



Members

Rep. Edmond Soliday, Chairperson  
Rep. Michael Speedy  
Rep. William Davis  
Rep. Jud McMillin  
Rep. Wendy McNamara  
Rep. Robert Morris  
Rep. Thomas Saunders  
Rep. David Yarde  
Rep. Nancy Dembowski  
Rep. Edward DeLaney  
Rep. Phil Pflum  
Rep. Steven Stemler  
Rep. Dennis Tyler  
Sen. Thomas Wyss  
Sen. James Merritt  
Sen. James Banks  
Sen. Vaneta Becker  
Sen. Ronald Grooms  
Sen. Allen Paul  
Sen. James Smith  
Sen. James Arnold  
Sen. Timothy Lanane  
Sen. Earline Rogers

# JOINT STUDY COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE ASSESSMENT AND SOLUTIONS

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Authority: P.L. 5-2011

## MEETING MINUTES<sup>1</sup>

Meeting Date: September 20, 2011  
Meeting Time: 10:00 A.M.  
Meeting Place: State House, 200 W. Washington  
St., House Chamber  
Meeting City: Indianapolis, Indiana  
Meeting Number: 3

**Members Present:** Rep. Edmond Soliday, Chairperson; Rep. Michael Speedy; Rep. Wendy McNamara; Rep. Robert Morris; Rep. Thomas Saunders; Rep. David Yarde; Rep. Nancy Dembowski; Rep. Edward DeLaney; Rep. Phil Pflum; Sen. Thomas Wyss; Sen. James Merritt; Sen. James Banks; Sen. Vaneta Becker; Sen. Ronald Grooms; Sen. James Smith; Sen. James Arnold.

**Members Absent:** Rep. William Davis; Rep. Jud McMillin; Rep. Steven Stemler; Rep. Dennis Tyler; Sen. Allen Paul; Sen. Timothy Lanane; Sen. Earline Rogers.

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<sup>1</sup> These minutes, exhibits, and other materials referenced in the minutes can be viewed electronically at <http://www.in.gov/legislative>. Hard copies can be obtained in the Legislative Information Center in Room 230 of the State House in Indianapolis, Indiana. Requests for hard copies may be mailed to the Legislative Information Center, Legislative Services Agency, West Washington Street, Indianapolis, IN 46204-2789. A fee of \$0.15 per page and mailing costs will be charged for hard copies.

## **I. Call to Order**

Chairman Soliday called the meeting to order at 10:10 a.m. Following introductions by Committee members, Chairman Soliday referred members to an Indystar.com article discussing the recent closure of the Sherman Minton Bridge connecting Indiana and Kentucky following the discovery of cracks in support beams. See Exhibit A.

## **II. Commissioner Michael Cline, Indiana Department of Transportation (INDOT)**

Commissioner Cline offered his thanks to the citizens of Indiana and Kentucky for their patience during the closure of the Sherman Minton Bridge for safety reasons. He stated that INDOT has made \$1.1 billion in annual capital investments for the past six years and maintains state roads and bridges at a level higher than the national average. He anticipates that, following the depletion of Major Moves funding, INDOT will spend approximately \$500 million annually for maintenance, safety, and other projects.

In response to a question from Senator Arnold, Commissioner Cline explained that the Sherman Minton Bridge had been on a two year review cycle but was being reviewed more frequently due to age and that the fracture had been discovered while the bridge was under contract for repairs. Commissioner Cline described INDOT's working relationship with Kentucky as very positive. Senator Arnold inquired about INDOT's plans with respect to the Cline Avenue bridge; Commissioner Cline responded that INDOT is reviewing outside proposals, but that any plan will involve demolishing the bridge.

Chairman Soliday commented that INDOT's limited resources must be allocated based on demand and that daily usage of the Cline Avenue bridge had decreased from 100,000 vehicles to 30,000 vehicles. He also reminded the Committee that public-private partnerships take many forms, not all of which require tolls.

Senator Grooms asked which state bears responsibility for maintaining, repairing, and paying for the Sherman Minton Bridge. Commissioner Cline answered that Indiana is responsible for maintenance and repairs and that INDOT is working on a plan to share costs with Kentucky.

Representative DeLaney asked if the Sherman Minton Bridge was one of the 469 Indiana bridges rated as structurally deficient or functionally obsolete. Commissioner Cline said that it was not. Commissioner Cline also said that he did not know where the Sherman Minton Bridge ranks with respect to daily usage, but that it is very important to Indiana and that its repairs will not delay other Indiana-Kentucky bridge projects. Representative DeLaney thanked Chairman Soliday for his good work in leading the Committee.

## **III. Bart Giesler, Aviation Association of Indiana (AAI)**

Mr. Giesler stated that Indiana has 114 public use airports; four are primary airports with scheduled service, and 110 are general aviation airports. See Exhibit B. He explained the traditional aviation funding process, which consists of 95% federal funding, 2.5% state funding, and 2.5% airport funding; currently, however, the state is funding 1.25% with the recipient airport providing 3.75%. He also explained the priority system that the Federal Aviation Administration (FAA) uses to determine funding. Mr. Giesler described the advantages of combining state and local projects to enhance FAA funding.

Mr. Giesler told Representative McNamara that Indiana's four primary airports are located in Indianapolis, Evansville, South Bend, and Fort Wayne; their funding is based on their project scores relative to projects undertaken by other airports located in the Great Lakes

region. Chairman Soliday asked Mr. Giesler to provide empirical data to assist in defining Indiana's current aviation demand and future needs; Mr. Giesler agreed to provide the Committee with an economic impact study that AAI is producing jointly with INDOT and Conexus Indiana. Senator Wyss commented that new engine technology allows larger airplanes to land on shorter runways, which increases the importance of general aviation.

Mr. Giesler introduced Travis McQueen, Dubois County Airport Authority (DCAA) Manager, and Doug Bawel, President and CEO of Jasper Engines and Transmissions. Mr. McQueen stated that local businesses invest in the DCAA and its infrastructure, which has resulted in DCAA's growth. Mr. Bawel said that many businesses decide where to locate based on proximity to general aviation airports. He also spoke about his company's significant return on its investment in corporate jets, which allow more potential customers to visit the facility and provide a better quality of life for employees. Senator Wyss voiced his agreement that general aviation airports are the future of aviation.

#### **IV. Steve Watson, CSX Corporation**

Mr. Watson provided statistics about Indiana's 42 freight railroads, of which four are Class I, one is Class II, and 38 are Class III. He stated that 17% of a Class I railroad's revenue is apportioned for capital expenditures, compared to an average of 3% in the manufacturing sector. Indiana's Class I railroads spend a combined \$32.5 million annually on highway crossing signal and surface maintenance. Mr. Watson predicts continued growth in overall volume, including intermodal volume, and tonnage. He also explained the concept of 286k compliance, which requires infrastructure to be rated to support axle loads of 286,000 pounds. See Exhibit C, pp. 1-5.

Representative Pflum asked if rail business remained stable during the economic downturn. Mr. Watson answered that there was a 2% drop off in 2009 and again in 2010 but that business is growing in 2011. Chairman Soliday asked if the freight rail infrastructure reached its peak capacity a few years ago. Mr. Watson answered yes.

#### **V. Michael Riley, Manager, INDOT Rail Office**

Mr. Riley stated INDOT's support of a multi-modal strategy to address Indiana's current and future transportation needs. He said that INDOT will continue to work with its partners at the Midwest Regional Rail Initiative (MWRRI) to develop the Midwest Regional Rail System. INDOT maintains that a business case must be made for implementation of high speed rail. Mr. Riley said that INDOT is working on a study of a high speed rail hybrid route passing through both South Bend and Fort Wayne as part of the Chicago-Cleveland corridor. Mr. Riley stated that INDOT has worked to leverage federal funding in support of high speed rail projects, including the receipt in July 2010 of a \$71.4 million grant for final design and construction for the Indiana Gateway Project in northwestern Indiana. In response to a question from Senator Wyss, Mr. Riley confirmed that the grant money has not been obligated for the Gateway project.

Representative DeLaney asked how much money the state contributes to passenger rail in Indiana. Mr. Riley answered that Indiana contributes no money to AMTRAK and that future contributions are not part of INDOT's business plan. Chairman Soliday stated that it would be helpful to see demand projections for high speed and conventional passenger rail to determine if funding is going to where it is needed. Mr. Riley said that INDOT is doing some baseline work in this area as a member of MWRRI.

## **VI. Thomas Hoback, President and CEO, The Indiana Rail Road Company**

Mr. Hoback provided an overview, including many photographic examples, of the Indiana Rail Road Company's infrastructure investments, which averaged \$118,000 per employee. He estimated that by 2015, the Indiana Rail Road Company will have cumulatively reinvested more than \$185 million in earnings over 30 years. The company's five year capital plan costs \$65 million and will upgrade infrastructure to heavy haul standards, rebuild the core route system to handle four times the current amount of gross ton miles by 2020, and enhance capacity to meet future traffic volumes. Mr. Hoback stated that the company's private investments result in the public benefits of less highway traffic and decreased fuel consumption. See Exhibit C, pp. 6-26.

Chairman Soliday asked if issues arise between passenger and freight railroads due to shared use of tracks. Mr. Hoback answered that both scheduling and infrastructure conflicts exist, especially as freight volume increases. Senator Wyss asked if repairs to a single rail track require complete closure of the line, and Mr. Hoback stated that the line is put out of service for eight to twelve hours during each 24 hour period, typically during less busy times, to allow repairs on smaller portions of the track.

## **VII. John Secor, President, Louisville & Indiana Railroad**

Mr. Secor spoke about Indiana's aging rail infrastructure, including bridges, for which repair and replacement costs over the next 30 years are expected to exceed \$5 billion. He said that failing to invest adequately in infrastructure will result in losses of key shippers, rail routes, economic development and employment opportunities, and tax revenue. He also stated that an increase of 1% in the rail market share of freight would remove 600 million tons of freight and 25 million trucks from the national highways, save shippers \$239 billion, and reduce national highway costs by \$17 billion. See Exhibit C, pp. 27-23.

Senator Wyss asked if the Class II and III railroads have shovel ready projects that could benefit from the national focus on infrastructure. Mr. Hoback interjected that the Indiana Rail Road Company has several in its five year plan, including achieving 286k compliance for a bridge at Crane Naval Surface Warfare Center. Representative Morris asked for how long a train may block an intersection. Mr. Secor answered that a stopped train may block an intersection for only five minutes, but that there is no limit for a moving train.

## **VIII. Mark Palmer, Indiana Transportation Association**

Mr. Palmer stated that there are both fixed route and demand response bus systems in Indiana; he placed annual rural passenger demand at two million and large fixed route passenger demand at 1.6 million. He distributed a map of Indiana's public transit systems. See Exhibit D. Mr. Palmer provided a breakdown of public transit funding sources and commented that the state's share of funding has decreased following the decoupling of the public mass transit fund from the state sales tax. He stated that overall ridership had increased until 2008, when the recession started, and he explained the "public transit paradox": As people lose their jobs, ridership and fare revenue decrease, so routes are eliminated and fares are increased to compensate for decreased ridership. Mr. Palmer said that ridership increased 3.62% in 2010 but that public transit providers continue to operate with severe funding deficits. He also said that Michigan and Illinois spend more per capita on public transit than does Indiana. Mr. Palmer said that he expects ridership to increase 18% over the next five years, which would result in drastic service cuts if funding continues at current levels. He would like to see adequate funding to allow public transit providers to maintain or improve the condition of their physical assets, maintain or increase the level of service, and replace aging fleets with hybrid buses to save fuel costs.

Representative DeLaney asked if rising pension costs for bus drivers and recently implemented property tax caps have affected funding for public transit providers. Mr. Palmer said that the property tax caps have definitely been a factor.

### **IX. Rich Cooper, Ports of Indiana**

Mr. Cooper stated that the Ports of Indiana is a self-funded statewide port authority that is governed by a bipartisan board of seven members appointed by the Governor. See Exhibit E. He defined a port as a collection point for the transfer of goods from different modes. Mr. Cooper provided statistics about the ports at Mount Vernon, Jeffersonville, and Burns Harbor. 2010 saw a record number of shipments pass through Indiana's ports, including the largest project shipment in the Ports' history. 2011 shipments through August are up 6% compared to 2010. Mr. Cooper stated that Indiana's ports have a total annual economic impact of \$5.4 billion. He provided tables showing the ports' capital requirements in 2010 and 2011 and projected requirements over the next five and 20 years. Mr. Cooper also listed several projects at each port intended to increase connectivity.

Senator Wyss confirmed with Mr. Cooper that Mr. Cooper was aware of the logistics tax credit legislation that Senator Wyss proposed during the 2011 legislative session. Chairman Soliday recessed the Committee for lunch.

### **X. Representative Milo Smith**

Chairman Soliday reconvened the Committee at 1:30 p.m.

Representative Smith provided copies of his written testimony, as well as several documents he referred to during his presentation. See Exhibit F. After reviewing HEA 1334-2011, which charged the Committee with studying various topics related to motorized bicycles and mopeds, Representative Smith discussed a recent decision issued by the Indiana Court of Appeals in which the court overturned a conviction for operating a motor vehicle while suspended due in part to the General Assembly's failure to define maximum design speed within the definition of a motorized bicycle. Representative Smith provided data on the varying license and insurance requirements for motorcycles and motorized bicycles as well as a chart showing licensing requirements for mopeds in 37 states.

Senator Becker asked how many states require licenses, insurance, or both for moped operators, and Representative Smith referred her to the information in his handout. Representative Yarde asked if the current 25 miles per hour (mph) limitation in the definition of motorized bicycle is more dangerous than a 30 mph limitation. Representative Smith stated that the 30 mph limitation is acceptable especially if paired with a requirement that a moped be operated not more than three feet from the right edge of the road.

At Senator Smith's request, Representative Smith explained the contents of a spreadsheet showing accidents involving mopeds and property damage in Evansville. Chairman Soliday commented that the operator of a moped is typically a high risk driver without a license or insurance and that the other party involved in an accident usually bears the costs. Representative Yarde confirmed with Representative Smith that the minimum age required to operate a motorized bicycle in Indiana is 15 years of age.

George Hawkins testified as a public citizen about the need to amend the definition of motorized bicycle to include vehicles that reach speeds of up to 30 mph, to impose stiffer penalties on individuals who violate motorized bicycle laws, and to require mandatory safety gear. Duane O'Neal, another public citizen, asked the Committee not to require moped operators to be licensed; he maintained that, by not requiring licenses for moped

operators, Indiana allows an at-risk population to actively participate in mobile society. Senator Wyss asked Mr. O'Neal how this at-risk population has fared in the 37 states that require moped operators to be licensed. Mr. O'Neal replied that it is a greater problem in rural states and that he did not oppose requiring a moped operator to have insurance.

Jay Jackson of ABATE Indiana stated that the current laws concerning mopeds are difficult to enforce. See Exhibit G. He provided photographic examples demonstrating the variety of vehicles that conform with the statutory definitions of motorized bicycle and motorcycle. Mr. Jackson provided statistics from 2004 to 2010 showing the number collisions involving mopeds in Indiana, with breakdowns by accidents involving injury, fatality, or property damage. Mr. Jackson requested consistency in defining the types of vehicles in order to allow operators to follow the law. He also recommended requiring operating training if licensing is not mandated.

Representative Smith introduced Chief Brad Hill of the Evansville Police Department (EPD), who in turn introduced EPD Detective Karin Montgomery and Officer Sara Hilsmeier. Detective Montgomery spoke about specification differences between electric bicycles, mopeds, and scooters. See Exhibit H. She also discussed the difficulties law enforcement officers face in trying to determine if traffic laws are being violated due to the visual similarities among the vehicles. She provided crash statistics for accidents involving these types of vehicles in Evansville. Officer Hilsmeier, an accident reconstruction specialist, described several scooter accidents at which she was a responding officer and displayed photographs depicting the property damage to both the scooters and automobiles involved in the accidents. Detective Montgomery closed the presentation by asking the General Assembly to: (1) require scooter operators to register their scooters with the Bureau of Motor Vehicles, carry insurance, and successfully complete scooter safety classes; and (2) eliminate the statutory need for a law enforcement officer to visually discern the varying engine sizes of scooters, mopeds, and motorized bicycles.

Senator Wyss asked what crime an intoxicated individual who operates a scooter is charged with; Detective Montgomery said the appropriate charge would be misdemeanor operating while intoxicated. Senator Smith asked about the difference between charging the theft of a scooter as property theft or automobile theft; Detective Montgomery stated that it affects crime reporting statistics.

#### **XI. Bob Zier, Chief of Staff, INDOT**

Senator Leising explained that INDOT's closure of 14 blocks of State Road 3 in Rushville for seven months prompted the need for SC 50-2011, which charged the Committee with studying INDOT's policies related to notice of construction. She stated that several small businesses located on State Road 3 had closed due to lack of business during the closure and that public safety services were also affected.

Mr. Zier described the procedure INDOT uses to notify the public and local elected officials of highway closures. INDOT prefers not to establish a permanent construction zone because most activities take less than a day and do not require full closure. INDOT's district public information officer issues a press release about the closure and also provides closure and restriction information in the Condition Acquisition and Reporting System (CARS). Mr. Zier stated that INDOT conducts a public hearing to which local public officials are invited before letting a contract for a major construction project that requires closure. INDOT also performs field checks at which affected stakeholders are invited to review the plans. INDOT typically compensates local units of government for damage resulting from incremental increases in traffic volume due to the closure.

Senator Wyss asked Mr. Zier if INDOT followed the usual process with regard to the closure Senator Leising described. Mr. Zier stated that INDOT followed the process, including holding a public hearing, but that not all information was shared at the local level due to an administration change. Chairman Soliday stated that it is good for the Committee to learn about INDOT's internal procedures; he said that he found the process rigorous and that, while it is always possible to do better, he did not think this particular situation required legislative action.

## **XII. Other Business and Adjournment**

During the meeting, the Committee received written testimony from Senator Sue Landske, Representative Randy Truitt, and Dr. Marvin Scott on behalf of the Midwest Interstate Passenger Rail Commission. See Exhibit I.

At the close of the meeting, Chairman Soliday reminded the members that they would be receiving an electronic copy of the Committee's informational report for their review and comments. Chairman Soliday adjourned the meeting at 3:45 p.m.

# INDYSTAR★COM

## Are hundreds of Indiana's key bridges wearing out?

12:20 AM, Sep. 20, 2011|

It normally buzzes with traffic, carrying 80,000 cars and trucks a day over the Ohio River between Southern Indiana and Louisville, Ky. It's definitely the bridge to somewhere.

But since Gov. Mitch Daniels ordered the six-lane I-64 bridge closed Sept. 9, shortly after inspectors found cracks in two critical support beams, it's been the bridge to nowhere, and motorists have been fuming as they look for alternative routes across the Ohio River.

Bearing the brunt: the nearby I-65 bridge, where all the extra traffic is adding delays of an hour or more, especially on the southbound lanes into Louisville during the morning rush hour.

"It's horrible. Every morning, there's a seven-mile backup in the area," said Ron Druck, operations manager at L.J. Rogers Trucking's office in New Albany, just north of the river.

Also feeling the pinch are commuters who cross the river to get to work, and local businesses that draw customers from across the river, from casinos in Southern

Indiana to restaurants and museums in downtown Louisville.

Such traffic woes aren't being felt in Central Indiana, but the closing does raise one question that could resonate across the state: How many other Indiana bridges are below standard, and how much will it cost to fix them?

As of December, Indiana had 469 state-maintained bridges that were structurally deficient or functionally obsolete, according to the Federal Highway Administration. That's up from 371 in December 2004, a month before Daniels took office.

The number doesn't include thousands of other bridges owned and maintained by counties, cities and towns.

Nationally, Indiana ranks 26th for the overall condition of its bridges, according to a recent study by Transportation for America, a coalition of business and citizen groups pushing for transportation reform.

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Ex. A

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"Today, one out of every nine bridges that motorists in Indiana cross each day are likely to be deteriorating to some degree," the study said.

And the money needed to bring them up to standards is staggering. It would cost more than \$3.5 billion to repair or replace Indiana's deficient bridges, according to a recent report by the American Society of Civil Engineers. The group gives Indiana a grade of C+ for bridges and a D+ for overall infrastructure, which also includes roads, airports, dams, water systems and other categories.

Last month, the Indiana Department of Transportation told a study committee of the General Assembly that even if the state were to spend \$100 million a year on bridge maintenance, 58 percent of the state's bridges would be in less-than-satisfactory condition by 2035.

In an interview Monday, INDOT officials said it was too soon to say how much the state needs to spend on bridge maintenance.

"The sweet spot is somewhere in the range of \$300 million a year, but it would be premature to say that's what we're intending to spend," said Michael B. Cline, INDOT's commissioner.

He said 87 percent of the state's 5,000 bridges are in excellent, good or satisfactory condition.

"We're confident that our bridges are in good condition," he said. "To say a piece of

infrastructure is deteriorating, yes, that's true. Over time, it gets wear and tear. It's our job to invest the dollars we have to keep them in good, serviceable order.

He said the state has spent \$2.9 billion in the past five years to maintain and repair bridges and roads, out of a total capital budget of \$6.5 billion.

But some Indiana groups say the Daniels administration should be spending more than it does to repair old bridges and highways. They fault the state for spending heavily on new highway projects, such as I-69, at the expense of older roads and bridges.

"It's just outrageous that we would have such appalling upkeep in our state," said Jesse Kharbanda, executive director of the Hoosier Environmental Council. "We've long maintained that Indiana's priorities are misplaced for transportation."

In the past five years, Indiana has raised and spent billions of dollars on roads and

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bridges with funds generated through the lease of the Indiana Toll Road to a private operator. But only 45 percent of the program's 10-year highway spending program is going toward maintenance and repairs, compared with 55 percent being spent on new construction, according to INDOT's most recent annual report.

"We've got crumbling roads and bridges," said Dan Parker, chairman of the Indiana Democratic Party. "The state should be investing heavily in repairs and maintenance."

But INDOT officials said the spending figures don't reflect the tens of millions of dollars that are spent to replace bridges, including several on I-465. Those projects are often counted as new construction rather than repair and maintenance, Cline said.

He declined to speculate on how long the I-64 bridge might be out of commission or how much repairs might cost. It will take at least two more weeks before engineers complete their inspection of the nearly 50-year-old span, known as the Sherman Minton Bridge, for more structural faults and recommend how to repair it.

Some transportation experts said such a repair is likely to be expensive. The Sherman Minton Bridge is one of the largest and busiest spans in the state.

"It's a unique piece of infrastructure in Indiana," said Dennis Faulkenberg, a former deputy commissioner and chief financial officer at INDOT who is president

of Appian, a transportation lobbying firm in Indianapolis. "You don't have funding generally available for such a project."

He said the state's highway and bridge repair funds are generally committed to other projects for the next two years, and a big emergency project could require some re-prioritization of projects.

It remains unclear how much the bridge closing in Southern Indiana is affecting commerce in Central and Northern Indiana.

In Southern Indiana, the impact has been sharp. The Horseshoe Southern Indiana casino saw its business drop by more than 10 percent last weekend after the bridge closed, although the casino said it is starting to bounce back after it began publicizing other routes.

In Central Indiana, Celadon Trucking, a national trucking company based in Indianapolis, said it has provided alternative routing for its drivers and has noticed some delays.

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"But it's not a crisis-type situation for us," said Celadon spokesman Monte Horst.

The Indiana Motor Truck Association, which represents hundreds of trucking companies statewide, said the bridge closing is "not stopping commerce," although it is causing anxiety among drivers and shippers.

"Time is money," said Gary Langston, the group's president. "This is costing everybody money, and it is disrupting service."

**The Louisville Courier-Journal contributed to this story.**

**Call Star reporter John Russell at (317) 444-6283. Follow him on Twitter @johnrussell99.**



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# Joint Study Committee on Transportation and Infrastructure Assessment and Solutions

Aviation Infrastructure Assessment  
By  
Aviation Association of Indiana

TIAS  
9/20/2011  
Ex B



# Indiana's Public Use Airports

- ▶ 114 Public use airports
  - 69 State system plan
  - 67 National Plan of Integrated Airport System (NIPIAS)
  - 66 NIPIAS Airports eligible for federal funding
  
- ▶ General Aviation (GA) vs Primary Airports
  - 4 Primary Airports
  - 110 GA Airports



# Current Funding Process

- ▶ Eligible NPIAS Airports receive \$150,000 per year
  - Commercial service airports receive additional
    - Passenger count
    - Cargo weight
- ▶ 95% federal, 2.5% state, 2.5% airport
- ▶ State spends approx \$1 – \$1.5 million per year to match
  - IND does not receive state funding
  - Some commercial service projects receive 80% federal funding



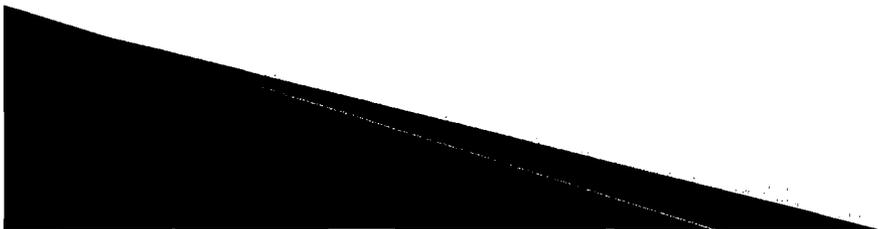
# FAA Priority System

- ▶ Airports annually submit their 5 year request to INDOT
- ▶ FAA will allow projects to be rolled over
  - FAA expects annual grant be used on high priority projects
  - 3 year penalty for applying for discretionary projects if airside developments not complete
  - FAA Low Priority Projects (revenue generating)
    - T-Hangars
    - Fuel Farms
    - Airport Terminals



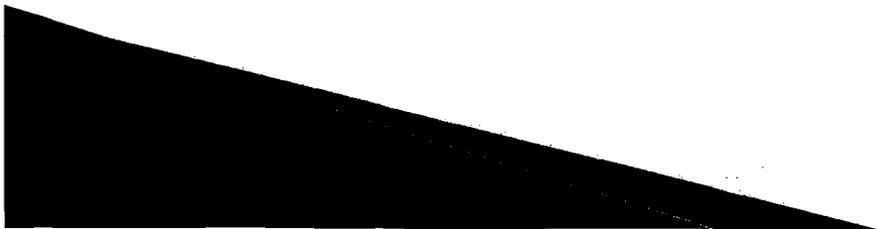
# FAA Discretionary Fund Projects

- ▶ Indiana airports compete in the FAA Great Lakes Region
- ▶ FAA scores projects
  - Safety/Security
  - Statutory emphasis
  - Reconstruction/Rehab
  - Environmental
  - Planning
  - Capacity
  - Standards
  - Other



# Federal Project Requests

Year	Total Requests	Total Planned
2011	\$126,256,802	\$98,371,714
2012	\$135,037,887	\$71,816,507
2013	\$111,695,242	\$69,142,904
2014	\$146,244,158	\$70,639,905
2015	\$119,180,276	\$69,015,972
5 Year Total	\$638,414,365	\$378,987,002



# 820 Federal Project Requests

- Runways and taxiways
  - New
  - Extension
  - Reconstruction
- Lighting
- Land acquisition
- Aprons
- Fencing (security/animal control)
- Other

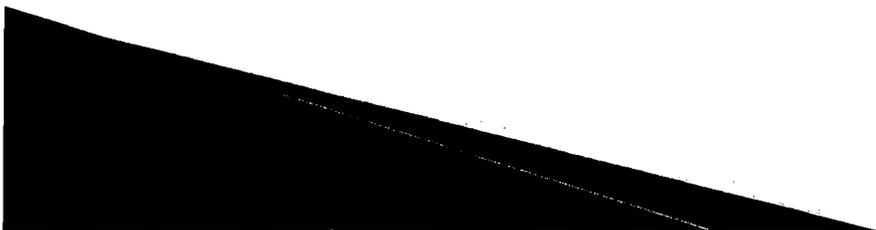
# State / Local Projects

- ▶ IC 8-21-11 Airport Development Program
- ▶ *Sec. 5. (a) The department shall adopt rules under IC 4-22-2 to establish a program to foster airport development in Indiana with special emphasis on improvement of airports as an economic development tool. The program must include the following components:*
  - (1) State grants to airports from the grant fund to match federal Aviation Trust Fund grants.*
  - (2) State grants to airports from the grant fund for airport development projects for which federal grants are not available.*
  - (3) Loans to airports from the loan fund for airport development projects.*
- ▶ Established 1990 session
- ▶ Last funded – 2001 budget

# State/Local Request

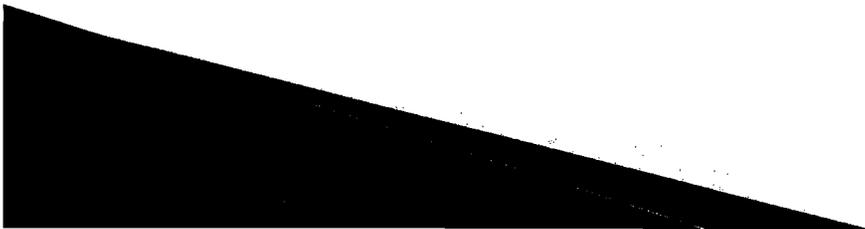
- ▶ 16 Airports submitted request as part of CIP

Year	Total Requested Amounts
2011	\$9,965,340
2012	\$3,838,335
2013	\$5,966,416
2014	\$4,501,761
2015	\$3,333,470
5 Year Total	\$27,605,322



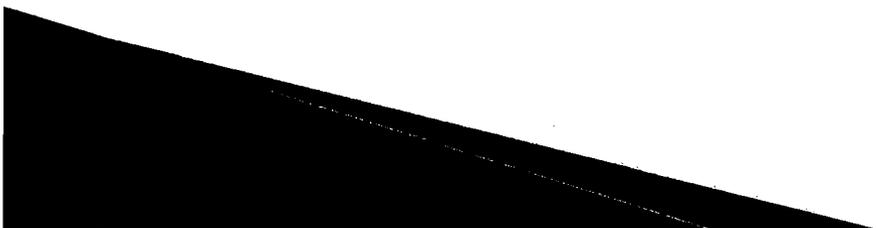
# State/Local Program Advantages

- ▶ Enhance FAA funds
  - Year End Discretionary
    - Bid ready projects
- ▶ Planning
  - Do not have to multi-year projects
- ▶ Indiana controls its destiny
  - FAA decides what projects are funded, INDOT
  - Indiana only matches funds for FAA projects



# Issues

- ▶ **Federal Funding Uncertainty**
  - 22nd Continuing Resolution since 2007
  - Classification of airports
- ▶ **NextGen Aircraft**
  - New technology needed
- ▶ **Local Airports Funding**
  - Property tax caps
  - Airport revenues down
  - Regulatory costs increasing
- ▶ **Development Around Airports**



# Questions

- ▶ Bart Giesler, Executive Director
- ▶ Aviation Association of Indiana
- ▶ [bgiesler@wswi.com](mailto:bgiesler@wswi.com)
- ▶ 317/916-4184



Indiana General Assembly

**Joint Study Committee On  
Transportation And Infrastructure  
Assessment And Solutions**

September 20, 2011

Steve Watson, CSX Corp.

Testifying on behalf of Indiana's Class 1 Freight Railroads

*At a Glance*

**Indiana's Freight Railroads:**

**42** rail carriers

**4,475** miles of track

**5,500** employees

**\$365** million annual payroll

TIAS  
9/20/2011  
Ex. C

## Railroad Infrastructure Costs:

**17%** of revenue apportioned  
for capital expenditures

**3%** manufacturing sector avg.



**\$12.5** million annually

Highway Crossing Signal Maintenance



**\$20** million annually

Highway Crossing Surface Maintenance

## Projected Growth:

Overall volume by 2020: ▲ **44%**

Overall tonnage by 2035: ▲ **60%**

Intermodal volume by 2035: ▲ **213%**

*Source: AASHTO*

## **Class 1 Investments Impacting Indiana:**

CSX's National Gateway  
(Eastern Seaboard–Chicago)

Norfolk Southern's Heartland Corridor  
(Norfolk–Chicago)

Canadian National's Kirk Yard  
(Yard expansion, locomotive shop)

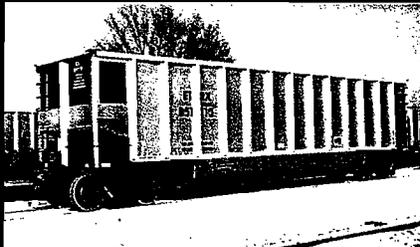
## **Q: What is 286k Compliance?**

A: Infrastructure that is rated to support axle loads of 286,000 lbs.

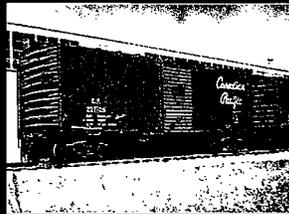
Especially important in the context of bridges.



