point of view. This course is aimed entirely at motorists who have little or no knowledge of BikeEd principles.

This course is designed for driver education programs, police departments, state bicycle advisory committees, service groups, automobile clubs, court-mandated motorist remediation, and civic groups.

This is the only manual for Motorist Education. The manual is in two parts, for 1-hour and 3-hour programs. There is no student manual or notebook. Graphics for use with overhead projectors are included. If no projector is available, you may make copies of the graphics to hand out to students.

[Text enclosed in brackets and italicized is notes intended for the instructor only.] Text intended as part of the teaching outline is not in brackets.

Note to Instructors: You need not memorize the script! You are free to create your own dialogue using the printed script as a guide.

This course is written to be taught as I would teach it, that is, as an interactive meeting of the minds of all of the participants. Everyone comes into the room with assumptions and prejudgments, many of which are different from my own. The best way to deal with those existing sets of experiences is to acknowledge them, and not to assume that the student is a clean slate. I find it ineffective to teach in a vacuum, to lecture at people and assume they automatically absorb what is being taught. Instead, I feel it is best to begin with what the participants understand and feel about cyclists and work from there.
--Michael M. Miller, League Cycling Instructor)

Length of Program 1 - 3 Hours depending on the specific needs of the audience

1-Hour Lecture, or 3 Hours of Classroom Instruction

Table of Contents: 1-hour Lecture

Table of Contents: 3-hour Classroom Instruction

Objectives

The Motorist Education program is designed to accomplish three goals:

1. To educate motorists about the ways that motorists and bicyclists may share the road safely;
2. To review traffic law as it pertains to the interaction of cyclists and motorists on the roads;
3. To review the common causes of car/bike crashes and some ways to help prevent these crashes.

Our purpose is the creation of a better atmosphere for both cyclist and motorist.

INTRODUCTION AND BASIC PRINCIPLES

[Participants should have a nametag, a sign-up sheet, and a pad and pen or pencil. On the blackboard should be written the words "Welcome to Motorist Education," along with your name and LCI number. Every attempt should be made to make the participants feel comfortable and at ease.]

[Introduce yourself. Briefly cover your background and history.] My name is _____. I am both a motorist and a cyclist. I am also a League of American Bicyclists certified instructor. League Cycling Instructors are trained to teach other cyclists what to do and what not to do when they ride in traffic.

As I have said, I am a motorist. [Non-motorist LCIs should NOT try to teach this class as the lead instructor.] I was a motorist before I was an adult cyclist. Think of me as a motorist who has a special appreciation for what cyclists go through in a transportation environment essentially dominated by automobiles, buses, and trucks.

Bicyclists Fare Best When They Act and Are Treated As Drivers of Vehicles.

This idea may seem a bit radical to many motorists. It is radical to a lot of cyclists as well. During this course, we hope that you will come to see that it is the answer to driving in a world that contains cyclists, that it offers a way in which cyclists and motorists may share the road rather than fight for access to it. At the very least, I would like everyone in this class to leave with a clear understanding that cyclists are legal roadway users, no different from motorists in the eyes of the law.

In the next hour, we will look at the following points:

- Prevailing motorist attitudes about cyclists. Some facts about bike crashes in general and car-bike crashes in particular.
- Typical traffic situations and how well trained cyclists handle them.
- A review of some problems and crash scenarios. What individual motorists and cyclists might do to lessen the car/bike crash rate.

I would like to begin by asking you a question. As a motorist, what is your first reaction when you see a cyclist on the road? Do you always have the same reaction, or is your reaction tempered by the age and behavior of the cyclist and what the cyclist is doing when you first see him or her? [Write the responses on the board.]

We are now going to look at some statistics. I don't expect you to memorize them, or even to write them all down. After we've done that, I'm going to ask for your reactions to them.

Sharing the Road with Bicyclists

Did You Know That...

Over 100 MILLION people in the United States own bicycles?
Close to 750 bicyclists are killed each year in the U. S.?
96% of these deaths result from crashes with motor vehicles?
In all 50 states, bicyclists have the same rights and responsibilities as drivers of cars, trucks and buses?

It is more than just kids who ride bicycles, as adults find it an enjoyable sport. Bicycles are increasingly a part of the traffic mix as more and more people use the roads. Let's take a look at crashes—where and to whom they can happen.

Bicycles are increasingly a part of the traffic mix as more and more people use the roads. Let's take a look at crashes—where and to whom they can happen. Please note that most crashes for each age group are not car-associated crashes.

Elementary school children have the highest crash rate: .72 crashes per 1,000 miles ridden. They travel an average of 1,400 miles between crashes.

College students have the next highest rate: .51 crashes per 1,000 miles ridden. They travel an average of 2,000 miles between crashes.

Bicycle club cyclists and other more experienced cyclists have .11 crashes per 1,000 miles ridden. They travel 8,900 miles between crashes.

