

**Bicycle Traffic Law Reform  
and Safety Issues**  
by Fred Oswald, MS, PE  
League Cycling Instructor, Bicycle commuter

Health benefits      Fun  
Companionship  
Clean air      Fitness  
Reduced congestion

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Slide 1 -- Cycling uses & benefits.  
This program was developed to show to local gov't officials in the Cleveland area to help them understand need to reform bicycle traffic law and to educate citizens.  
The program is similar to a "bicycle Driving Seminar" by the author with some shift in emphasis to law reforms.

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**Cycling is Community Friendly Transportation**

- No air pollution.
- No greenhouse gases.
- No imported oil.
- Little hazard to bystanders.
- Quiet.
- Uses little parking space.
- Efficient use of roads.
- Promotes health.


**But Our Society Mistreats Cyclists**

- Discriminatory and dangerous laws.
- Poor road maintenance, especially at the edge.
- Nonfunctioning vehicle detectors.
- Harassment of transportation cyclists.
- Indifference to road rage & assault.
- Little secure parking.

*Why?*

Fred Oswald, Dec 2002

Slide 2 – Cycling benefits & dilemma



*It's not what he doesn't know  
that bothers me, it's what he  
knows for sure that just ain't so.*


--- Will Rogers, 1879-1935  
American-Cowboy humorist, philosopher

Slide 3 –  
Public attitude about cycling is suggested by a book title "Everything I needed to know about life I learned in Kindergarten".


First section shows how & why nearly everyone is misinformed about cycling. It takes 10-20 thousand miles of traffic cycling experience to "unlearn" the misinformation and learn better ideas.

Next we show safety statistics & some techniques experienced cyclists use  
Finally, we show impact on traffic law.


## Early Cycling History



ca 1820, Running Machine



Ca 1870, Penny Farthing



1890, Safety bicycle

Fred Oswald, Jan 2002

Cycling popularity in USA boomed during 1880-90's then crashed with development of the auto in early 20<sup>th</sup> century. 'Dark ages' lasted until mid '60's.

### Slide 4 -- History:

Early bicycle-like devices ~2 centuries old.  
 Cycling became popular only in 1880-90's,  
 But cycling's golden years lasted only ~one generation  
 Then cycling was eclipsed by 'horseless carriage'  
 For 2 generations, almost no American adults cycled.  
 Wrong & dangerous ideas developed -- bicycle is child's toy, cycling on road is dangerous (fear from the rear).  
 No proof for these notions. Studies were finally done in '70's that refute the fear but is still widely believed.

### Who teaches our children "bike safety"? Who taught us when we were children? -- Compare cycling with swimming

	Bike Safety	Water Safety
Qualifications	"Authority figure"	Certified instructor
Skill/ Experience Required	None	Pre-class written & swim skills test
Instructor Training	None	36 hour class, master skills, written & swim exam.
Syllabus	None	Red Cross water safety prog.

Fred Oswald, Jan 2002

### Slide 5 – Teachers

Typical "authority figure" is parent, teacher, policeman who make up "program" as they go with things that "sound good". Compare with Red Cross swim lessons.  
 This perpetuates incorrect ideas. The misinformed teach the ignorant.

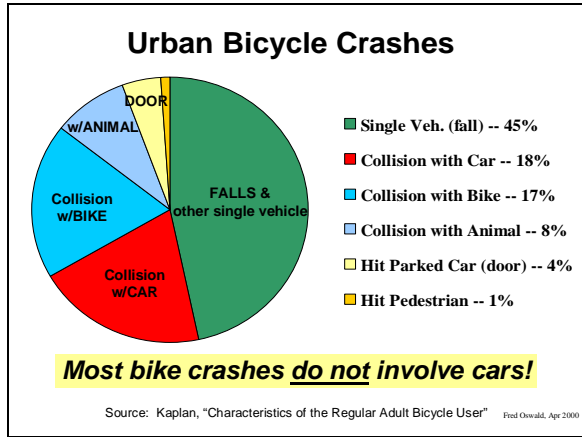
### Myths Behind Traditional "Bike Safety"

1. Biggest danger is traffic passing from rear
2. Cyclists need not follow most traffic laws
3. Cyclists do not deserve to use the road
4. A "good scare" promotes bike safety
5. Stop required at stop sign, but not yield
6. OK to turn left from right curb without looking
7. Hand signal more important than right of way
8. Cyclists cannot look behind to judge traffic
9. Safety essentials: "helmets, helmets, helmets"

