

Bicycle Commuter Issues -- The Politics of Two Wheels

by Fred Oswald, PE

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This article shows how many people in our society believe a dangerous superstition about bicycle operation. People following the superstition ride bicycles in ways that put them at much greater risk (riding on the wrong side of the road, for example). The superstition dominates public policy relating to cycling, which increases risk for all. This article discusses the problems caused by misguided policy and what can be done to remedy them. A companion article, [Bicycle Commuter's Guide](#)¹, tells how experienced cyclists follow the rules of the road via a principle called **Vehicular Cycling**, which is summarized as "**Cyclists fare best when they act and are treated as operators of vehicles.**"



The Superstition: Almost everyone *except experienced cyclists* believes that cyclists on the road are at great risk of being run down from behind. From this superstition comes the belief that busy roads are too dangerous for cyclists and thus cyclists should stay off the roads. The fear is understandable but it is wrong. Hit-from-behind accidents, although terrible when they occur, are extremely rare. Accident studies show that these constitute less than one half of one percent (0.5%) of urban daylight crashes. (Unlit cyclists at night are in much greater danger.)

The risk can be compared to that of head-on collisions between cars traveling on a narrow country road. We are not terrified of such head-on crashes because we know they are rare and we are used to the hazard. Experienced cyclists understand that they have a similar situation with passing cars. The major risk to cyclists is from turning and crossing traffic at intersections. Cyclists are safer when they operate in an orderly traffic system where they ride in accord with the standard "rules of the road". Unfortunately, it takes several thousand miles of cycling in traffic to get over the superstition. Most "bike advocates" lack this experience, thus they advocate segregated facilities that are more dangerous than the roads they fear.



Bikeways are popular with novices because they separate cyclists from traffic, giving the *illusion* of safety. Unfortunately a cyclist just off the road or at the extreme edge is less visible than one in the traffic lane where drivers look for traffic. Bikeways increase the already greater hazards from turning traffic at intersections. ("Bikeways" is used here to mean separate places for bikes but not cars -- either separate bike paths or lanes at the edge of the road, designated by painted lines.)

Consider a cyclist in a bikeway traveling straight through an intersection. Since bike lanes are usually at the right edge of the road, right-turning motor traffic must cross bike traffic. This increases the risk of collisions. A bike lane carried into an intersection forms a "coffin corner". These bike lanes violate the fundamental principle of traffic engineering that traffic is channeled according to its destination, not by its type. Bike lanes make traffic streams cross, thus they lead to mistakes by both cyclists and motorists.

Novice riders in a bike lane are much more likely to commit errors making left turns, since they are reluctant to leave their lane to merge to the left turn lane. Instead, they wait until they are in the intersection, then dart across traffic like ducks in a shooting gallery.

Side road traffic is a hazard to bike lane or sidewalk cyclists because most motorists do not yield to them. Drivers cross the bikeway to stop just short of the actual traffic path. This blocks the bike lane or sidewalk and leads to broadside collisions.

"All Purpose Trails" in the Cleveland parks have obscene signs at road and even at driveway crossings that say, "**Stop, Walk Bike.**" One reason for the signs is to defer liability from accidents (blaming the victim). A related reason is that the intersections are very dangerous because of crossing traffic and poor sight lines. These paths have the additional hazard of mixing incompatible traffic (skaters, dog walkers, etc.), which follows no rules of the road. Moreover, most paths are much




too narrow (only 8-9 feet wide). This leads to collisions. The only safe way to ride such a path is very slowly. Fast cyclists do not belong on a busy "bike path".

John Forester, author of *Effective Cycling*, argues emphatically against separate bicycle spaces because they are less safe than the road and yet cyclists are often required to use these unsafe facilities. Even without restrictive laws, bikeways give motorists the idea that bicycles do not belong on the roads. Forester writes bitterly, "The idea that a significant amount of transportation will be done by politically correct people who have been enticed by false promises of safety to ride on slow and dangerous bike paths deserves all the jeering it receives. Basing the national cycling program on such a pathetic hypothesis is a scientific disgrace."

Bikeways encourage bicycle users *not* to act like vehicle drivers. They feel they are not part of traffic and thus not governed by traffic laws. Instead, like pedestrians, they ignore traffic signals. Bikeway cyclists are also more likely to ride at night without lights. This attitude leads to accidents.