These figures show us that the crash rate declines with experience and maturity. Experienced cyclists have a crash rate less than 1/6 as high as elementary school-age children, and only about 1/5 as high as college students, who are adults in terms of maturity, physical skills and judgment.

Now let's look at the types of crashes that experienced club cyclists have. Because the data are not readily available from among any other group, we cite studies of crashes among experienced cyclists.

Type of Crash	Proportion	Percent
Falls	1/2	50
Car-Bike Collisions	1/6	17
Bike-Bike	1/6	17
Bike-Dog	1/12	8
All Other	1/12	8

Why do falls equal all the other types of crashes combined? Road conditions, weather, other cyclists and pedestrians must all be taken into account. Road conditions, which may merely irritate motorists, can ruin a cyclist's whole day. Potholes, uneven pavement or seams in the road that do not even slow an automobile can cause cyclist to lose control. Steel plates, steel bridge decks and some road markings become slippery when wet. Badly designed storm drains may grab the cyclist's front wheel and pitch him or her over the handlebars. Automobiles, trucks and buses may be able to run over broken glass, gravel or sand in the road, but cyclists must see these conditions as obstacles and avoid them. Other obstacles include pedestrians, uncontrolled dogs and other cyclists. The next time you are startled when a wrong-way cyclist pops unexpectedly from behind a parked truck, consider how that feels to a cyclist who is using the road properly.

Where are crashes most likely to occur?

Some studies have shown that, in environments where cyclists have access to and ride on sidewalks and bike paths (or multi-use recreational paths), more crashes to cyclists occur there than on streets and highways. This is true for a couple of reasons. Let's look at each of these venues and examine possible reasons. Most cyclists have had members of the motoring public ask "Why don't you get up on the sidewalk where it is safer?" Motorists think of the sidewalks as a safe place to ride bicycles mainly because there are no automobiles there. And yet, sidewalks are probably the most dangerous places in the world for cyclists. Driveways, streets and alleys regularly intersect sidewalks. When a cyclist is on the street, the motorist sees her and reacts, but when she is on the sidewalk, she is invisible to the motorist on the street. Every time that sidewalk-cyclist tries to cross a driveway, street or alley he runs the risk of popping out in front of a motorist and getting hit. As motorists, would we prefer to have cyclists on the street where we can see them or on the sidewalks where they suddenly pop out into the streets when we least expect them?

Most collisions between motorists and bicycles happen at intersections, including the point at which driveways and walkways intersect roads. The following charts are based on a study of all car/bike collisions, and breaks down where these are most likely to occur, in an urban or rural setting, and their causes:

Types and Proportions of Car-Bike Collisions

Collision Type	Urban	Rural	Total
Turning and Crossing	89%	60%	85%
Motorist Overtaking Cyclist	7	30	9.5
Other Parallel Path	4	10	4.7

What do these data suggest? [Get answers from the class. Stress that cyclists being hit from behind is a very infrequent collision.]

Major Causes of Car-Bike Collisions (total does not equal 100%)

Cyclist's failure to yield to crossing traffic	25%
Wrong way cycling	17
Cyclist's failure to yield when changing lanes	13
Motorist's left turn	8
Sidewalk cycling	7
Motorist's right turn	5
Motorist's restart from stop	4

What do these statistics mean? [You want the audience to draw its own conclusions, principally that intersections are the main problem, and that riding on the wrong side of the street, the main problem among young riders, is a major cause of crashes.]

It is important to point out that the younger the rider, the more likely he or she is to have problems controlling their bicycle and not understanding how the traffic operates. As you move into and through the teenage years, you get problems of simply not knowing the rules or being unwilling to obey them. Older riders are more likely to obey the rules but still have problems with motorists who are careless or indifferent to the rules.

Now that we've seen crash data, we can look at some of the techniques cyclists use to reduce conflicts with other road users.

Cyclists will:

Drive on the right, not on the left, and not on the sidewalk.

Position themselves according to their speed relative to the speed of other traffic:

To the right when traveling slower than the rest of the traffic;

In the center of their lane when traveling as fast as the traffic in front of them;

Toward the center when passing slower vehicles. An exception is when the slower vehicle is in a lane to the left and passing on the right is legal and there is sufficient room for it (at least a full lane width).

Position themselves for turns in the same manner as motorists:

Toward the curb or right edge for right turns;

Toward the center for straight through;

In a left-turn lane or next to the centerline for left turns.

Drive in the center of a lane that's too narrow for safely sharing with a motor vehicle.

Signal turns and lane changes when feasible. Remember that signaling is not required under circumstances when the cyclist risks a loss of control by removing a hand from the handlebars. A turn of their head will often substitute for a hand signal.

We will now move on to the last section of the course, specific recommendations for motorists to help create a bicycle friendly world. What can the motorist do to avoid car/bike crashes? Here's what we recommend:

[Depending on your audience and the time available, you may want to spend time on each of the following points, trying to relate it back to what was discussed earlier.]