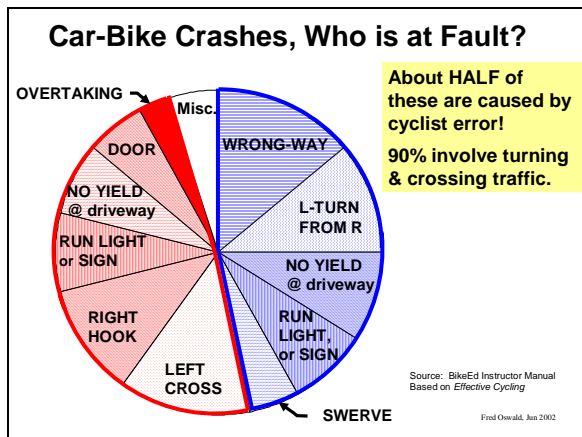
Fred Oswald, Jan 2002

### Slide 6 – Myths

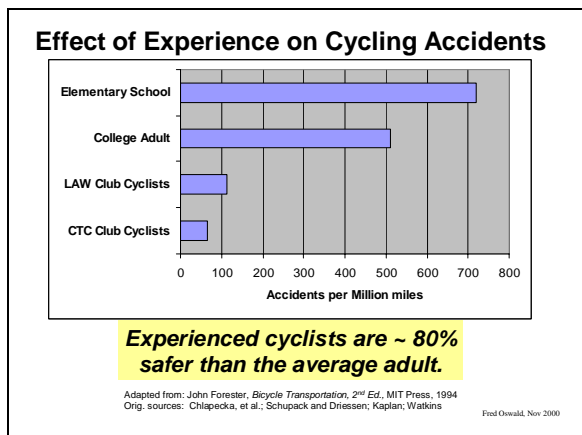
First is big one "fear from rear".  
 #2 causes #3.  
 #4-7 underlie "bike safety" instruction. This instruction does not mention yielding but stresses fear, stop & signal.  
 #5-7 caused by the assumption in #8.  
 #9 is "safe crashing". Better to teach "not crashing"



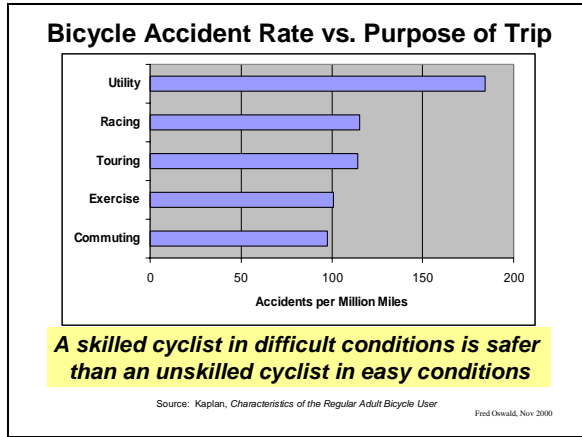
Slide 7 – Urban Crashes  
 Most people think car collision is #1 but it is actually distant 2nd.  
 Most crashes are falls or other "single vehicle" crashes.  
 Bike-bike collision is almost tied for #2. Even dogs cause many crashes



Slide 8 – Crashes, who at fault.  
 Most people think hit from behind (overtaking) is #1 but it is smallest slice.  
 About 90% are result of turning & crossing traffic.  
 About half of adult crashes are fault of cyclist (blue outline), wrong-way riders is #1 cause.  
 Making L turn from curb causes many crashes (this is taught by "bike safety")  
 More child crashes fault of cyclist, especially "driveway rideout" under age 8.  
 Note, many "motorist fault" crashes occur on sidewalk or bike lane crossing – preventable.



Slide 9 – Experience vs. Crashes  
 Elementary school crashes ~700/million mi.  
 College only 30% better.  
 Club cyclists are 5 times better than college, 7x than elementary  
 (LAW is US club cyclists, CTC is British club cyclists)  
 Experienced cyclists have much to teach us about bike safety.



Slide 10 – Accidents vs Trip Purpose  
 Racing & commuting face greatest hazards but have lowest crash rate.  
 Even utility is safer than college kids.  
 Note, commuting shown separately from utility (errands, trips to store, etc.)