To ride safely on an urban bike path or sidewalk, one must ride extremely slowly, dismount and walk across intersections and walk through congested commercial districts. (Traffic laws often *require* walking across intersections -- note the sign pictured above.) The delays involved are so absurd, that almost no one will accept them. Only the slowest and most cautious cyclists can ride safely on urban bike paths. Forester says: "Those who unwittingly demand dangerous facilities in the belief that these facilities will protect them should be told the truth, their demands should not be met, and they should be directed toward safe practices instead."

Non-cyclists view urban bikeways much more favorably than cyclists. The more that cyclists gain experience, the more they realize that separate facilities generally offer no improvement but are more often dysfunctional and dangerous. However, a few special places, such, as along a river or coastline have no crossing roads so they are free of intersection hazards. They can make for very pleasant riding if the paths are not crowded. Such places are useful mostly for recreation because they rarely connect home, work and shopping.

 **The best roads** for cycling have smooth surfaces, free of hazards like potholes and storm drains. You will feel more comfortable on roads with "wide curb lanes" where the outside lane is wide enough to share with motor traffic. About 12 feet of usable width is needed for reasonable lane sharing (14 feet for auto speeds over 45 mph). If you measure road lanes, deduct a one-foot "shy distance" on any road with a curb, edge drop-off or soft shoulder. Many roads are narrower than this standard, lack a good shoulder and are rough, especially near the edge. Many "arterial" roads once had four standard width lanes (two each direction), but they have been re-striped to add a turning lane in the center. This makes the lanes substandard. But in some places, 4-lane roads have wide (14') outside lanes and narrow (11') inside (left) lanes. The narrow inside lanes tend to "calm" traffic speeds while the wider outside lanes are good for cycling.



Simple Loop Detector: Detector wires are under the cyclist's left foot and another near left side of lane. (He should be further left.)

Many traffic lights are controlled by induction loop "vehicle detectors" that may fail to detect bicycles, particularly if cyclists do not know how to find the "hot spot". These spots should be marked with stencils. Some (especially simple-loop detectors) are not adjusted to be sensitive enough to detect the small amount of metal in a bicycle, even if the bicycle is stopped in the most sensitive spot (typically over one of the wires). City engineers may be indifferent to this problem. They do not consider the bicycle as a design vehicle for the roads; therefore, they refuse to fix "broken" detectors. I have been told to "push the pedestrian button" by



Double Loop Detector: The bike is over the "hot spot" in the center of the left turn lane. (The cut marks in the right lane are easier to see.)

a city engineer who belongs to a bicycle planning committee! How many motorists would tolerate being told to go off the road to push a button?



Superhighways: Bike paths must avoid road crossings if they are to be safe and fast. However, most cycle commuting occurs in cities where intersections are common. The only way to avoid crossings is to tunnel under or elevate over intersecting roads like a freeway. A busy bike path should be at least 12 feet wide (16 feet may be needed if incompatible users, especially skaters, share the path). All of this drives up the cost enormously. There are better uses for the money.

Well-planned bike lanes (which are very rare) encourage riders to follow some of the normal vehicular rules of the road. The best of these may be nearly as safe as good roads -- but not safer. You can see photos of bikelane hazards in a MassBike article "[Good, bad or ugly](#)"² bikelanes. Tom Revay compares bikeway claims to reality in [Bike Lane Contrarian](#)³. Even if bikeways are built to the best practices, there are still several objections to segregated bike facilities in a commuting environment:

1. They are built on a false premise: The "fear from the rear" superstition. The presence of bikeways reinforces the superstition.
2. Bikeways do not enhance the skill of those who ride them. But, they attract novice cyclists who think they know *everything*.
3. Bikelanes encourage mistakes by cyclists turning left (they tend to turn from the curb), they encourage motorists to turn in front of cyclists going straight through an intersection and they encourage cyclists to pass slow cars on the right.
4. Bikeways are most strongly pushed in the least appropriate and most harmful locations, urban environments with high intersection densities.
5. Bikeways consume money that could be better spent fixing road hazards, and most important, educating everyone to use existing roads safely.
6. Bike lanes accumulate gravel, broken glass, etc. Some "bicycle friendly" cities promise to sweep their bike lanes weekly. But guess what services will be cut first when the budget gets tight? If there is a wide lane with no paint stripe, cars will drive over the area when cyclists are not there "sweeping" it clean.
7. Laws that ban cyclists from the road often accompany the bikeways. The presence of a bikeway exacerbates the tendency for motorists to resent cyclists being on the road, even if it is unusable due to poor maintenance. The resentment often leads to harassment**.