1. Leave at least three feet of passing space between the right side of your vehicle and a bicycle.
2. Be aware that when a traffic lane is too narrow for cars and bikes to ride side by side, bicycles should "take the lane," which means riding in or near the center of the lane.
3. Reduce speed when passing a cyclist, especially if the roadway is narrow.
4. When turning left at an intersection, yield to oncoming bicyclists just as you would yield to oncoming motorists.
5. After passing a cyclist on your right, check over your shoulder to make sure you have adequate distance before merging back in. Experienced bicyclists often ride 25-30 mph and may be closer than you think.
6. Don't blast your horn when approaching bicyclists--you could startle them and cause a crash.
7. In inclement weather give cyclists extra trailing and passing room, just as you would other motorists.
8. Learn to recognize situations and obstacles that may be hazardous to cyclists, such as potholes, debris, and glass--then give them adequate space to maneuver.
9. Look for bicycles when opening your car door.
10. Children on bicycles are often unpredictable in their actions. Expect the unexpected.

CLOSURE

[It might be a good idea to try to open up the discussion at this point to see if there are any changes in basic attitudes toward cyclists. You might want them to give you some feedback as to what they will be coming away with from the session. Every instructor has his or her own way of doing this. Don't forget in closing to go back to the list of motorist concerns about cycling developed at the beginning of the class and make sure all of those concerns were addressed.]

Objectives

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To educate motorists about the ways that motorists and bicyclists may share the road safely;
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Our purpose is the creation of a better atmosphere for both cyclist and motorist.

First Session—1 hour

INTRODUCTION AND BASIC PRINCIPLES

[Participants should have a nametag, a sign-up sheet, a pad and pen or pencil, and a folder for whatever handout materials might be deemed necessary. On the board should be written the words "Welcome to Motorist Education," along with your name and LCI number. Every attempt should be made to make the participants feel comfortable and at ease.]

[Introduce yourself. Briefly cover your background and history.] My name is _____. I am both a motorist and a cyclist. I am also a League of American Bicyclists certified Instructor. League Cycling Instructors are trained to teach other cyclists what to do and what not to do when they ride in traffic.

As I have said, I am a motorist. [Non-motorist LCIs should NOT try to teach this class as the lead instructor.] I was a motorist before I was an adult cyclist. Think of me as a motorist who has a special appreciation for what cyclists go through in a transportation environment essentially dominated by automobiles, buses, and trucks.

Bicyclists fare best when they act and are treated as drivers of vehicles.

I hope that we will demonstrate in this class that this philosophy is best for us motorists as well. Why? Because following the tenets embraced by that one phrase makes life easier for everybody. It lowers blood pressure and stress levels and it can help reduce the number of car/bike crashes and the attending injury and death of cyclists each year. As a motorist, I do not want to wind up with a cyclist in my grill or draped over my hood. As a cyclist, I don't want to ding up a perfectly good automobile if I can avoid it.

This idea may seem a bit radical to many motorists. It is radical to a lot of cyclists as well. During this course, we hope that you will come to see that it is the answer to driving in a world that contains cyclists, that it offers a way in which cyclists and motorists may share the road rather than fight for access to it. This course is divided into three sessions of one hour each.

Section 1
Prevailing motorist attitudes about cyclists. Some facts about bike crashes in general and car-bike crashes in particular.

Section 2
Typical traffic situations and how well trained cyclists handle them.

Section 3
A review of some problems and crash scenarios. What individual motorists and cyclists and community governments might do to lessen the car/bike crash rate.

By the end of this class, I would like to be able to say that I had convinced all of you that bicycles have an important role to play in the American transportation mix and that cyclists deserve as much respect as operators of other vehicles on our highways. I will settle for getting the beginning of understanding for the problems and hazards which cyclists confront every day. At the very least, I would like everyone in this class to leave with a clear understanding that cyclists are legal highway users, no different from motorists in the eyes of the law.

OPENING EXERCISE—GROUP PARTICIPATION

I would like to begin by asking you a question. As a motorist, what is your first reaction when you see a cyclist on the road? Do you always have the same reaction, or is your reaction tempered by the age and behavior of the cyclist and what the cyclist is doing when you first see him or her? What concerns do you have when you see this cyclist? What feelings do you have? Are these feelings different if you encounter a large group of cyclists who all seem to be going somewhere together? Are your feelings towards a lone cyclist at 7:45 on a workday morning on a busy downtown street different than they might be at 3:45 on a sunny Sunday afternoon in the park? Are your feelings different if the cyclist is very young or very old? Do you feel differently about a cyclist who stays in the traffic flow and obeys stop signs and traffic signals than you do about one who rides on the wrong side of the street when he wants to, blows through stop lights and ignores stop signs? How do you feel if you are sitting in rush hour traffic waiting for a light to change and a cyclist rides between the rows of cars up to the intersection and goes through the red light? Does he have the right to do that? What should you do if you see this type of behavior? More important, do bicycles have any right to be on the streets at all? Who decides what the appropriate vehicle mix on our streets and highways should be?