Slide 11 – Wrong Way & Sidewalk Hazards  
 This is just one of many accident scenarios showing wisdom of following same rules of road as other drivers.  
 A driver is most likely to look in traffic lane to left. Less likely to look at sidewalk. Very unlikely to look to right on sidewalk.  
 Some people are taught to ride on the wrong side of the road to “see traffic coming”.  
 The accident rate for wrong-way cyclists is about 3½ times as high as for cycling properly.  
 Pedestrians walk facing traffic so they can sidestep off the road if necessary. But you cannot sidestep on a bike.

### Accident Studies of Sidewalks and Sidepaths

Riding on sidepath/sidewalk compared to riding on road increases collision risk by a factor of:

- 1.8 (California; Wachtel and Lewiston 1994)
- 2.7 (Eugene, OR, 1979)
- 4.7 (California, 1974)
- 3.4 (Sweden; Linderholm 1984)
- 2.4-8.6 (Finland, Sweden, & Norway; Leden 1988)
- 3.9 (Denmark; Jensen, Andersen, Nielsen 1997)
- 1.7 to 5 (Germany; Schnull, Alrutz et al 1993)

**Riding against traffic on sidewalk or sidepath is significantly more dangerous.**

Paul Schmek, 2001

Slide 12 – Sidewalk Accident Studies  
 Sidewalk about 2-9 times as dangerous as road (depends on speed, driveway & intersection density, etc.)

**Bicycle Sidepath / Sidewalk –  
Unsafe at (almost) any speed**



"...Sidewalks are typically designed for pedestrian speeds and maneuverability and are not safe for higher speed bicycle use." Amer Assoc. of State Highway Trans. Officials, Guidelines for the Development of Bicycle Facilities

Photo by F. Oswald, Jun 1999

**Slide 13 – Sidepath Hazards**

Sidepath type sidewalk from Cleveland Metroparks.

A path beside the road is just an asphalt sidewalk.

Quote at bottom is from AASHTO "Green Book".

**Bike Lane Hazards**

**Bike lane encourages:**

- Passing on right
- "Filter forward" (right of right-turning traffic)
- "Drive-out" at stop sign
- "Right hook"
- "Left cross"

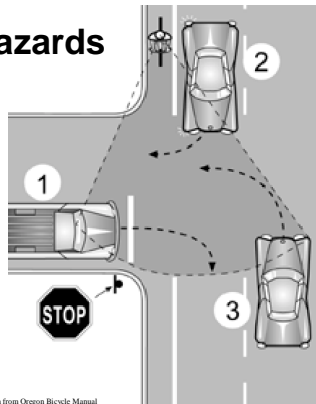


Illustration from Oregon Bicycle Manual

**Slide 14 – BL Hazards**

BL encourages cyclists to pass on right even where car may turn right.

Makes motorist mistake more likely.

Note: "left cross" & "right hook" (accident pie chart shows these are important hazards).

**Expert Information About Cycling**



**Effective Cycling and Street Smarts should be on YOUR bookshelf**

Fred Oswald, Jun 2002

**Slide 15 – Expert Information**

"Street Smarts" originally pub by Bicycling Mag. was adopted by PA and Ohio (pending in VA). It is both an expert and "official" source. *Effective Cycling* is standard reference book. *Bicycle Transportation* is advanced book or for trans. engineers. *Cyclocraft* is British book. BikeEd Instructor Manual is based on Effective Cycling course developed in mid-70's

## Principles of Traffic Law

1. First Come, First Served
2. Drive on the Right
3. Obey Traffic Control Devices
4. Observe Speed Positioning
5. Follow Intersection Positioning

2 wheels or 4, the rules of the road are the same

Vehicular Cycling teaches:  
*Cyclists fare best when they act and are treated as drivers of vehicles*

Source: Effective Cycling & BikeEd Instructor Manuals  
Fred Oswald, Jun 2002

## Slide 16 – Principles of Traffic Law

Rules of the road make the roadway an orderly place. This is a huge advantage for cyclists.

#1 First Come -- you have right to space you occupy plus safe dist. ahead (right of way). At intersections, yield to right. Yield to superior road.

#2 Drive on right, not left or sidewalk

#3 Traffic control devices supercede right of way rules

#4 Speed positioning means stopped veh. at extreme right, slow veh. next, fast to left.

#5 Intersection positioning (channelization) means use correct lane for destination.