Open-top hopper car, ca. 1930  
**Capacity: 50 tons**



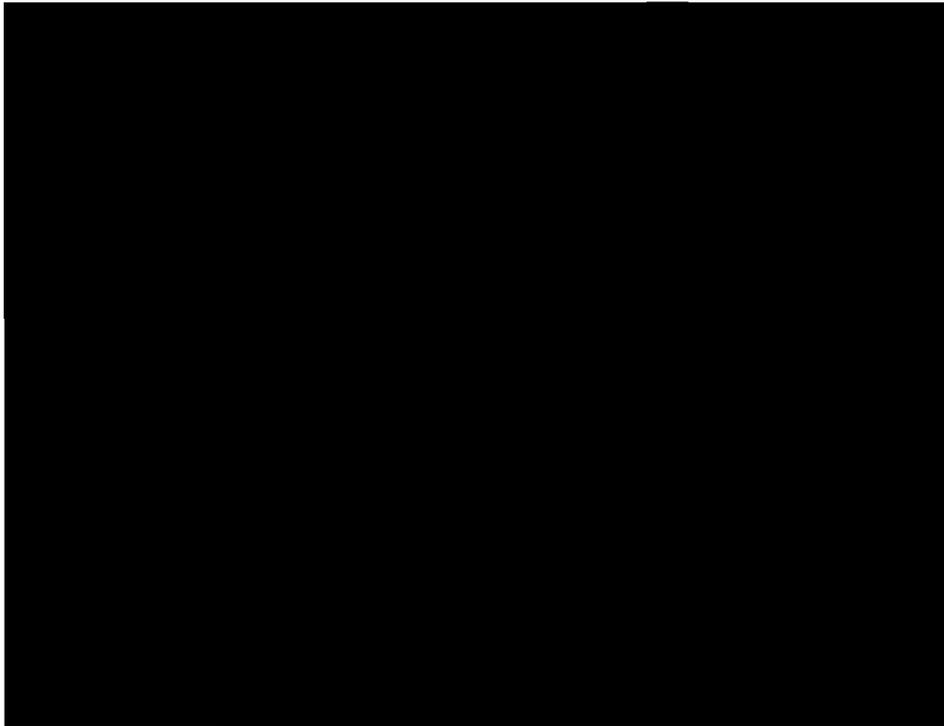
Modern hopper  
(286,000 gross wt.)



40-ft steel boxcar, ca. 1930  
**Capacity: 45 tons**



Modern 60-ft car  
(286,000 gross wt.)



The Indiana Rail Road Company  
**Infrastructure Investment  
Overview**

September 20, 2011

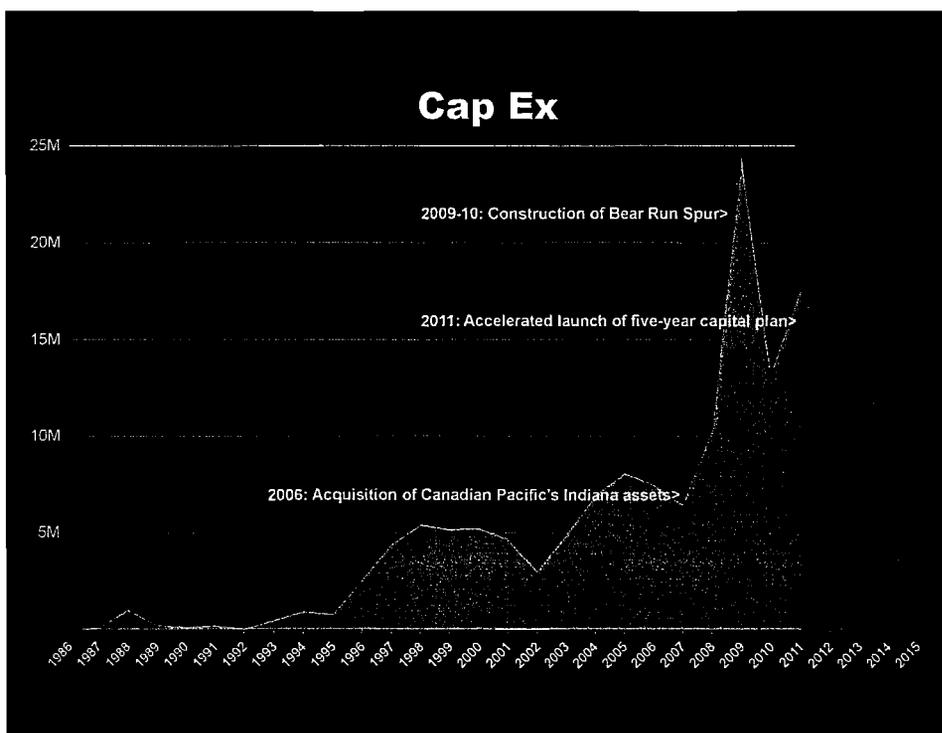
**Thomas Hoback**

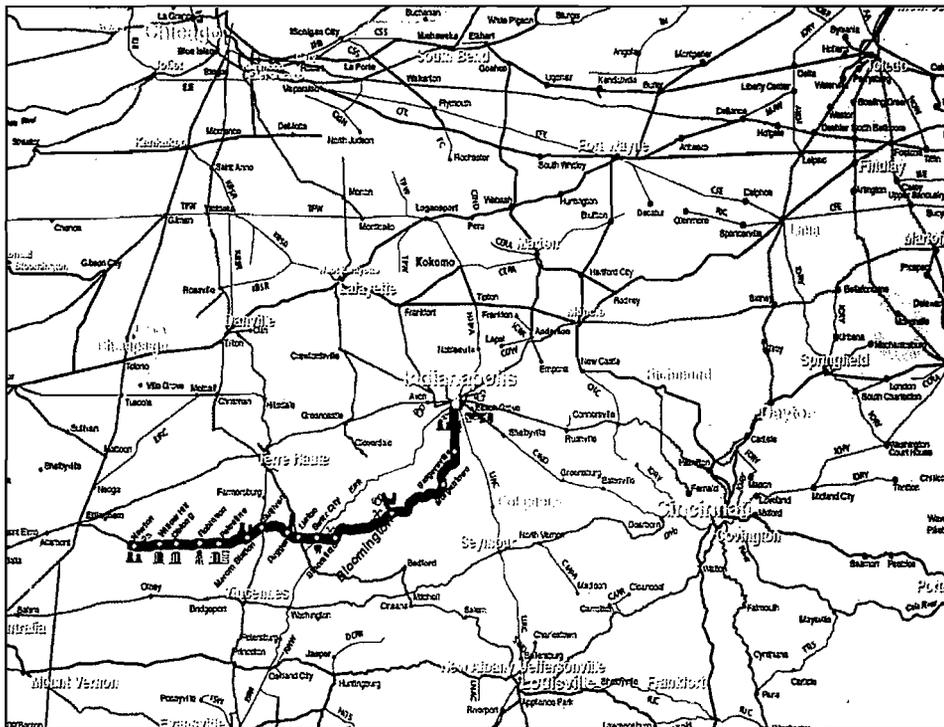
Founder, President and Chief Executive Officer  
**The Indiana Rail Road Company**



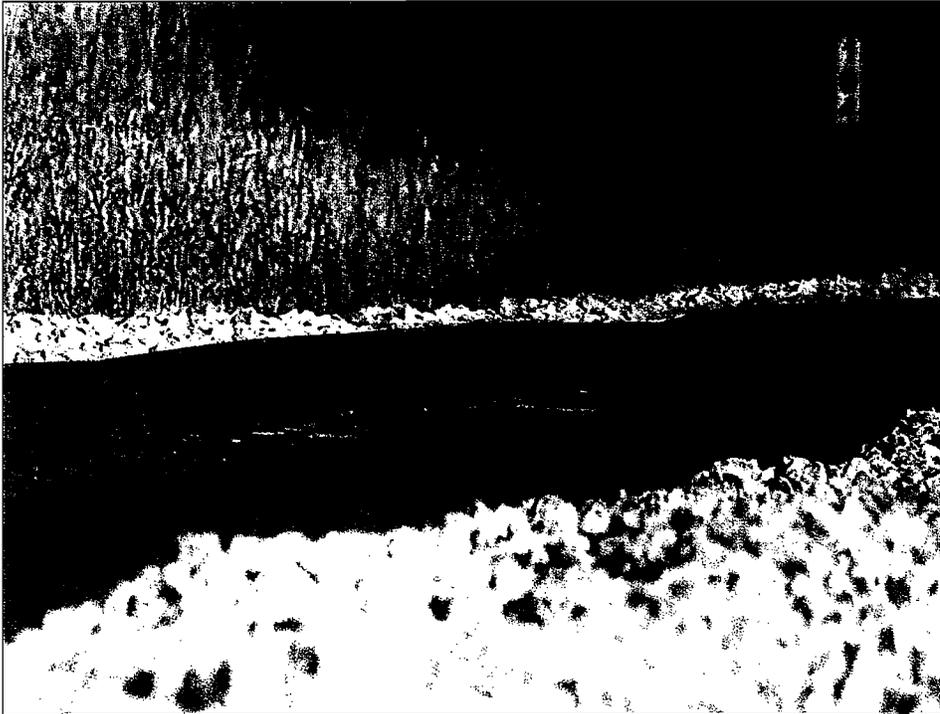
**\$118,644**

**By 2015, Indiana Rail Road will have cumulatively reinvested more than \$185 million in earnings over 30 years.**







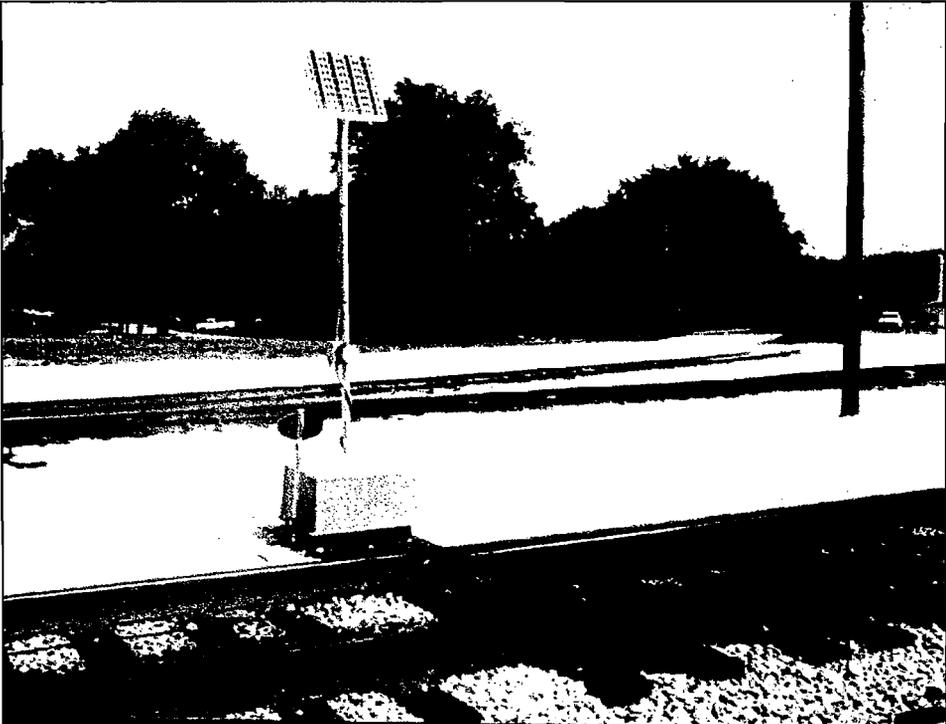


1996–2000

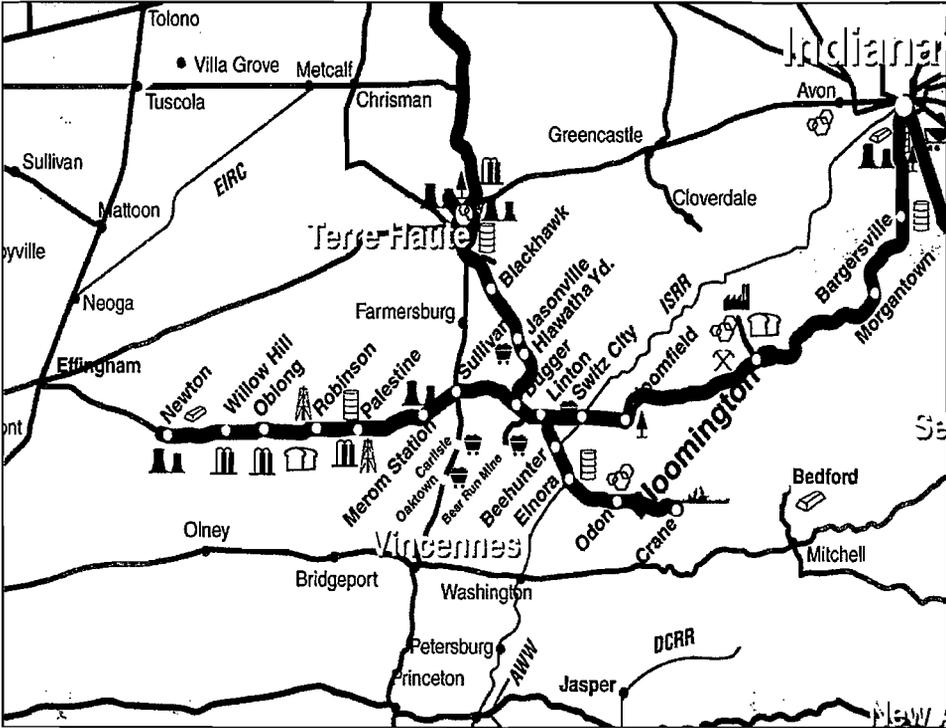
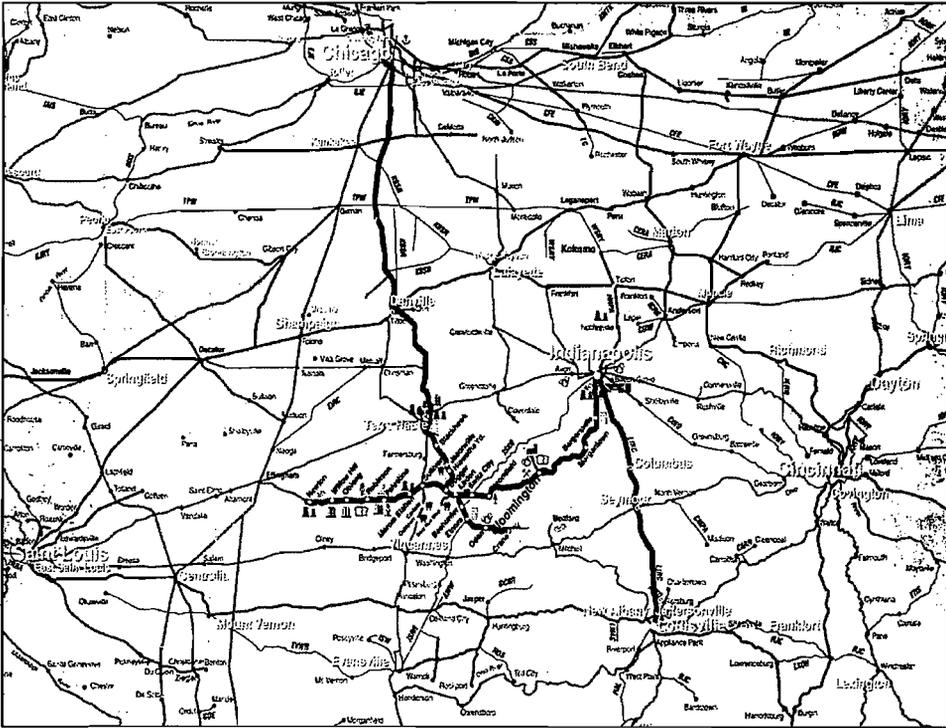
## **First Major Capital Program**

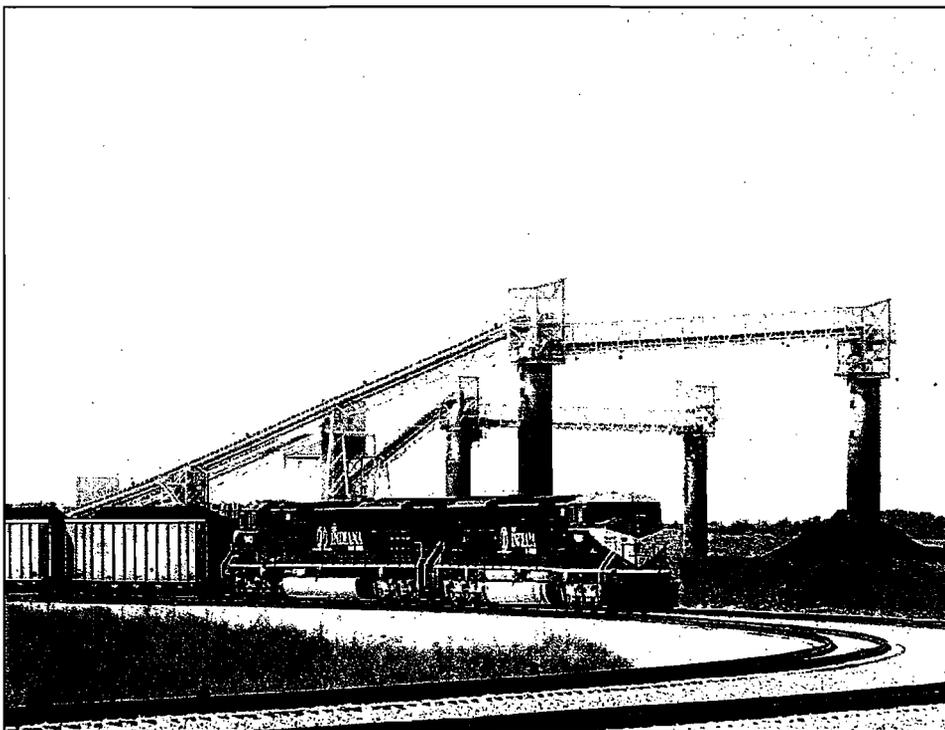
- Five years, \$20 million
  - Relay rail
  - Yard rehab
  - Technology

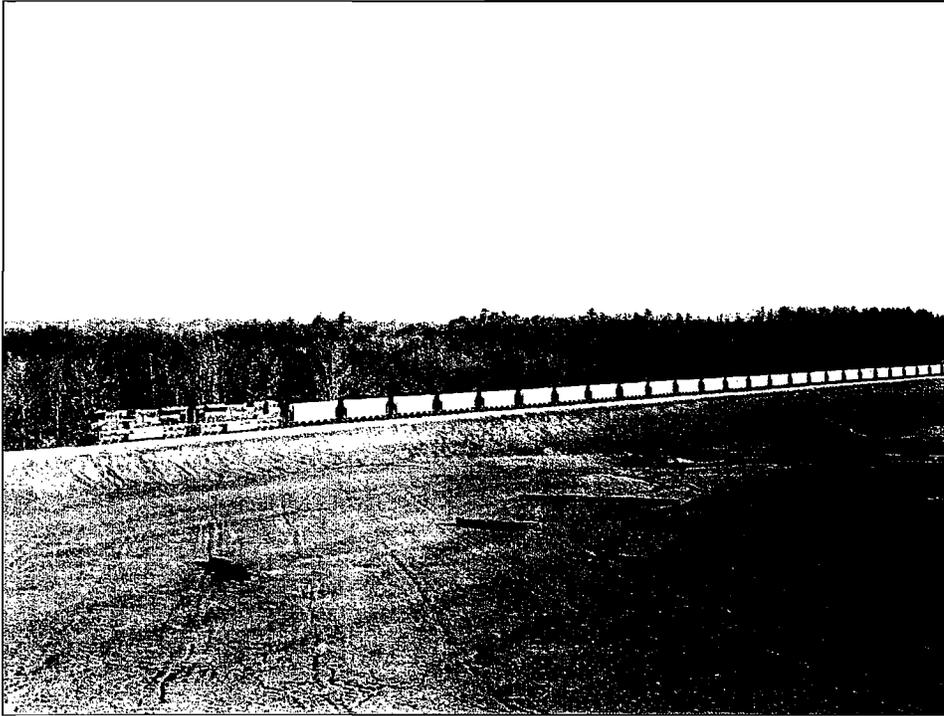














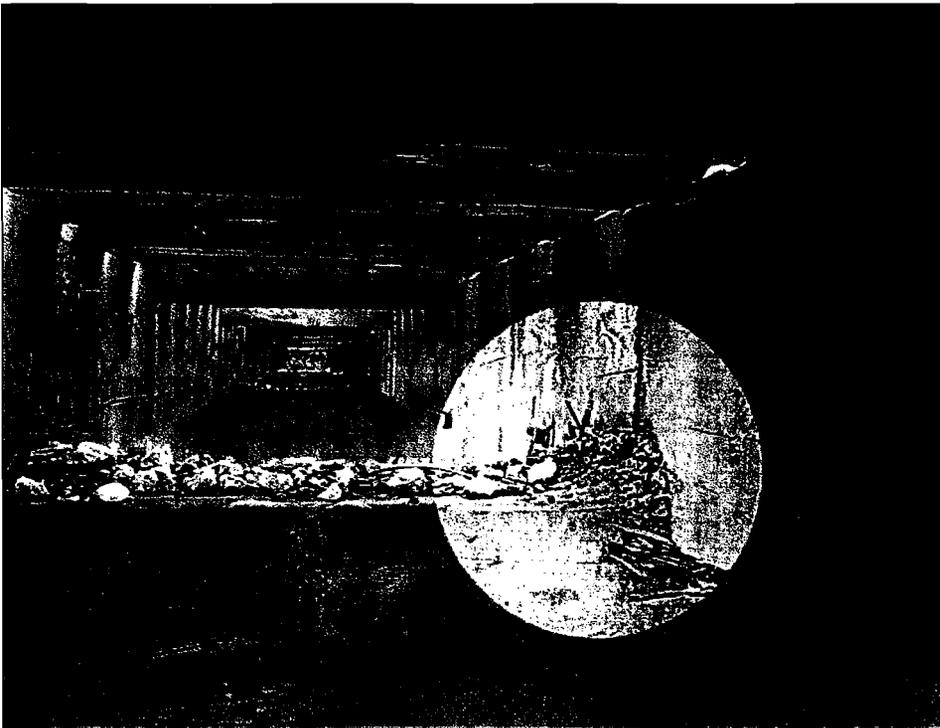
## **Five-year Capital Plan**

- \$65 million
- Upgrade infrastructure to heavy-haul standards
- Rebuild core route system to handle four-fold increase in gross ton-miles by 2020
- Enhance capacity to meet future traffic volumes

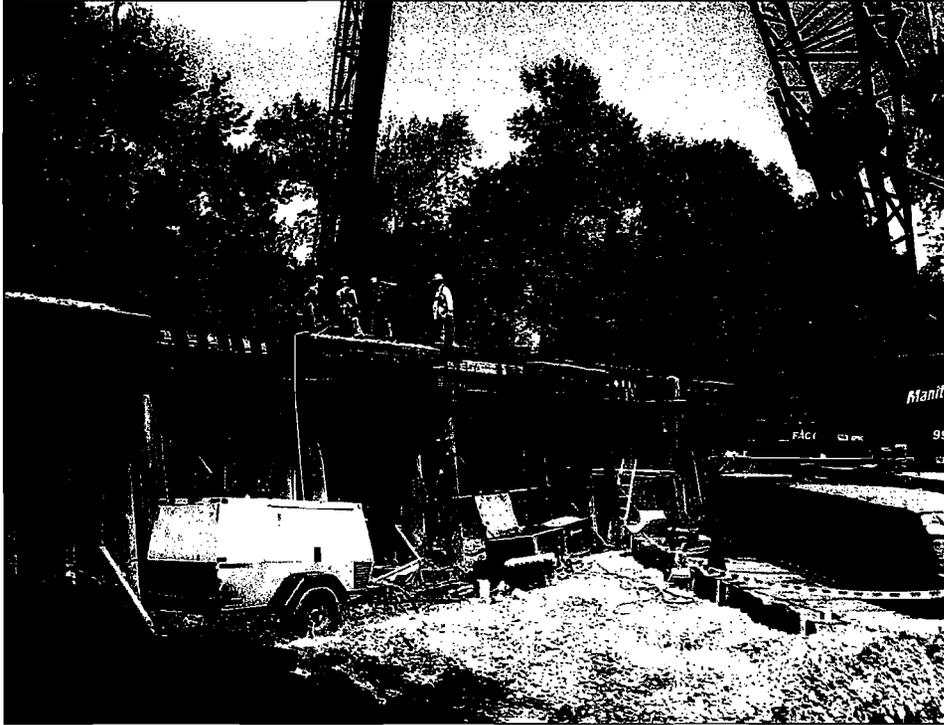
## **2011 Accelerated Year 1:**

- Renew 40 road crossings
- Replace 3 significant bridges
- Replace 34,000 crossties
- Undercut 18,000 feet of roadbed
- Install 21 miles of continuous welded rail
- 166 miles of rail grinding
- 13 new miles of CTC territory

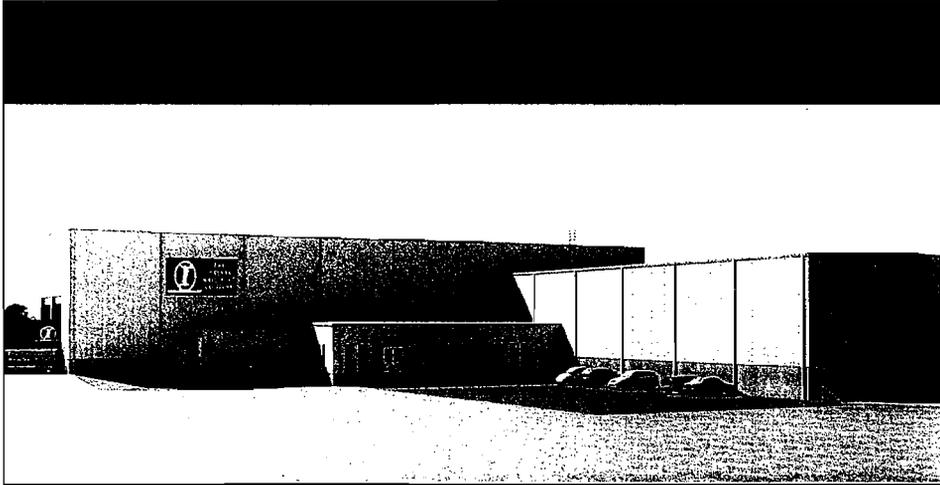












**A \$6 million investment  
In Greene County**

**800,000**

**Our investment of private capital  
creates public benefit.**

**2015 and beyond:**

- Increase in traffic of 50%
- Growth in heavy-haul and merchandise traffic
- Intermodal
- Strategic alliances to extend networks
- Public-private partnerships
- Urban rail relocation projects

### **Key Takeaways:**

- Railroads invest a high percentage of earnings to maintain privately owned heavy infrastructure.
- Railroads provide significant public benefit through capital investment—from reducing highway congestion and emissions to promoting industrial and economic development.

### **Key Takeaways:**

- Robust growth projections along with aging infrastructure and non-286k-compliant bridges will require significant capital investment over the next 5-20 years.
- Appropriate investment credits can help railroads extend their capital dollars and meet the demand for infrastructure investment.



Louisville & Indiana Railroad

**Aging Rail Infrastructure:  
From Crossroads Into the Crosshairs**

September 20, 2011

**John Secor**      President

**Louisville & Indiana Railroad**

*Bridge to the Future*

**Bridges, All Classes of RRs:**

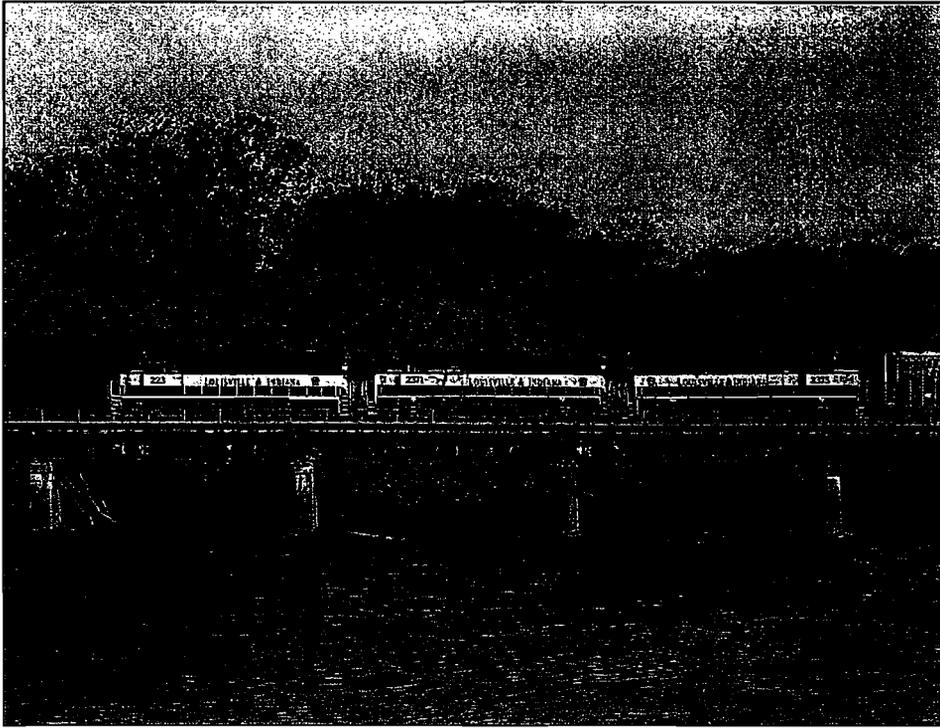
**14,033** bridges owned

**3,177** owned in Indiana

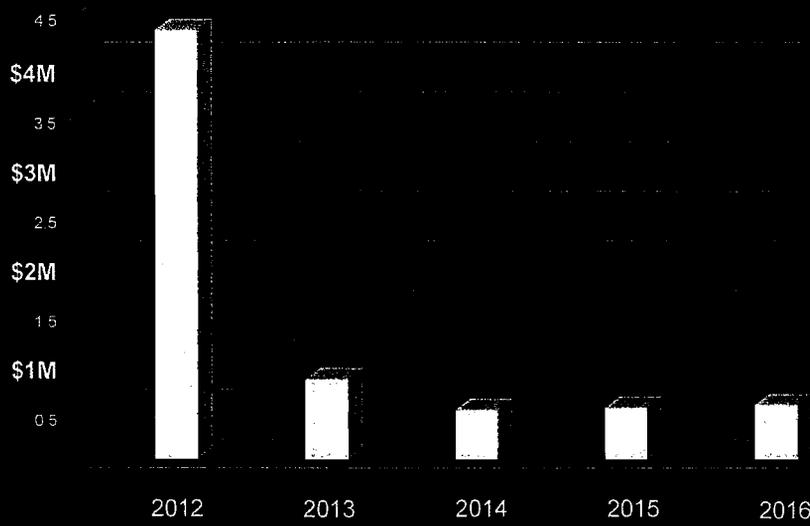
**\$5-6** billion repair/replacement cost  
over next 30 years

*(Source AAR Statistics for 2008 and GAO Report to Congressional Requestors on Railroad Bridges and Tunnels, August 2007)*





### L&I Projected Bridge Expenses:



## Axle Loads Increasing:

263k

**286k**

**315k**

Modern locomotives >400,000 lbs.

## Rail Growth and Investment:

Growth by 2035: ▲ **88%**

Investment requirements are compounded by projected growth rates and advanced age of existing infrastructure.