Right now, I would like to have you break up into groups of no more than four, meet the other people in your group and choose one member as the group recorder. I will give a handout to each recorder with some of these questions on it. Please go through the list and let the recorder get your feelings down on paper about each question. We will reassemble in ten to fifteen minutes. [This should be varied according to the size of the group.]

[When the class gets back together, ask each recorder to summarize their group's feelings. Make notes on the blackboard. When the last recorder has finished, you should have a list of driver concerns on the blackboard. Lead a brief discussion of these concerns to get a feel for the degree of anti-cyclist prejudice present in the room as well as the amount of resistance you will encounter when you get into the basic philosophy of BikeEd. Do not try to win the students over during this discussion; acknowledge their concerns and make sure that you cover all of them in some way during the upcoming discussion.]

BASIC FACTS

Let's begin with an assumption. If cycling on local streets and highways is legal, then it is not really an appropriate topic for discussion here. If we, as highway users, have reservations about allowing large trucks to use residential streets, automobiles that cannot maintain 45 mph on Interstates or bicycles on our streets and highways, there are government agencies that provide a forum for us to be heard. For the moment, since cycling is legal, let's discuss the realities of having two different vehicles, bicycles and automobiles, share the roads.

Did You Know That...

Over 100 MILLION people in the United States owned bicycles? Close to 750 bicyclists are killed each year in the U. S.? 96% of these deaths result from crashes with motor vehicles? In all 50 states, bicyclists have the same rights and responsibilities as drivers of motor vehicles?

It is more than just kids who ride bicycles, as adults find it an enjoyable sport. Bicycles are increasingly a part of the traffic mix. Let's take a look at crashes.

Children have the highest crash rate: .72 crashes per 1,000 miles ridden. They travel an average of 1,400 miles between crashes.

College students have the next highest rate: .51 crashes per 1,000 miles ridden. They travel an average of 2,000 miles between crashes.

Experienced cyclists have .11 crashes per 1,000 miles ridden. They travel 8,900 miles between crashes.

Please note that most crashes for each age group are not car-associated crashes.

Two Types of Bicycling Crashes: Falls and Collisions

The majority of all crashes do not happen between cars and bikes, but are the result of falls. Because the data are not readily available from among any other group, we cite studies of crashes among experienced cyclists.

Type of Crash	Proportion	Percent
Falls 1/2 50		
Car-Bike Collisions	1/6	17
Bike-Bike	1/6	17
Bike-Dog	1/12	8
All Other	1/12	8

Why do falls equal all the other types of crashes combined? Road conditions, weather, other cyclists and pedestrians must all be taken into account. Road conditions, which may merely irritate motorists, can ruin a cyclist's whole day. Potholes, uneven pavement or seams in the road that do not even slow an automobile can cause cyclist to lose control. Steel plates, steel bridge decks and some road markings become slippery when wet. Badly designed storm drains may grab the cyclist's front wheel and pitch him or her over the handlebars. Automobiles, trucks and buses may be able to run over broken glass, gravel or sand in the road, but cyclists must see these conditions as obstacles and avoid them. Other obstacles include pedestrians, uncontrolled dogs and other cyclists. The next time you are startled when a wrong-way cyclist pops unexpectedly from behind a parked truck, consider how that feels to a cyclist who is using the road properly.

Where are crashes most likely to occur?

Some studies have shown that, in environments where cyclists have access to and ride on sidewalks and bike paths (or multi-use recreational paths), more crashes to cyclists occur there than on streets and highways. This is true for a couple of reasons. Let's look at each of these venues and examine possible reasons. Most cyclists have had members of the motoring public ask "Why don't you get up on the sidewalk where it is safer?" Motorists think of the sidewalks as a safe place to ride bicycles mainly because there are no automobiles there. And yet, sidewalks are probably the most dangerous places in the world for cyclists. Driveways, streets, and alleys regularly intersect sidewalks. When a cyclist is on the street, the motorist sees her and reacts, but when she is on the sidewalk, she is invisible to the motorist on the street. Every time that sidewalk cyclist tries to cross a driveway, street or alley he runs the risk of popping out in front of a motorist and getting hit. As motorists, would we prefer to have cyclists on the street where we can see them or on the sidewalks where they suddenly pop out into the streets when we least expect them?

In fact, sidewalk cycling constitutes a danger to pedestrians and is outlawed in many communities. Many paths are meant to be scenic and most wander wherever land was available. Visibility can be limited by the scenery and cyclists who choose to use paths must be prepared to deal with walkers, runners, rollerbladers and dogs. Bicycle paths are often considered to be a nice addition to the city's park system but they are designed for recreational use. For cyclists who are trying to get somewhere quickly, the streets are often the best choice.