## Vehicular Cycling “Layers of Safety”

1. Don't CAUSE accident (follow rules of road)
2. Deter motorist mistakes
3. Drive defensively to escape hazards
4. Use safety equipment to reduce injury



Fred Oswald,  
Jun 2002

## Slide 17 – Layers of Safety

#1 About half of bike accidents are fault of cyclist (run lights, no lights, wrong way)

#2 Motorists may underestimate your speed or misjudge space for passing. If you take control you can often prevent motorist mistakes.

#3 Anticipate problems and leave room to escape.

#4 Helmet may allow walking away from accident. Gloves protect hands.

## Dealing With a Narrow Traffic Lane

Top -- even with cyclist very close to curb, motorist must use part of next lane to allow 3' passing clearance.



Bottom -- what happens if you “hug the curb”. Motorist reluctant to cross lane line will “squeeze by” at unsafe clearance.  
Solution – move LEFT!

Fred Oswald  
Aug 2002

## Slide 18 – Narrow Traffic Lane

Many motorists act as if there is a “glass wall” between lanes. Once they cross the lane line, then they generally give enough room. (The right tire track is often good place to ride.)

Novices hug the curb, and wonder why cars pass so close.

Cyclists have the right & duty to travel in safety.

## State of Ohio on Bicycle Lane Position

Ohio Revised Code § 4511.55(A) says:

*...ride as near to the right side of the roadway as practicable ...*

Note *practice-able*. It **DOES NOT SAY** as near as possible!

Ohio Dept. of Public Safety says:

*Cyclists can travel in the middle of the lane if they are proceeding at the same speed as the rest of the traffic, or if the lane is too narrow to share safely with a motor vehicle.*

(Digest of Ohio Motor Vehicle Laws, 6/99, p. 63)

*On a road with two or more narrow lanes in your direction -- like many city streets -- you should ride in the middle of the right lane at all times.*

(Ohio Bicycling Street Smarts, p. 16)

Fred Oswald, Jun 2002

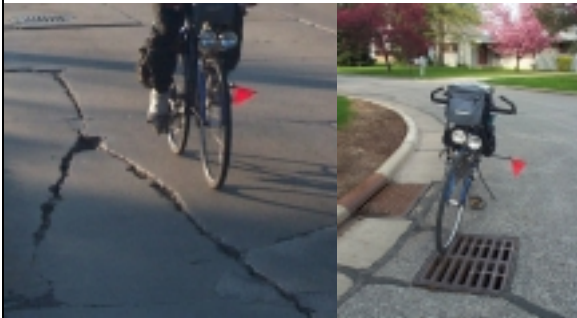
Slide 19 – Ohio law and state Public Safety agency publications that set policy.

"Far right rule" is a bad law, often misunderstood. It encourages dangerous lane position and police harassment.

Dept. of Public Safety quotes are extremely useful!

If you are from another state, see what official materials say and lobby for a state version of Street Smarts.

## Road Hazards for Bikes



Any crack or "slot" in direction of travel can cause a crash

Fred Oswald, May 2001

Slide 20 – Road hazards

Both of these have since been fixed but the drain grate was a poor engineering choice. Illustrates need to educate engineers in bicycle driving.

## Teach your kids: 'Drive your Bike!'



A bike is not a toy. It is a child's first vehicle.

Fred Oswald, Sep 2002

Slide 21 – Teaching Children

Shows 7-year old learning how to scan, signal and merge for turn.

This is a very quiet residential street (appropriate for her age).

## Why traffic law matters

*Traffic laws help shape ---*

- How cyclists are taught to ride.
- How the police treat cyclists.
- What the motoring public expects from cyclists.
- What happens in court if a cyclist has a collision.

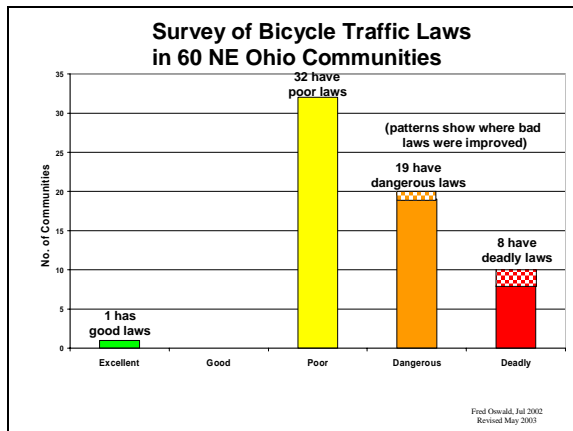
*Uniform traffic laws promote safe, fair & efficient travel for all.*

**Cyclists deserve equal protection under the law**

Paul Schinck & Fred Oswald, Mar 2003

Slide 22 – Traffic Law

Cyclists can be denied rights because of bad laws.



