

# DELAWARE BICYCLE DRIVER'S MANUAL

(Parent Alert Included)



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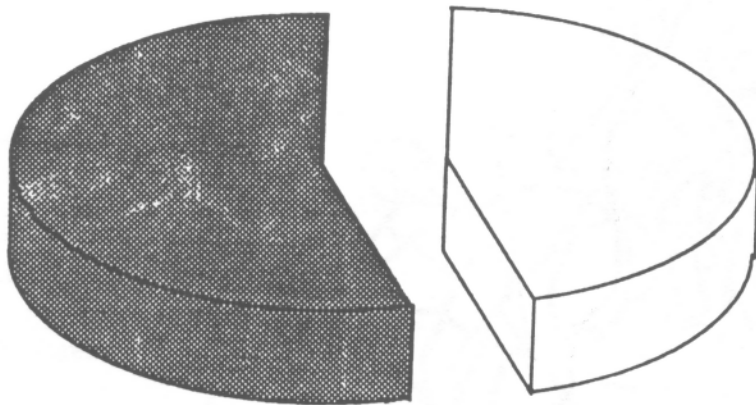
# BICYCLE DRIVER'S MANUAL

Driving a bicycle is fun, is good exercise and doesn't pollute the air. But, driving a bicycle can be very dangerous. Each year, over 1,500 Delaware bicycle drivers are injured in bicycle accidents and 2-3 bicycle drivers are killed. Driving a bicycle safely requires skill, adherence to Delaware Bicycle Laws and safe, defensive driving practices.

## BE RESPONSIBLE

Remember, bicycles are vehicles, just like cars, trucks and buses, and you are a driver. All vehicle drivers, including bicycle drivers, follow the same rules of the road. A safe bicycle driver always drives on the right side of the road, obeys all traffic signs and signals and uses hand signals to let other drivers know when he's going to stop or turn.

## WHO IS AT FAULT?



□ Motorist 45%  
■ Bicyclist 55%

Oregon Study, 1990

## BE VISIBLE

Bicycles are smaller and harder to see than other vehicles. Help other drivers see you by wearing bright and fluorescent colors and by using a bicycle safety flag. A bicycle safety flag is the single best thing to increase your visibility. A bicycle flag costs only a few dollars and attaches to every type of bicycle.

Don't drive your bicycle at night! It's very difficult to see you at night. The bicycle/car accident rate is twenty times higher at night. If you must drive at night your bicycle is required to have a front white light visible for at least 500 feet and a rear red reflector that can be seen for at least 600 feet. You must also have white or yellow reflectors on the wheels and pedals. Make sure all your reflectors are in place and are tight and clean. In addition, the bicycle driver should wear white clothing, plus a reflective vest or other reflective clothing.

## BE PREDICTABLE

Being a visible bicycle driver will help a car driver see you, but you must also be predictable so they know what you're going to do. You can be predictable by driving on the right side of the road, obeying all traffic signs and signals and by using hand signals to indicate stops and turns.

Drive with the traffic on the right hand side of the road, not against it. Bicycle drivers should not drive on roads with a posted speed limit greater than 50 mph, but may drive on the shoulder. Bicycle drivers must drive on the paved shoulders or in the bike lanes. If there is no paved shoulder or bike lane, bicycle drivers must drive on the right-most portion of the right side as is practical. Do not weave in and out of parked cars and watch out for street drains, loose gravel, pot holes, opening car doors, dogs and other hazards.

It's important to use hand signals to let other drivers know when you're going to slow down, stop or make a turn. Give hand signals at least 100 feet before stopping or turning to allow car and truck drivers enough time to avoid hitting you. Practice your hand signals in a safe area until you can do them with ease.



**Right Turn  
(Preferred)**


















**Left Turn**



**Stop or Slow**

Traffic only works if all people interpret the laws and messages the same. Signs, signals, and pavement markings tell us what to do. If you fail to follow some, you may get hurt. If you fail to follow others, you will get hurt. To make it easier to follow signs, traffic engineers repeat the message three times, by color, by shape and by words or the symbol used. Here are the most important colors, shapes and messages for bicyclists.