*Source: US DOT*

## **Failure to Invest Adequately Will Result in Losses:**

- Loss of key shippers that require high-capacity/high axle loads
- Loss of rail routes to abandonment
- Loss of economic development opportunities to surrounding states
- Loss of employment opportunities
- Loss of tax base

## *Road Crossing Surfaces* **Zero Return on Investment:**

**198** public crossings

**59** private crossings

**2.4** average per mile—more than TWICE the national average

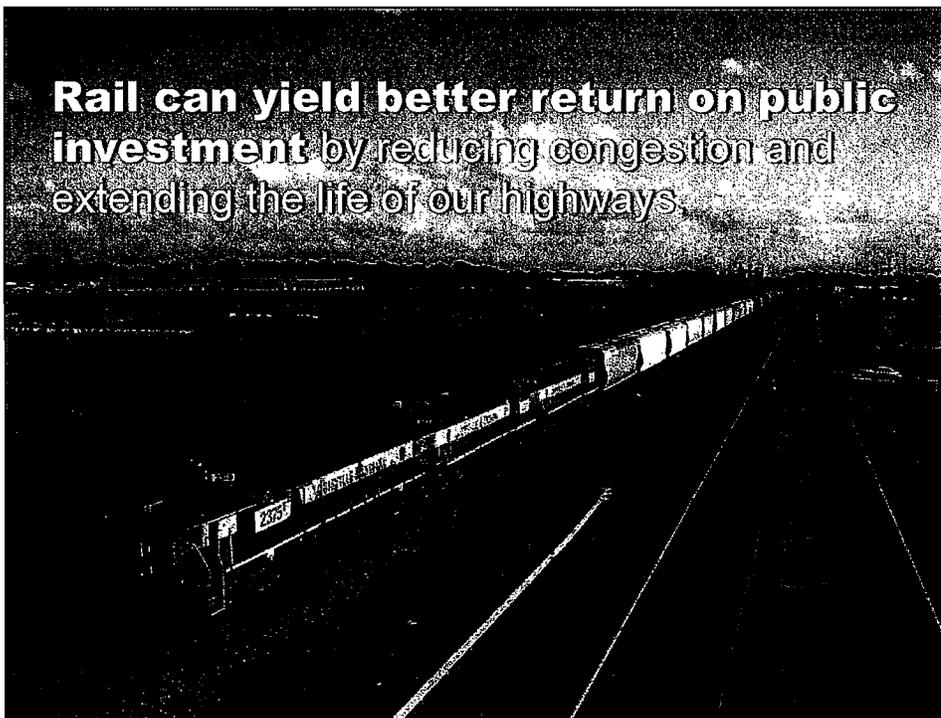
*Road Crossing Signals*  
**RRs Pay for Motor Vehicle Control:**

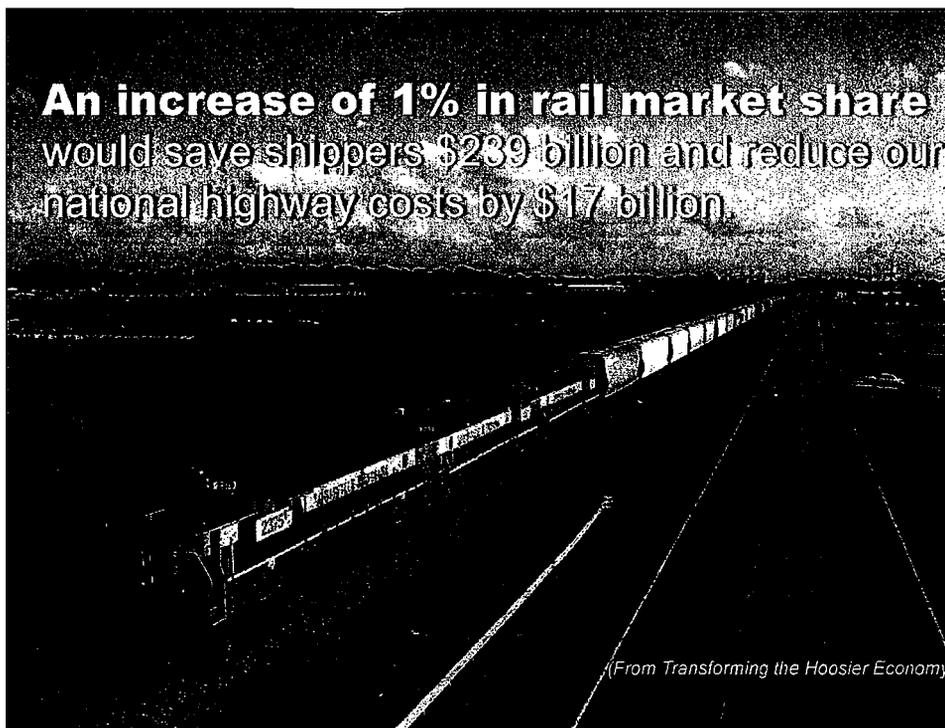
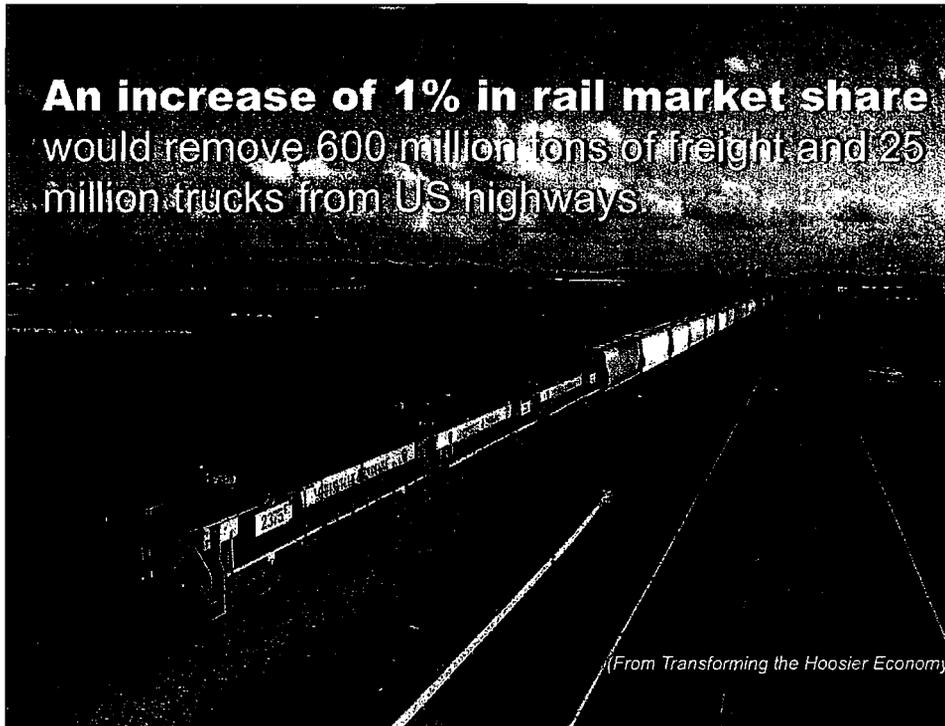
**92**

L&I signaled crossings

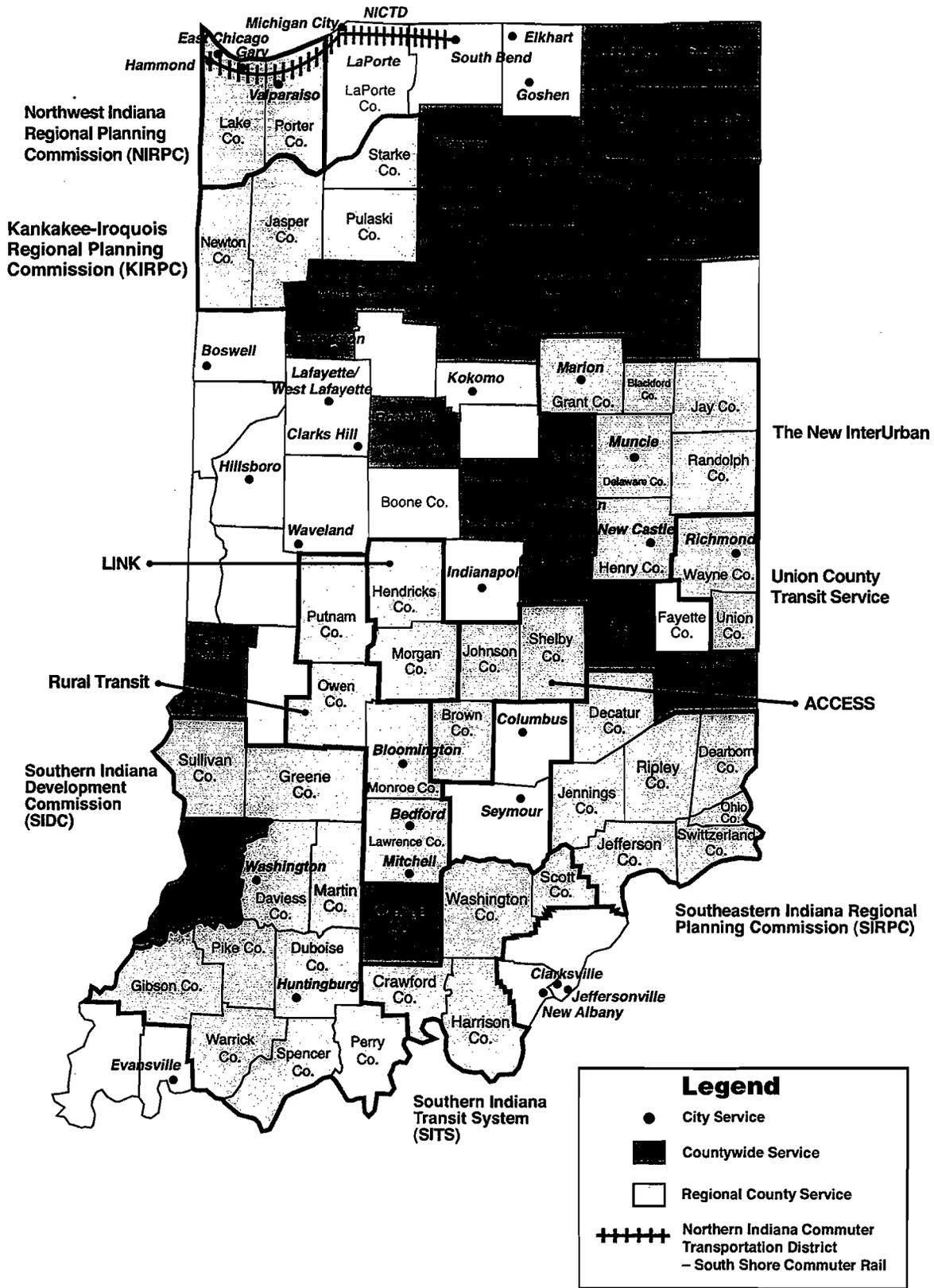
**\$3,000+**

annual maintenance  
cost for each installation





# 2010 PUBLIC TRANSIT SYSTEMS IN INDIANA



TIAS  
9/20/2011

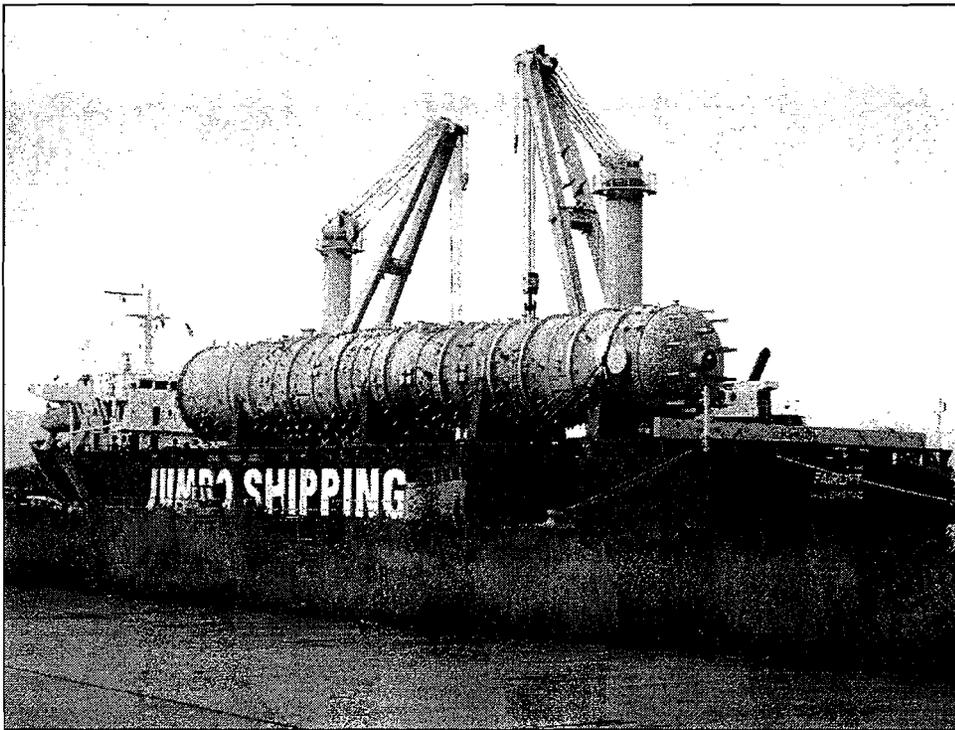
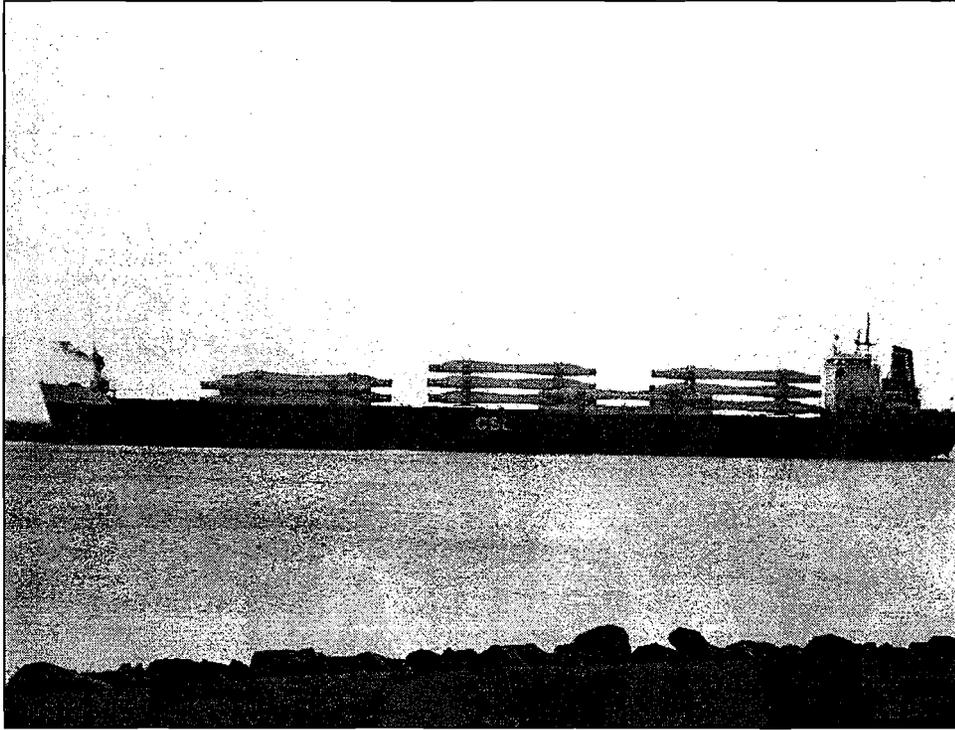
Ex. D

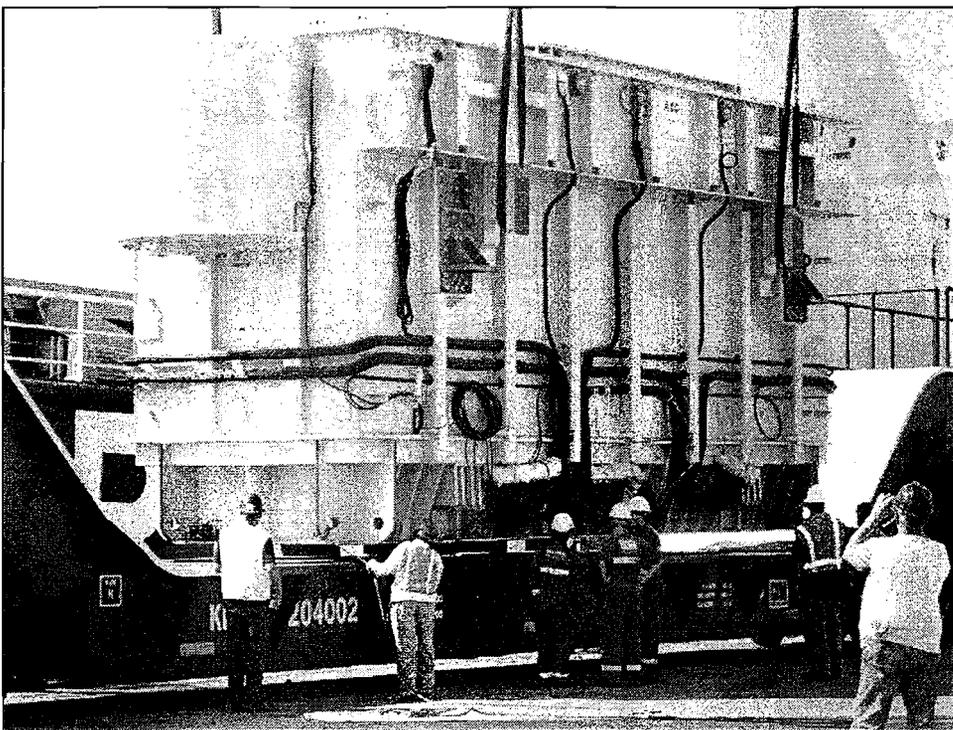


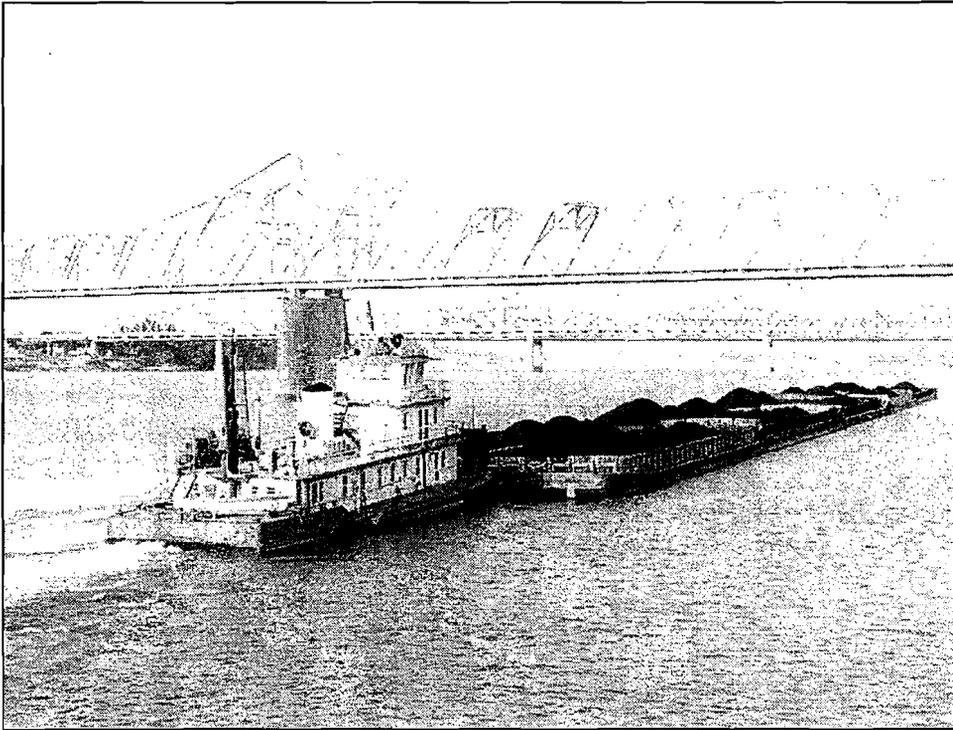
## Ports of Indiana

- ▶ Self-funded statewide port authority
- ▶ Managing 3-port system in world's most productive industrial & agricultural region
- ▶ Charged with promoting Indiana's development in the following sectors:
  - Agricultural
  - Industrial
  - Commercial
- ▶ Governing commission created by legislature in 1961
- ▶ Bipartisan 7-member board appointed by Governor

TIAS  
9/20/2011  
Ex. E





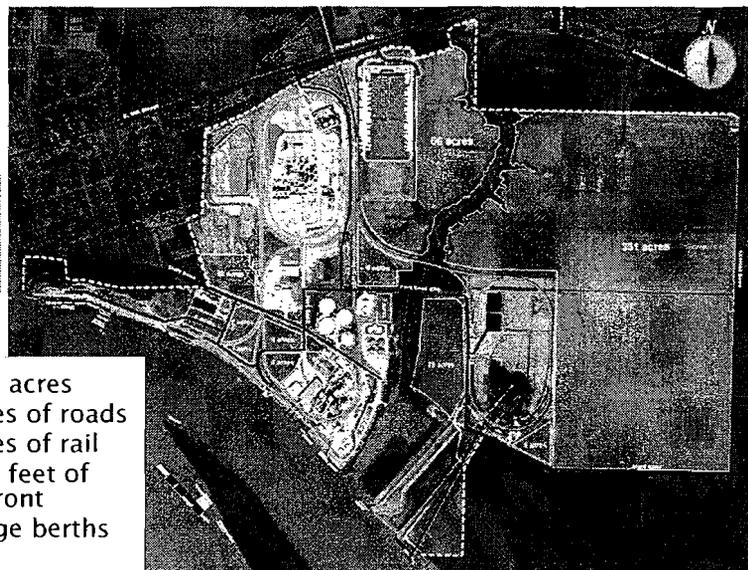


## Port of Indiana–Mount Vernon



PORTS OF INDIANA

Mount Vernon



- ▶ 1,000 acres
- ▶ 2 miles of roads
- ▶ 3 miles of rail
- ▶ 7,500 feet of riverfront
- ▶ 8 barge berths

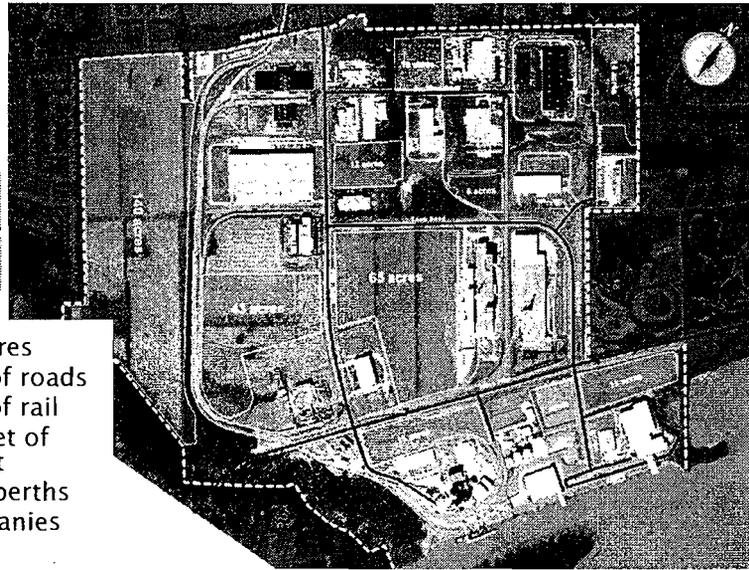
## Port of Indiana–Jeffersonville



PORTS OF INDIANA

Jeffersonville

BOUNDARIES  
ROADWAYS  
RAILWAYS  
FACILITIES  
VACANCIES



- ▶ 1,100 acres
- ▶ 7 miles of roads
- ▶ 6 miles of rail
- ▶ 3,200 feet of riverfront
- ▶ 7 barge berths
- ▶ 25 companies

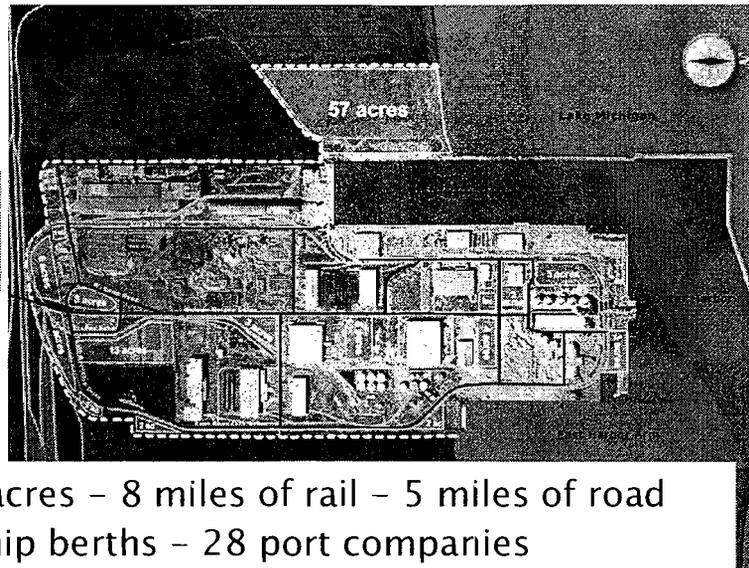
## Port of Indiana–Burns Harbor



PORTS OF INDIANA

Burns Harbor

BOUNDARIES  
ROADWAYS  
RAILWAYS  
FACILITIES  
VACANCIES



- ▶ 600 acres – 8 miles of rail – 5 miles of road
- ▶ 14 ship berths – 28 port companies

## Record Shipments in 2010

- ▶ Overall shipments increased by 8 percent vs. 2009
- ▶ Handled largest project shipment in ports' history
  - Illinois project brought in 11 ships of wind turbines
  - 134 complete wind turbine units – Vectora Transportation
    - 402 blades, 402 tower sections, 134 nacelles, 134 hubs
    - Required 20 acres of outdoor storage at the port
- ▶ First export windmill shipment
  - From new Accionia facility in Iowa to Nova Scotia
- ▶ Largest single piece of project cargo
  - 388-ton electrical transformer from Spain

## 2011 Shipments – August YTD

- ▶ Overall shipments up 6 percent vs. 2010
- ▶ Handling record shipments of project cargo
  - Wind turbines, generators, BP refinery equipment
- ▶ 2 new top 10 cargoes: ethanol, DDGs (10% of all shipments)
- ▶ 2011 shipment increases:
  - Fertilizer: +10%
  - Limestone: +11%
  - Steel: +20%
  - Oils: +22%
  - Salt: +40%
  - Minerals: +67%
- ▶ Completed major steel export for ArcelorMittal in Sept.

## Economic Impact

### Ports of Indiana - *Annual Contributions to State*

- ▶ 43,744 jobs
- ▶ \$224 million of state & local taxes
- ▶ \$732 million in local purchases
- ▶ \$2.4 billion of wages & salaries
- ▶ **\$5.4 billion in total economic value per year**

## Ports of Indiana CapEx & Major Maintenance

	<u>CapEx</u>	<u>Major Maintenance</u>
▶ 2010:	\$14.6M	\$188K
▶ 2009:	\$5.5M	\$147K
▶ 2008:	\$1.2M	\$60K
▶ 2007:	\$4.2M	\$224K
▶ 2006:	\$1.5M	\$177K

## Port Capital Requirements

**2010: \$14.6 million**

- ▶ Road \$2.0M
- ▶ Rail \$0.5M
- ▶ Waterfront \$10.0M
- ▶ Buildings/Utilities \$0.1M
- ▶ Land Purchase \$2.0M

**2011: \$6.6 million**

- ▶ Roadways \$0.2M
- ▶ Railways \$1.9M
- ▶ Waterfront \$2.7M
- ▶ Buildings/Utilities \$1.8M

## Port Capital Requirements

**Next 5 Years: \$7.4 million**

- ▶ Roadways \$1.0M
- ▶ Railways \$2.6M
- ▶ Waterfront \$2.0M
- ▶ Buildings/Utilities \$1.8M

**Years 5–20: \$21 million**

- ▶ Roadways \$2.0M
- ▶ Railways \$8.0M
- ▶ Waterfront \$6.0M
- ▶ Buildings/Utilities \$5.0M

## Long-Term Projects for Improved Connectivity

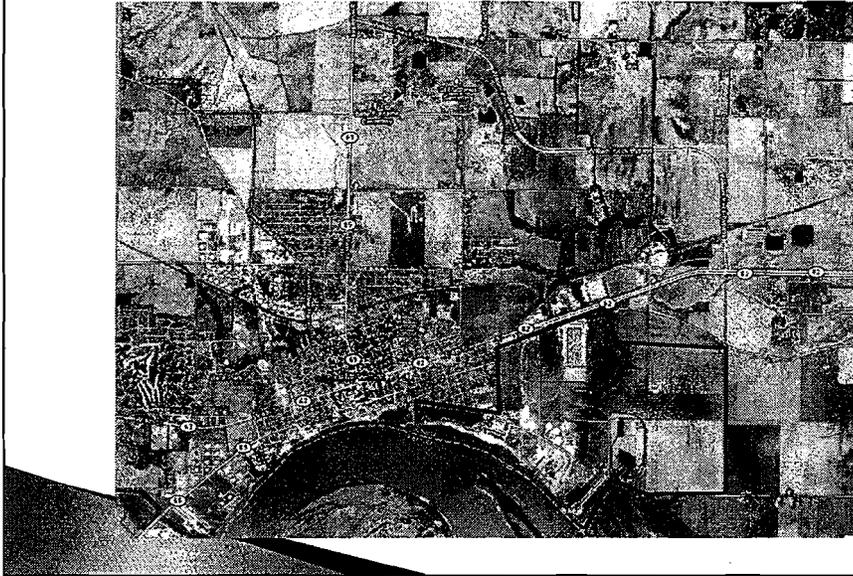
- ▶ Port of Indiana–Burns Harbor
  - Bridge for secondary entrance into port
  - Direct connector from port to I-94 and I-90
  - Illiana connection from Illinois to I-65
  - Consider 6-lane I-65 from Gary to Louisville



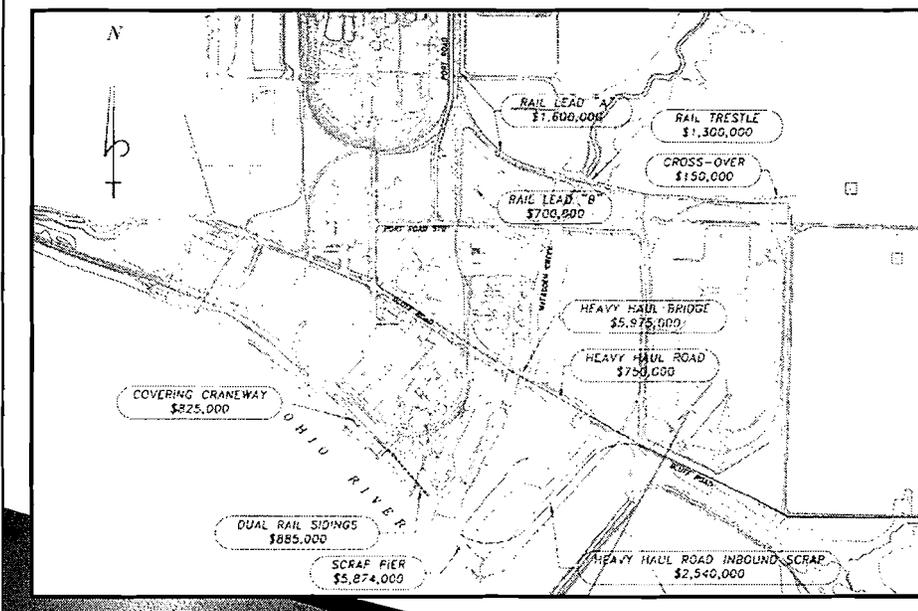
## Long-Term Projects for Improved Connectivity

- ▶ Mount Vernon
  - Reconfiguring port entrance for truck traffic
  - Connection for NW bypass around downtown
  - Paving Lamont Road and Indian Mounds Road
  - Remove stoplights on Hwy 62 connector to I-69
  - Replace heavy-haul bridge over McFadden Creek
  - Upgrade State Road 69 as 4-lane connector to I-64
  - Recently proposed Mega Project
    - Total Infrastructure Cost: \$21 million
    - \$2.5 million from Ports of Indiana
    - \$18 million from other sources

# Port of Indiana-Mount Vernon

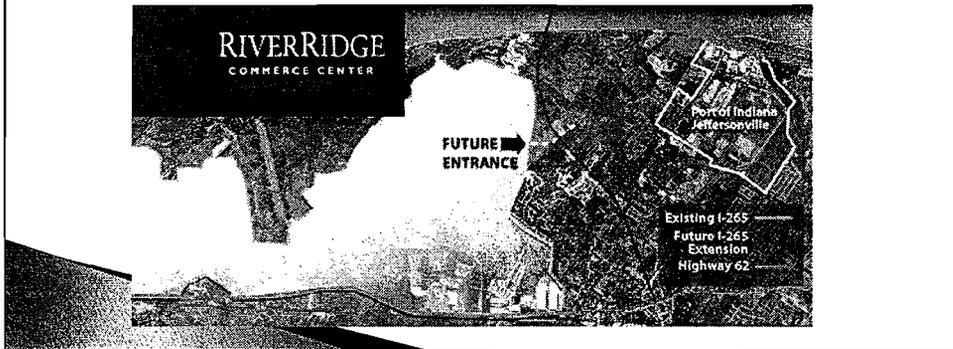


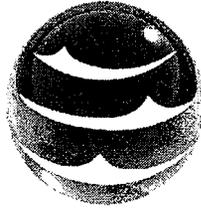
# Port of Indiana-Mount Vernon



## Long-Term Projects for Improved Connectivity

- ▶ Port of Indiana–Jeffersonville
  - Rail connection to River Ridge
  - Heavy-haul road connection to River Ridge
  - East End Bridge across Ohio River connecting I-265
  - Attain sites for long-term dredging disposal





**PORTS OF INDIANA**  
3 PORTS - 2 WATERWAYS - 1 SYSTEM

[WWW.PORTSOFINDIANA.COM](http://WWW.PORTSOFINDIANA.COM)

**Joint Study Committee on Transportation and Infrastructure Assessment and Solutions**

September 20, 2011

Thank you for agreeing to study issues related to the use of motorized bicycles (aka mopeds) and motor scooters.

As detailed in HEA 1334, with the following topics:

- (1) Definitions of the following:
  - (A) Motorized bicycle.
  - (B) Motor scooter.
  - (C) Moped.
  - (D) Motor-driven cycle.
- (2) Issues related to:
  - (A) internal combustion power; and
  - (B) battery power;of motor vehicles described in subdivision (1).
- (3) Issues relating to:
  - (A) necessary equipment for;
  - (B) licensing of operators of;
  - (C) titling of;
  - (D) registration of;
  - (E) taxation of; and
  - (F) insurance requirements for; motor vehicles described in subdivision (1).