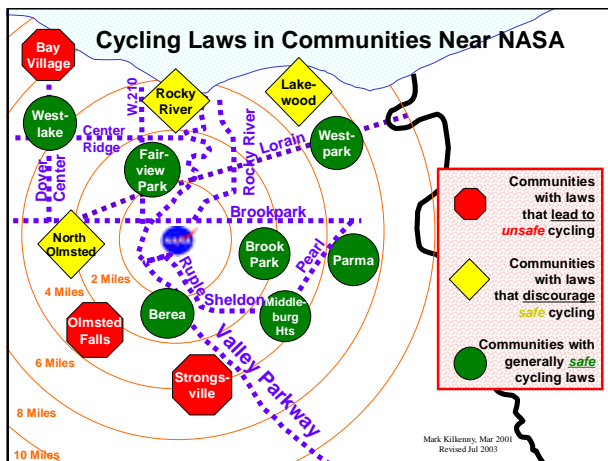
Slide 23 -- Local Laws Chart

Some cities are improving laws (3 so far)! Deadly (score F) have sidewalk laws for everyone. Dangerous (D) have children's sidewalk law or sidepath law (these affect fewer cyclists). Poor (C) is generally consistent with state law (but still not good)

Brook Park recently adopted Model Laws, improved from F to A!

Ohio rates a D-, mainly because it allows local "regulation" plus "far right rule"

See [www.crankmail.com](http://www.crankmail.com) for details and suggested model laws. Please do a similar survey for your area.



Slide 24 – Communities near NASA Glenn  
Some cities are improving laws but it is a slow process.

See [www.crankmail.com](http://www.crankmail.com) for latest info. and suggested model laws.

## Dangerous bicycle laws

Actual local ordinances

*“Any person operating a bicycle shall ride upon the sidewalk rather than the roadway when sidewalks are available and not congested with pedestrian traffic.”*

*“Wherever a designated path for bicycles has been provided adjacent to a street, bicycle riders shall use such path and shall not use the street.”*

*“Every person operating a bicycle upon a roadway shall ride as near to the right side of the roadway as practicable ...”*

These ordinances require expert cyclists to imitate beginners. It is safer to have novices learn from the experts.

**Only informed governments can make good laws.**

Fred Oswald  
Jun 2001

Slide 25 – Examples of Dangerous Laws  
 #3 is also state law (far right rule)  
 Best solution is reform at state level including uniform laws (like motor veh. laws).  
 Good laws are uniform for all. Laws must provide safety, fairness, efficiency.  
 Very few bicycle specific rules are necessary.  
 Most are dangerous and discriminatory.

## Discriminatory bicycle laws

Actual local ordinances

*“No person shall ride a bicycle across or through an intersection when crossing a through street. Such intersections are to be crossed by walking the bicycle across or through the intersection.”*

How many motorists would tolerate being told to push their cars?

*“A person operating a bicycle shall yield the right of way to vehicular traffic on a roadway.”*

These ordinances violate well-established principles of traffic operation. They are confusing and inconsistent with state law.

**Only informed governments can make good laws.**

Fred Oswald, Jun 2001

Slide 25 – Examples of Discriminatory Laws

## Building ‘Bicycle Friendly’ Communities

Educate and enforce –



- Educate motorists ...
- ... and cyclists ...
- ... and police ...
- ... on how to ride safely, and what the law *really* says.



**Every traffic lane is a bike lane!**

Tom Revey, Mar 2001  
Rev Fred Oswald, Mar 2003

Slide 27 – How to be friendly to cyclists.

## Summary

- Much of what we learned as kids is wrong.
- Most cycling accidents do not involve cars.
- Most collisions involve turning or crossing traffic.
- Experienced cyclists are ~80% safer than average.
- Proper lane position helps avoid trouble.
- Every traffic lane is a bike lane!
- A bike is not a toy. It is a child's first vehicle.
- Standard traffic laws good; bike-specific laws bad.

***Cyclists fare best when they act and are treated as drivers of vehicles***

Fred Oswald,  
Sep 2002

Slide 28 – Summary

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