<p><b>Warning Signs</b></p> <p>Indicate general warning, or warn of road construction and maintenance. Can be orange and black, or yellow and black.</p>	 Signal Ahead	 Share the Road	 Cross Road			
<p><b>Regulatory Signs</b></p> <p>Indicate stop or prohibition. Can be either red, or black and white.</p>	 STOP	 No Bicycles	 DO NOT ENTER			
<p><b>Guide Signs</b></p> <p>Give general information to the driver. Includes route markers and signs with blue, brown or green backgrounds.</p>	 Hospital	 Telephone	 SCENIC AREA			
<p><b>Information Signs</b></p> <p>Provide general directional information. Can have either green or brown backgrounds.</p>	 BIKE ROUTE	 Trail	 OLYMPIC NAT'L PARK 6 MILES			
<p><b>Traffic Signals</b></p> <p>Indicate what to do at intersections.</p>	<p><b>Traffic Signals</b></p> <table border="0"> <tbody> <tr> <td data-bbox="711 1771 889 1944"> <p>STEADY RED Stop.</p> <p>STEADY YELLOW Warning. (Bicyclist should treat it as a stop.)</p> <p>STEADY GREEN Proceed.</p> </td> <td data-bbox="922 1787 1008 1921">  </td> <td data-bbox="1024 1771 1230 1944"> <p>FLASHING RED Stop, then proceed.</p> <p>FLASHING YELLOW Slow down, move with caution</p> <p>GREEN ARROW Turn as indicated.</p> </td> </tr> </tbody> </table>			<p>STEADY RED Stop.</p> <p>STEADY YELLOW Warning. (Bicyclist should treat it as a stop.)</p> <p>STEADY GREEN Proceed.</p>		<p>FLASHING RED Stop, then proceed.</p> <p>FLASHING YELLOW Slow down, move with caution</p> <p>GREEN ARROW Turn as indicated.</p>
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Every driver is required to obey all traffic signs and signals. At a traffic light a bicycle driver should signal and stop when the light is red. When the light turns green scan before you start. Scanning means looking left, right and left again to make sure no cars are coming. The yellow light means caution and warns the light will soon change to red. For bicycle drivers, yellow should mean the same as red – STOP!



**SCANNING**

## BE DEFENSIVE

Being alert means paying attention to what you're doing. Driving a bicycle is serious business. Watch out for cars and trucks, loose gravel, street drains, opening car doors, dogs and other hazards.

At intersections and before entering a street ALWAYS SCAN. Look left, right and left again. Make sure you see cars and trucks because they may not see you. Know what's around you at all times.

All vehicle drivers including bicycle drivers, should drive defensively. Watch out for the other guy! Bicycles are difficult to see so it's up to the bicycle drivers to stay out of the way of cars and trucks. Car and truck drivers will sometimes go through a red light or not stop at a stop sign. You may have right of way, but being right won't help much if you get hit by a two-ton car going fifty miles an hour. Drive defensively for your safety.

## BE EQUIPPED: WEAR A HELMET – IT'S OUR LAW!

If all bicycle drivers wore helmets there would be fewer bicycle drivers killed in accidents. Three out of four bicycle fatalities are due to head injuries. A good bicycle helmet can prevent or reduce the seriousness of these injuries.

New bicycle helmets are light, provide good air circulation, fit a wide range of head sizes and cost as little as \$20. When buying a helmet look for one that meets performance standards by the American National Standards Institute and/or the Snell Memorial Foundation.

If you break your arm, the doctor will put it in a cast and in six to ten weeks you'll be as good as new. But if you break your head you may be permanently injured or killed. A good helmet can save your life.



# COMMON BICYCLE AND MOTOR VEHICLE ACCIDENTS (AAA)

## Midblock Rideout

This is the most frequent accident type for young bicycle drivers and occurs soon after the bicycle driver enters the road from a driveway, alley or curb without slowing, stopping or looking for traffic. The bicycle driver's sudden entry leaves the motorist too little time to avoid the collision. A significant number of accidents also involve motorist entering or leaving a driveway at mid-block and colliding with a bicyclist.

**"Bicycle Drivers"** – Stop and look left-right-left for traffic before entering the road. Always be cautious of vehicles entering or exiting at midblock. Don't assume that they see you! Be prepared to stop and quickly maneuver clear of the emergency.

## Wrong Way Riding

Motorists do not expect traffic to be approaching from the wrong way. It is the exception to the rule that creates the condition for an accident which is the main reason why it is unlawful to ride facing traffic.

**"Bicycle Drivers"** – Go with the flow! Ride Right - with traffic just like cars do.

## Motorist Overtaking Cyclist

This accident occurs because the motorist fails to see and react to the bicycle driver until it's too late. This accident type is more frequent at night, on narrow rural roads, involves driver inattention, and also involves drunk driving.