After introducing HB 1334, Rep. Riecken asked to be a co-author because of some discussions she had with the Evansville Police Department.

During the last 6 months of 2010 Evansville was averaging almost 1 property damage accident per week, involving a moped.

**See Exhibit 1**

**Most, if not all, of the committee members are probably aware that on...**

**On July 26, 2011 the Court of Appeals of Indiana** ... in *Lock v. Indiana*, the court suspended Lock's conviction of a Class D felony of operating a motor vehicle while his privileges were suspended.

*Before I share the court's published opinion with you and what they said the legislature failed to define, I need to summarize this case:*

*On June 7, 2009, Lock was riding his "Zuma" (a motorized bicycle) at 43 mph and State Trooper pulled him over because he did not have a license plate. And, Lock was arrested for operating a motorized vehicle while suspended and he was cited for no registration plate on a motorcycle, and no motorcycle endorsement.*

*IC 9-13-2-109 defines a motorized bicycle with a maximum design speed of not more than twenty-five (25) miles per hour*

**See Exhibit 2**

*IC 9-21-11-12 states a motorized bicycle may not be operated at a speed greater than 25 mph.*

- *In this opinion the court stated "Our Legislature did not define "maximum design speed," "in the absence of such guidance we decline the State's invitation to speculate."*

**See Exhibit 3**

TIAS  
9/20/2011  
Ex F

- *Dissenting Judge Baker embraced the Trooper's testimony that "if you go faster than 25 mph, it's no longer a motorized bicycle. It's considered a motorcycle."*

**See Exhibit 4**

If you were 1 of 193,000 that registered your motorcycle with BMV in 2010 BMV that purchased a motorcycle for the first time you were not allowed to ride it until applied for a motorcycle license or endorsement before you could take it on any Indiana public street or highway.

**See Exhibit 5**

## If You Have a License

The first thing you'll need to do is obtain a motorcycle operator's learner permit.

You will need to pass a written test based on motorcycle laws and safety before you may get your permit. The information you'll need to pass the test is contained in the manual.

**See Exhibit 6**

When you feel confident enough with your motorcycle knowledge, head back to the agency to take the test.

If you pass the test and pay the \$9 fee for the learner permit, you will receive a permit that is valid for one year. It allows you to ride your cycle on public streets and highways. However, you can't ride with passengers, and you can only ride during daylight. Also, you'll need to wear a helmet and eye protection. After you've had your permit for at least 30 days, you may apply for a motorcycle endorsement, which will simply be added to your existing license. You may achieve this by either passing a motorcycle skills (road) test, or by showing that you've successfully completed an approved motorcycle safety course.

**See Exhibit 7**

Approximately 37 states require a license to operate a motorized bicycle (moped).

**See Exhibit 8...with details**

**See Exhibit 9...summary grid**

***To continually improve public safety on our streets and highways we must make changes to keep up with new technologies.***

### In closing:

- Should motorized bicycles (mopeds) motor scooters ride as far to the right as possible (within 3' of the right edge)?
- Should they complete a moped rider education course (similar to motorcycles)?
- Should they be insured with minimum liability?
- Should they have a moped identification plate?
- Should they register their ownership of the moped?
- If someone is operating a motorized vehicle with under 50 cc's over 25 mph should an officer of the law be allowed to charge them with operating motorcycle?
- *Because of the court Should we define "maximum design speed,"*
- Should we allow a trooper to ticket someone for operating a moped....???
- Last but not least...should we define "moped" in statute?

Source: Evansville Police Department

ta_date	unittype	vehcode	tritype	Year	Contributing_Circumstances_1.Description	Crash_Type.Description	Damage_Estimate.Description
4/25/10 17:28	VEH	Moped	Motor Cycle	2010	Speed to Fast for Weather Conditions	Rear End	\$1001 to \$2500
9/28/10 13:43	VEH	Moped	Motor Cycle	2010	Failure To Yield Right of Way	Right Angle	\$1001 to \$2500
2/12/10 20:12	VEH	Moped	Moped	2010	Failure To Yield Right of Way	Right Angle	\$2501 to \$5000
3/23/10 20:39	VEH	Moped	Moped	2010	Ran Off Road Right	Right Turn	\$1001 to \$2500
4/23/10 18:27	VEH	Moped	Moped	2010	Failure To Yield Right of Way	Right Angle	\$2501 to \$5000
5/4/10 15:18	VEH	Moped	Moped	2010	Improper Turning	Right Angle	\$2501 to \$5000
5/10/10 7:33	VEH	Moped	Moped	2010	Following to Closely	Rear End	Under \$1000
5/21/10 15:30	VEH	Moped	Moped	2010	Failure To Yield Right of Way	Left Turn	\$2501 to \$5000
5/31/10 16:01	VEH	Moped	Moped	2010	Failure To Yield Right of Way	Right Angle	\$1001 to \$2500
6/3/10 17:16	VEH	Moped	Moped	2010	Ran Off Road Right	Same Direction Sideswipe	Under \$1000
6/29/10 15:40	VEH	Moped	Moped	2010	Disregard Signal/Regulatory Device	Same Direction Sideswipe	\$2501 to \$5000
7/7/10 13:43	VEH	Moped	Moped	2010	Failure To Yield Right of Way	Head On	\$2501 to \$5000
7/7/10 20:19	VEH	Moped	Moped	2010	Failure To Yield Right of Way	Right Angle	\$1001 to \$2500
7/28/10 20:06	VEH	Moped	Moped	2010	Unsafe Speed	Non-Collision	\$2501 to \$5000
7/29/10 15:43	VEH	Moped	Moped	2010	Following to Closely	Rear End	\$1001 to \$2500
7/29/10 21:00	VEH	Moped	Moped	2010	Overcorrecting/Over Steering	Same Direction Sideswipe	\$1001 to \$2500
8/6/10 22:18	VEH	Moped	Moped	2010	Passenger Distraction	Non-Collision	Under \$1000
8/9/10 15:49	VEH	Moped	Moped	2010	Driver Distracted	Rear End	\$1001 to \$2500
8/24/10 1:08	VEH	Moped	Moped	2010	Ran Off Road Left	Ran Off Road	Under \$1000
9/30/10 16:42	VEH	Moped	Moped	2010	Left of Center	Opposite Direction Sideswipe	Under \$1000
10/6/10 11:11	VEH	Moped	Moped	2010	Failure To Yield Right of Way	Right Angle	\$1001 to \$2500
10/11/10 17:31	VEH	Moped	Moped	2010	Other (Explain)	Non-Collision	Under \$1000
12/7/10 10:05	VEH	Moped	Moped	2010	Improper Passing	Same Direction Sideswipe	\$1001 to \$2500
4/25/10 17:05	VEH	Moped	Motor Scooter	2010	Failure To Yield Right of Way	Right Angle	\$2501 to \$5000
5/7/10 11:15	VEH	Moped	Motor Scooter	2010	Following to Closely	Same Direction Sideswipe	Under \$1000
6/14/10 9:52	VEH	Moped	Motor Scooter	2010	Failure To Yield Right of Way	Right Turn	Under \$1000
7/8/10 11:05	VEH	Moped	Motor Scooter	2010	Failure To Yield Right of Way	Right Angle	\$1001 to \$2500
8/25/10 16:42	VEH	Moped	Motor Scooter	2010	Ran Off Road Right	Ran Off Road	Under \$1000
9/28/10 12:16	VEH	Moped	Motor Scooter	2010	Improper Turning	Same Direction Sideswipe	\$2501 to \$5000
11/2/10 14:25	VEH	Moped	Motor Scooter	2010	Failure To Yield Right of Way	Right Turn	\$2501 to \$5000
11/11/10 20:17	VEH	Moped	Motor Scooter	2010	Disregard Signal/Regulatory Device	Right Angle	Under \$1000

**IC 9-13-2-109**

**Motorized bicycle**

Sec. 109. "Motorized bicycle" means a two (2) or three (3) wheeled vehicle that is propelled by an internal combustion engine or a battery powered motor, and if powered by an internal combustion engine, has the following:

- (1) An engine rating of not more than two (2) horsepower and a cylinder capacity not exceeding fifty (50) cubic centimeters.
- (2) An automatic transmission.
- (3) A maximum design speed of not more than twenty-five (25) miles per hour on a flat surface.

The term does not include an electric personal assistive mobility device.

*As added by P.L.2-1991, SEC.1. Amended by P.L.143-2002, SEC.3.*

**IC 9-21-11**

Chapter 11. Bicycles and Motorized Bicycles

**IC 9-21-11-1**

**Parents and guardians; authorizing or permitting violation of chapter; bicycles; application of chapter**

Sec. 1. (a) The parent of a child and the guardian of a protected person may not authorize or knowingly permit the child or protected person to violate this chapter.

(b) Subject to the exceptions stated, the provisions of this chapter applicable to bicycles apply whenever a bicycle is operated upon a highway or a path set aside for the exclusive use of bicycles.

*As added by P.L.2-1991, SEC.9.*

**IC 9-21-11-2**

**Roadways; rights and duties**

Sec. 2. A person riding a bicycle upon a roadway has all the rights and duties under this article that are applicable to a person who drives a vehicle, except the following:

(1) Special regulations of this article.

(2) Those provisions of this article that by their nature have no application.

*As added by P.L.2-1991, SEC.9.*

**IC 9-21-11-3**

**Operation; seats; passengers**

Sec. 3. (a) A person propelling a bicycle may not:

(1) ride other than upon the permanent and regular seat attached to the bicycle; or

(2) carry any other person upon the bicycle who is not seated upon a firmly attached and regular seat on the bicycle.

(b) A person may not ride upon a bicycle unless seated under this section.

*As added by P.L.2-1991, SEC.9.*

**IC 9-21-11-4**

**Number of passengers**

Sec. 4. A bicycle may not be used to carry more persons at one (1) time than the number for which the bicycle is designed and equipped.

*As added by P.L.2-1991, SEC.9.*

**IC 9-21-11-5**

**Attachment to street car or vehicle; prohibition**

Sec. 5. A person upon a bicycle, a coaster, roller skates, or a toy vehicle may not attach the bicycle, coaster, roller skates, or toy vehicle or the person to a street car or vehicle upon a roadway.

*As added by P.L.2-1991, SEC.9.*

## **IC 9-21-11-6**

### **Lane use restrictions; riding two abreast**

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Sec. 6. A person riding a bicycle upon a roadway may not ride more than two (2) abreast except on paths or parts of roadways set aside for the exclusive use of bicycles.

*As added by P.L.2-1991, SEC.9.*

## **IC 9-21-11-7**

### **Packages, bundles, or other articles preventing proper use of handlebars**

Sec. 7. A person who rides a bicycle may not carry a package, a bundle, or an article that prevents the person from keeping both hands upon the handlebars.

*As added by P.L.2-1991, SEC.9.*

## **IC 9-21-11-8**

### **Bell or other audible signaling devices; sirens; whistles**

Sec. 8. A person may not ride a bicycle unless the bicycle is equipped with a bell or other device capable of giving a signal audible for a distance of at least one hundred (100) feet. A bicycle may not be equipped with and a person may not use upon a bicycle a siren or whistle.

*As added by P.L.2-1991, SEC.9.*

## **IC 9-21-11-9**

### **Lamps and reflectors**

Sec. 9. A bicycle operated on a highway from one-half (1/2) hour after sunset until one-half (1/2) hour before sunrise must be equipped with the following:

(1) A lamp on the front exhibiting a white light visible from a distance of at least five hundred (500) feet to the front.

(2) A lamp on the rear exhibiting a red light visible from a distance of five hundred (500) feet to the rear or a red reflector visible from a distance of five hundred (500) feet to the rear.

*As added by P.L.2-1991, SEC.9.*

## **IC 9-21-11-10**

### **Brakes**

Sec. 10. A bicycle must be equipped with a brake that will enable the person who operates the bicycle to make the braked wheels skid on dry, level, clean pavement.

*As added by P.L.2-1991, SEC.9.*

## **IC 9-21-11-11**

### **Highways; regulations and requirements**

Sec. 11. A person who operates a bicycle upon a highway shall observe the regulations and requirements of this article.

*As added by P.L.2-1991, SEC.9.*

## **IC 9-21-11-12**

### **Motorized bicycles; prohibitions on operation; conditions**

Sec. 12. A motorized bicycle may not be operated under any of the following conditions:

- (1) By a person less than fifteen (15) years of age.
- (2) By a person who has not obtained an identification card under IC 9-24, a permit under IC 9-24, an operator's license under IC 9-24, a chauffeur's license under IC 9-24, or a public passenger chauffeur's license under IC 9-24.
- (3) On an interstate highway or a sidewalk.
- (4) At a speed greater than twenty-five (25) miles per hour.

*As added by P.L.2-1991, SEC.9.*

## **IC 9-21-11-13**

### **Persons under 18 years of age; operation of motorized bicycle; safety equipment**

Sec. 13. A person less than eighteen (18) years of age who operates or rides a motorized bicycle on a street or highway shall do the following:

- (1) Wear protective headgear meeting the minimum standards set by the bureau or a helmet that meets the standards established by the United States Department of Transportation under 49 CFR 571.218 in effect January 1, 1979.
- (2) Wear protective glasses, goggles, or a transparent face shield.

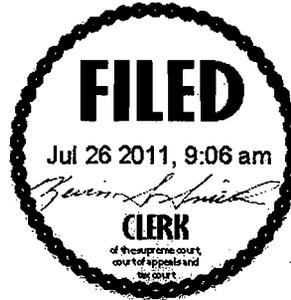
*As added by P.L.2-1991, SEC.9.*

## **IC 9-21-11-14**

### **Violations; Class C infraction**

Sec. 14. A person who violates this chapter commits a Class C infraction.  
*As added by P.L.2-1991, SEC.9.*

**FOR PUBLICATION**



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**IN THE  
COURT OF APPEALS OF INDIANA**

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MICHAEL J. LOCK,

Appellant-Defendant,

vs.

STATE OF INDIANA,

Appellee-Plaintiff.

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No. 35A04-1010-CR-641

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APPEAL FROM THE HUNTINGTON SUPERIOR COURT  
The Honorable Jeffrey R. Heffelfinger, Judge  
Cause No. 35D01-0906-FD-135

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July 26, 2011

OPINION - FOR PUBLICATION

**MAY, Judge**

Michael Lock appeals his conviction of Class D felony operating a motor vehicle while privileges are suspended.<sup>1</sup> He contends the State failed to prove his 2009 Yamaha Zuma was a motor vehicle. We agree, and reverse his conviction.

### **FACTS AND PROCEDURAL HISTORY**

On June 27, 2009, Lock was riding a Zuma at forty-three miles per hour. Trooper Pornteb Nathalang noticed the Zuma did not have a license plate and pulled Lock over. Trooper Nathalang discovered Lock's driving privileges were suspended and arrested him.

The State charged Lock with Class D felony operating a vehicle while suspended and cited him for two infractions: No Registration Plate on Motorcycle and No Motorcycle Endorsement. On November 3, 2009, Lock filed a motion to dismiss, which, after a hearing, was denied. On July 19, 2010, the parties stipulated to the following facts:

1. On June 27, 2009, at approximately 11:10 a.m., the Defendant, Michael Lock, was operating a 2009 Yamaha Zuma on US 24 near County Road 800 North in Huntington County.
2. Indiana State Trooper Nathalang observed the Defendant and received a radar track on his vehicle of 43 mph. The roadway was flat, level, and dry.
3. Trooper Nathalang stopped the Defendant and discovered that the Defendant's driving privileges were suspended for being a habitual traffic violator under Indiana Code 9-30-10.
4. The 2009 Yamaha Zuma that the Defendant was operating has the following mechanical specifications: two wheels, an internal combustion engine with a cylinder capacity of 49 cubic centimeters, an engine rating of not more than two horse power, and an automatic transmission.

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<sup>1</sup> Ind. Code § 9-30-10-16.

(App. at 15.) Based on those stipulations, the trial court found Lock guilty, and, at the request of the State, dropped the two motorcycle-related infractions against him. The trial court sentenced him to 180 days, and ordered forfeiture of his driving privileges for life.

### DISCUSSION AND DECISION

When reviewing the sufficiency of evidence to support a conviction, we consider only the probative evidence and reasonable inferences supporting the trial court's decision. *Drane v. State*, 867 N.E.2d 144, 146 (Ind. 2007). It is the fact-finder's role, and not ours, to assess witness credibility and weigh the evidence to determine whether it is sufficient to support a conviction. *Id.* To preserve this structure, when we are confronted with conflicting evidence, we consider it most favorably to the trial court's ruling. *Id.* We affirm a conviction unless no reasonable fact-finder could find the elements of the crime proven beyond a reasonable doubt. *Id.* It is therefore not necessary that the evidence overcome every reasonable hypothesis of innocence; rather, the evidence is sufficient if an inference reasonably may be drawn from it to support the trial court's decision. *Id.* at 147.

To prove Class D felony operating a vehicle while suspended, the State must prove Lock operated a motor vehicle while his driving privileges were suspended and while he had notice of the suspension. Ind. Code § 9-30-10-16. Lock argues the State did not prove he operated a motor vehicle, because his Zuma is a motorized bicycle, which, pursuant to Ind. Code § 9-13-2-105(d), is exempt from the provisions of the statutes regarding operation of a motor vehicle while privileges are suspended. We agree the State did not prove the Zuma

was a motor vehicle; however, neither does the record before us permit us to hold the Zuma is a motorized bicycle.

A “motor vehicle” is a “vehicle that is self-propelled,” Ind. Code § 9-13-2-105(a), and for purposes of Indiana Code Chapter 9-30-10, “does not include a motorized bicycle.” Ind. Code § 9-13-2-105(d). A “motorized bicycle” is

a two (2) or three (3) wheeled vehicle that is propelled by an internal combustion engine or a battery powered motor, and if powered by an internal combustion engine, has the following:

- (1) An engine rating of not more than two (2) horsepower and a cylinder capacity not exceeding fifty (50) cubic centimeters.
- (2) An automatic transmission.
- (3) A maximum design speed of not more than twenty-five (25) miles per hour on a flat surface.

Ind. Code § 9-13-2-109.

Lock stipulated the Zuma “has the following mechanical specifications: two wheels, an internal combustion engine with a cylinder capacity of 49 cubic centimeters, an engine rating of not more than two horse power, and an automatic transmission.” (App. at 15.) Lock did not stipulate to the third element in the definition of motorized bicycle, the “maximum design speed” of the Zuma.

Lock moved to dismiss on the ground the statute was unconstitutionally vague. At the hearing, the State argued:

*Here I don't think it is the State's requirement that it define the exact maximum design speed of a particular vehicle but whether, in its proof, having to show that this particular moped, the exact number of what its maximum design speed but rather is able by its proof that if you are traveling at twenty (20) miles over the maximum design speed obviously its (sic) designed to go faster than twenty-five miles per hour (25 mph) so the State believes that it would tell a person of reasonable intelligence what is required to comply with the law.*

(Tr. at 31) (emphasis added). We decline the State's invitation to relieve it of its burden to prove every element of a crime it prosecutes. *See, e.g., Austill v. State*, 745 N.E.2d 859, 862 (Ind. Ct. App. 2001) (the State bears the burden to prove every element of an offense; that burden is placed on the State as part of the constitutional presumption that a defendant is innocent until proven guilty), *trans. denied*. The State offered no evidence of the Zuma's maximum design speed. It could not prove Lock drove a motor vehicle while his license was suspended without proving the vehicle Lock was driving was a motor vehicle, not a motorized bicycle. *See* Ind. Code § 9-13-2-105. The burden never was on Lock to prove what he drove was a motorized bicycle, as its status as a motor vehicle is an element of the crime alleged. *See Geljack v. State*, 671 N.E.2d 163, 165 (Ind. Ct. App. 1996) (It is "unconstitutional to place the burden of persuasion for an affirmative defense on the defendant when proving the defense becomes tantamount to requiring the defendant to negate an element of the crime.").

The State invites us to infer the Zuma has a "maximum design speed" over 25 miles per hour because it was travelling forty-three miles per hour on a "flat, level, and dry" roadway. (App. at 15.) Our Legislature did not define "maximum design speed," nor did the State (at trial or on appeal) provide a definition.<sup>2</sup> In the absence of any such guidance,<sup>3</sup> we

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<sup>2</sup> During his deposition, Trooper Nathalang conceded he knew of no statutory or regulatory definition of "maximum design speed" and stated, "if you go faster than 25 miles an hours (sic), it's no longer a motorized bicycle. It's considered a motorcycle." (App. at 65-66.) In light of his admission that he did not know the definition of maximum design speed, we decline to hold the officer's statement proves the Zuma's "maximum design speed." Additionally, we note the statutory definition of "motorcycle" does not include speed as a factor used to define that class of motor vehicles. *See* Ind. Code § 9-13-2-108 (a motorcycle is "a motor vehicle with motive power having a seat or saddle for use of the rider and designed to travel on not more than

decline the State's invitation to speculate that a vehicle capable of travelling 43 miles per hour necessarily must have a "maximum design speed" over 25 miles per hour. We may not affirm a conviction based on mere speculation. *Gross v. State*, 817 N.E.2d 306, 310 (Ind. Ct. App. 2004). Therefore, we reverse Lock's conviction of Class D felony operating a motor vehicle while privileges are suspended.<sup>4</sup>

Reversed.

BRADFORD, J., concurs.

BAKER, J., dissenting with separate opinion.

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three (3) wheels in contact with the ground. The term does not include a farm tractor or a motorized bicycle.”).<sup>3</sup> The dissent relies on our earlier decision in *Annis v. State*, 917 N.E.2d 722, 725 (Ind. Ct. App. 2009) as instructive regarding the interpretation of the term “maximum design speed.” *Annis* is distinguishable because the vehicle therein had a cylinder capacity larger than permitted by Ind. Code § 9-13-2-109. Thus, *Annis*' vehicle was not a motorized bicycle based on its cylinder capacity, regardless of its speed. As the cylinder capacity of the Zuma is not at issue in the instant case, we do not find *Annis* instructive.

<sup>4</sup> Finally, we note Lock also argues Ind. Code § 9-30-10-16 is unconstitutionally void for vagueness, because he was unable to find evidence of a “maximum design speed” for the Zuma and, therefore, was unable to determine whether his driving the Zuma was illegal. In his deposition, Trooper Nathalang said, “I think everybody agrees that the Statute – this particular statute [Ind. Code § 9-13-2-109] – is a little bit lacking as far as clarification, you know, as far as what's a moped, a motorized bicycle, and what's a motorcycle, you know.” (App. at 68.) If the law enforcement officer and the State, both responsible for enforcing a law, cannot determine whether a vehicle meets the statutory elements, it arguably may be impossible for a layperson to determine whether driving that vehicle comports with the law. Nevertheless, as the State did not prove the elements of the offense, we need not address vagueness. See *Mohamed v. State*, 843 N.E.2d 553, 555 (Ind. Ct. App. 2006) (if there is insufficient evidence to support a conviction, we need not address the constitutionality of the statute).

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**IN THE  
COURT OF APPEALS OF INDIANA**

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MICHAEL J. LOCK,

Appellant-Defendant,

vs.

STATE OF INDIANA,

Appellee-Plaintiff.

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No. 35A04-1010-CR-641

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**BAKER, Judge, dissenting.**

I respectfully dissent and part ways with the majority’s conclusion that the evidence was insufficient to support Lock’s conviction for operating a motor vehicle while privileges are suspended. I cannot agree that the State is inviting us to merely “speculate” that the Zuma, which was capable of traveling at a speed of at least forty-three miles per hour, is a motor vehicle within the meaning of the statute. Slip op. at 6.

As the majority observes, Indiana Code section 9-13-2-105(d) states that a “motorized bicycle” must have a design speed of “not more than twenty-five miles per hour. . . .” Whether a “motorized bicycle or moped is a ‘motor vehicle’ will depend on the factual or procedural context.” State v. Drubert, 686 N.E.2d 918, 921 (Ind. Ct. App. 1997). In this case, I believe that it is quite reasonable to infer that Lock’s Zuma has a maximum design

speed of more than twenty-five miles per hour. The undisputed evidence establishes that Trooper Nathalang determined that Lock was operating the Zuma at a speed of forty-three miles per hour. And Lock was traveling on a flat, level, and dry roadway, at a constant speed, when Trooper Nathalang was following him. Appellant's App. p. 57.

The statutes provide that if the vehicle is designed to go faster than twenty-five miles per hour, it is a "motor vehicle," for purposes of the charged offense. I.C. §§ 9-13-2-105(a); -109. That said, I embrace Trooper Nathalang's deposition testimony that "if you go faster than 25 miles an hour, it's no longer a motorized bicycle. It's considered a motorcycle." Appellant's App. p. 65-66.

In my view, Lock's operation of the Zuma is the precise behavior that the statute under which Lock was charged seeks to prevent. Moreover, I find this court's opinion in Annis v. State, 917 N.E.2d 722 (Ind. Ct. App. 2009), instructive. In that case, the evidence demonstrated that the defendant was driving a vehicle with a cylinder capacity in excess of that permitted under the motorized bicycle statute. Moreover, the defendant was operating the vehicle uphill at a speed of forty-one miles per hour. We concluded that the evidence was sufficient to support the defendant's conviction for operating a vehicle with a suspended license because it was established that the defendant was operating a motor vehicle rather than a motorized bicycle. Id. at 725.

As in Annis, I believe that the State presented ample evidence in this case to establish that Lock's Zuma is a motor vehicle and that he was in violation of Indiana Code section 9-30-10-16. Thus, I would affirm Lock's conviction.

**LEGISLATIVE SERVICES AGENCY  
OFFICE OF FISCAL AND MANAGEMENT ANALYSIS**

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**FISCAL IMPACT STATEMENT**

**LS 7397**  
**BILL NUMBER: HB 1334**

**NOTE PREPARED: Jan 7, 2011**  
**BILL AMENDED:**

**SUBJECT: Mopeds.**

**FIRST AUTHOR: Rep. Smith M**  
**FIRST SPONSOR:**

**BILL STATUS: As Introduced**

**FUNDS AFFECTED:   GENERAL**  
**X DEDICATED**  
**FEDERAL**

**IMPACT: State & Local**

**Summary of Legislation:** This bill has the following provisions:

- (1) Changes the term motorized bicycle to moped.
- (2) Requires that a moped operated on a highway must be titled and registered with the Bureau of Motor Vehicles, with a registration fee equal to that of a motorcycle.
- (3) Requires that certain funds received from the registration of a moped be deposited in the Motorcycle Operator Safety Education Fund.
- (4) Requires the operator of a moped on a highway to have an identification card or driver's license in the operator's immediate possession when operating the moped.
- (5) Requires a dealer who sells at least 12 mopeds a year to register as a dealer with the Secretary of State.
- (6) Prohibits the operation of a moped without financial responsibility in effect on the moped.
- (7) Requires certain individuals to file accident reports after an accident involving a moped.
- (8) Repeals the term "motor scooter".
- (9) Makes conforming changes, makes technical corrections, and deletes outdated language.

**Effective Date:** July 1, 2011.

**Explanation of State Expenditures:** Requiring registration and a certificate of title for mopeds may increase associated expenditures for the BMV. The BMV does not register or title these items currently. However, any expenditure is likely to be minimal. In CY 2007, the BMV registered approximately 6.3 million vehicles and issued about 2.0 million titles. The fund affected is the Motor Vehicle Highway Account (MVHA), which supports the BMV. The number of mopeds in Indiana is not known. The fund affected is the Motor Vehicle Highway Account, which supports the BMV.

**Explanation of State Revenues:** Requiring certain funds received from the registration of a moped to be deposited in the Motorcycle Operator Safety Education Fund will increase revenue to the fund. The impact will depend upon the number of mopeds registered annually. The annual registration fee for motorcycles is \$26.05, which includes a \$0.30 fee which is deposited into the Spinal Cord and Brain Injury Fund and a \$7 fee which is deposited into the Motorcycle Operator Safety Education Fund. The table below shows the distribution of the \$26.05 fee for motorcycles, along with the uses of the funds.

Extending the current \$26.05 annual registration fee to mopeds will generate additional annual state revenue. The number of mopeds in the state that would be required to register is unknown. However, assuming there are 3,000 moped that would be required to register in the state, this bill is expected to increase state revenue by \$78,150 per year from registration fees. The table below shows the distribution of the motorcycle registration fee.

Distribution of Annual Registration Fee	Fee	Est'd Revenue
Motor Vehicle Highway Account (MVHA)	\$8.75	\$26,250
Public Safety Fee	\$0.25	\$750
Motorcycle Operator Safety Education Fund	\$7.00	\$21,000
Crossroads 2000 Fund	\$3.00	\$9,000
BMV Technology Fund	\$0.50	\$1,500
Anti-Terrorism	\$1.25	\$3,750
Bureau of Motor Vehicles Commission (BMVC)	\$5.00	\$15,000
Spinal Cord Brain Injury Fund	\$0.30	\$900
<b>TOTAL</b>	<b>\$26.05</b>	<b>\$78,150</b>

Requiring the possession of an operator's license or an identification card may increase the issuance of these licenses and permits and increase fee revenue. The funds affected are the MVHA, the State Police Building Fund, the Motorcycle Operator Safety Education Fund, the Crossroads 2000 Fund, the BMV Technology Fund, the Anti-Terrorism Fund, and the Bureau of Motor Vehicles Commission (supported by the state License Branch Fund).

Additionally, requiring a dealer of at least 12 mopeds per year to register as a dealer with the Secretary of State will mean additional revenue. The funds affected are the Dealer Compliance Account and the MVHA.

**Background Information:** In FY 2010 the BMV completed 193,890 motorcycle registration transactions and received a total of \$5.05 M in revenue from these transactions.

The MVHA may be used for road construction, reconstruction, and maintenance for cities, towns, and counties. The MVHA also supports entirely the operation of the BMV, a significant part of the operation of the Department of Transportation, about 61% of the operation of the State Police, and part of the operation of the state Department of Revenue.

The Public Safety fee supports the State Police Building Fund, which is used for construction, maintenance, and equipping of and/or leasing of State Police facilities.

The Motorcycle Operator Safety Education Fund supports motorcycle education.

The Crossroads 2000 Fund supports highway bonding.

The BMV Technology Fund supports technology for the BMV.

The anti-terrorism fee supports the Integrated Public Safety Commission (IPSC). The IPSC operates Project Hoosier Safe-T (Safety Acting for Everyone-Together, an initiative of the IPSC). The Commission works with local, state, and federal public safety agencies to implement a statewide, interoperable, digital, 800 MHz trunked voice and mobile data communications network for public safety officials. SAFE-T will provide 95% statewide mobile coverage through a baseline design of 126 communication sites. SAFE-T seeks to replace inadequate, obsolete, and incompatible communications systems and allow coordination and response to routine, emergency and catastrophic events. Public safety agencies independently choose whether or not to participate in SAFE-T.

The Bureau of Motor Vehicles Commission is supported by the state License Branch Fund.

The Spinal Cord and Brain Injury Fund supports research for spinal cord and brain injuries.

The Dealer Compliance Account is used by the Secretary of State to monitor dealers.

**Explanation of Local Expenditures:**

**Explanation of Local Revenues:** Funds from the MVHA are distributed to cities, towns, and counties.

**State Agencies Affected:** BMV; Secretary of State; State Police; Department of Transportation; state Department of Revenue.

**Local Agencies Affected:** Recipients of MVHA distributions; various public safety agencies.

**Information Sources:** Danielle Roessing, BMV.

**Fiscal Analyst:** Bill Brumbach, 232-9559.

AN MSF MANUAL

# MOTORCYCLE OPERATOR MANUAL



With Supplementary Information  
for Three-Wheel Motorcycles



## PREFACE

Operating a motorcycle safely in traffic requires special skills and knowledge. The Motorcycle Safety Foundation (MSF) has made this manual available to help novice motorcyclists reduce their risk of having a crash. The manual conveys essential safe riding information and has been designed for use in licensing programs. While designed for the novice, all motorcyclists can benefit from the information this manual contains.

The original Motorcycle Operator Manual was developed by the National Public Services Research Institute (NPSRI) under contract to the National Highway Traffic Safety Administration (NHTSA) and within the terms of a cooperative agreement between NHTSA and the MSF. The manual and related tests were used in a multi-year study of improved motorcycle operator licensing procedures, conducted by the California Department of Motor Vehicles under contract to NHTSA.

The purpose of this manual is to educate the reader to help avoid crashes while safely operating a motorcycle. For this edition, the MSF has updated and expanded the content of the original manual.

These revisions reflect:

- The latest finding of motorcycle-safety research.
- Comments and guidance provided by the motorcycling, licensing and traffic safety communities.
- Expanded alcohol and drug information.

In promoting improved licensing programs, the MSF works closely with state licensing agencies. The Foundation has helped more than half the states in the nation adopt the Motorcycle Operator Manual for use in their licensing systems.

Improved licensing, along with high-quality motorcycle rider education and increased public awareness, has the potential to reduce crashes. Staff at the Foundation are available to assist state, private and governmental agencies in efforts to improve motorcycle safety.



Tim Buche  
*President,*  
*Motorcycle Safety Foundation*



2 Jenner, Suite 150  
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[www.msf-usa.org](http://www.msf-usa.org)



**Indiana Motorcycle  
Requirements March 2011**

In order to operate a motorcycle on a public roadway, an individual must have a valid Motorcycle Learner Permit or a Motorcycle Endorsement on any of the following types of base license:

- An Operator, Chauffeur, or Public Passenger Chauffeur.