** Motorist harassment of cyclists usually involves noise: yelling, blowing the horn, etc. But about two percent of the incidents go beyond annoyance -- "buzzing" close and fast, throwing objects, trying to hit or grab, etc. My experience shows that bikeways encourage harassment. On my daily commute (20 miles, round trip), I endure about one incident per week along the 30% of the route on park roads that have adjacent bike paths; one incident per month on the 60% of my route on roads with sidewalks; and just one incident in ten years on the 10% of the route on roads with no parallel "facilities". Update: Recently the parks put up "Share the Road" signs and harassment incidents have declined slightly.

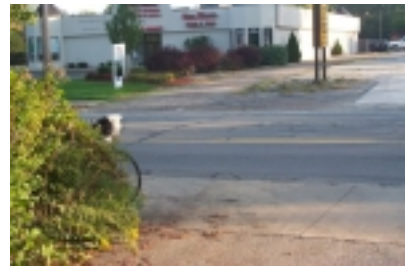
The 1998 Transportation Equity Act (TEA-21) provided \$3-4 billion for cycling over six years. If vehicular cyclists had vigorously made their needs known, this could have done a lot of good -- fixing road hazards, for example. Unfortunately, much of the money was wasted or worse, produced harm.

Transportation planners prefer to build bikeways for what they call "Basic and Children" type riders rather than teaching them to become competent cyclists who can use existing roads. Two Forester quotes: (1) "Any system based on incompetent cyclists will be inefficient and less useful, and hence less used." (2) "... the skill of cycling properly reduces accidents by about 80%, as shown by comparing several studies of accidents to cyclists."



Community support: Cycling is one of the most community friendly forms of transportation. Unfortunately, City Hall is often hostile to cyclists. We need to educate the public and politicians. Join planning committees and talk to city officials and police. Show the *Effective Cycling* video and donate copies of *Street Smarts* to teach about Vehicular Cycling (see the "Resources" section).

Traffic law gives cyclists "all the rights and all the responsibilities" as operators of vehicles. However, some communities ban riding on certain roads. Resist these restrictive laws that are based on superstition. Especially onerous are "sidewalk laws", which require riding in places **known to be dangerous**. Cities must be held liable for accidents caused by such laws. The Uniform Vehicle Code removed its "mandatory sidepath rule" in 1976 after cyclists warned of the dangers of sidewalk cycling. Why are many communities 25 years behind the UVC? Nearly as bad are laws saying "... shall ride as near to the right side of the street as is practicable, ..." Cyclists on an Internet discussion list discussed a "model" version of the UVC. The [Ohio Bicycle Federation](#)⁴ has reforms for Ohio laws. You can see proposals for both the UVC and Ohio on the [Crankmail advocacy section](#)⁵.



Sidewalk hazard – poor sight lines

Police and judges ignorant of cycling technique can misinterpret even reasonable laws. For example, a Dayton area cyclist was cited for "impeding traffic" on a 5-lane road by a police officer who believed it is dangerous to ride on the road. He was found guilty and fined \$100 plus costs. The conviction was eventually overturned on appeal. For details, see [OhioBike](#).⁴

Police must not be "soft" on felonies against cyclists. An officer who does not witness a motorist assault can at least telephone the offender to deliver a stern warning. Police must also stop lawless riders. Cyclists who ride on the wrong side, ride without lights at night or who flout the law are dangerous. And these actions damage the credibility of all cyclists. Violators can be offered, as an alternative to traffic fines, the opportunity to watch the training video and take a test to show what they have learned. (See example of a test on [Crankmail](#)⁵.) A bicycle patrol is a very effective unit for some police departments. Bicycle officers receive special training to cycle in traffic in addition to specialized police skills. Properly trained officers are much more likely to enforce traffic laws correctly and they are also much at better teaching children.

Cities must provide *secure* "parking" (U-shaped bars to lock to, placed in safe areas, rather than the typical "wheel bender" hidden around the corner.) Lockers that protect accessories and tools from theft are even better. Buses should be equipped to carry bikes. Multi-mode bike/bus commuting can help people who live too far from work to ride the whole distance.



Typical wheel bender bike rack. Best place to lock bike is to the side.