**"Bicycle Drivers"** – Avoid riding at night, on narrow roads and where highway speeds are over 35 mph. Always use lights and reflectors if you must ride at night.

## Bicycle Driver Left Turn or Sudden Swerve

The bicycle driver swerves to the left without checking traffic, without signaling and moves into the path of an overtaking motor vehicle. The motorist does not have enough time to avoid the collision.

**"Bicycle Drivers"** – Be predictable. Always drive in a straight line. When preparing to change your lane position, look behind you and yield to overtaking traffic. For making a left turn, give the left-hand signal and when it's safe, move left to the left lane. Give the left-hand signal again and then make your turn when it is safe to do so.

## Stop Sign Rideout

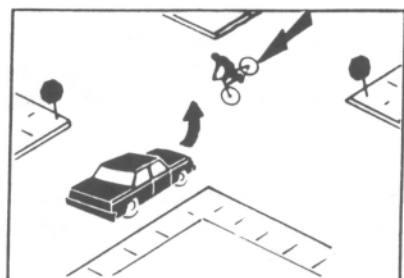
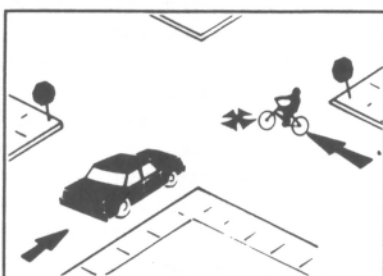
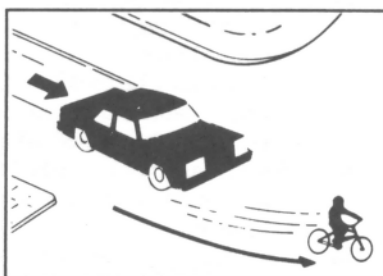
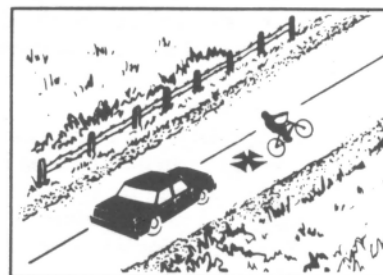
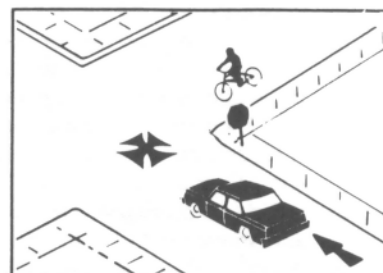
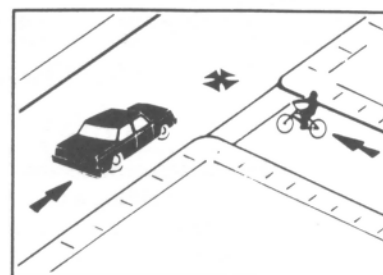
This accident occurs when the bicyclist enters an intersection that is controlled by a sign and collides with a motor vehicle approaching from an uncontrolled lane. The bicycle driver fails to stop/slow and look for traffic before entering the intersection. This improper action leaves the motorist too little time to avoid a collision.

**"Bicycle Drivers"** – When driving your vehicle, obey all traffic signs and signals. At busy intersections, get off your bike and walk across the road as you do when you are a pedestrian.

## Motor Vehicle Fails to Yield

This often occurs as left-turning vehicles fail to see or yield to on-coming bicycle drivers or other traffic scenarios where the bike drive has right-of-way.

**"Bicycle Drivers"** – Be a defensive driver. Always be aware of oncoming or approaching traffic and be prepared of emergency maneuvers. Motorists may be inattentive, drinking, drugged or simply not see you. Being alert and able to respond quickly in such cases is your only defense. Always dress in high visibility clothing (fluorescent colors) and a helmet and equip your bike with a safety flag to increase your visibility.