Collisions

Most collisions between motorists and bicycles happen at intersections, including the point at which driveways and walkways intersect roads. The following charts are based on a study of all car/bike collisions, and breaks down where these are most likely to occur, in an urban or rural setting, and their causes:

Types and Proportions of Car-Bike Collisions (United States)

Collision Type	Urban	Rural	Total
Turning and Crossing	89%	60%	85%
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Wrong way cycling	17
Cyclist's failure to yield when changing lanes	13
Motorist's left turn	8
Sidewalk cycling	7
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Motorist's restart from stop	4

What do these statistics mean?

[You want the audience to draw their own conclusions, principally that intersections are the main problem and that riding against traffic, is a major cause of crashes.}

We will take a short break here. We will spend the next hour depicting the ideal world of how motorists and bicycles should interact, and then the last hour discussing what can and will go wrong, and then reach some conclusions about how to avoid car/bike crashes and how to improve the overall environment for safety.

Second Session—1 hour

THE BASIC CONCEPTS OF BIKEED

Welcome back! In the first hour we discussed some basic statistics about bicycling and bike/car crashes. In this hour we will discuss the basic principles of traffic safety as they apply to bicycles. You will recall that the most likely crash between a car and a bike will take place at an intersection, under urban conditions and with a child who does not understand or fails to observe basic traffic safety principles. During this hour we will take a good look at those concepts, so that we can reinforce what we already know about good driving principles and apply them to car/bike encounters. Once we accept the concept that cyclists are drivers of vehicles, then we have to create an environment that encourages cars to share the road with cyclists on an equal footing. Let's look at some of those principles.

Driving on the Right

In this country, it is the law for both cars and bicycles. When you see a child not obeying this principle on a bike, you can cross it off to inexperience. When you see an adult riding against traffic, you must assume that this person is not obeying the rules of the road. A corollary to this principle states that, in most circumstances, slower traffic stays to the right, faster traffic passes on the left when it is safe to do so.

Right-of-Way

Right-of-way is a tricky issue. According to law in most states, when two vehicles meet at an intersection between two equal roadways at the same time, the driver on the left yields the right-of-way if there is no traffic control or if the intersection is designated a four-way stop. This principle is often misunderstood or just plain violated every day by motorists and cyclists alike. Some motorists are timid and wait even when it is their turn to proceed. Some motorists are too impatient and pull into the intersection without regard as to who should yield. This misunderstanding is often extended to bicycles. When confronted with a bicycle at one of these intersections, some motorists insist on yielding the right-of-way to the bicycle while others disregard the bicycle and pull through. Either approach risks a crash and violates the rule of right-of-way. The correct approach is to treat a bicycle exactly like a motor vehicle. Each must take his turn in going through one of these intersections according to who has the right-of-way.

Superior and Inferior Roadways

Whenever a smaller roadway intersects with a larger roadway, in the absence of any signs or signals, the traffic on the smaller roadway will yield to the traffic on the larger roadway. This is designed to keep the traffic flowing on the major roads with both speed and safety. Remember that the law treats bicycles exactly like other vehicles. Have you ever had your drive to work interrupted by another motorist who suddenly pulls out of a side street and causes you to slam on the brakes to avoid a crash? Have you ever been sitting in a side street waiting to get out and had another motorist seem to speed up just to keep you from coming out? Have you ever done either of these things to someone else and felt embarrassed about it later? Let's assume that the other vehicle in each of these scenarios is a bicycle. Has anything changed? A cyclist who comes out of a side street and cuts off a car is just as wrong as a motorist who does the same thing. Just as wrong as the motorist who ignores the cyclist who is already in the lane.

Traffic Signals

As long as everyone obeys them, they work to regulate the flow of vehicles on the road. It is a major gripe among motorists that cyclists often ignore traffic signals. Let me ask a question. When was the last time you saw another motorist go through when the signal was clearly red? When was the last time you saw a pedestrian cross a street against a red light? The answer to both questions is that you see it all of the time. A lot of folks seem to think that the rules no longer apply. Some drive cars, some ride bicycles and some walk. Each and every one of them is wrong in doing so. And what must the rest of us do? We obey the laws and go about our business, always alert for the lawless highway user who threatens to ruin our day. There is one time when cyclists feel justified in taking some liberty with stoplights. When traffic engineers set the sensitivity on electronically controlled signals, they sometimes do not give proper consideration to bicycles. The result of this is that there are some signals that detect cars but not bicycles. What would you do as a motorist if you found yourself at a red light that would not change for you? Would you wait five minutes, ten minutes, thirty minutes, or an hour? Will you continue to wait because you refuse to break the law or will you take the next opportunity to proceed when there is a break in the traffic and it is safe to do so? Law-abiding cyclists are sometimes forced to make the same choice.