Education is combating ignorance. There are three kinds of ignorance. (1) The simple ignorance of those who do not know. (2) The compound ignorance of those who do not know that they do not know. (3) The *dangerous* ignorance of those who "know for sure" but it is based on superstition. There is no excuse for transportation professionals to be ignorant of vehicular cycling. At present, very few have had Effective Cycling training and most believe the superstition. Training must be an educational requirement to meet the Code of Ethics. The Ohio Administrative Code, Sect. 4733-35-03(B), states "The Engineer or Surveyor shall undertake to perform assignments only when he and/or his consulting support are qualified by training and experience in the specific technical fields involved."

Public Service Announcements can help teach the public about our right to use the roads and also combat dangerous practices such as wrong way riding. PSA's must fight the superstition. Do you have connections with a radio or TV station? Perhaps you can get them to produce and broadcast PSA's. Customized PSA videos are available from [Seidler Productions](#)⁶, or produce your own (See [Crankmail](#)⁵ for ideas.) You can see video PSA's on the Web in a small RealVideo window from the [Bicycle Coalition of Maine](#)⁷.



Possibly world's worst wheel benders. They would be better boat anchors.

The most useful and most cost-effective thing government can do for cycling is support proper cycling education. Teaching riders to wear helmets is only the beginning of bicycle safety education. A helmet can reduce injury from an accident, but it is much better to *avoid* accidents. After years of trying, the League of American Bicyclists finally got a small grant to promote "[Bike Ed](#)" courses⁸. Unfortunately, those who need the classes most are least likely to accept training. This is why we need PSA's to inform the public that there is more to cycling than steering and balance.

Governments can produce useful bicycle information if they work with competent cyclists. A great example is the Pennsylvania "[Bicycle Driver's Manual](#)"⁹, six pages listing and explaining relevant traffic laws followed by the *Street Smarts* booklet. The Ohio Department of Public Safety plans to issue a similar Bicycle Driver's Manual in 2002. The Boston Transportation Dept. in cooperation with MassBike, produced the flyers "[Don't Be a Road Warrior](#)" and "[Don't Be a Road Hog](#)"¹⁰.

The Cleveland-area planning agency is the Northeast Ohio Areawide Coordinating Agency. NOACA has a Bicycle Advisory Subcommittee that meets the second Wednesday each month. Most of their activities so far involve "paint & path". We need people to work on education instead.

Cyclists must learn how to talk to government planners. A good example is from an article [Meeting the "Bike Path" Challenge](#).¹¹ *If high-speed cyclists are forced to use the trail, sooner or later, one of them is going to collide with a baby carriage, a toddler on a trike, or someone's grandmother. We need to improve cycling conditions on the adjacent roads to lure the serious cyclists away from the trail. How can we work together on that?*



Children's Cycling: The Center for Disease Control identified inactivity as a major threat to public health. The March 1999 *Bicycling Magazine* in an article titled "Why Johnny Won't Ride", asked, "Why must our children be chauffeured to school, to soccer, to the park?" Getting children to bike places can provide a big part of the solution. That means we must educate children to ride properly. The problem of inactive children is aggravated by our fears for their safety. Parents and schools drive children places to protect them from accidents. We must not condemn children to cardiovascular disease in order to "save" them.

Parents can ride with their children, setting an example and showing how to avoid mistakes. However, parents must learn first so they teach correct technique. The most common causes of children's bicycle accidents are (1) riding on wrong side of road against oncoming traffic; (2) swerve left without looking, hit by passing vehicle; (3) ride out from residential driveway or off sidewalk into traffic; (4) failure to stop at stop sign or signal. See the article "[Guidelines for Choosing a Safe Bicycle Route To School](#)"¹².

Depending on individual maturity, parents can start riding with their children, on quiet roads, from age 7 or 8. Perhaps by 10 they can be allowed short trips on their own. Around age 10 to 12 you will encounter the problem of peer pressure. This makes children afraid to wear helmets. I have battled my own children over this issue and have sometimes locked up their bikes. Parents must set a good example. Where is mommy's (or daddy's) helmet? Try talking to other parents about a "parents pact" where all agree to teach proper methods and enforce helmet use.