On June 30, 1987, the 134th Delaware General Assembly passed a new set of vehicle laws pertaining to bicycles. The following is a summary of the new laws:

## DELAWARE BICYCLE LAWS

### Title 21, Delaware Code, Chapter 41, Subchapter XII

1. Parents and guardians shall not authorize or permit violation of these laws by their child or ward.
2. Every person riding a bicycle shall have all the rights and responsibilities of a driver of any other vehicle.
3. No bicycle shall carry more persons than it was designed to carry, except an adult rider may carry a child securely attached in a back pack or sling.
4. A trailer or semitrailer may be securely attached to a bicycle.
5. Persons riding a bicycle, coaster, roller skates, sled, or toy vehicle shall not cling to another vehicle upon the highway.
6. A bicycle shall be ridden "as close as practicable" to the right-hand edge of the roadway except:
  - a. When passing another bicycle or vehicle going in the same direction.
  - b. When making a left-hand turn.
  - c. When avoiding parked or moving vehicles, fixed or moving objects, animals, surface hazards, etc.
7. A bicycle may be ridden near the left-hand edge of the roadway only on one-way highways with two or more lanes and a less than 30 mph posted speed limit.
8. Riding no more than two abreast is permitted only within a single lane and when not impeding the normal and reasonable movement of roadway traffic.
9. A person riding a bicycle shall have both hands available to operate the bicycle. At least one hand shall be kept on the handlebars at all times. A one-armed person may ride a bicycle and must use mechanical turn signals.
10. Left turns shall be permitted according to:
  - a. Normal motor vehicle type of left turn procedure.
  - b. Approach the turn on the right edge of the roadway, cross the intersecting roadway, stop out of the way of traffic, yield to all vehicles and pedestrians, obey all traffic control devices, and then proceed in new direction.
  - c. Special traffic control devices.
11. The right arm may be used to signal right turns.
12. Right and left turn signals shall be given not less than 100 feet from turn and while stopped waiting to turn. Such signals may be given intermittently, rather than continuously, if the hand giving the signals is needed to control the bicycle.
13. A person riding a bicycle on a sidewalk or in a crosswalk shall yield to pedestrians and give an audible signal before overtaking.
14. A person shall not ride a bicycle on a sidewalk or crosswalk when prohibited by official control devices.
15. A person riding a bicycle on a sidewalk, or pushing a bicycle across the road at a crosswalk, shall have all the rights and responsibilities of a pedestrian.
16. A bicycle may be parked on a sidewalk except when prohibited by official control device or when impeding the normal and reasonable movement of sidewalk traffic.
17. Bicycles may be parked where vehicle parking is allowed.
18. Bicycles may not be parked in such a way as to obstruct the movement of a legally parked motor vehicle.
19. A uniformed police officer may stop, inspect, and test a bicycle that is suspected to be unsafe or to have improper equipment.
20. When riding at night, a bicycle shall be equipped with a front, white light visible for at least 500 feet from a motor vehicle with lawful low beam head lamps.
21. Every bicycle shall be fitted with a rear, red reflector visible for at least 600 feet from a motor vehicle with lawful low beam head lamps.
22. When riding at night, a bicycle shall be equipped with reflective material visible from both sides for at least 600 feet, or a lighted lamp visible from both sides for at least 500 feet, from a motor vehicle with lawful low beam head lamps.
23. A bicycle and its rider may be equipped with additional lights and reflectors.
24. Every bicycle shall be equipped with brakes that are capable of stopping the bicycle within 25 feet from a speed of 10 mph on dry, clean, level pavement.
25. Every bicycle sold at retail shall have a permanent identification number stamped or cast on its frame.
26. A person riding a bicycle shall not wear ear plugs in both ears or a headset covering both ears.
27. A person who is hard of hearing may wear a hearing aid while riding a bicycle.
28. A bicycle driver under the age of 16 shall wear an approved helmet. This also applies to children riding in a restraining seat.
29. Human powered vehicles are a certain class of vehicles which are exclusively human-powered by means of foot pedals and which the driver normally rides astride. Adult cycles are included but all children's cycles are excluded as are all toys and all vehicles that require the driver to place a foot on the ground to cause motion.

#### "Bicycle Racing"

30. Bicycle racing on a highway shall only be permitted when approved by DelDOT or local authorities.
31. Persons involved in an approved bicycle race may be exempted from compliance with traffic laws provided that traffic control is adequate to assure the safety of all highway users.