Hand Signals

Whether your state law requires that operators of vehicles signal all turns and lane changes, or whether such maneuvers must be signaled only when there are other road users close enough to be affected, has little relevance to bicyclists. Motor vehicles have lighted turn signals, so signaling is easy. For cyclists, signaling requires taking one hand off the handlebars. This prevents full use of the brakes and may impede steering. While cyclists are required to give the same signals as motorists, the law normally allows cyclists the option of not signaling if doing so risks a loss of control. Lawful and considerate cyclists signal their intention to turn or change lanes whenever feasible, just as lawful and considerate motorists do. Of course there are cyclists and motorists who, by failing to indicate their intentions, endanger us all. What do we do about such people? Experienced motorists and cyclists learn to look for these dangerous road users and avoid getting into a crash with them. That is the essence of defensive driving.

Channelization

Channelization is a principle of both traffic law and highway engineering. This simply means that whenever a driver intends to turn, he or she must first go to the side of the roadway appropriate for the turn. Left-turning drivers begin their turn from the left-most lane or near the centerline, and right-turning drivers begin from the right edge. This is true for both motorists and bicyclists. Cyclists do have the option, when they wish to turn left on roads with a high volume of high speed traffic, to pull over to the right curb, dismount and cross as a pedestrian. Drivers not wishing to turn take the center of a wide single lane or the center lane of a multi-lane road. Normally, cyclists are expected to stay to the right when they are slower than the automobile traffic. There are times, however, when conditions make it reasonable and safe for cyclists to be on the left side of or in the middle of the lane, even if motor traffic is temporarily impeded.

As a motorist, you expect all slower traffic to stay to the right except to pass or to execute a left turn on a multi-lane road. Do you get agitated when you encounter another motorist puttering along in one of the left lanes at half the posted speed limit or less? There is no profit in getting angry, honking on the horn or whatever, but some motorists do it. When rational motorists encounter a slower car out of the right lane, they assume that the driver is preparing to turn left, or is avoiding a "right turn only" lane. Since bicycles are just another class of legitimate highway users, they are required to obey the law in exactly the way that everyone else does. This means that, when you see a cyclist leave the relative safety of the right lane, there is probably a reason for it.

Courtesy

Patience and courtesy, on the part of both motorists and cyclists, will help everyone avoid difficult situations. Cyclists quickly learn that it is better to yield to motorists whose on-road behavior is inconsiderate or dangerous. It is equally important for motorists to yield to cyclists who display erratic or dangerous behavior, regardless of how irritating that behavior may be. Cyclists should yield to dangerous motorists and motorists should yield to dangerous cyclists because the consequences of any other response are injury and death.

Let me ask another question. When you are driving down the highway and you see another motorist do something that you believe to be dangerous or illegal, what are your options? Does anyone expect you to chase the outlaw motorist down and register your complaint? Is it wise to do so? What do you think when you make a mistake and some irate motorist starts following you, honking and gesturing at you? Most of us respond to bad driving by simply shrugging our shoulders and driving on. If the behavior is really dangerous and/or we believe the other driver to be impaired, we might alert the police, but that is all. We do not normally have any other responsibilities to corral other motorists' anti-social tendencies and we are probably better off if we don't start going up to other motorists and lecturing them on what we believe to be defects in their driving. Confronted with dangerous or discourteous driving, most motorists have the good manners to mind their own business and let the police take care of the rest. The same should be true of cyclists who ride illegally or are discourteous. Ignore these people and drive on. If the behavior is bad enough, the police will handle it sooner or later.

Road Position of Bicycles

One of the most difficult parts of cycling is where the bicycle should be on the roadway. We all know that, as slower moving vehicles, bicycles should be driven as far to the right as practicable. This does not mean that the bicycle should be in the gutter or up against the curb. Take, as an example, a residential street with parking on both sides. A cyclist is riding down this street with a car following. They come to a stretch where 5 or 6 parking spaces are empty. The motorist wants the cyclist to move over, but should he? What happens to the cyclist when he gets to he end of the empty parking spaces and then moves out into the lane again? Since the cyclist was out of traffic for a time, he must now make sure that there is not another car coming down the road that will challenge him for the lane or hit him as he makes his maneuver. If there were to be a crash as the cyclist moves out of the parking lane and into traffic, it would be the fault of the cyclist who "suddenly swerved in front of" the following car. In the same situation, would you pull your automobile into the unoccupied part of the parking lane in order to let a faster following car pass? Other motorists would expect you to continue at your speed, even if it is less than the speed limit. Residential streets are posted at 25 mph to 35 mph, but no rule says that any legitimate roadway user has to go the posted speed or yield to faster traffic that may approach from the rear.