**GENERAL INFORMATION**

If an applicant applies for a Motorcycle Temporary Permit, Motorcycle Learner Permit, Motorcycle Only, or a Motorcycle Endorsement the Bureau of Motor Vehicles may not issue if the applicant is ineligible due to driving privileges being revoked, suspended or invalidated which prohibits obtaining a permit or license.

**PERMIT TYPES**

***Temporary Motorcycle Learner Permit***

An individual must meet the following conditions to obtain a Temporary Motorcycle Learner's Permit:

- Be at least fifteen (15) years of age;
- Be enrolled in an approved

motorcycle driver education and training course:

- Present a certificate of enrollment in an approved motorcycle driver education and training course to the Bureau of Motor Vehicles at the time of application;
- Must present identification from approved list;
- Must successfully pass a vision screening

Upon completion of an approved motorcycle driver education and training course the Temporary Motorcycle Learner's Permit will be validated and the holder may only operate a motorcycle under the following conditions:

- When wearing a helmet that meets the standards established by the United States Department of Transportation under 49CFR571.218;
- Operate a motorcycle only during daylight hours;
- May not carry passengers;
- Must be under the supervision of the licensed motorcycle operator who is at least eighteen (18) years of age (upon completion of an approved driver education training course).

The holder of this permit may operate a motorcycle upon a highway while enrolled in an



approved motorcycle driver education and training course only when the holder is under the direct supervision of an instructor. The instructor must be certified to teach a motorcycle driver's education course by the State Board of Education or by the Bureau of Motor Vehicles.

**NOTE:** If the holder of a Temporary Motorcycle Learner Permit chooses to have a Motorcycle Only License issued once they meet the experience, age and BMV requirements, they will be required to surrender their "Motorcycle Only" license when they apply for a Driver Education or Learner Permit. At that time, the license branch may give the applicant an affidavit of motorcycle endorsement. **During this time, the applicant may not ride a Motorcycle.** Once they meet the age and time requirements of the Driver Education or Learner Permit, an Operator's License may be issued with the Motorcycle Endorsement.

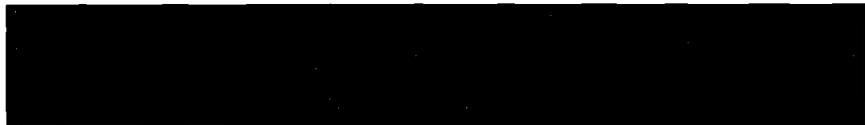
### **Motorcycle Learner's Permit**

A person may qualify for a Motorcycle Learner's Permit under the following conditions:

- The individual must hold a valid Operator, Chauffeur, or Public Passenger Chauffeur base license.
- Pass a vision screening and motorcycle written examination.

A Motorcycle Learner's Permit authorizes the holder to operate a motorcycle upon the highway for a period of one (1) year from the date of issuance, under the following restrictions:

- The holder must wear a helmet that meets the standards established by the United States Department of Transportation under 49CFR571.218;
- Operate a motorcycle only during daylight hours;
- May not carry passengers;



## **MOTORCYCLE ONLY LICENSE**

A Motorcycle Only License may be issued to an individual who has held a **Temporary Motorcycle Learner's Permit** for a period of thirty days, and meets the age requirements of at least sixteen (16) years and thirty (30) days of age, and passed the approved motorcycle driver education and training course. The applicant must also pass a motorcycle written test and vision screening at the license branch.

### **TESTING**

When applicable the applicant must pass a vision screening, a written motorcycle examination and a Motorcycle Skills Test.

The Motorcycle Skills test will be administered at a Motorcycle Skills Test site by an individual certified by the Bureau of Motor Vehicles. (Inquire at the License Branch for information regarding the Motorcycle Skills Test site locations and testing dates.)

All applicants must hold a valid Motorcycle Learner Permit for a period of **thirty (30) days** before a Motorcycle Skills Test can be administered. Proof of a **current** Motorcycle Endorsement from any other state Licensing Agency may

exempt them from the Motorcycle Skills Test.

The fee for a Motorcycle Skills Test is Ten dollars (\$10.00). **Applicants must bring exact amount of money for the skills test; the examiner will not make change. No checks will be accepted.**

Applicants must present photo-ID and permit or Affidavit of Motorcycle Endorsement at time of skills test. If an applicant does not pass the Motorcycle Skills Test on the first attempt, a second attempt may be taken on the same day at no additional charge. Once the motorcycle skills test is successfully completed, the skills test results are good for the duration of the holder's motorcycle permit.

The Motorcycle Learner Permit is valid for a period of one (1) year. Each individual is allowed three (3) attempts during the validity of the motorcycle permit.

Every applicant prior to taking of the Motorcycle Skills Test will be required to sign a Waiver of Liability.





**THE MOTORCYCLE**  
**SKILLS TEST**

The Motorcycle Skill's Test consists of seven areas, which measures an applicant's basic control of the Motorcycle and response to hazardous situations. The Motorcycle Skills Test consists of the following actions:

- Overall control
- Sharp left turn, stopping at designated points, offset cone weave, right U-turn, quick stop and obstacle swerve.

"Points" will be assessed if the applicant fails to execute any of the above maneuvers properly.

**The applicant will fail the motorcycle skills test if he/she:**

- **Accumulates more than ten (10) points;**
- **Falls or drops the motorcycle;**
- **Commits an unsafe act;**
- **Disregards or fails to understand instructions of the examiners.**

**FEES**

Fees are subject to change. Please inquire at the License Branch for the Permit, License, and Endorsement fees.



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## SUPPLEMENT FOR 3-WHEEL MOTORCYCLES

What you do before you start a trip goes a long way toward determining whether or not you'll get where you want to go safely. Before taking off on any trip, a safe rider makes a point to:

1. **Wear the right gear.**
2. **Become familiar with the motorcycle.**
3. **Check the motorcycle equipment.**
4. **Be a responsible rider.**

## WEAR THE RIGHT GEAR

When you ride, your gear is "right" if it protects you. In any crash, you have a far better chance of avoiding serious injury if you wear:

- **A DOT compliant helmet.**
- **Face or eye protection.**
- **Protective clothing.**

### Helmet Use

Crashes can occur — particularly among untrained, beginning riders. And one out of every five motorcycle crashes results in head or neck injuries. Head injuries are just as severe as neck injuries — and far more common. Crash analyses show that head and neck injuries account for a majority of serious and fatal injuries to motorcyclists. Research also shows that, with few exceptions, head and neck injuries are reduced by properly wearing a quality helmet.

Some riders don't wear helmets because they think helmets will limit their view to the sides. Others wear helmets only on long trips or when riding at high speeds. But, here are some facts to consider:

- **A DOT compliant helmet** lets you see as far to the sides as necessary. A study of more than 900 motorcycle crashes, where 40% of the riders wore helmets, did not find even one case in which a helmet kept a rider from spotting danger.
- **Most crashes happen** on short trips (less than five miles long), just a few minutes after starting out.
- **Most riders** are riding slower than 30 mph when a crash occurs. At these speeds, helmets can cut both the number and the severity of head injuries by half.

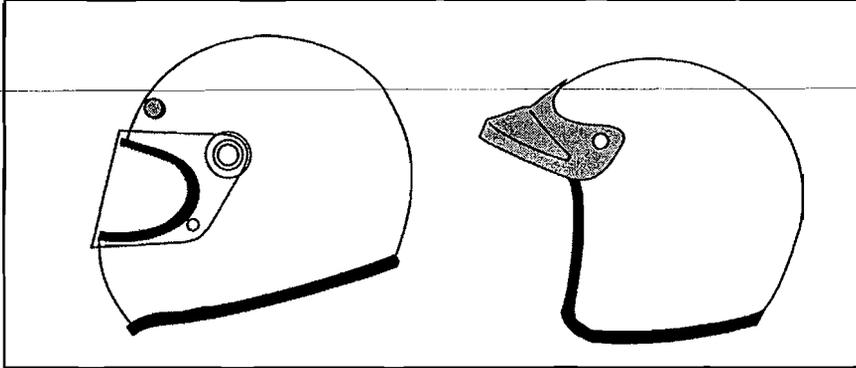
No matter what the speed, helmeted riders are three times more likely to survive head injuries than those not wearing helmets at the time of the crash. The single most important thing you can do to improve your chances of surviving a crash is to wear a securely-fastened, quality helmet.

### Helmet Selection

There are two primary types of helmets, providing two different levels of coverage: three-quarter and full face.

Whichever style you choose, you can get the most protection by making sure that the helmet:

## HELMETS



- **Is designed to meet U.S.** Department of Transportation (DOT) and state standards. Helmets with a label from the Snell Memorial Foundation also give you an assurance of quality.
- **Fits snugly**, all the way around.
- **Has no obvious defects** such as cracks, loose padding or frayed straps.

Whatever helmet you decide on, keep it securely fastened on your head when you ride. Otherwise, if you are involved in a crash, it's likely to fly off your head before it gets a chance to protect you.

### Eye and Face Protection

A plastic shatter-resistant faceshield can help protect your whole face in a crash. It also protects you from wind, dust, dirt, rain, insects and pebbles thrown up from cars ahead. These problems are distracting and can be painful. If you have to deal with them, you can't devote your full attention to the road.

Goggles protect your eyes, though they won't protect the rest of your face like a faceshield does. A windshield is not a substitute for a faceshield or goggles. Most windshields will not protect your eyes from the wind. Neither will eyeglasses or sunglasses. Glasses won't keep your eyes from watering, and they might blow off when you turn your head while riding.

*To be effective, eye or faceshield protection must:*

- **Be free** of scratches.
- **Be resistant** to penetration.
- **Give a clear view** to either side.
- **Fasten securely**, so it does not blow off.
- **Permit air** to pass through, to reduce fogging.
- **Permit enough room** for eyeglasses or sunglasses, if needed.

Tinted eye protection should not be worn at night or any other time when little light is available.

## Clothing

The right clothing protects you in a collision. It also provides comfort, as well as protection from heat, cold, debris and hot and moving parts of the motorcycle. It can also make you more visible to others.

- **Jacket and pants** should cover arms and legs completely. They should fit snugly enough to keep from flapping in the wind, yet loosely enough to move freely. Leather offers the most protection. Sturdy synthetic material provides a lot of protection as well. Wear a jacket even in warm weather to prevent dehydration. Many are designed to protect without getting you overheated, even on summer days.
- **Boots or shoes** should be high and sturdy enough to cover your ankles and give them support. Soles should be made of hard, durable, slip-resistant material. Keep heels short so they do not catch on rough surfaces. Tuck in laces so they won't catch on your motorcycle.
- **Gloves** allow a better grip and help protect your hands in a crash. Your gloves should be made of leather or similar durable material.

In cold or wet weather, your clothes should keep you warm and dry, as well as protect you from injury. You cannot control a motorcycle well if you are numb. Riding for long periods in cold weather can cause severe chill and fatigue. A winter jacket should resist wind and fit snugly at the neck, wrists and waist. Good-quality rainsuits designed for motorcycle riding resist tearing apart or ballooning up at high speeds.

## KNOW YOUR MOTORCYCLE

There are plenty of things on the highway that can cause you trouble. Your motorcycle should not be one of them. To make sure that your motorcycle won't let you down:

- **Read** the owner's manual first.
- **Start** with the right motorcycle for you.
- **Be familiar** with the motorcycle controls.
- **Check** the motorcycle before every ride.
- **Keep** it in safe riding condition between rides.
- **Avoid** add-ons and modifications that make your motorcycle harder to handle.

## The Right Motorcycle For You

First, make sure your motorcycle is right for you. It should "fit" you. Your feet should reach the ground while you are seated on the motorcycle, and the controls should be easy to operate. Smaller motorcycles are usually easier for beginners to operate.

### TEST YOURSELF

1

**A plastic shatter-resistant face shield:**

- Is not necessary if you have a windshield.
- Only protects your eyes.
- Helps protect your whole face.
- Does not protect your face as well as goggles.

Answer - page 41

At minimum, your street-legal motorcycle should have:

- **Headlight, taillight and brakelight.**
- **Front and rear brakes.**
- **Turn signals.**
- **Horn.**
- **Two mirrors.**

### Borrowing and Lending

Borrowers and lenders of motorcycles, beware. Crashes are fairly common among beginning riders — especially in the first months of riding. Riding an unfamiliar motorcycle adds to the problem. If you borrow a motorcycle, get familiar with it in a controlled area. And if you lend your motorcycle to friends, make sure they are licensed and

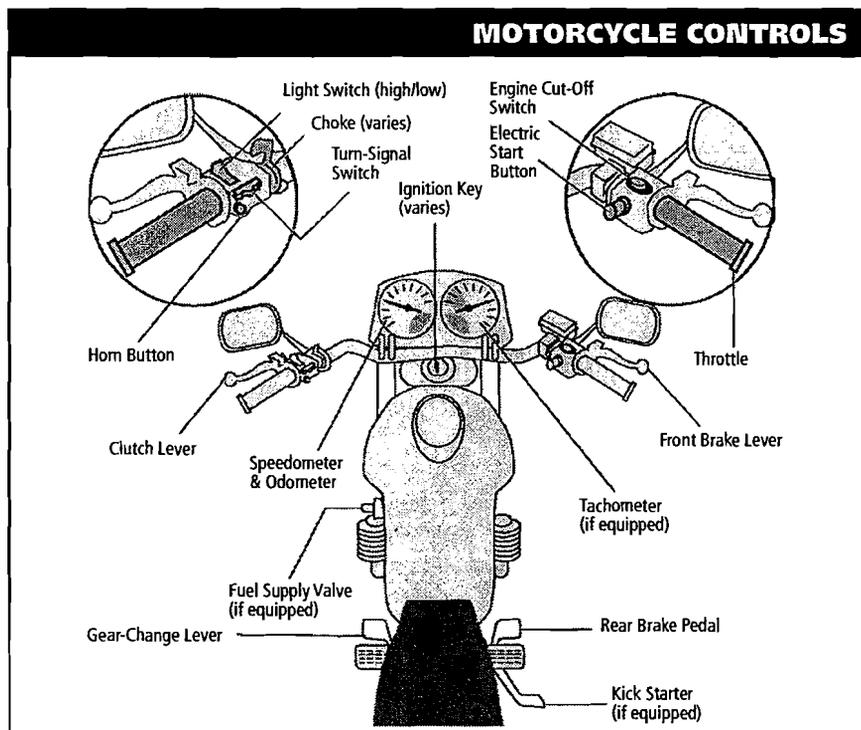
know how to ride before allowing them out into traffic.

No matter how experienced you may be, ride extra carefully on any motorcycle that's new or unfamiliar to you. More than half of all crashes involve riders with less than five months of experience on their motorcycle.

### Get Familiar with the Motorcycle Controls

Make sure you are completely familiar with the motorcycle before you take it out on the street. Be sure to review the owner's manual. This is particularly important if you are riding a borrowed motorcycle.

If you are going to use an unfamiliar motorcycle:



- **Make all the checks** you would on your own motorcycle.
- **Find out where everything is**, particularly the turn signals, horn, headlight switch, fuel-supply valve and engine cut-off switch. Find and operate these items without having to look for them.
- **Know the gear pattern.** Work the throttle, clutch and brakes a few times before you start riding. All controls react a little differently.
- **Ride very cautiously** and be aware of surroundings. Accelerate gently, take turns more slowly and leave extra room for stopping.

### Check Your Motorcycle

A motorcycle needs more frequent attention than a car. A minor technical failure in a car seldom leads to anything more than an inconvenience for the driver.

If something's wrong with the motorcycle, you'll want to find out about it before you get in traffic. Make a complete check of your motorcycle before every ride.

*Before mounting the motorcycle, make the following checks:*

- **Tires** — Check the air pressure, general wear and tread.
  - **Fluids** — Oil and fluid levels. At a minimum, check hydraulic fluids and coolants weekly. Look under the motorcycle for signs of an oil or gas leak.
  - **Headlights and Taillight** — Check them both. Test your switch to make sure both high and low beams are working.
  - **Turn Signals** — Turn on both right and left turn signals. Make sure all lights are working properly.
  - **Brake Light** — Try both brake controls, and make sure each one turns on the brake light.
- Once you have mounted the motorcycle, complete the following checks before starting out:
- **Clutch and Throttle** — Make sure they work smoothly. The throttle should snap back when you let go. The clutch should feel tight and smooth.
  - **Mirrors** — Clean and adjust both mirrors before starting. It's difficult to ride with one hand while you try to adjust a mirror. Adjust each mirror so you can see the lane behind and as much as possible of the lane next to you. When properly adjusted, a mirror may show the edge of your arm or shoulder—but it's the road behind and to the side that's most important.
  - **Brakes** — Try the front and rear brake levers one at a time. Make sure each one feels firm and holds the motorcycle when the brake is fully applied.
  - **Horn** — Try the horn. Make sure it works.
  - **Fuel Supply Valve** — Make sure the valve is open. Your motorcycle may start with fuel still in the lines, but it will stall once the lines are empty.

In addition to the checks you should make before every trip, check the following items at least once a week: Wheels, cables, fasteners and fluid levels. Follow your owner's manual to get recommendations.

## KNOW YOUR RESPONSIBILITIES

“Accident” implies an unforeseen event that occurs without anyone’s fault or negligence. Most often in traffic, that is not the case. In fact, most people involved in a crash can usually claim some responsibility for what takes place.

Consider a situation where someone decides to try to squeeze through an intersection on a yellow light turning red. Your light turns green. You pull into the intersection without checking for possible latecomers. That is all it takes for the two of you to tangle. It was the driver’s responsibility to stop. And it was your responsibility to look before pulling out. Neither of you held up your end of the deal. Just because someone else is the first to start the chain of events leading to a crash, it doesn’t leave any of us free of responsibility.

As a rider you can’t be sure that other operators will see you or yield the right of way. To lessen your chances of a crash occurring:

- **Be visible** — wear proper clothing, use your headlight, ride in the best lane position to see and be seen.
- **Communicate your intentions** — use the proper signals, brake light and lane position.
- **Maintain an adequate space cushion** — when following, being followed, lane sharing, passing and being passed.
- **Search your path** of travel 12 seconds ahead.
- **Identify and separate** multiple hazards.
- **Be prepared to act** — remain alert and know how to carry out proper crash-avoidance skills.

Blame doesn’t matter when someone is injured in a crash. There is rarely a single cause of any crash. The ability to ride aware, make critical decisions and carry them out separates responsible riders from all the rest. Remember, it is up to you to keep from being the cause of, or an unprepared participant in, any crash.

## TEST YOURSELF

2

### *More than half of all crashes:*

- A. Occur at speeds greater than 35 mph.
- B. Happen at night.
- C. Are caused by worn tires.
- D. Involve riders who have less than five months of experience on their motorcycle.

*Answer - page 41*

This manual cannot teach you how to control direction, speed or balance. That's something you can learn only through practice, preferably in a formal course of instruction like an MSF *RiderCourse*. But control begins with knowing your abilities and riding within them, along with knowing and obeying the rules of the road.

## BASIC VEHICLE CONTROL

### Body Position

*To control a motorcycle well:*

- **Posture** — Sit so you can use your arms to steer the motorcycle rather than to hold yourself up.
- **Seat** — Sit far enough forward so that arms are slightly bent when you hold the handlebars. Bending your arms permits you to press on the handlebars without having to stretch.
- **Hands** — Hold the handgrips firmly to keep your grip over rough surfaces. Start with your right wrist flat. This will help you keep from accidentally using too much throttle. Also, adjust the handlebars so your hands are even with or below your elbows. This permits you to use the proper muscles for precision steering.
- **Knees** — Keep your knees against the gas tank to help you keep your balance as the motorcycle turns.
- **Feet** — Keep your feet firmly on the footrests to maintain balance. Don't drag your feet. If your foot catches on something, you could be injured and it could affect your control of the motorcycle. Keep your feet near the controls so you can get to them fast if needed. Also, don't let your toes point downward — they may get caught between the road and the footrests.

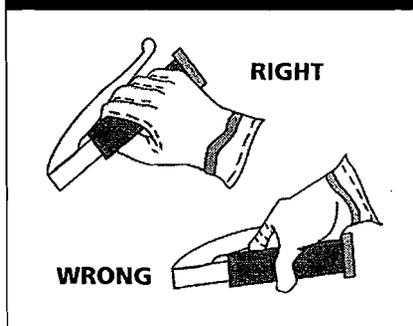
### Shifting Gears

There is more to shifting gears than simply getting the motorcycle to pick up speed smoothly. Learning to use the gears when downshifting, turning or starting on hills is important for safe motorcycle operation.

Shift down through the gears with the clutch as you slow or stop. Remain in first gear while you are stopped so that you can move out quickly if you need to.

Make certain you are riding slowly enough when you shift into a lower gear. If not, the motorcycle will lurch, and the rear wheel may skid. When riding downhill or shifting into first gear you may need to use the brakes to slow enough before downshifting safely. Work toward a smooth, even clutch release, especially when downshifting.

### HOLDING HANDGRIPS



It is best to change gears before entering a turn. However, sometimes shifting while in the turn is necessary. If so, remember to do so smoothly. A sudden change in power to the rear wheel can cause a skid.

## Braking

Your motorcycle has two brakes: one each for the front and rear wheel. Use both of them at the same time. The front brake is more powerful and can provide **at least three-quarters** of your total stopping power. The front brake is safe to use if you use it properly.

*Remember:*

- **Use both brakes** every time you slow or stop. Using both brakes for even “normal” stops will permit you to develop the proper habit or skill of using both brakes properly in an emergency. Squeeze the front brake and press down on the rear. Grabbing at the front brake or jamming down on the rear can cause the brakes to lock, resulting in control problems.
- **If you know the technique**, using both brakes in a turn is possible, although it should be done very carefully. When leaning the motorcycle some of the traction is used for cornering. Less traction is available for stopping. A skid can occur if you apply too much brake. Also, using the front brake incorrectly on a slippery surface may be hazardous. Use caution and **squeeze** the brake lever, never grab.
- **Some motorcycles** have integrated braking systems that activate the front and rear brakes together when applying the rear brake pedal. (Consult the owner's manual for a detailed explanation on the operation and effective use of these systems.)

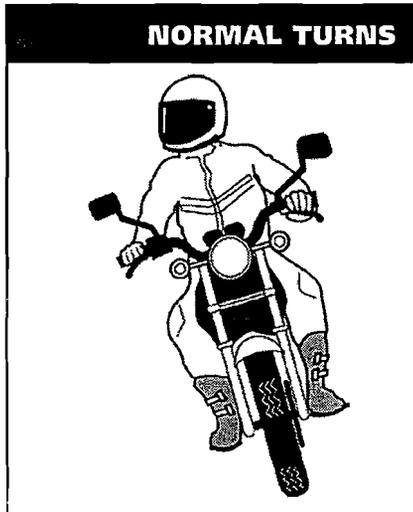
## Turning

Riders often try to take curves or turns too fast. When they can't hold the turn, they end up crossing into another lane of traffic or going off the road. Or, they overreact and brake too hard, causing a skid and loss of control. Approach turns and curves with caution.

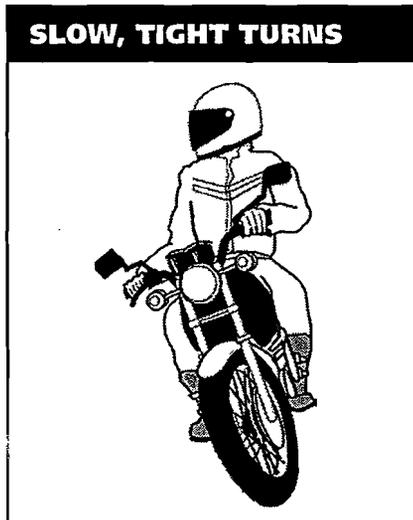
**Use four steps for better control:**

- **SLOW** — Reduce speed before the turn by closing the throttle and, if necessary, applying both brakes.
- **LOOK** — Look through the turn to where you want to go. Turn just your head, not your shoulders, and keep your eyes level with the horizon.
- **PRESS** — To turn, the motorcycle must lean. To lean the motorcycle, press on the handgrip in the direction of the turn. Press left handgrip — lean left — go left. Press right handgrip — lean right — go right. The higher the speed in a turn, the greater the lean angle.
- **ROLL** — Roll on the throttle to maintain or slightly increase speed. This helps stabilize the motorcycle.

In normal turns, the rider and the motorcycle should lean together at the same angle.



In slow, tight turns, counterbalance by leaning the motorcycle only and keeping your body straight.



### TEST YOURSELF

3

*When riding, you should:*

- A. Turn your head and shoulders to look through turns.
- B. Keep your arms straight.
- C. Keep your knees away from the gas tank.
- D. Turn just your head and eyes to look where you are going.

*Answer - page 41*

### KEEPING YOUR DISTANCE

The best protection you can have is distance — a “cushion of space” — all around your motorcycle. If someone else makes a mistake, distance permits you:

- **Time to react.**
- **Space to maneuver.**

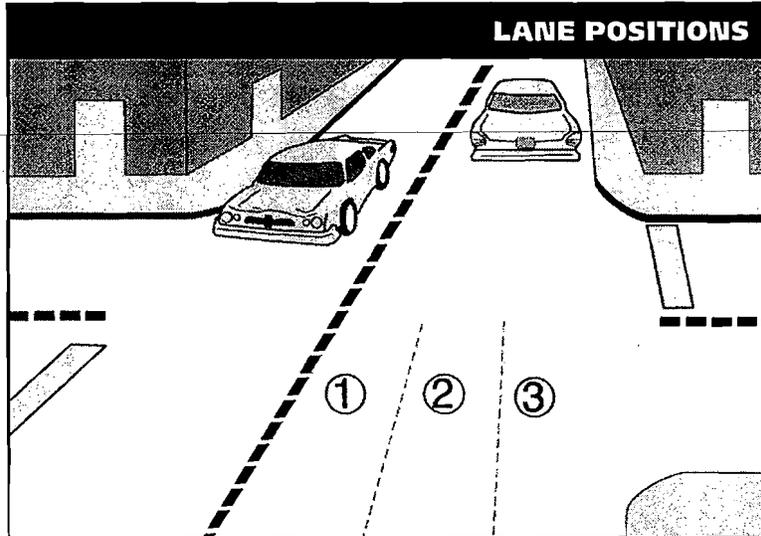
### Lane Positions

In some ways the size of the motorcycle can work to your advantage. Each traffic lane gives a motorcycle three paths of travel, as indicated in the illustration.

*Your lane position should:*

- **Increase** your ability to see and be seen.
- **Avoid** others’ blind spots.
- **Avoid** surface hazards.
- **Protect** your lane from other drivers.
- **Communicate** your intentions.
- **Avoid** wind blast from other vehicles.
- **Provide** an escape route.

Select the appropriate path to maximize your space cushion and make yourself more easily seen by others on the road.



In general, there is no single best position for riders to be seen and to maintain a space cushion around the motorcycle. No portion of the lane need be avoided — including the center.

Position yourself in the portion of the lane where you are most likely to be seen and you can maintain a space cushion around you. Change position as traffic situations change. Ride in path 2 or 3 if vehicles and other potential problems are on your left only. Remain in path 1 or 2 if hazards are on your right only. If vehicles are being operated on both sides of you, the center of the lane, path 2, is usually your best option.

The oily strip in the center portion that collects drippings from cars is usually no more than two feet wide. Unless the road is wet, the average center strip permits adequate traction to ride on safely. You can operate to the left or right of the grease strip and still be within the center portion of the traffic lane. Avoid riding on big buildups of oil and grease usually found at busy intersections or toll booths.

### Following Another Vehicle

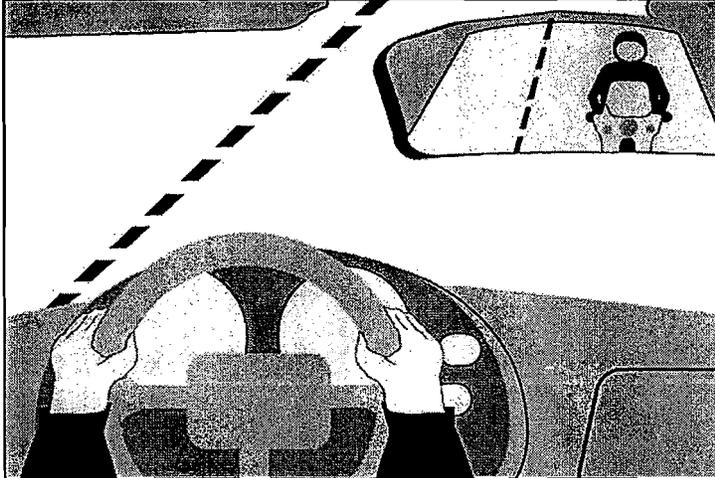
"Following too closely" could be a factor in crashes involving motorcyclists. In traffic, motorcycles need as much distance to stop as cars. Normally, a **minimum of two seconds** distance should be maintained behind the vehicle ahead.

*To gauge your following distance:*

- **Pick out a marker**, such as a pavement marking or lamppost, on or near the road ahead.
- **When the rear bumper** of the vehicle ahead passes the marker, count off the seconds: "one-thousand-one, one-thousand-two."
- **If you reach the marker** before you reach "two," you are following too closely.

A two-second following distance leaves a minimum amount of space to stop or swerve if the driver ahead stops suddenly. It also permits a better view of potholes and other hazards in the road.

A larger cushion of space is needed if your motorcycle will take longer

**FOLLOWING**

than normal to stop. If the pavement is slippery, if you cannot see through the vehicle ahead, or if traffic is heavy and someone may squeeze in front of you, open up a three-second or more following distance.

Keep well behind the vehicle ahead even when you are stopped. This will make it easier to get out of the way if someone bears down on you from behind. It will also give you a cushion of space if the vehicle ahead starts to back up for some reason.

When behind a car, ride where the driver can see you in the rearview mirror. Riding in the center portion of the lane should put your image in the middle of the rearview mirror — where a driver is most likely to see you.

Riding at the far side of a lane may permit a driver to see you in a sideview mirror. But remember that most drivers don't look at their sideview mirrors nearly as often as they check the rearview mirror. If the traffic situation allows, the center portion of the lane is usually the best place for you to be seen by the drivers ahead and to prevent lane sharing by others.

**Being Followed**

Speeding up to lose someone following too closely only ends up with someone tailgating you at a higher speed.

A better way to handle tailgaters is to get them in front of you. When someone is following too closely, change lanes and let them pass. If you can't do this, slow down and open up extra space ahead of you to allow room for both you and the tailgater to stop. This will also encourage them to pass. If they don't pass, you will have given yourself and the tailgater more time and space to react in case an emergency does develop ahead.

**Passing and Being Passed**

Passing and being passed by another vehicle is not much different than with a car. However, visibility is more critical. Be sure other drivers see you, and that you see potential hazards.

## Passing

1. **Ride in the left portion** of the lane at a safe following distance to increase your line of sight and make you more visible. Signal and check for oncoming traffic. Use your mirrors and turn your head to look for traffic behind.
2. **When safe**, move into the left lane and accelerate. Select a lane position that doesn't crowd the car you are passing and provides space to avoid hazards in your lane.
3. **Ride through the blind spot** as quickly as possible.
4. **Signal again**, and complete mirror and headchecks before returning to your original lane and then cancel the signal.

**Remember, passes must be completed within posted speed limits, and only where permitted. Know your signs and road markings!**

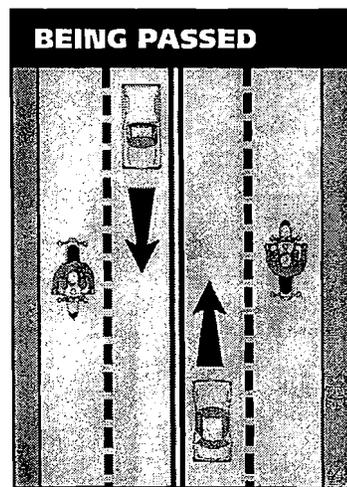
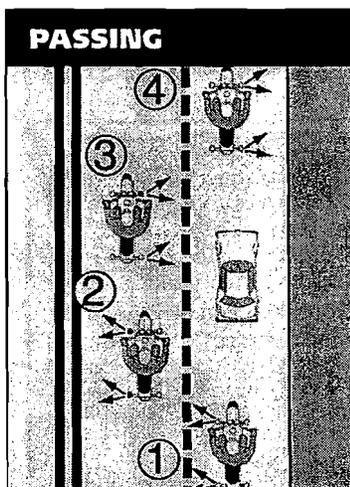
## Being Passed

When you are being passed from behind or by an oncoming vehicle, stay in the center portion of your lane. Riding any closer to them could put you in a hazardous situation.

*Avoid being hit by:*

- **The other vehicle** — A slight mistake by you or the passing driver could cause a sideswipe.
- **Extended mirrors** — Some drivers forget that their mirrors hang out farther than their fenders.
- **Objects thrown from windows** — Even if the driver knows you're there, a passenger may not see you and might toss something on you or the road ahead of you.
- **Blasts of wind from larger vehicles** — They can affect your control. You have more room for error if you are in the middle portion when hit by this blast than if you are on either side of the lane.