**CHILDREN AGE SEVEN ARE TOO YOUNG TO UNDERSTAND STREET RIDING, CHILDREN 7-9 NEED PARENTAL SUPERVISION IN THEIR FIRST 8-12 MONTHS OF RIDING AND CHILDREN 10-12 STILL NEED SUPPORT AND SHOULD LIMIT ALL RIDING TO DAYLIGHT HOURS.**

## **Development Limits Children's Traffic Safety Skills**

- \* Children are short; drivers can't see them and children have no sense of that. Young children believe if they see the driver, the driver sees them.
- \* Children are impulsive. Controlling impulses comes with age and experience.
- \* Children lack experience in judging speed and distance.
- \* Children lack an adequate field of vision because they are short. Their field of vision is one-third that of adults.
- \* Children lack cognitive skills in that they have trouble focusing attention or handling more than one traffic factor at a time. For example, if they are avoiding a pot hole, their attention is not on traffic. Complex traffic situations consequently pose a serious danger to young children.
- \* Behavior in traffic is influenced by peers. If one bicyclist fails to stop at a sign, his friends will also.

## **Effective Learning Means Practice**

Adults need to make sure the bicycle safety message is rehearsed and reinforced so that it sinks into the child's active, playful mind. The following behavior will help keep your child safe:

- \* Set limits on where and what time of day they drive.
- \* Require that they wear an approved helmet.
- \* Assure that the bicycle fits them properly.
- \* Remember driving skills take time to develop. Take time for your child to learn to drive a bicycle skillfully and safely.
- \* Teach and regularly review the Delaware Bicycle Laws.
- \* Use the Bicycle Safety Checklist on a routine basis to assure the bicycle is safe and in good mechanical condition.
- \* Reinforce the safety messages by being a role model for your child.



## BICYCLE SAFETY CHECKLIST

### Size - Fit of bicycle to bicycle driver

- Can bicycle driver straddle frame with both feet on the ground?
- Check height of seat post (provide minimum clearance in frame as recommended by manufacturer).

### Handlebars

- Tight and in line with wheel?
- Height below driver's shoulder level?
- Check height of stem (provide minimum clearance in frame as recommended by manufacturer).
- Grips tight and ends in good condition?

### Frame

- All tubes in line, not bent?
- Front fork straight, in good condition?

### Pedals

- Tight, intact, no binding?

### Wheels

- Both run true side to side and round?
- Spokes - good tension, none missing?
- Rims - no dents, free of rust; if caliper brakes, the sides clean and free of lubricants.
- Tires - properly inflated, good tread, no sidewall damage, straight valve stem?

### Bearings - No looseness or binding?

- Front wheel.
- Front fork.
- Rear wheel.
- Pedal crank.

### Chain

- 1/2" play, no excessive looseness with derailleurs per manufacturer recommendation?
- Chainguard - unbent, free of chain?
- Clean and free of rust?

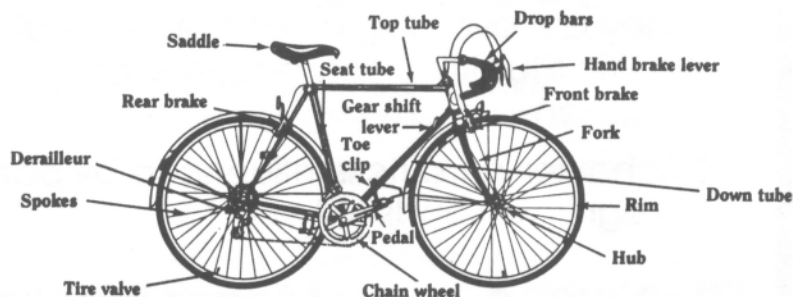
### Brakes

- Coaster brakes - operate with 20 degrees travel before brake is engaged; brake arm strap fully tightened.
- Hand brakes - sufficient reserve when lever is engaged, and brake lever tight?
- Caliper brakes centered and tight?
- Nuts tight on brake shoes?
- Proper clearance of 1/16" of shoe from rim.
- At least 3/16" rubber on brake pad?
- Cable taut, no frayed ends?

### Other safety equipment

- Shift control operating properly?
- Multi-speed mechanism operating properly; hub and derailleur is functional in all gears.
- Red rear reflector - conforms to local laws?
- Reflectors visible from both sides when riding at night.
- Front light - battery or generator and bulb satisfactory?
- Bell or horn - working and audible?

### Parts of a Lightweight Multi-Speed Bicycle



### For More Information:

The Bicycle Injury Prevention & Education in Delaware (BIPED) Resource Center provides speakers, audiovisuals and educational materials to organizations and the public. Contact the Center at (302) 856-7303 or the Community Traffic Safety Program (CTSP) Coordinator in your county for more information. The CTSP Coordinators are located at the following University of Delaware, Cooperative Extension county offices:

- \* Sussex County (302) 856-7303
- \* Kent County (302) 697-4000
- \* New Castle County (302) 831-4973