Let's consider another situation. You are a motorist driving in the right-most lane of a 45 mph four-lane highway. You see a sign ahead that designates the right lane for right turns only. You want to go straight through, not turn right. What must you do? [Take answers from the audience.] That's right, you will signal and merge one lane to the left when you have determined that it is safe to merge. What would you think of a motorist who stayed in the right-turn-only lane all the way up to the intersection and then suddenly swerved to the left in front of you? As motorists, we should not expect cyclists to deal with this situation any differently. Once again, the consequences of staying in the right lane for the cyclist are that she has to negotiate for access to the straight through lane when she runs out of pavement and she risks being hit when she does. It is best for the cyclist (and only a brief delay for the following motorists) if she merges left into that straight through lane just as though she were driving a car.

Lastly, consider what we said earlier about road conditions. You try to steer around potholes and other obstacles in your car. Do you expect the cyclist you are following to do anything else? Flaws in the pavement that do not cause a car any trouble may be a hazard to the cyclist. Highway users allow other vehicles room to maneuver around obstacles safely—bicycles included.

Notice that in the narrow lane, the cyclist is taking the middle or is in front of the right wheel of the following car. This illustration shows a curb. One thing that automobile traffic does for cyclists is sweep glass and other trash off of the road into the gutters next to the curb. That is fine for everyone, but it is wrong to expect that cyclists will yield the road to automobiles and ride through the trash in the gutter. If the cyclist takes more of the lane in this situation, he stops following cars from trying to pass when there is not room or time. Trust me when I say that all cyclists want following motorists to pass them as quickly as possible, but understand that smart cyclists won't let you by when it is not safe.

Cyclists must also ride out far enough from parked cars to avoid open doors. A minimum of three feet of clearance is necessary. Parked cars may hide a cyclist from view of motorists behind as well as those pulling out of side streets. These drivers typically scan only the travel lanes for approaching traffic and will not see a cyclist who is not in their normal field of view. It is unreasonable to expect cyclists to swerve closer to the curb when there are brief gaps between parked cars.

Two or More Abreast

Rules governing the ability of cyclist to ride two abreast vary from state to state. Cyclists like to do it because it is sociable and safer where some motorists try to squeeze between the lone cyclist and traffic in the left lane rather than merge with that traffic. Naturally, motorists always assume that cyclists who ride two abreast are obstructing traffic. We hope that, if there is room to get by, the cyclists will move over to help you do that. If they are not considerate, we hope that you will just pass when it is safe.

Left Turns

Left turns are the most difficult movement for cyclists because they involve moving away from the normal riding position near the right edge of the road. Because bicycles are narrow vehicles, movements to the left require more care than the same movement made by a motorist. Let's look at how a cyclist should position himself for a left turn under three scenarios. Remember that a cyclist's goal is exactly like that of a motorist: he wants to execute the turn with the least danger to himself and the least disruption of the flow of other traffic.

With left-turn-only lane.

Notice the cyclist's position in the left-turn-only lane depending on its width; he takes a narrow lane but shares a wide one. Why does the cyclist take the right side of the wide lane?

Without left-turn-only lane

This lane allows left turns and through traffic. In the left view, the cyclist takes a narrow lane because it is unsafe to share side-by-side with a motorist. In the right view, the cyclist shares the lane. Notice that his position in the lane depends on the intended direction of the motorist directly behind him.

With multiple left-turn lanes

Cyclists use the right-most lane that leads to their destination. Therefore, when there are two left-turn-only lanes, the cyclist uses the one on the right—either the center or the right side of that lane, depending on its width. What would the cyclist's position be if the right most of the two left-turn lanes were a left-and-through lane?

Third Session—1 hour

WHAT CAN AND WILL GO WRONG: SOME SAFETY SUGGESTIONS

Welcome back! During the concluding hour we are going to go back to some of the car-bike crash statistics, look at some of the difficulties cyclists encounter with special bike lanes, so-called bike paths, and sidewalks and then make some specific suggestions to help improve bicycle safety.

Car-Bike Collisions

According to studies, the biggest determining factor in the types of car-bike crashes is the age of the person riding the bicycle. About one-third of all such collisions occur to riders under the age of 12, one-third between the ages of 12 and 15, and approximately one-third from 16 and up. So the age of the rider has a great deal to do with the likelihood of there being a car-bike crash. Let's take a look at some typical car-bike collisions by age group.

Typical Car-Bike Collisions by Age Group

Median Age	Major Causes of Car-Bike Collisions
Under 12	Entering into roadway, swerving about
12 - 14	Right-of-way errors; wrong-way riding
Over 14	Signal changes; motorist drive-out; motorist turns; motorist overtaking

It is important to point out that the younger the rider, the more likely she is to have problems controlling his bicycle. As you move into and through the teenage years, you get problems of simply not knowing the rules or being unwilling to obey them. Older riders are more likely to obey the rules but still have problems with motorists who are careless or indifferent to the rules.