A youth Effective Cycling or Bike Ed class can make children's biking much safer. Palo Alto schools have taught vehicular cycling in fifteen hours of classes as early as grade 3. (See [John Forester's](#)¹³ web page.) By contrast, traditional "Bike Safety" teaches fear of cars. Imagine how few children would learn to swim if water safety were taught this way. The video *A Kid's Eye View* (see Resources) is good for teaching parents. Bike Rodeos are a popular although superficial way to teach kids but they are a chance to reach parents. See [Crankmail](#) for ideas⁵.



Resources: Download "[Dilemmas of Bicycle Planning](#)"¹⁴ for a great discussion of advocacy issues. *Street Smarts* by John Allen is a very good and inexpensive, 39 page booklet about vehicular cycling techniques. *Street Smarts* booklet is available through [Rubel Bikemaps](#)¹⁵ and also on the web and in print as part of the [Pennsylvania Bicycle Driver's Manual](#)⁹. John Forester's books, *Effective Cycling* and *Bicycle Transportation* (MIT Press) are excellent resources (once you get past his confrontational, "in your face" style). More information is available on the [Bicycling Life](#)¹⁶, [MassBikeMetroBoston](#)¹⁷ and [North Carolina Coalition for Bicycle Driving](#)¹⁸ web sites.

The *Effective Cycling* video is an excellent tool for educating politicians. *A Kid's Eye View* is a great video to show to parents at PTA or Scout groups. You can buy *Kid's* (\$10) and *EC* (\$25) from the League of American Bicyclists, phone 202 822-1333 or email to bikeleague@bikeleague.org¹⁹. Make your own materials to educate local officials. See examples including ideas for a brochure and Public Service Announcement messages on the [Crankmail web site](#)⁵. The [Bicycle Coalition of Maine](#)⁷ has PSA videos that you can see on the Web via RealVideo or purchase a tape for \$10.

To be an effective advocate you must join with others. The leading national organization is the [League of American Bicyclists](#)⁸. LAB sponsors "Bike Ed" cycling courses and other programs. Unfortunately, the League emphasizes recreational path cycling over transportation. They seem indifferent to laws that ban cyclists from the roads. Make sure your voice is heard to promote vehicular cycling. For example, urge that no community can qualify as a "Bicycle Friendly City" if it has restrictive or dangerous laws. Local cycling organizations can promote education and fight sidewalk laws. Check out [Chainguard](#)²⁰ a cyclists' advocacy organization, which has stimulating articles on its web site. In addition, consider the [Chainguard email discussion group](#)²¹.

This article was written to promote the idea that cyclists must be recognized as drivers of vehicles with a legal right to use the road. Segregated facilities (bikeways) have their supporters, chiefly among beginners and non-cyclists. However, bike paths attract mostly novice, recreational cyclists who often carry their bicycles to the path on automobiles. Only if cyclists are allowed to use the roads can bicycles be healthful and practical vehicles for commuting and other essential travel instead of just toys. Finally, transportation engineers and planners must understand vehicular cycling so their products are safe and useful for bicycle transportation.

If you have any questions or comments, please direct them to [Fred Oswald](#)²². The author is a Professional Engineer in Ohio and a bicycle commuter from Cleveland.

Summary of links from this article:

1. <http://www.geocities.com/lakeeriewheelers/advocacy/commute-guide.pdf>
2. <http://www.massbikeboston.org/program/intersections.htm>
3. <http://tomrevay.tripod.com/projects/MassBike/BikeLanes/index.htm>
4. <http://www.ohiobike.org/>
5. <http://www.crankmail.com/bike-res.html>
6. <http://www.streetside.com/sp/psa.html>
7. <http://www.bikemaine.org/>
8. <http://www.bikeleague.org/>
9. <http://www.dot.state.pa.us/Internet/hwyIntHS.nsf/frmBikeManual>
10. <http://www.massbike.org/pub/>
11. <http://www.parrett.net/~rralston/bpath.html>
12. <http://www.cse.ucsc.edu/~karplus/bike/safe-route-to-school.html>
13. <http://www.johnforester.com/Articles/education.htm>
14. <http://danenet.wicip.org/bcp/dilemma.html>
15. <http://www.bikemaps.com/bss.htm>
16. <http://www.bicyclinglife.com/>
17. <http://www.massbikeboston.org/>
18. <http://www.humantransport.org/bicycledriving/index.html>
19. bikeleague@bikeleague.org
20. <http://chainguard.org/>
21. <http://yahoogroups.com/community/chainguard>
22. <mailto:fredoswald@nccw.net>