**Do not** move into the portion of the lane farthest from the passing vehicle. It might invite the other driver to cut back into your lane too early.



### Lane Sharing

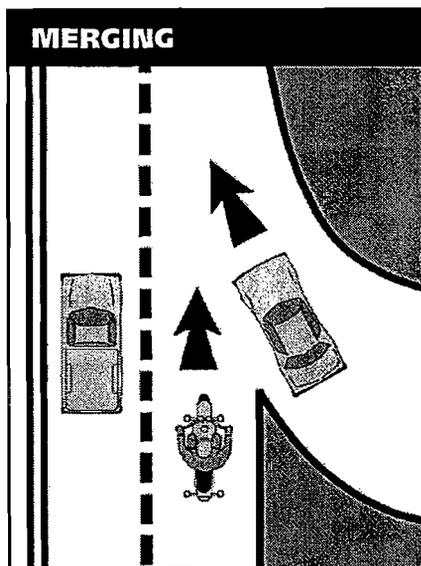
Cars and motorcycles need a full lane to operate safely. Lane sharing is usually prohibited.

Riding between rows of stopped or moving cars in the same lane can leave you vulnerable to the unexpected. A hand could come out of a window; a door could open; a car could turn suddenly. Discourage lane sharing by others. Keep a center-portion position whenever drivers might be tempted to squeeze by you. Drivers are most tempted to do this:

- **In heavy**, bumper-to-bumper traffic.
- **When they** want to pass you.
- **When you** are preparing to turn at an intersection.
- **When you** are moving into an exit lane or leaving a highway.

### Merging Cars

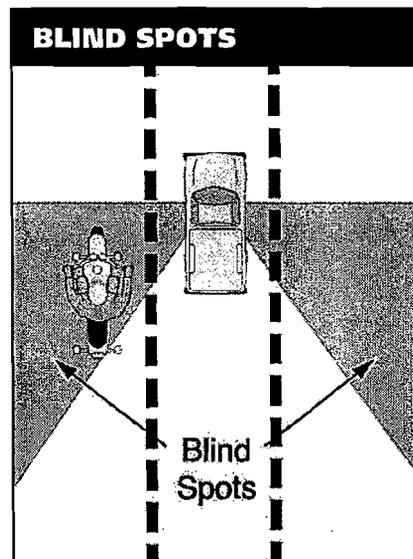
Drivers on an entrance ramp may not see you on the highway. Give them



plenty of room. Change to another lane if one is open. If there is no room for a lane change, adjust speed to open up space for the merging driver.

### Cars Alongside

Do not ride next to cars or trucks in other lanes if you do not have to. You might be in the blind spot of a car in the next lane, which could switch into your lane without warning. Cars in the next lane also block your escape if you come upon danger in your own lane. Speed up or drop back to find a place clear of traffic on both sides.



### TEST YOURSELF

4

*Usually, a good way to handle tailgaters is to:*

- Change lanes and let them pass.
- Use your horn and make obscene gestures.
- Speed up to put distance between you and the tailgater.
- Ignore them.

*Answer - page 41*

## SEE

Good experienced riders remain aware of what is going on around them. They improve their riding strategy by using MSF's SEE<sup>SM</sup> strategy, a three-step process used to make appropriate judgments, and apply them correctly in different traffic situations:

- Search
- Evaluate
- Execute

Let's examine each of these steps.

### Search

Search aggressively ahead, to the sides and behind to avoid potential hazards even before they arise. How assertively you search, and how much time and space you have, can eliminate or reduce harm. Focus even more on finding potential escape routes in or around intersections, shopping areas and school and construction zones.

Search for factors such as:

- **Oncoming traffic** that may turn left in front of you.
- **Traffic** coming from the left and right.
- **Traffic** approaching from behind.
- **Hazardous** road conditions.

Be especially alert in areas with limited visibility. Visually "busy" surroundings could hide you and your motorcycle from others.

### Evaluate

Think about how hazards can interact to create risks for you. Anticipate potential problems and have a plan to reduce risks.

- **Road and surface characteristics**

— Potholes, guardrails, bridges, telephone poles and trees won't move into your path but may influence your riding strategy.

- **Traffic control devices** — Look for traffic signals, including regulatory signs, warning signs, and pavement markings, to help you evaluate circumstances ahead.

- **Vehicles and other traffic** — May move into your path and increase the likelihood of a crash.

Think about your time and space requirements in order to maintain a margin of safety. You must leave yourself time to react if an emergency arises.

### Execute

Carry out your decision.

To create more space and minimize harm from any hazard:

- **Communicate** your presence with lights and/or horn.
- **Adjust your speed** by accelerating, stopping or slowing.
- **Adjust your position** and/or direction.

Apply the old adage "one step at a time" to handle two or more hazards. Adjust speed to permit two hazards to separate. Then deal with them one at a time as single hazards. Decision-making becomes more complex with three or more hazards. Evaluate the consequences of each and give equal distance to the hazards.

In potential high-risk areas, such as intersections, shopping areas and school and construction zones, cover the clutch and both brakes to reduce the time you need to react.

**TEST YOURSELF****5**

*To reduce your reaction time, you should:*

- A. Ride slower than the speed limit.
- B. Cover the clutch and the brakes.
- C. Shift into neutral when slowing.
- D. Pull in the clutch when turning.

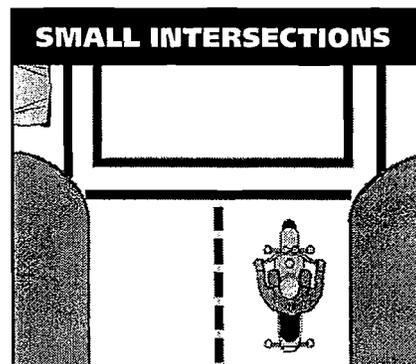
Answer - page 41

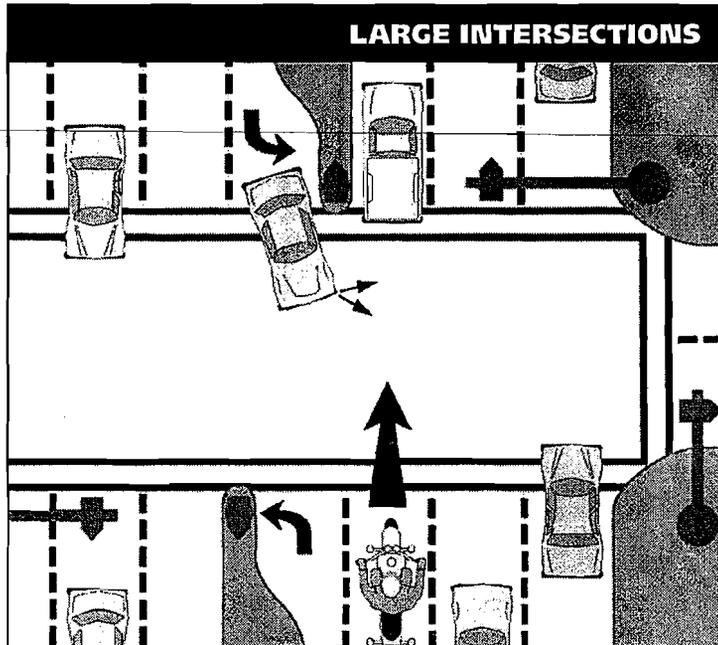
**INTERSECTIONS**

The greatest potential for conflict between you and other traffic is at intersections. An intersection can be in the middle of an urban area or at a driveway on a residential street — anywhere traffic may cross your path of travel. Over one-half of motorcycle/car crashes are caused by drivers entering a rider's right-of-way. Cars that turn left in front of you, including cars turning left from the lane to your right, and cars on side streets that pull into your lane, are the biggest dangers. Your use of SEE [p. 17] at intersections is critical.

There are no guarantees that others see you. Never count on "eye contact" as a sign that a driver will yield. Too often, a driver looks right at a motorcyclist and still fails to "see" him or her. The only eyes that you can count on are your own. If a car can enter your path, assume that it will. Good riders are always "looking for trouble" — not to get into it, but to stay out of it.

Increase your chances of being seen at intersections. Ride with your headlight on and in a lane position that provides the best view of oncoming traffic. Provide a space cushion around the motorcycle that permits you to take evasive action.





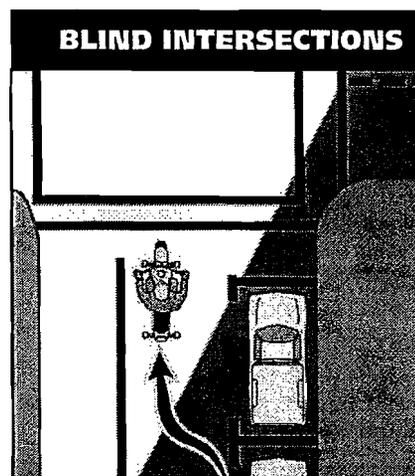
When approaching an intersection where a vehicle driver is preparing to cross your path, slow down and select a lane position to increase your visibility to that driver. Cover the clutch lever and both brakes to reduce reaction time. As you enter the intersection, move away from the vehicle. Do not change speed or position radically, as drivers might think you are preparing to turn. Be prepared to brake hard and hold your position if an oncoming vehicle turns in front of you, especially if there is other traffic around you. This strategy should also be used whenever a vehicle in the oncoming lane of traffic is signaling for a left turn, whether at an intersection or not.

### Blind Intersections

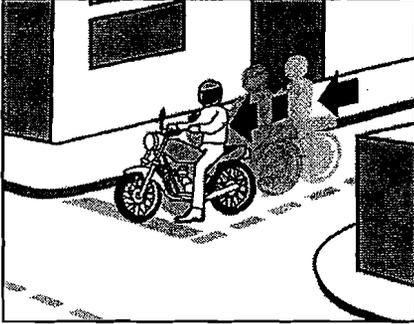
If you approach a blind intersection, move to the portion of the lane that will bring you into another driver's field of vision at the earliest possible moment.

In this picture, the rider has moved to the left portion of the lane — away from the parked car — so the driver on the cross street can see him as soon as possible.

Remember, the key is to see as much as possible and remain visible to others while protecting your space.



## STOP SIGNS



If you have a stop sign or stop line, stop there first. Then edge forward and stop again, just short of where the cross-traffic lane meets your lane. From that position, lean your body forward and look around buildings, parked cars or bushes to see if anything is coming. Just make sure your front wheel stays out of the cross lane of travel while you're looking.

## Passing Parked Cars

When passing parked cars, stay toward the left of your lane. You can avoid problems caused by doors opening, drivers getting out of cars or people stepping from between cars. If oncoming traffic is present, it is usually best to remain in the center-lane position to maximize your space cushion.

A bigger problem can occur if the driver pulls away from the curb without

## TEST YOURSELF

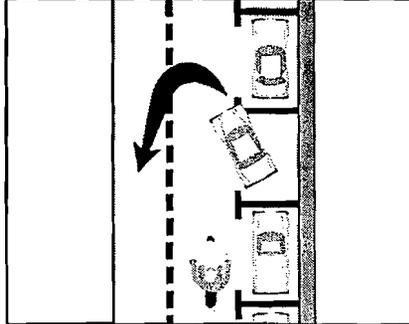
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***Making eye contact with other drivers:***

- A. Is a good sign they see you.
- B. Is not worth the effort it takes.
- C. Doesn't mean that the driver will yield.
- D. Guarantees that the other driver will yield to you.

*Answer - page 41*

## PARKED CARS



checking for traffic behind. Even if he does look, he may fail to see you.

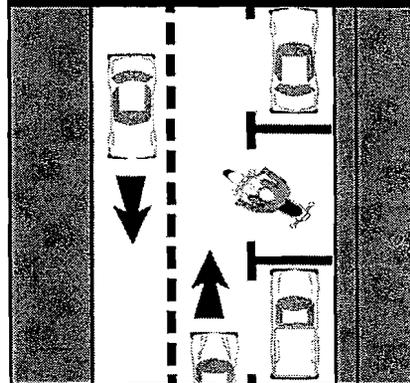
In either event, the driver might cut into your path. Slow down or change lanes to make room for someone cutting in.

Cars making a sudden U-turn are the most dangerous. They may cut you off entirely, blocking the whole roadway and leaving you with no place to go. Since you can't tell what a driver will do, slow down and get the driver's attention. Sound your horn and continue with caution.

## Parking at the Roadside

Park at a 90° angle to the curb with your rear wheel touching the curb.

## PARKING AT CURBS



## INCREASING CONSPICUITY

In crashes with motorcyclists, drivers often say that they never saw the motorcycle. From ahead or behind, a motorcycle's outline is much smaller than a car's. Also, it's hard to see something you are not looking for, and most drivers are not looking for motorcycles. More likely, they are looking through the skinny, two-wheeled silhouette in search of cars that may pose a problem to them.

Even if a driver does see you coming, you aren't necessarily safe. Smaller vehicles appear farther away and seem to be traveling slower than they actually are. It is common for drivers to pull out in front of motorcyclists, thinking they have plenty of time. Too often, they are wrong.

However, you can do many things to make it easier for others to recognize you and your motorcycle.

### Clothing

Most crashes occur in broad daylight. Wear bright-colored clothing to increase your chances of being seen. Remember, your body is half of the visible surface area of the rider/motorcycle unit.

Bright orange, red, yellow or green jackets or vests are your best bets for being seen. Your helmet can do more than protect you in a crash. Brightly colored helmets can also help others see you.

Any bright color is better than drab or dark colors. Reflective, bright-colored clothing (helmet and jacket or vest) is best.

Reflective material on a vest and on the sides of the helmet will help drivers

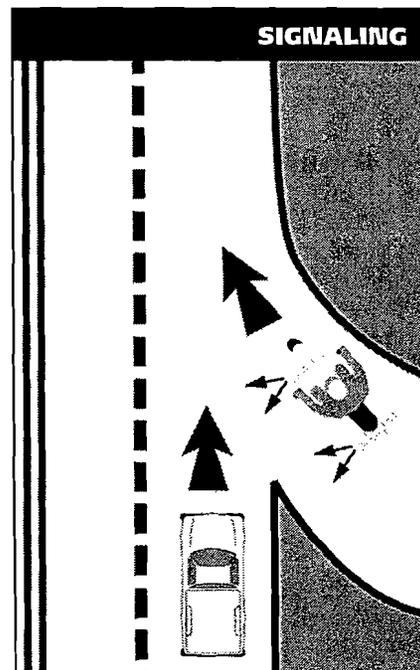
coming from the side to spot you. Reflective material can also be a big help for drivers coming toward you or from behind.

### Headlight

The best way to help others see your motorcycle is to keep the headlight on — **at all times** (new motorcycles sold in the USA since 1978 automatically have the headlights on when running). Studies show that, during the day, a motorcycle with its light on is twice as likely to be noticed. Use low beam at night and in fog.

### Signals

The signals on a motorcycle are similar to those on a car. They tell others what you plan to do.



However, due to a rider's added vulnerability, signals are even more important. Use them anytime you plan to change lanes or turn. Use them even when you think no one else is around. It's the car you don't see that's going to give you the most trouble. Your signal lights also make you easier to spot. That's why it's a good idea to use your turn signals even when what you plan to do is obvious.

When you enter a freeway, drivers approaching from behind are more likely to see your signal blinking and make room for you.

Turning your signal light on before each turn reduces confusion and frustration for the traffic around you. Once you turn, make sure your signal is off or a driver may pull directly into your path, thinking you plan to turn again. Use your signals at every turn so drivers can react accordingly. Don't make them guess what you intend to do.

### Brake Light

Your motorcycle's brake light is usually not as noticeable as the brake lights on a car — particularly when your taillight is on. (It goes on with the headlight.) If the situation will permit, help others notice you by flashing your brake light before you slow down. It is especially important to flash your brake light before:

- **You slow more quickly** than others might expect (turning off a high-speed highway).

- **You slow where** others may not expect it (in the middle of a block or at an alley).

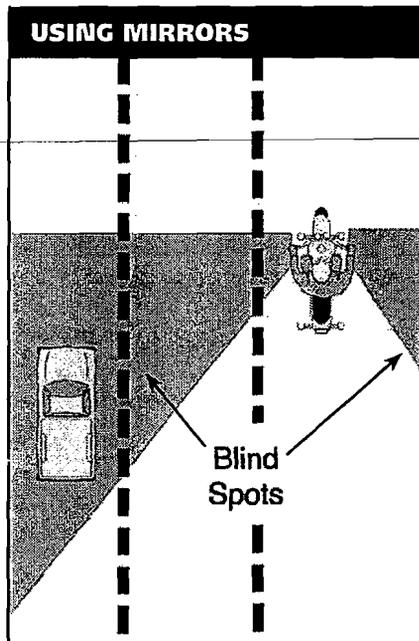
If you are being followed closely, it's a good idea to flash your brake light before you slow. The tailgater may be watching you and not see something ahead that will make you slow down. This will hopefully discourage them from tailgating and warn them of hazards ahead they may not see.

### Using Your Mirrors

While it's most important to keep track of what's happening ahead, you can't afford to ignore situations behind. Traffic conditions change quickly. Knowing what's going on behind is essential for you to make a safe decision about how to handle trouble ahead.

Frequent mirror checks should be part of your normal searching routine. Make a special point of using your mirrors:

- **When you are stopped** at an intersection. Watch cars coming up from behind. If the drivers aren't paying attention, they could be on top of you before they see you.
- **Before you change lanes.** Make sure no one is about to pass you.
- **Before you slow down.** The driver behind may not expect you to slow, or may be unsure about where you will slow. For example, you signal a turn and the driver thinks you plan to turn at a distant intersection, rather than at a nearer driveway.



Some motorcycles have rounded (convex) mirrors. These provide a wider view of the road behind than do flat mirrors. They also make cars seem farther away than they really are. If you are not used to convex mirrors, get familiar with them. *(While you are stopped, pick out a parked car in your mirror. Form a mental image of how far away it is. Then, turn around and look at it to see how close you came.)* Practice with your mirrors until you become a good judge of distance. Even then, allow extra distance before you change lanes.

## Head Checks

Checking your mirrors is not enough. Motorcycles have "blind spots" like cars. Before you change lanes, turn your head, and look to the side for other vehicles.

On a road with several lanes, check the far lane and the one next to you. A driver in the distant lane may head for the same space you plan to take.

Frequent head checks should be your normal scanning routine, also. Only by knowing what is happening **all around** you are you fully prepared to deal with it.

## Horn

Be ready to use your horn to get someone's attention quickly.

It is a good idea to give a quick beep before passing anyone that may move into your lane.

*Here are some situations:*

- **A driver** in the lane next to you is driving too closely to the vehicle ahead and may want to pass.
- **A parked car** has someone in the driver's seat.
- **Someone is in the street**, riding a bicycle or walking.

In an emergency, press the horn button loud and long. Be ready to stop or swerve away from the danger.

Keep in mind that a motorcycle's horn isn't as loud as a car's — therefore, use it, but don't rely on it. Other strategies, like having time and space to maneuver, may be appropriate along with the horn.

### Riding at Night

At night it is harder for you to see and be seen. Picking your headlight or taillight out of the car lights around you is not easy for other drivers. To compensate, you should:

- **Reduce Your Speed** — Ride even slower than you would during the day — particularly on roads you don't know well. This will increase your chances of avoiding a hazard.
- **Increase Distance** — Distances are harder to judge at night than during the day. Your eyes rely upon shadows and light contrasts to determine how far away an object is and how fast it is coming. These contrasts are missing or distorted under artificial lights at night. Open up a three-second following distance or more. And allow more distance to pass and be passed.
- **Use the Car Ahead** — The headlights of the car ahead can give you a better view of the road than even your high beam can. Taillights bouncing up and down can alert you to bumps or rough pavement.
- **Use Your High Beam** — Get all the light you can. Use your high beam whenever you are not following or meeting a car. Be visible: Wear reflective materials when riding at night.
- **Be Flexible About Lane Position.** Change to whatever portion of the lane is best able to help you see, be seen and keep an adequate space cushion.

### TEST YOURSELF

7

#### *Reflective clothing should:*

- A. Be worn at night.
- B. Be worn during the day.
- C. Not be worn.
- D. Be worn day and night

*Answer - page 41*

### CRASH AVOIDANCE

No matter how careful you are, there will be times when you find yourself in a tight spot. Your chances of getting out safely depend on your ability to react quickly and properly. Often, a crash occurs because a rider is not prepared or skilled in crash-avoidance maneuvers.

Know when and how to stop or swerve, two skills critical in avoiding a crash. It is not always desirable or possible to stop quickly to avoid an obstacle. Riders must also be able to swerve around an obstacle. Determining which skill is necessary for the situation is important as well.

*Studies show that most crash-involved riders:*

- **Underbrake** the front tire and overbrake the rear.
- **Did not** separate braking from swerving or did not choose swerving when it was appropriate.

The following information offers some good advice.

### Quick Stops

To stop quickly, apply both brakes at the same time. Don't be shy about using the front brake, but don't "grab" it, either. Squeeze the brake lever firmly and progressively. If the front wheel locks, release the front brake immediately then reapply it firmly. At the same time, press down on the rear brake. If you accidentally lock the rear brake on a good traction surface, you can keep it locked until you have completely stopped; but, even with a locked rear wheel, you can control the motorcycle on a straightaway if it is upright and going in a straight line.

**STOPPING DISTANCE**



**REAR ONLY**



**FRONT ONLY**



**BOTH**

Always use both brakes at the same time to stop. The front brake can provide 70% or more of the potential stopping power.

If you must stop quickly while turning or riding a curve, the best technique is to straighten the bike upright first and then brake. However, it may not always be possible to straighten the motorcycle and then stop. If you must brake while leaning, apply light brakes and reduce the throttle. As you slow, you can reduce your lean angle and apply more brake pressure until the motorcycle is

straight and maximum brake pressure is possible. You should "straighten" the handlebars in the last few feet of stopping. The motorcycle should then be straight up and in balance.

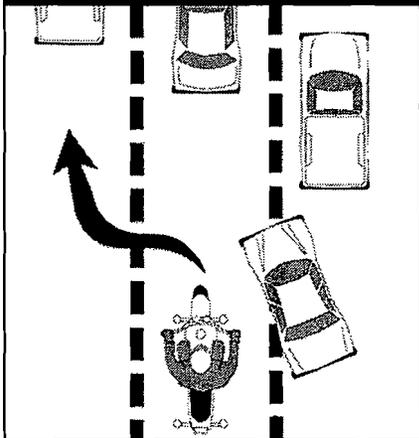
**Swerving or Turning Quickly**

Sometimes you may not have enough room to stop, even if you use both brakes properly. An object might appear suddenly in your path. Or the car ahead might squeal to a stop. The only way to avoid a crash may be to turn quickly, or swerve around it.

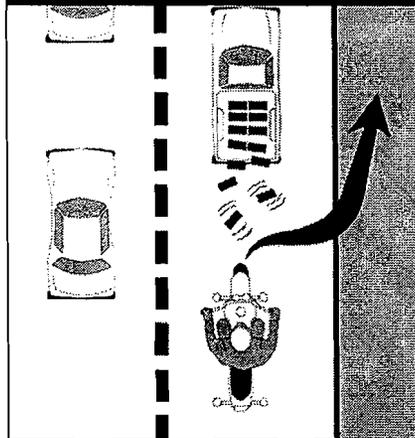
A swerve is any sudden change in direction. It can be two quick turns, or a rapid shift to the side. Apply a small amount of pressure to the handgrip located on the side of your intended direction of escape. This will cause the motorcycle to lean quickly. The sharper the turn(s), the more the motorcycle must lean.

Keep your body upright and allow the motorcycle to lean in the direction of the turn while keeping your knees

**SWERVE, THEN BRAKE**



**BRAKE, THEN SWERVE**



against the tank and your feet solidly on the footrests. Let the motorcycle move underneath you. Make your escape route the target of your vision. Press on the opposite handgrip once you clear the obstacle to return you to your original direction of travel. To swerve to the left, press the left handgrip, then press the right to recover. To swerve to the right, press right, then left.

IF BRAKING IS REQUIRED, SEPARATE IT FROM SWERVING. Brake before or after — never while swerving.

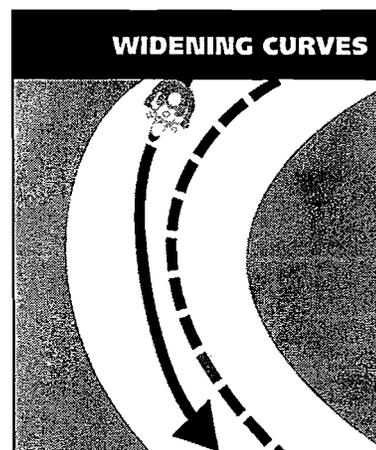
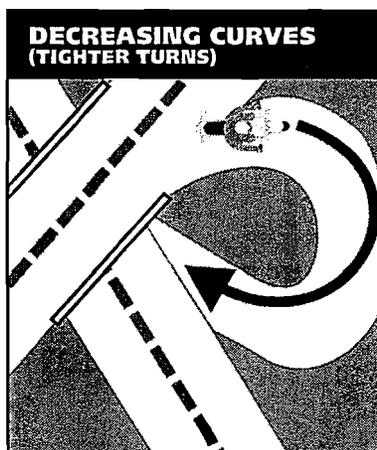
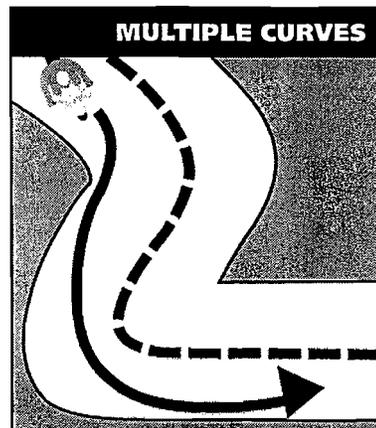
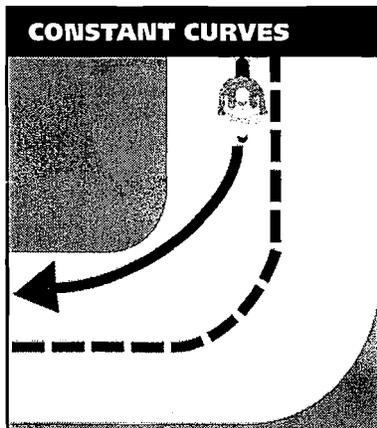
### Cornering

A primary cause of single-vehicle crashes is motorcyclists running wide in a curve or turn and colliding with the roadway or a fixed object.

Every curve is different. Be alert to whether a curve remains constant, gradually widens, gets tighter or involves multiple turns.

Ride within your skill level and posted speed limits.

Your best path may not always follow the curve of the road.



Change lane position depending on traffic, road conditions and curve of the road. If no traffic is present, start at the outside of a curve to increase your line of sight and the effective radius of the turn. As you turn, move toward the inside of the curve, and as you pass the center, move to the outside to exit.

Another alternative is to move to the center of your lane before entering a curve — and stay there until you exit. This permits you to spot approaching traffic as soon as possible. You can also adjust for traffic “crowding” the center line, or debris blocking part of your lane.

### TEST YOURSELF

8

*The best way to stop quickly is to:*

- A. Use the front brake only.
- B. Use the rear brake first.
- C. Throttle down and use the front brake.
- D. Use both brakes at the same time.

*Answer - page 41*

## HANDLING DANGEROUS SURFACES

Your chance of falling or being involved in a crash increases whenever you ride across:

- **Uneven surfaces or obstacles.**
- **Slippery surfaces.**
- **Railroad tracks.**
- **Grooves and gratings.**

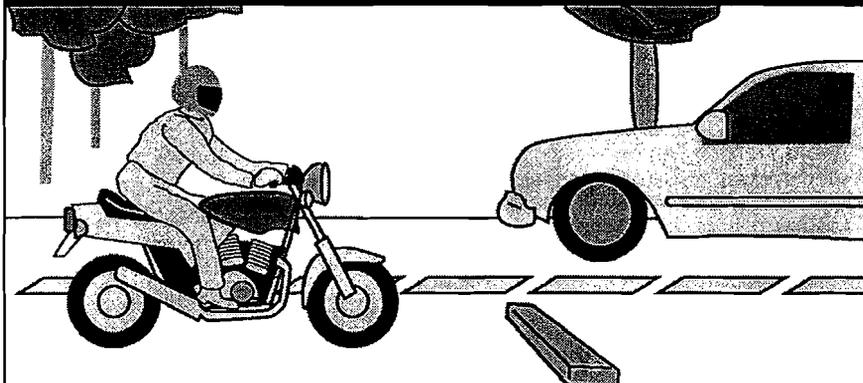
### Uneven Surfaces and Obstacles

Watch for uneven surfaces such as bumps, broken pavement, potholes or small pieces of highway trash.

Try to avoid obstacles by slowing or going around them. If you must go over the obstacle, first determine if it is possible. Approach it at as close to a 90° angle as possible. Look where you want to go to control your path of travel. If you have to ride over the obstacle, you should:

- **Slow down** as much as possible before contact.
- **Make sure** the motorcycle is straight.

### OBSTACLES



- **Rise slightly** off the seat with your weight on the footrests to absorb the shock with your knees and elbows, and avoid being thrown off the motorcycle.
- **Just before contact**, roll on the throttle slightly to lighten the front end.

If you ride over an object on the street, pull off the road and check your tires and rims for damage before riding any farther.

### Slippery Surfaces

Motorcycles handle better when ridden on surfaces that permit good traction. Surfaces that provide poor traction include:

- **Wet pavement**, particularly just after it starts to rain and before surface oil washes to the side of the road.
- **Gravel roads**, or where sand and gravel collect.
- **Mud, leaves, snow, and ice.**
- **Lane markings (painted lines)**, steel plates and manhole covers, especially when wet.

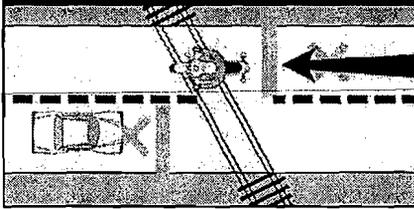
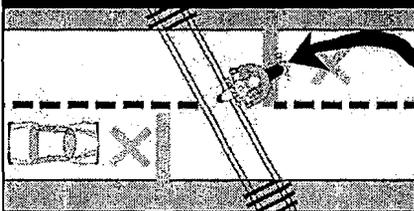
To ride safely on slippery surfaces:

- **Reduce Speed** — Slow down before you get to a slippery surface to lessen your chances of skidding. Your motorcycle needs more distance to stop. And it is particularly important to reduce speed before entering wet curves.
- **Avoid Sudden Moves** — Any sudden change in speed or direction can cause a skid. Be as smooth as possible when you speed up, shift gears, turn or brake.
- **Use Both Brakes** — The front brake is still effective, even on a slippery surface. Squeeze the brake

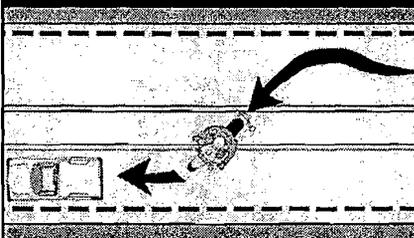
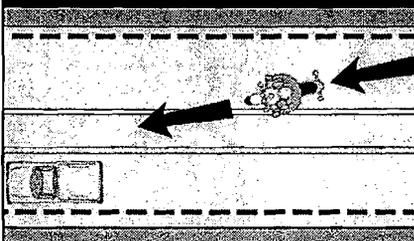
lever gradually to avoid locking the front wheel. Remember, gentle pressure on the rear brake.

- **The center of a lane** can be hazardous when wet. When it starts to rain, ride in the tire tracks left by cars. Often, the left tire track will be the best position, depending on traffic and other road conditions as well.
- **Watch for oil spots** when you put your foot down to stop or park. You may slip and fall.
- **Dirt and gravel** collect along the sides of the road — especially on curves and ramps leading to and from highways. Be aware of what's on the edge of the road, particularly when making sharp turns and getting on or off freeways at high speeds.
- **Rain dries and snow melts faster** on some sections of a road than on others. Patches of ice tend to develop in low or shaded areas and on bridges and overpasses. Wet surfaces or wet leaves are just as slippery. Ride on the least slippery portion of the lane and reduce speed.

Cautious riders steer clear of roads covered with ice or snow. If you can't avoid a slippery surface, keep your motorcycle straight up and proceed as *slowly* as possible. If you encounter a large surface so slippery that you must coast, or travel at a walking pace, consider letting your feet skim along the surface. If the motorcycle starts to fall, you can catch yourself. Be sure to keep off the brakes. If possible, squeeze the clutch and coast. Attempting this maneuver at anything other than the slowest of speeds could prove hazardous.

**CROSTRACKS—RIGHT****CROSTRACKS—WRONG****Railroad Tracks, Trolley Tracks and Pavement Seams**

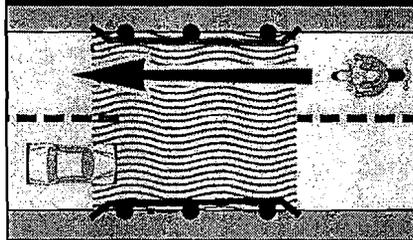
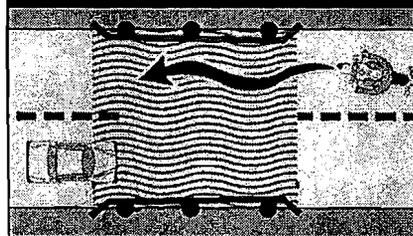
Usually it is safer to ride straight within your lane to cross tracks. Turning to take tracks head-on (at a 90° angle) can be more dangerous — your path may carry you into another lane of traffic.