The Conflict Between Motorists and Cyclists

At this point, let's talk about the basic conflict between cyclists and motorists. Some motorists still feel that bicycles really do not belong on the road, regardless of laws to the contrary. When these folks encounter a cyclist, they can turn mean and spiteful and they have an array of interesting ways of showing their antagonism. This should not be anything new: many of these motorists vent their spite on other motorists, too. On the other side, most cyclists feel that they have every right to be on the road. Some extremists in the cycling community go further and take the stand that bicycles are "morally superior" to automobiles. These cyclists argue that bicycles are more "environmentally friendly", use fewer resources, take up less valuable highway real estate, don't use fossil fuels and don't pollute the air, and so on. When a motorist who believes that bicycles have no place on the highway meets a cyclist who believes that bicycles are morally superior to automobiles, conflict is bound to result. Generally, there is no dialogue on this; no place for motorists and cyclists to meet and talk out their differences except on the street where tempers flare and useful information is not exchanged. Most motorists simply mind their own business and go on and they give the cyclist no indication as to whether they approve or disapprove of bicycles. A small minority of motorists feels that cycling is a threat that must be addressed at every opportunity. The most direct (and often less politically powerful) of these motorists tries to run cyclists off the road or intimidate them in other ways. There are more subtle (and possibly more politically powerful) motorists who wish to use other means to get cyclists off the roads as much as possible. These folks stress safety and insist that cycling in traffic is inherently unsafe. Wouldn't it be better, not to mention safer, if bicycles had their own lanes (or paths) rather than having to share roads already clogged by automobiles? The argument goes on to the position that, if cycling is in some way good, then offering separate facilities will encourage more people to try it. Many of these "separate facilities" are proposed and built with the best possible intentions. In reality, bike paths and bike lanes can become unusable to cyclists fairly quickly because of poor design, little or no maintenance, or failure of the police to enforce the

laws. Improperly designed bike facilities are casualty generators from day one and expose the governmental authority that created them to legal liability.

Bike Lanes and Bike Paths

Bike lanes are an attempt to reserve a part of the facilities originally set aside for automobile traffic exclusively for the use of bicycles. Bike lanes have been proposed and/or built which put separate lanes outside of the right lane on both sides of the road, in place of a median in the center of the road, and two-way bike lanes on just one side of the road. There are a number of design considerations, which must be taken into account by the builders of these bike lanes as well as political considerations. A lot of projects, which have included bike lanes, have been less than successful for a number of reasons. These reasons include:

1. The lanes are poorly designed.
2. The lanes are not properly maintained or cleaned.
3. The lanes are not properly protected from incursions by motor vehicles.
4. The lanes do not go anywhere that cyclists want to go.
5. Motorist resentment.

Why should motorists be resentful? Cycling may be growing in America, but it has a long way to go before it becomes as popular as it is in other parts of the world. What motorist who must sit in rush hour traffic would not be at least a little resentful if he could see a bike lane that is hardly used right next to the road? "Whose idea was it to set aside 25% of this road for less than 1% of the users?" he might ask with some justification. The actual observed usage of this bike lane may be worse than it should be because experienced bike commuters either go out of their way to avoid bike lanes or plan their commute during less busy times of the day to avoid traffic and automobile fumes.

Bike lanes and bicycle paths always have built-in danger points where bicycles and cars come into contact, generally because motorists wish to turn across the bike lane. Remember that any bicycle that is not in the traffic stream is also not in the consciousness of passing motorists. The cyclist is simply moving toward his or her destination, the motorist wishes to turn, crosses the lane and hits the cyclist. Because of their different natures, bicycle lanes tend to offer more of these opportunities for crashes than do bicycle paths, but they exist in almost any separate bicycle facility ever built. The case for bicycle paths (or, multi-use paths) is easier to make. Whereas bike lanes are intended to lure commuters and other high-speed cyclists, bicycle paths are mostly intended for low-speed recreational riding. Bicycle paths do not normally go anywhere in particular but follow riverbanks or other areas that the city planners wish to use as a "green belt" anyway. Bicycle paths serve a number of good purposes in that they open the area to recreational use while tending to direct traffic and limit environmental damage from people making their own path through the woods. Well-constructed paths attract a number of users in addition to cyclists, whether or not that was the intention of the builders. Cyclists must share these facilities with walkers, skaters, runners, and whole families out with the family dog. Sometimes these facilities are called bicycle paths and sometimes they are called "multi-use" recreational paths, but either way, they normally attract a lot of non-cycling use. Unlike our streets and highways, multi-use recreational paths have no clearly understood rules to govern their use. People go there to have fun and they do not pay a lot of attention to rules even if any are posted. The best and the worst of these paths is that on warm, sunny afternoons, they are covered with all manner of users who must simply get along together and normally do. Inexperienced cyclists love these paths and happily mix with the runners, walkers and skaters. More experienced cyclists are less enthusiastic, but still use them occasionally.