**PARALLEL TRACKS—RIGHT****PARALLEL TRACKS—WRONG**

For track and road seams that run parallel to your course, move far enough away from tracks, ruts, or pavement seams to cross at an angle of at least 45°. Then, make a deliberate turn. Edging across could catch your tires and throw you off balance.

**Grooves and Gratings**

Riding over rain grooves or bridge gratings may cause a motorcycle to weave. The uneasy, wandering feeling is generally not hazardous. Relax, maintain a steady speed and ride straight across. Crossing at an angle forces riders to zigzag to stay in the lane. The zigzag is far more hazardous than the wandering feeling.

**GRATE CROSSINGS—RIGHT****GRATE CROSSINGS—WRONG****TEST YOURSELF**

9

*When it starts to rain it is usually best to:*

- Ride in the center of the lane.
- Pull off to the side until the rain stops.
- Ride in the tire tracks left by cars.
- Increase your speed.

*Answer - page 41*

## MECHANICAL PROBLEMS

You can find yourself in an emergency the moment something goes wrong with your motorcycle. In dealing with any mechanical problem, take into account the road and traffic conditions you face. Here are some guidelines that can help you handle mechanical problems safely.

### Tire Failure

You will seldom hear a tire go flat. If the motorcycle starts handling differently, it may be a tire failure. This can be dangerous. You must be able to tell from the way the motorcycle reacts. If one of your tires suddenly loses air, react quickly to keep your balance. Pull off and check the tires.

If the front tire goes flat, the steering will feel "heavy." A front-wheel flat is particularly hazardous because it affects your steering. You have to steer well to keep your balance.

If the rear tire goes flat, the back of the motorcycle may jerk or sway from side to side.

*If either tire goes flat while riding:*

- **Hold handgrips** firmly, ease off the throttle, and keep a straight course.
- **If braking is required**, however, gradually apply the brake of the tire that isn't flat, if you are sure which one it is.
- **When the motorcycle slows**, edge to the side of the road, squeeze the clutch and stop.

### Stuck Throttle

Twist the throttle back and forth several times. If the throttle cable is stuck, this may free it. If the throttle stays stuck, immediately operate the engine cut-off switch and pull in the clutch at the same time. This will remove power from the rear wheel, though engine sound may not immediately decline. Once the motorcycle is "under control," pull off and stop.

After you have stopped, check the throttle cable carefully to find the source of the trouble. Make certain the throttle works freely before you start to ride again.

### Wobble

A "wobble" occurs when the front wheel and handlebars suddenly start to shake from side to side at any speed. Most wobbles can be traced to improper loading, unsuitable accessories or incorrect tire pressure. If you are carrying a heavy load, lighten it. If you can't, shift it. Center the weight lower and farther forward on the motorcycle. Make sure tire pressure, spring pre-load, air shocks and dampers are at the settings recommended for that much weight. Make sure windshields and fairings are mounted properly.

Check for poorly adjusted steering; worn steering parts; a front wheel that is bent, misaligned, or out of balance; loose wheel bearings or spokes; and worn swingarm bearings. If none of these is determined to be the cause, have the motorcycle checked out thoroughly by a qualified professional.

Trying to “accelerate out of a wobble” will only make the motorcycle more unstable. Instead:

- **Grip the handlebars firmly**, but don’t fight the wobble.
- **Close the throttle gradually** to slow down. Do not apply the brakes; braking could make the wobble worse.
- **Move your weight** as far forward and down as possible.
- **Pull off the road** as soon as you can to fix the problem.

### TEST YOURSELF 10

*If your motorcycle starts to wobble:*

- A. Accelerate out of the wobble.
- B. Use the brakes gradually.
- C. Grip the handlebars firmly and close the throttle gradually.
- D. Downshift.

Answer - page 41

### Drive Train Problems

The drive train for a motorcycle uses either a chain, belt, or drive shaft to transfer power from the engine to the rear wheel. Routine inspection, adjustment, and maintenance makes failure a rare occurrence. A chain or belt that slips or breaks while you’re riding could lock the rear wheel and cause your motorcycle to skid.

If the chain or belt breaks, you’ll notice an instant loss of power to the rear wheel. Close the throttle and brake to a stop in a safe area.

On models with a drive shaft, loss of oil in the rear differential can cause the rear wheel to lock, and you may not be able to prevent a skid.

### Engine Seizure

When the engine “locks” or “freezes” it is usually low on oil. The engine’s moving parts can’t move smoothly against each other, and the engine overheats. The first sign may be a loss of engine power or a change in the engine’s sound. Squeeze the clutch lever to disengage the engine from the rear wheel. Pull off the road and stop. Check the oil. If needed, oil should be added as soon as possible or the engine will seize. When this happens, the effect is the same as a locked rear wheel. Let the engine cool before restarting.

### ANIMALS

Naturally, you should do everything you safely can to avoid hitting an animal. If you are in traffic, however, remain in your lane. Hitting something small is less dangerous to you than hitting something big — like a car.

Motorcycles seem to attract dogs. If you are chased, downshift and approach the animal slowly. As you approach it, accelerate away and leave the animal behind. Don’t kick at an animal. Keep control of your motorcycle and look to where you want to go.

For larger animals (deer, elk, cattle) brake and prepare to stop — they are unpredictable.

### TEST YOURSELF 11

*If you are chased by a dog:*

- A. Kick it away.
- B. Stop until the animal loses interest.
- C. Swerve around the animal.
- D. Approach the animal slowly, then speed up.

Answer - page 41

## FLYING OBJECTS

From time to time riders are struck by insects, cigarettes thrown from cars or pebbles kicked up by the tires of the vehicle ahead. If you are wearing face protection, it might get smeared or cracked, making it difficult to see. Without face protection, an object could hit you in the eye, face or mouth. Whatever happens, keep your eyes on the road and your hands on the handlebars. When safe, pull off the road and repair the damage.

## GETTING OFF THE ROAD

If you need to leave the road to check the motorcycle (or just to rest for a while), be sure you:

- **Check the roadside** — Make sure the surface of the roadside is firm enough to ride on. If it is soft grass, loose sand or if you're just not sure about it, slow way down before you turn onto it.
- **Signal** — Drivers behind might not expect you to slow down. Give a clear signal that you will be slowing down and changing direction. Check your mirror and make a head check before you take any action.
- **Pull off the road** — Get as far off the road as you can. It can be very hard to spot a motorcycle by the side of the road. You don't want someone else pulling off at the same place you are.
- **Park carefully** — Loose and sloped shoulders can make setting the side or center stand difficult.

## CARRYING PASSENGERS AND CARGO

Only experienced riders should carry passengers or large loads. The extra weight changes the way the motorcycle handles, balances, speeds up and slows down. Before taking a passenger or a heavy load on the street, practice away from traffic.

### Equipment

*To carry passengers safely:*

- **Equip and adjust** your motorcycle to carry passengers.
- **Instruct the passenger** before you start.
- **Adjust your riding** technique for the added weight.

*Equipment should include:*

- **A proper seat** — large enough to hold both of you without crowding. You should not sit any farther forward than you usually do.
- **Footrests** — for the passenger. Firm footing prevents your passenger from falling off and pulling you off, too.
- **Protective equipment** — the same protective gear recommended for operators.

Adjust the suspension to handle the additional weight. You will probably need to add a few pounds of pressure to the tires if you carry a passenger. (Check your owner's manual for appropriate settings.) While your passenger sits on the seat with you, adjust the mirrors and headlight according to the change in the motorcycle's angle.

## Instructing Passengers

Even if your passenger is a motorcycle rider, provide complete instructions before you start. Tell your passenger to:

- **Get on** the motorcycle only after you have started the engine.
- **Sit as far forward** as possible without crowding you.
- **Hold firmly** to your waist, hips, belt, or to the bike's passenger handholds.
- **Keep both feet** on the footrests, even when stopped.
- **Keep legs away** from the muffler(s), chains or moving parts.
- **Stay directly behind you**, leaning as you lean.
- **Avoid unnecessary** talk or motion.

Also, tell your passenger to *tighten his or her hold* when you:

- **Approach** surface problems.
- **Are about to start** from a stop.
- **Warn that you** will make a sudden move.

## Riding With Passengers

Your motorcycle will respond more slowly with a passenger on board. The heavier your passenger, the longer it may take to slow down and speed up — especially on a light motorcycle.

### TEST YOURSELF

12

#### *Passengers should:*

- A. Lean as you lean.
- B. Hold on to the motorcycle seat.
- C. Sit as far back as possible.
- D. Never hold onto you.

Answer - page 41

- **Ride a little slower**, especially when taking curves, corners or bumps.
- **Start slowing earlier** as you approach a stop.

- **Open up a larger cushion** of space ahead and to the sides.
- **Wait for larger gaps** to cross, enter or merge in traffic.

Warn your passenger of special conditions — when you will pull out, stop quickly, turn sharply or ride over a bump. Turn your head slightly to make yourself understood, but keep your eyes on the road ahead.

## Carrying Loads

Most motorcycles are not designed to carry much cargo. Small loads can be carried safely if positioned and fastened properly.

- **Keep the Load Low** — Fasten loads securely, or put them in saddlebags. Piling loads against a sissybar or frame on the back of the seat raises the motorcycle's center of gravity and disturbs its balance.
- **Keep the Load Forward** — Place the load over, or in front of, the rear axle. Tankbags keep loads forward, but use caution when loading hard or sharp objects. Make sure the tankbag does not interfere with handlebars or controls. Mounting loads behind the rear axle can affect how the motorcycle turns and brakes. It can also cause a wobble.
- **Distribute the Load Evenly** — Load saddlebags with about the same weight. An uneven load can cause the motorcycle to drift to one side.

- **Secure the Load** — Fasten the load securely with elastic cords (bungee cords or nets). Elastic cords with more than one attachment point per side are more secure. A tight load won't catch in the wheel or chain, causing it to lock up and skid. Rope tends to stretch and knots come loose, permitting the load to shift or fall.
- **Check the Load** — Stop and check the load every so often to make sure it has not worked loose or moved.
- **Know the Route** — Make sure everyone knows the route. Then, if someone is separated they won't have to hurry to keep from getting lost or taking a wrong turn. Plan frequent stops on long rides.

### Keep Your Distance

Maintain close ranks but at the same time keep a safe distance to allow each rider in the group time and space to react to hazards. A close group takes up less space on the highway, is easier to see and is less likely to be separated. However, it must be done properly.

**Don't Pair Up** — Never operate directly alongside another rider. There is no place to go if you have to avoid a car or something on the road. To talk, wait until you are both stopped.

**Staggered Formation** — This is the best way to keep ranks close yet maintain an adequate space cushion. The leader rides in the left side of the lane, while the second rider stays one second behind in the right side of the lane.

### GROUP RIDING

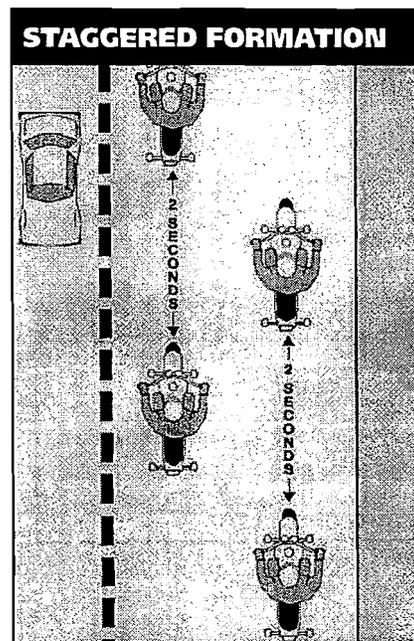
If you ride with others, do it in a way that promotes safety and doesn't interfere with the flow of traffic.

#### Keep the Group Small

Small groups make it easier and safer for car drivers who need to get around them. A small number isn't separated as easily by traffic or red lights. Riders won't always be hurrying to catch up. If your group is larger than four or five riders, divide it up into two or more smaller groups.

#### Keep the Group Together

- **Plan** — The leader should look ahead for changes and signal early so "the word gets back" in plenty of time. Start lane changes early to permit everyone to complete the change.
- **Put Beginners Up Front** — Place inexperienced riders just behind the leader. That way the more experienced riders can watch them from the back.
- **Follow Those Behind** — Let the tailender set the pace. Use your mirrors to keep an eye on the person behind. If a rider falls behind, everyone should slow down a little to stay with the tailender.



A third rider maintains in the left position, two seconds behind the first rider. The fourth rider would keep a two-second distance behind the second rider. This formation keeps the group close and permits each rider a safe distance from others ahead, behind and to the sides.

- **Passing in Formation** — Riders in a staggered formation should pass one at a time.
- **First, the lead rider should pull out** and pass when it is safe. After passing, the leader should return to the left position and continue riding at passing speed to open room for the next rider.
- **After the first rider passes safely,** the second rider should move up to the left position and watch for a safe chance to pass. After passing, this rider should return to the right position and open up room for the next rider.

Some people suggest that the leader should move to the right side after passing a vehicle. This is not a good idea. It encourages the second rider to pass and cut back in before there is a large enough space cushion in front of the passed vehicle. It's simpler and safer to wait until there is enough room ahead of the passed vehicle to allow each rider to move into the same position held before the pass.

**Single-File Formation** — It is best to move into a single-file formation when riding curves, turning, entering or leaving a highway.

### TEST YOURSELF

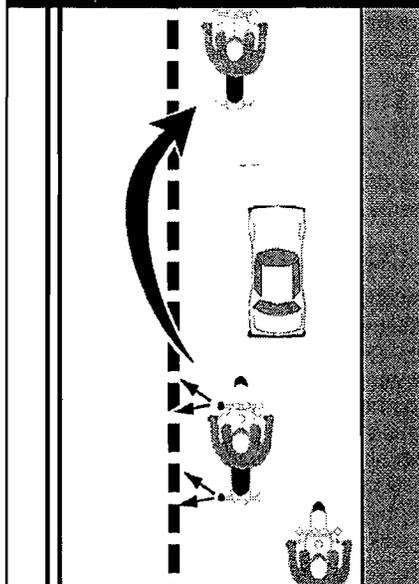
13

*When riding in a group, inexperienced riders should position themselves:*

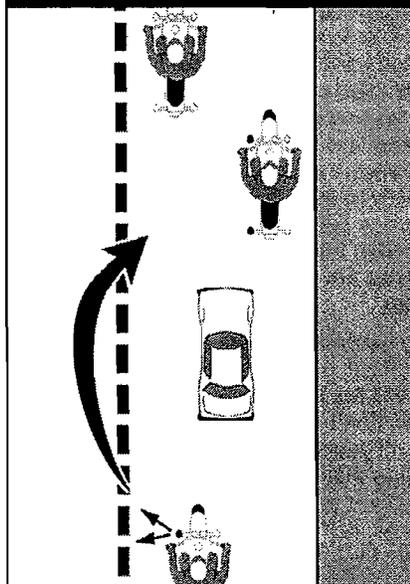
- Just behind the leader.
- In front of the group.
- At the tail end of the group.
- Beside the leader.

Answer - page 41

### GROUP PASSING (STAGE 1)



### GROUP PASSING (STAGE 2)



Riding a motorcycle is a demanding and complex task. Skilled riders pay attention to the riding environment and to operating the motorcycle, identifying potential hazards, making good judgments and executing decisions quickly and skillfully. Your ability to perform and respond to changing road and traffic conditions is influenced by how fit and alert you are. Alcohol and other drugs, more than any other factor, degrade your ability to think clearly and to ride safely. As little as one drink can have a significant effect on your performance.

Let's look at the risks involved in riding after drinking or using drugs. What to do to protect yourself and your fellow riders is also examined.

### WHY THIS INFORMATION IS IMPORTANT

Alcohol is a major contributor to motorcycle crashes, particularly fatal crashes. Studies show that nearly 40% of all riders killed in motorcycle crashes had been drinking. The rest had only a few drinks in their systems — enough to impair riding skills. In the past, drug levels have been harder to distinguish or have not been separated from drinking violations for the traffic records. But riding "under the influence" of either alcohol or drugs poses physical and legal hazards for every rider.

Drinking and drug use is as big a problem among motorcyclists as it is among automobile drivers. Motorcyclists, however, are more likely to be killed or severely injured in a crash. Injuries occur in 90% of motorcycle crashes and 33% of automobile crashes that involve abuse of substances. On a yearly basis, 2,000 motorcyclists are killed and about 50,000 seriously injured in this same type of crash. These statistics are too overwhelming to ignore.

By becoming knowledgeable about the effects of alcohol and other drugs you will see that riding and substance abuse don't mix. Take positive steps to protect yourself and prevent others from injuring themselves.

### ALCOHOL AND OTHER DRUGS IN MOTORCYCLE OPERATION

No one is immune to the effects of alcohol or drugs. Friends may brag about their ability to hold their liquor or perform better on drugs, but alcohol or drugs make them less able to think clearly and perform physical tasks skillfully. Judgment and the decision-making processes needed for vehicle operation are affected long before legal limitations are reached.

Many over-the-counter, prescription and illegal drugs have side effects that increase the risk of riding. It is difficult to accurately measure the involvement of particular drugs in motorcycle crashes. But we do know what effects various drugs have on the processes involved in riding a motorcycle. We also know that the combined effects of alcohol and other drugs are more dangerous than either is alone.

### ALCOHOL IN THE BODY

Alcohol enters the bloodstream quickly. Unlike most foods and beverages, it does not need to be digested. Within minutes after being consumed, it reaches the brain and begins to affect the drinker. The major effect alcohol has is to slow down and impair bodily functions — both mental and physical. Whatever you do, you do less well after consuming alcohol.

## Blood Alcohol Concentration

Blood Alcohol Concentration or BAC is the amount of alcohol in relation to blood in the body. Generally, alcohol can be eliminated in the body at the rate of almost one drink per hour. But a variety of other factors may also influence the level of alcohol retained. The more alcohol in your blood, the greater the degree of impairment.

*Three factors play a major part in determining BAC:*

- **The amount** of alcohol you consume.
- **How fast** you drink.
- **Your body** weight.

Other factors also contribute to the way alcohol affects your system.

Your sex, physical condition and food intake are just a few that may cause your BAC level to be even higher. But the full effects of these are not completely known. **Alcohol may still accumulate in your body even if you are drinking at a rate of one drink per hour.** Abilities and judgment can be affected by that one drink.

A 12-ounce can of beer, a mixed drink with one shot (1.5 ounces) of liquor, and a 5-ounce glass of wine all contain the same amount of alcohol.

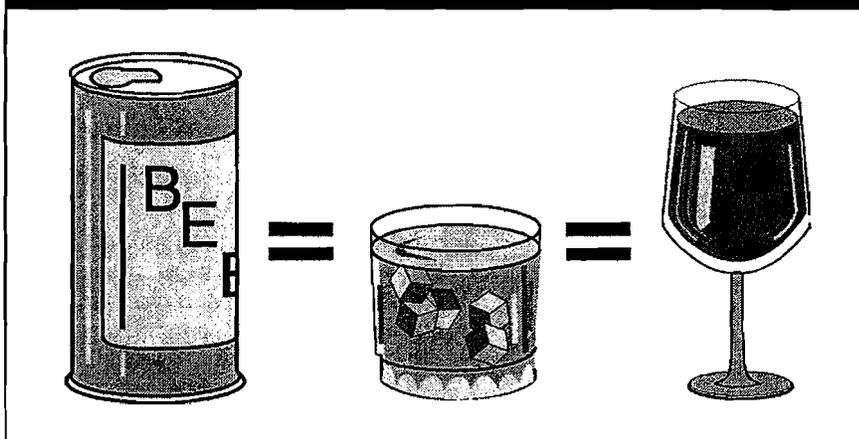
The faster you drink, the more alcohol accumulates in your body. If you drink two drinks in an hour, at the end of that hour, at least one drink will remain in your bloodstream.

Without taking into account any other factors, these examples illustrate why time is a critical factor when a rider decides to drink.

A person drinking:

– Seven drinks over the span of three hours would have at least four ( $7 - 3 = 4$ ) drinks remaining in their system at the end of the three hours. They would need at least another four hours to eliminate the four remaining drinks before they consider riding.

## ALCOHOL CONTENT



– Four drinks over the span of two hours would have at least two ( $4 - 2 = 2$ ) drinks remaining in their system at the end of the two hours. They would need at least another two hours to eliminate the two remaining drinks before they consider riding.

There are times when a larger person may not accumulate as high a concentration of alcohol for each drink consumed. They have more blood and other bodily fluids. But because of individual differences it is better not to take the chance that abilities and judgment have not been affected. Whether or not you are legally intoxicated is not the real issue. Impairment of judgment and skills begins well below the legal limit.

### ALCOHOL AND THE LAW

In all states, an adult with a BAC of 0.08% or above is considered intoxicated. For operators under the age of 21, lower BAC limits (0.00 to 0.02%, depending on state) apply. It doesn't matter how sober you may look or act. The breath or urine test is what usually determines whether you are riding legally or illegally.

Your chances of being stopped for riding under the influence of alcohol are increasing. Law enforcement is being stepped up across the country in response to the senseless deaths and injuries caused by drinking drivers and riders.

### Consequences of Conviction

Years ago, first offenders had a good chance of getting off with a small fine and participation in alcohol-abuse classes. Today the laws of most states impose stiff penalties on drinking operators. And those penalties are mandatory, meaning that judges must impose them.

If you are convicted of riding under the influence of alcohol or drugs, you may receive any of the following penalties:

- **License Suspension** — Mandatory suspension for conviction, arrest or refusal to submit to a breath test.
- **Fines** — Severe fines are another aspect of a conviction, usually levied with a license suspension.
- **Community Service** — Performing tasks such as picking up litter along the highway, washing cars in the motor-vehicle pool or working at an emergency ward.
- **Costs** — Additional lawyer's fees to pay, lost work time spent in court or alcohol-education programs, public transportation costs (while your license is suspended) and the added psychological costs of being tagged a "drunk driver."

### MINIMIZE THE RISKS

Your ability to judge how well you are riding is affected first. Although you may be performing more and more poorly, you think you are doing better and better. The result is that you ride confidently, taking greater and greater risks. Minimize the risks of drinking and riding by taking steps before you drink. Control your drinking or control your riding.

### Make an Intelligent Choice

**Don't Drink** — Once you start, your resistance becomes weaker.

Setting a limit or pacing yourself are poor alternatives at best. Your ability to exercise good judgment is one of the first things affected by alcohol. Even if you have tried to drink in moderation, you may not realize to what extent your skills have suffered from alcohol's fatiguing effects.

**Or Don't Ride** — If you haven't controlled your drinking, you must control your riding.

- **Leave the motorcycle** — so you won't be tempted to ride. Arrange another way to get home.
- **Wait** — If you exceed your limit, wait until your system eliminates the alcohol and its fatiguing effects.

### STEP IN TO PROTECT FRIENDS

People who have had too much to drink are unable to make a responsible decision. It is up to others to step in and keep them from taking too great a risk. No one wants to do this — it's uncomfortable, embarrassing and thankless. You are rarely thanked for your efforts at the time. But the alternatives are often worse.

There are several ways to keep friends from hurting themselves:

- **Arrange a safe ride** — Provide alternative ways for them to get home.
- **Slow the pace of drinking** — Involve them in other activities.
- **Keep them there** — Use any excuse to keep them from getting on their motorcycle. Serve them food and coffee to pass the time. Explain your concerns for their risks of getting arrested or hurt or hurting someone else. Take their key, if you can.
- **Get friends involved** — Use peer pressure from a group of friends to intervene.

It helps to enlist support from others when you decide to step in. The more people on your side, the easier it is to be

firm and the harder it is for the rider to resist. While you may not be thanked at the time, you will never have to say, "If only I had ..."

### FATIGUE

Riding a motorcycle is more tiring than driving a car. On a long trip, you'll tire sooner than you would in a car. Avoid riding when tired. Fatigue can affect your control of the motorcycle.

- **Protect yourself** from the elements — Wind, cold, and rain make you tire quickly. Dress warmly. A windshield is worth its cost if you plan to ride long distances.
- **Limit your distance** — Experienced riders seldom try to ride more than about six hours a day.
- **Take frequent rest breaks** — Stop and get off the motorcycle at least every two hours.
- **Don't drink or use drugs** — Artificial stimulants often result in extreme fatigue or depression when they start to wear off. Riders are unable to concentrate on the task at hand.

### TEST YOURSELF

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*If you wait one hour per drink for the alcohol to be eliminated from your body before riding:*

- You cannot be arrested for drinking and riding.
- Your riding skills will not be affected.
- Side effects from the drinking may still remain.
- You will be okay as long as you ride slowly.

*Answer - page 41*

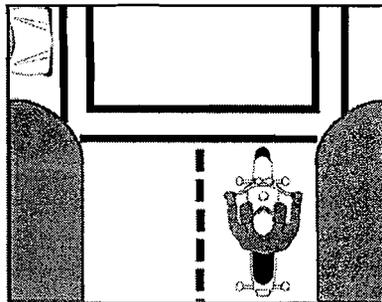
Safe riding requires knowledge and skill. Licensing tests are the best measurement of the skills necessary to operate safely in traffic. Assessing your own skills is not enough. People often overestimate their own abilities. It's even harder for friends and relatives to be totally honest about your skills. Licensing exams are designed to be scored more objectively.

To earn your license, you must pass a knowledge test and an on-cycle skill test. Knowledge test questions are based on information, practices and ideas from this manual. They require that you know and understand road rules and safe riding practices. An on-cycle skill test will either be conducted in an actual traffic environment or in a controlled, off-street area.

### Knowledge Test

(Sample Questions)

1. **It is MOST important to flash your brake light when:**
  - A. Someone is following too closely.
  - B. You will be slowing suddenly.
  - C. There is a stop sign ahead.
  - D. Your signals are not working.
2. **The FRONT brake supplies how much of the potential stopping power?**
  - A. About one-quarter.
  - B. About one-half.
  - C. About three-quarters.
  - D. All of the stopping power.
3. **To swerve correctly:**
  - A. Shift your weight quickly.
  - B. Turn the handlebars quickly.
  - C. Press the handgrip in the direction of the turn.
  - D. Press the handgrip in the opposite direction of the turn.
4. **If a tire goes flat while riding and you must stop, it is usually best to:**
  - A. Relax on the handgrips.
  - B. Shift your weight toward the good tire.
  - C. Brake on the good tire and steer to the side of the road.
  - D. Use both brakes and stop quickly.
5. **The car below is waiting to enter the intersection. It is best to:**
  - A. Make eye contact with the driver.
  - B. Reduce speed and be ready to react.
  - C. Maintain speed and position.
  - D. Maintain speed and move right.



## On-Motorcycle Skill Test

Basic vehicle control and crash-avoidance skills are included in on-motorcycle tests to determine your ability to handle normal and hazardous traffic situations.

*You may be tested for your ability to:*

- **Know your motorcycle** and your riding limits.
- **Accelerate, brake and turn safely.**
- **See, be seen** and communicate with others.
- **Adjust speed** and position to the traffic situation.
- **Stop, turn and swerve quickly.**
- **Make critical decisions** and carry them out.

*Examiners may score on factors related to safety such as:*

- **Selecting** safe speeds to perform maneuvers.
- **Choosing** the correct path and staying within boundaries.
- **Completing** normal and quick stops.
- **Completing** normal and quick turns or swerves.

**To receive a motorcycle license with full privileges, most states require that maneuvers be performed as designed for single-track, two-wheeled motorcycles.**

On-motorcycle skill tests are not designed for sidecars or three-wheeled vehicles. Those vehicles maneuver differently than a two-wheeled motorcycle. Depending on the state, an examiner may follow you on a car test-route. Restrictions (sidecar, three-wheeled vehicle) may be added until completion of a two-wheeled motorcycle test.

Answers to Test Yourself (previous pages)

1-C, 2-D, 3-D, 4-A, 5-B,  
6-C, 7-D, 8-D, 9-C, 10-C,  
11-D, 12-A, 13-A, 14-C

Answers to Knowledge Test (left):

1-B, 2-C, 3-C, 4-C, 5-B

*Diagrams and drawings used in this manual are for reference only and are not to correct scale for size of vehicles and distances.*

## SUPPLEMENTARY INFORMATION FOR THREE-WHEEL VEHICLES

Many states require a separate license endorsement to operate a three-wheel vehicle. This requires the rider to pass both a written and a skills test. The purpose of this supplement is to help prepare riders to complete the written exam for a three-wheel vehicle license or endorsement. This information is provided in addition to that offered in the first part of this Motorcycle Operator Manual (MOM), so when preparing to take the written test, begin by reading the information on 2-wheel motorcycles thoroughly. It provides information on safe operation of your vehicle in traffic. This supplement contains information specific to the safe operation of a three-wheel vehicle, including both three-track vehicles and motorcycles with sidecars.

### KNOW YOUR VEHICLE

Due to the many three-wheel vehicle designs available on the market today, standards suitable for testing may vary. However, vehicles should conform to standards determined by your state. In general, three-wheel vehicles will have the following specifications:

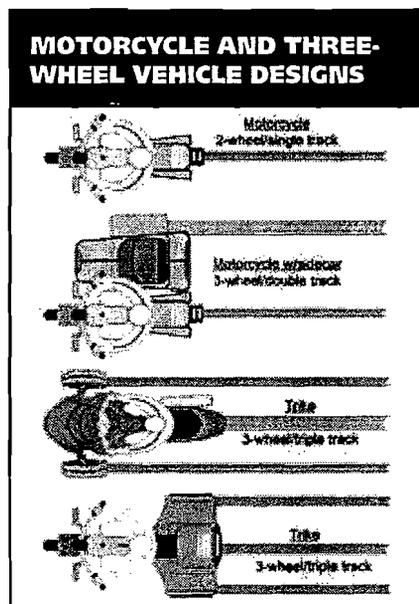
1. **Three-wheels** leaving two or three separate tracks during straight line operation.
2. **Motorcycle-based** conversion or design with:
  - Handlebar steering
  - Motorcycle-type controls arranged with the standard layout. Convenience alterations such as a single brake pedal or lever control, automatic clutch, or automatic transmission are allowed.
- Saddle seating
  - Seating in which the rider/passenger straddles the vehicle.
  - If designed for a passenger, the passenger must be seated behind the operator (or in a separate passenger compartment in the case of a motorcycle with sidecar).
3. **Turning** diameter of the vehicle at its widest point must be less than 40'.
4. **The vehicle** meets all applicable federal on-road vehicle standards.

The following vehicles are not included in this definition, and therefore testing requirements may not be applicable. Always refer to your state Department of Motor Vehicles, Department of Licensing or other appropriate state regulatory agency for exact regulations regarding testing for:

- **Automotive hybrids** or automotive conversions
  - **Vehicles with automotive** controls or seating
  - **Vehicles with front or rear mounted engines** (engines must be mounted mid-frame below the rider to be considered motorcycle-based)
  - **Vehicles with enclosed** or semi-enclosed riding compartments
  - **Motorcycles or scooters** with two close-set wheels in front (contact patches less than 18.1 inches apart) that lean and maneuver like standard, single-track, two-wheel motorcycles
- or
- **Vehicles** with any other departure from the above standards.

## Three-Wheel Vehicle Designs

As shown below in the Figure, vehicle designs vary among manufacturers. Unlike traditional motorcycles, which are considered single-track vehicles, three-wheel vehicles could be either dual or triple track design. Dual track vehicles are motorcycles with sidecars, while triple track vehicles can be configured either with dual front wheels or dual rear wheels.



## The Right Vehicle for You

Make sure your three-wheel vehicle or sidecar-equipped motorcycle is right for you. You should be able to comfortably reach and operate all of the controls, and be able to complete full vehicle turns using the handlebars without excessive upper body movements that could jeopardize stability and control.

## Borrowing and Lending

Borrowers and lenders, beware.

Crashes are fairly common among beginning operators, especially in the first months of riding. Operating an unfamiliar vehicle adds to the problem. If you borrow a three-wheel vehicle or motorcycle with sidecar, get familiar with it in a controlled area. If you lend your three-wheel vehicle or motorcycle with sidecar to friends, make sure they are licensed and know how to ride before you allow them to operate in traffic. Such vehicles operate very differently than 2-wheel motorcycles.

No matter how experienced you may be, be extra careful on any vehicle that is unfamiliar or new to you.

## Get Familiar with Vehicle Controls

Be sure you are familiar with the controls of the three-wheel vehicle or motorcycle with a sidecar before attempting to operate it on any highway, since some vehicle controls may differ from those found on other three-wheel vehicles or motorcycles. This is especially important if you are riding on a borrowed vehicle. Before beginning the ride:

- **Make all the checks** you would on your own vehicle.
- **Familiarize yourself** with all controls, such as the turn signals, horn, headlight switch, fuel control valve, and cut-off switch. Locate and operate these items without having to search for them.
- **Operate all the controls** before you start riding. Know the gearshift pattern and operate the throttle, clutch and brakes a few times. Controls react differently

on different vehicles, and exact locations of controls may vary slightly. Additionally, some motorcycle conversions may be equipped with a single brake pedal or lever control, automatic clutch, or automatic transmission.

- **As you begin to ride**, start out slowly and carefully and be aware of your surroundings. Accelerate gently, take turns a little more slowly, and leave extra room for stopping.

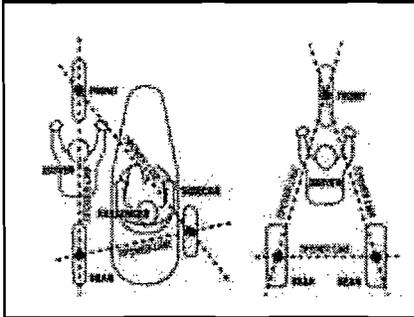
## BASIC VEHICLE CONTROL

### Steering & Tip

Three-wheel vehicles handle differently than motorcycles. With three wheels on the ground, they are naturally more stable than a motorcycle. They also steer differently. Because conventional three-wheel vehicles cannot lean, they cannot countersteer. Instead, the front wheel is pointed in the direction the rider wants the vehicle to go.

Under some conditions during the operation of a three-wheel vehicle, it is possible to have only two wheels in contact with the road surface. This could occur during turning or tight maneuvers whenever enough weight is transferred outside of what are called tip-over lines. The Figure shows the

### TIP-OVER LINES



tip-over lines on three-wheel vehicles. Because of this tendency, careful load and passenger positioning inside the tip-over lines will help maintain maximum stability of the vehicle.

### Body Position

As with any motor vehicle, operator position is important for control and for reducing or preventing fatigue. The operator should be able to reach both handgrips comfortably, since more handlebar movement is necessary than when riding a motorcycle. While it is not necessary for the rider of a three-wheel vehicle to move drastically during operation, shifting weight in the direction of the turn can improve control.

### Braking

On a motorcycle with a sidecar, during braking in a sharp turn, the sidecar wheel may lift off the ground. Motorcycle and sidecar tires have limited traction or grip on the road surface and traction is greater when the vehicle is rolling, not skidding or slipping. During turning, some of the available tire traction is used for cornering, so less is available for stopping. Thus, a skid can occur if you brake too hard.

### Turning

The tendency of the rear, inside wheel to lift during turning is greater with increased vehicle speed and tighter curve radii. During a turn, inertia causes the center of gravity of the vehicle to shift sideways, and outward toward the tip-over line. The reduced weight over the opposite side wheel can cause it to lift slightly.

Because the weight of a three-track vehicle is distributed almost equally between the two front or two rear wheels, these vehicles handle the same in left and right hand turns.

***When turning a three-track vehicle:***

- **Approach a turn** at speed with your head up, and look through the turn.
- **Concentrate** on pointing the front wheel/wheels in the direction you want the vehicle to go.
- **Roll off** the throttle before entering the turn.
- **Apply the brakes** enough to slow the vehicle to a speed at which you can ride safely through the turn, then release the brakes before the turn.
- **Slightly lean** your upper body in the direction you intend to turn.
- **Steer** the front wheel/wheels toward the turn.
- **Roll on** the throttle to pull the vehicle through the turn.

Because the center of gravity of a motorcycle with sidecar is close to the motorcycle itself, the behavior of the vehicle when turning right and when turning left are quite different.

During a right turn, a slight sideways movement of the center of gravity creates a greater tendency for the sidecar wheel to lift. The lift will be greater if the sidecar is empty or lightly loaded.

***When turning right on a motorcycle with sidecar:***

- **Anticipate** the degree of turn required.
- **Reduce speed** before entering the curve by downshifting or braking.

- **Slightly lean** your upper body in the direction you intend to turn.
- **Maintain speed** as you enter the curve.
- **Accelerate** gradually as you exit the curve.

During a left hand turn, the sidecar acts as a stabilizer, so the sidecar wheel stays on the ground. However, if the turn is taken too sharply or at too high a rate of speed, there is a tendency for the motorcycle rear suspension to extend, and this may cause the rear wheel of the motorcycle to lift off the ground.

***When turning left on a motorcycle with sidecar:***

- **Reduce** speed prior to entering the turn
- **Apply** more pressure on the rear brake than on the front

## Hills

When riding uphill on a three-wheel vehicle or motorcycle with a sidecar, some weight will shift to the rear, causing the front of the vehicle to become lighter. This weight shift reduces the traction on the front tire/tires for steering and tire grip.

When riding downhill, gravity increases the amount of braking force required to slow or stop the vehicle. It is important, therefore, to begin slowing earlier for cornering and stopping.

## Lane Position

The track of the dual wheels of a three-wheel vehicle or motorcycle with a sidecar is almost the same width as some automobiles. Unlike a motorcycle, you are limited, therefore, in lane positioning. Keep toward the center of the lane to be sure the track of the dual

wheels does not cross the painted lines into opposing traffic. Riding too far to the right could cause loss of traction if the tire leaves the pavement.

Lane positioning when riding in groups is also an important consideration. You will not be able to use a staggered formation, such as you would when riding motorcycles. Ride single file and always maintain a safe margin, two seconds minimum, between vehicles.

### Parking at the Roadside

Because of the limitations on mobility and vehicle length, it is not practical to park your vehicle at a 90 degree angle with your rear wheel touching the curb, as you would with a motorcycle. Position your vehicle in a parking space so you are parked parallel to the curb and set the parking brake. Some three-wheel vehicles have reverse, so you can more easily maneuver into a parking space designed for an automobile. Parking parallel to the curb will facilitate pulling away from the curb and entering the lanes of traffic.

### Acceleration and Deceleration

A three-wheel vehicle with two drive wheels tends to be much more stable during acceleration and braking than a motorcycle with a sidecar. Attaching a sidecar to your motorcycle adds a non-powered, off-centered mass of weight. So, during acceleration, the sidecar will feel as though it is lagging behind you, causing the vehicle to feel as though it is being steered to the right. During deceleration or braking, the momentum of the sidecar continues to carry it forward, giving the feeling that the sidecar is trying to pass you, making the vehicle feel as though it is being steered left.

- **On acceleration**, compensate for this yaw tendency by steering slightly in the opposite direction from the sidecar.
- **On deceleration**, compensate for this tendency by steering slightly in the direction of the sidecar. You can also pull in the clutch when braking.

### Swerving

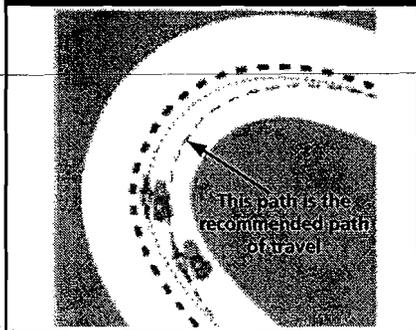
A quick stop may not always be sufficient to avoid an obstacle in your path, even if you properly apply both brakes. Sometimes the only way to avoid a collision is to swerve. A swerve is any sudden change of direction. It can be two quick turns or a rapid shift to the side when maneuvering the vehicle. Often, there is not much time to adjust your body position.

A three-wheel vehicle or motorcycle with sidecar is not as maneuverable as a motorcycle, so plan well ahead to avoid the need for any sudden turns or swerving. If braking is required, brake either before or after the swerve, never while swerving.

### Cornering & Curves

The cornering characteristics of a three-wheel vehicle or motorcycle with a sidecar differ from those of a motorcycle. Even with three wheels on the ground, a sidecar can tip over if it is being turned too sharply or is going too fast for a corner. Therefore, it is best to always slow before entering a corner.

The best path to follow in the curve may not be the one that follows the curve of the road. Following the center of the lane may actually increase the tip over forces. Check opposing traffic carefully, and if safe, enter the curve toward the outside of your lane, as shown in the Figure. This increases your line of sight through the curve and

**PATH THROUGH A CURVE**

reduces the effective radius of the curve. As you turn, move toward the inside of the curve, and as you pass the center, move to the outside to exit, always remembering to stay in your lane.

**CARRYING PASSENGERS AND CARGO**

Three-wheel vehicles are designed to carry passengers and cargo, but always be sure not to exceed the tire or vehicle loading capacity. The extra weight could change the handling characteristics of the vehicle slightly, so you must give some thought to where the loads are positioned.

Many three-track vehicles will have built-in storage compartments for cargo, either in front of, or behind the rider. On these vehicles, center the load and keep it low in the storage areas so it is positioned within the tip-over lines and balanced side-to-side. If a passenger is being carried, the passenger will sit directly behind the rider.

On a motorcycle with a sidecar, the best place for a passenger is in the sidecar. Never put a single passenger on the saddle; the added weight on the tip-over-line will increase the instability of the vehicle. While a second passenger

can be carried on the seat behind the rider, the heavier passenger should always be in the sidecar.

The passenger sitting behind the rider should sit upright at all times. It is not necessary for the passenger to lean into curves with the rider.

When carrying loads in a sidecar, secure the load firmly in place, since if the load shifts, handling will be affected. Loads should be distributed toward the rear of the sidecar to reduce tipping of the nose of the sidecar in the event of a sudden left turn.

When loaded, you may find performance is reduced and that stopping distances are longer, so allow a little extra distance. The addition of a sidecar passenger will greatly improve stability, and right hand turns can be made at a slightly higher speed. Turning left, however, will require more turning force.

## **MOTORCYCLES MAKE SENSE – SO DOES PROFESSIONAL TRAINING**

Motorcycles are inexpensive to operate, fun to ride and easy to park. Unfortunately, many riders never learn critical skills needed to ride safely.

Professional training for beginning and experienced riders prepares them for real-world traffic situations. Motorcycle Safety Foundation *RiderCourses*<sup>SM</sup> teach and improve such skills as:

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- Traffic strategies
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**For the basic or experienced *RiderCourse* nearest you,  
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The Motorcycle Safety Foundation's (MSF) purpose is to improve the safety of motorcyclists on the nation's streets and highways. In an attempt to reduce motorcycle crashes and injuries, the Foundation has programs in rider education, licensing improvement, public information and statistics. These programs are designed for both motorcyclists and motorists. A national not-for-profit organization, the MSF is sponsored by BMW, BRP, Ducati, Harley-Davidson, Honda, Kawasaki, KTM, Piaggio/Vespa, Suzuki, Triumph, Victory and Yamaha.

The information contained in this publication is offered for the benefit of those who have an interest in riding motorcycles. The information has been compiled from publications, interviews and observations of individuals and organizations familiar with the use of motorcycles, accessories, and training. Because there are many differences in product design, riding styles, federal, state and local laws, there may be organizations and individuals who hold differing opinions. Consult your local regulatory agencies for information concerning the operation of motorcycles in your area. Although the MSF will continue to research, field test and publish responsible viewpoints on the subject, it disclaims any liability for the views expressed herein.



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# Motorcycle License in Indiana

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You might be jumping out of your skin with excitement at the thought of riding that new motorcycle of yours, but you'll need to have a motorcycle license or endorsement before you can take it on any Indiana public street or highway.

The process of obtaining your license or endorsement depends on whether you already have an operator's license (meaning driver, commercial driver, or public passenger/chauffeur) of some sort.

## If You Have a License

The first thing you'll need to do is obtain a motorcycle operator's learner permit. The best way to do this is to stop by any license agency, and pick up a copy of the Motorcycle Operator Manual or download one [here](#).

You will need to pass a written test based on motorcycle laws and safety before you may get your permit.

The information you'll need to pass the test is contained in the manual. When you feel confident enough with your motorcycle knowledge, head back to the agency to take the test. It is free to take, and no appointment is necessary.

If you pass the test and pay the \$9 fee for the learner permit, you will receive a permit that is valid for one year. It allows you to ride your cycle on public streets and highways. However, you can't ride with passengers, and you can only ride during daylight. Also, you'll need to wear a helmet and eye protection.

After you've had your permit for at least 30 days, you may apply for a motorcycle endorsement, which will simply be added to your existing license. You may achieve this by either passing a motorcycle skills (road) test, or by showing that you've successfully completed an approved motorcycle safety course. The following section will give details on how to do both.

## Motorcycle Training and Testing

All motorcycle training and testing in the state goes through [ABATE of Indiana \(ABATE\)](#). For a listing of training schedules, testing locations and times, and other information, just visit their site, or call them at (800) 232-2283.

If you decide just to opt for the on-cycle skills test, there is a \$10 fee. Make sure to bring along your operator license.

If you decide to take the safety course instead, you may register online or call [ABATE](#). The course costs \$75. If you pass the course, you will be given a waiver good for one year, which will allow you skip the skills testing.

Once you've either successfully completed the skills test or the safety course, take your completion card and permit to any license agency, and you'll receive a new operator's license that will have a motorcycle endorsement.

## If You Don't Have a License

If you fall under this category and are 15 or older, you can still get a motorcycle license.

The first thing you should do is enroll in the safety course offered through [ABATE](#). The cost of the course is \$75. Then, bring your enrollment card to any [license agency](#) for a learner's permit.

You'll also need to bring along [acceptable proof of identity](#). Also, if you're younger than 18, a parent or legal guardian will need to sign the [financial responsibility](#) section of the permit application form.

If everything checks out and you pay the \$9 fee, you will get a motorcycle permit, which is valid for one year. Even with this permit, though, you will not be allowed to drive on public streets or highways. You must first pass the safety course and obtain a safety completion card. Then the permit is considered "validated" and you may drive on the roads.

You should note that with a permit you won't be allowed to have passengers, and you can only drive during daylight.

Also, you'll need to wear a helmet and eye protection. And, you'll need to be under the supervision of

Watch: One moped wheelie video to rule them all - Shanghaiist

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## Alabama - researched by SherryB

I got this reply from an email query to the Alabama Department of Public Safety (9/20/99):

"I hope the following information will be helpful. A motorcycle license is required to drive a moped. Contact the probate office to register and get plates for the moped. Interstate highways are the only prohibited area for operation. Insurance is required effective June 2000. A motorcycle helmet is required. If you have proper lighting, night driving is permitted."

Additional info: Alabama requires a title, registration, and a license plate. Registering a moped from a non-title state is a real pain, it has taken us 2 trips to the County Courthouse already. Our particular county (Lauderdale) is requiring a signed, dated, and notarized document on letterhead from the previous owner's county courthouse stating that mopeds are a non-titled object in that state. The previous owner is not willing to wait in line at their courthouse for such a document, so we are hoping that a faxed non-notarized document on letterhead will work.

Motorcycle licenses can be issued at age 15 in Alabama.

SherryB  
<http://home.hiwaay.net/~bayless/>

## More on Alabama - sent by D. Eugene Davis

In State of Alabama, mopeds are classed as motorcycles, thus motorcycle license is needed to operate one. Standard operator's license is NOT sufficient.

Titles NOT required for any vehicle pre-1975. Otherwise, switching of title is 18 dollars. Also, a sales tax of 3.75% is levied unless one can offer proof of tax payment on bill of sale. Motorcycle plates are about 11 dollars.

Insurance is needed effective 6/2000. I estimate 10 to 20 dollars per month.

Web [moped2.org](http://moped2.org)

Translate to: [German](#) | [French](#)  
[Spanish](#) | [Portugese](#) | [Italian](#)

## **Arizona - researched by PryBen@aol.com**

After almost a month of hassle with the state of arizona concerning licencing and registration of mopeds - here is what I found -

Mopeds are any bike with a helper motor of 50cc or less, 1.5 braking hp, and no speed faster than 25 mph. To lisenca a moped you need only a bill of sale. A lot of mopeds were incorectly titled as motorcycles, so if you need to change the "title" over, have a class 1 inspection done to verify it is a moped, then take the paperwork to the DMV to have the title destroyed, and a registration issued.

Registration is \$5.00 + \$4.50 for tax. Registration for all mopeds expires on Oct 31 of every year. Insurance is required. To drive a moped you need only a valid drivers lisenca (dunno about permits) and moped restriction do exist in some cases (if you are unable to drive a car - not for DUI).

Moped Dealers can NOT get dealer plates for their mopeds.

No titles shall be issued to mopeds.

Any new moped bought out of state shall have a 5% tax added to the registration fee (taken from the cost of the moped)

I think that about covers it.

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## **Arizona - reported by Ryan Price**

The laws are you must have a valid AZ drivers lisenca. Second you need to register the moped, but you are not allowed to title them. Also some insurance is required as well. For driving them, they are treated as a combination bicycle/scooter. I was told to "use your best judgement." Hope this helps.

Ryan Price  
Tucson Az.

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## **Arizona - updated on 21 Oct 2005 by Owen Bensen**

I just went to transfer the title of my 2003 Yamaha Vino Classic 49cc scooter, and the Arizona Motor Vehicle office here would not register or title it. They checked with someone in Tempe, and now apparently any scooter under 50cc is treated as a moped, where previously it had to have working pedals and be 1.5 bhp or less. No plates or proof of insurance are needed. We'll see what happens if I am ever stopped by a police officer.....

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## **Arkansas- submitted by vlad the imp@webtv.net**

From state code 27-20, 101 through 107: Required: Automatic transmission, 50 cc or less, headlight, tail light, reflector, brakes, horn,tags, registration, helmet under 21yo. Rider must use goggles or have a transparent windshield in place. Motorcycle lisenca required.

## **More Arkansas info**

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## **California Moped Laws**

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## **Colorado - submitted by MrBill812@aol.com**

The state law in Colorado is that 1. you must have a valid drivers license to ride a moped, 2. the moped doesn't have to have a plate on it if it is 50cc or under or doesn't exceed 30mph. You also have to have pedals on the moped, for it to be considered a motorized bike... I can't remember where I found the info, but I think it was in the drivers license handbook or maybe an internet site... I think you'll find the police aren't well informed of moped laws. I live in Fort Collins and ride almost daily using bike lanes, and other then a strange look from the police once in a while I have not been hassled.

## **More Colorado info**

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## **Connecticut - submitted by John Nimlo**

Dear 50 cc fans:

As far as i can tell a moped is considered a bicycle with a helper motor in the nutmeg state provided:

- a. goes no faster than 30 mph
- b. displaces less than 50 cc
- c. has an automatic transmission
- d. less than 2 brake horse power
- e. and after 7/1/97 the need for pedals is deleted from the requirements.

However the operator of this vehicle must possess a valid motor vehicle operators license or a motorcycle license. It would seem then that many 50 cc scooters would qualify under this amended rule.

There is no need for a tag or insurance or emissions testing and i would assume no personal property tax.

Being a bicycle of course they are prohibited on limited access highways and turnpikes.

Respectfully submitted,

John

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## **Delaware Moped Laws**

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## **Florida - submitted by Steven W. Buehler**

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## **Georgia Moped Laws**

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## **Hawaii Moped Laws**

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## **Idaho Moped Laws**

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## Illinois

I have called the DMV in Illinois and talked to the Secretary of State office too and I know the following facts about mopeds in IL:

- 1) You must have a valid drivers licence
  - a) for a car if under 49cc's
  - b) for a small motorcycle if between 49 and 150 cc's
  - c) for a big motorcycle if above 150cc's
- 2) You must have a title for the moped
- 3) You must register the moped with the state
- 4) You must have plates on the moped
- 5) You must have insurance for the moped.

Perry

P.S. Here's some more info (found in Illinois driver's guide)

Motorized pedalcycles, often called mopeds, are low-speed, two-wheeled vehicles. They can be pedaled like a bicycle or driven like a motorcycle. Mopeds are intended for limited use on public roadways. Here are some of the responsibilities of moped drivers:

Moped drivers must have a valid driver's license.

- LAWS: Moped drivers must obey all signs, signals and traffic laws. They also must obey most bicycle laws.
- SPEED: A moped may not go over 30 miles per hour.
- PASSENGERS: Moped drivers may carry a passenger only when the moped is made for two people. Equipment must include a passenger seat and a passenger footrest.
- EQUIPMENT: If a moped is driven at night, it must have a headlight visible from at least 500 ft. A moped must also have a red reflector on the rear visible from at least 100 to 600 ft.

---

## Indiana - submitted by Larry and Ian

The rules are as follows:

- you must be 15 years or older
- You have to have head gear
- You have to have proof of an enrollment in a motorcycle class
- Proof of vision test
- Insurance
- 50cc or smaller
- you don't need a license
- stay off the freeway (Duh)
- keep to the far right of the road
- I have officers names and badge numbers and phone numbers I keep them in my wallet if you need them - it pays to do your homework and i love my Zuma.

---

## Indiana - update by Chris Peters

Some police officers around the Lafayette/Indianapolis area are pulling kids over for no eye gear. (Ex. Goggles, Face mask, exc.) There is an \$80 fine for no eyewear. Even if you have a visor for example, but you are riding with it up. They give no mercy. 80 bucks! Just some warning.

## More Indiana info

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### **Iowa - submitted by Ace**

"Mopeds" are any single-passenger two-wheeled vehicle with a displacement of 50cc or less. In fact, you almost never see actual pedal mopeds here, it's all scooters and bikes like my '79 QT50. You can drive one at 14 (if you take a moped safety course) or with a normal drivers' license.

Mopeds must display a dippy neon flag. As far as I know, no helmet is required. Enforcement is pretty lax -- I ride without a flag, with a passenger, no helmet, etc. quite often and I have never had police trouble yet.

Oh yes -- top speed 25, but I've never seen it enforced as long as posted speed limits are obeyed.

## More Iowa info

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### **Kansas- submitted by vlad the imp@webtv.net**

Code KSA8-1439A. 3.5 BHP, 130cc, Automatic trans., 30 mph, registration, drivers licence, headlight, tail light, reflector, brakes, helmet if under 18yo, minimum age 14yo. No mention of reciprocity.

## More Kansas info

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## Kentucky Moped Laws

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## Louisiana Moped Laws

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## Maine Moped Laws

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### **Maryland - submitted by jlwoods@erols.com**

Section 11-134.1. Moped. "Moped" means a bicycle that: (1) Is designed to be operated by human power with the assistance of a motor; (2) Is equipped with pedals that mechanically drive the rear wheel or wheels; (3) Has two or three wheels, of which one is more than 14 inches in diameter; (4) Has a motor with a rating of 1.5 brake horsepower or less and, if the motor is an internal combustion engine, a capacity of 50 cubic centimeters poston displacement of less. (1978, ch. 328; 1979, ch. 65). 16-101 (b) "Motor-assisted bicycles" require a driver's license or moped operator's permit regardless of residency status. and 16-104.2. "Moped operator's permit" precludes anyone under 16 or whose license or privilege to drive in any State is revoked, suspended, refused, or cancelled.

## More Maryland info

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## Massachusetts moped laws

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### **Michigan - investigated by Andrei Zaitsev**

I spoke to  
Motorsport Co 1834 W Court St Flint, MI (810) 239-7191  
and this is what I found out:

If you are 15 year old, you need to get special moped permit.  
Once 16 you can ride with regular drivers' license.  
Helmet is required till you are 19.  
Moped has to be registered with secretary of state - get decal (sticker) - \$15 for 3 years.  
No insurance, no license plates are needed.

### More Michigan info

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### **Minnesota - submitted by vlad the imp@webtv.net**

(DMV pamphlet) 50cc, 2 BHP, 30 mph, Valid Drivers licence, 15yo minimum, registration, plate, no operatin on interstates, headlight, stop light/tail light, headlight always lit, eye protection required (not specified), horn, r.v. mirror, helmet if under 18yo which must be ANSI approved.

### More Minnesota info

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## **Mississippi**

Titling a scooter or moped with the Mississippi Motor Vehicle Licensing (MVL) Bureau is optional, but you must register for a tag (license plate) if you plan to drive such a vehicle on the roadways. Most people go ahead and title the scooter or moped at the same time; you'll need a title to sell the vehicle.

The process is much the same as registering a motorcycle. You have seven days from purchase to register your bike with your local tax collector's office. You'll need to provide the manufacturer's certificate of origin if the vehicle is new or the original title signed over to you if you bought a used vehicle.

You'll also need to provide a bill of sale and a current odometer reading.

The first-time registration fee is \$10, and the state also collects ad valorem, privilege, and sales tax based on the value and type of vehicle.

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### **Missouri - as recalled by Andrei Zaitsev**

Any vehicle under 50cc and going  $\leq 30$ mph is considered a moped. Pedals are not required, so small scooters by Yamaha and Honda can qualify too.

Moped is permitted on all roads, except interstate highways. It is ok to ride on shoulder, but not on the sidewalk.

Helmet is recommended but not required. Special license, plates, insurance are not required.

Minimum age to ride moped is 16. There might be a way to start at 15 1/2, because this is the min age when you can get a motorcycle learner's permit. Check with local License Bureau about that.

---

## **Missouri - as summarized by Pat Dore**

Greetings all:

After an email to the Missouri Highway Patrol, I recieved a copy of the statutes involving "motorized bicycles:

1. Must have drivers license
  2. No use on interstate highways
  3. Not more than 50ccs
  4. Less than 30mph on level grade
  5. Ride as far to right as possible
  6. Less than 3 brake horsepower
- Nothing else except standard lighting, brakes, and auto transmission

Hope this sets some minds at rest.

All the best, Pat Dore

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## **Missouri Moped laws**

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## **Montana - submitted by John Snyder**

After making some phone calls to different government offices I discovered -- and am still slightly confused by it -- in Montana, USA a bicycle was defined in 1979 as having;

2-3 wheels touching the ground. Functioning pedals that allow the operator to propel the vehicle without assistance. If equipped with an auxilary power source the motor will not exceed 2 BHP and/or [ed. ?] 50cc. The auxilary motor will not permit the vehicle to exceed 30 mph.

If these limits are exceeded the vehicle becomes subject to all regulations pertaining to motorcycles -- i.e. DMV title, headlights, tail lights, turn signals, motorcycle operator endorsement to an individual's Driver's License, vehicle license plate and vehicle registration within the county of residence. There are no separate legal provisions for MOPEDES, electric bicycles or AHPV 4-wheeled vehicles such as a quadracycle with any size/type auxilary motor or not.

Other than my confusion about motor size and power (was it "or", "and" or "and/or" ?), the clerk at the local DMV mentioned that if a power-assisted bicycle was able to exceeding 30 mph it could not be operated on public highways. Under 30 mph it's still a bicycle which can be operated on the highway.

## **More Montana info**

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## **Nebraska - submitted by vlad the imp@webtv.net**

Code 60.6. 30 mph, 25 mph nights, 14yo, permit required, pedals, automatic trans., 50 cc, 2 BHP, Class O licence, light, tail light, helmet with a visor, no riders, both hands on handlebars, single file on state highways, banned on interstates, reciprocity with other states for 30 days.

## **More Nebraska info**

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## **Nevada Moped Laws**

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## New Hampshire Moped Laws

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### **New Jersey - submitted by John Agner**

You must be 15, wear a helmet, not exceed 25 mph operating speed, may operate on bike routes abutting streets, have a moped, car or motorcycle license, have insurance and plates, and to get plates, you must produce title to register (which is how one gets plates). Also, you can't carry a passenger, my pet peeve as my Vespa Grande was designed for two.

### **More NJ info - by Steve Hassa**

NJ Moped laws are you be at least 15 years old to get a moped permit. After you pass a written test. you can drive during daylight hours only. After you pass a road test you get a permanent moped license. Any one that has an automobile license can drive a moped with no special license. You must wear a helmet, have a registration, insurance and license plate. Insurance is \$78.00 a year at this time. Pedals required, 25mph maximum speed and 1.5 brake horsepower. This law was effective in June of 1983 and cut the number of moped sales in in NJ by approximate 70%.

## Complete New Jersey moped laws

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### **New Mexico - submitted by Alex Kramer**

nmsa1978 66-3-1101. Mopeds; standards; operator requirements; application of Motor Vehicle Code.

- A. Mopeds shall comply with those motor vehicle safety standards deemed necessary and prescribed by the director of motor vehicles.
- B. Operators of mopeds shall have in their possession while operating a moped a valid driver's license of any class or permit, issued to them.
- C. Except as provided in Subsections A and B of this section, none of the provisions of the Motor Vehicle Code relating to motor vehicles or motorcycles as defined in that code shall apply to a moped.
- D. As used in this section, "moped" means a two-wheeled or three-wheeled vehicle with an automatic transmission and a motor having a piston displacement of less than fifty cubic centimeters, which is capable of propelling the vehicle at a maximum speed of not more than thirty miles per hour on level ground at sea level.

History: 1953 Comp., § 64-3-1101, enacted by Laws 1978, ch. 35, § 213; 1981, ch. 361, § 17.

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## New York Moped Laws

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### **North Carolina - submitted by Jim**

This is direct quote from the North Carolina Department of Transportation website:

"You must be age 16 or older to operate a moped on North Carolina highways or public vehicular areas. A driver's license is not required, and the moped does not have to be registered, inspected or covered by liability insurance. A motorcycle safety helmet is required by law when operating a moped on North Carolina highways. A moped cannot have a motor of more than 50 cubic centimeters, an external shifting device or have the capability of exceeding 30 miles per hour on a level surface."

### **More North Carolina info**

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## **North Dakota Moped Laws**

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### **Ohio - collected by Greg and Dan Kauffman**

I am holding in my hand a brochure from the Ohio Department of Public safety. It states the requirements for operating a moped.

1. To become licensed to operate a moped, 14 and 15 year olds have to pass the usual vision and written tests, as well as a road test. This rule will also apply to persons not currently holding a valid operators license, regardless of age.
2. Probationary licenses will be required for 14 and 15 year old operators.
3. The probationary license can be revoked until the age of 16 if the operator violates state laws regulating moped operation or state or local traffic laws, **EVEN ONE TIME**.
4. Operators will be required to obtain and display a rear license plate.

ADDITIONALLY, you must-

- wear a protective helmet with a chin strap properly fastened if you are under 18
- drive a moped equipped with a rear view mirror
- operate the moped within three feet of the right edge of the roadway
- never carry another person on the moped

I was also told I needed insurance, So I got a liability only policy, cost about 30 bucks.

---

### **Oklahoma - submitted by vlad the imp@webtv.net**

Registration, title, tags. Banned on interstates and limited access roads. Pedals, automatic trans., 50cc, 2BHP, 30 mph, insurance requird. No inspection, no licence. Law has been amended to remove peds from legal motor vehicle category for some issues.

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### **Oregon - submitted by catrinus.wallet@bangate1.TEK.COM**

Where I live, in Oregon, the law is that you must have a regular drivers' license to drive a moped... Also, the moped **MUST** have license plates and liability insurance.

Also, they are considered motor vehicles, so mopeds may NOT use any of the wonderful bike paths that are being built in the Portland area. I truly believe that this is the single most important reason why mopeds have never caught on in most places in the USA – it's just too nerve wracking to compete with autos on most city streets, especially when you're doing the speed limit (25 or 30 mph) round town and all of the yahoos insist on going 45. Also, the cars seem to get angry because I'm not riding in the bike lane! I wonder if there is an advocacy group around that could start to work on the issue of letting mopeds to use street bike lanes.

By the way, in Oregon the dept of Motor Vehicles puts out a book called "Motorcycle and Moped Handbook" which details all of the requirements for mopeds. Perhaps other states do as well.

To reply to me directly, please send e-mail to [Catrinus.Wallet@juno.com](mailto:Catrinus.Wallet@juno.com)

---

## Oregon - added by [Stelapig@aol.com](mailto:Stelapig@aol.com)

In Oregon, you do not need a drivers license to drive a moped, you can get a moped license, which i have, or you can drive a moped with just a drivers license, or a motorcycle license... To drive with a moped license, or for the bike to be a moped in Oregon, it must be under 50 cc's.

### More Oregon info

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## Pennsylvania - as researched by [Andrei Zaitsev](#)

I spoke to the guy from  
Bob Sauers' Cycle Shop in PA

Very helpful salesman!  
He said they presently sell Tomos, but in the past they also carried Puch,  
Jawa and Garelli.

As far as Pennsylvania regulations, here they are:  
Min age: 16 .  
Drivers license required (no special motorcycle license).  
Title required.  
Insurance required - about \$60/year.  
You can ride without helmet.  
No inspection needed.  
Moped must have pedals.

P.S. Here's PA [moped fact sheet](#) - thanks to [David Nickey](#)

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## Puerto Rico - translated and submitted by [Luis Anaya](#)

Hi:

The following is a translation of the drivers manual for the commonwealth of Puerto Rico. the original URL is at: [http://www.dtop.gov.pr/DISCO/Guia/Bici\\_Moto.htm#MOTOCICLETAS](http://www.dtop.gov.pr/DISCO/Guia/Bici_Moto.htm#MOTOCICLETAS)

Editorial comments are in ( )'s

Motorcycles, Tricycles and Mopeds

Any person who drives a motorcycle or moped must have a valid drivers license (16 years for a drivers license). and must obey all transit laws the same way as an automobile operator. Any person that is riding a motorcycle (and moped, implied), must be seated on a regular seat and can not carry more than one person unless the motorcycle is designed to do so (yes, you can carry two people on your moped if it is designed to do so). All occupants must use a helmet and for additional protection and to prevent an accident, the motorcycle driver must use goggles or shield or have a windshield installed.

Motorcycles: Highway Permit

All motorcycles with an engine larger than 360 cc may require a highway permit to the DTOP (Department of Public Works and Transport). That person will be subject to inspection and a test to ensure his or her proficiency on a motorcycle. Without this permit you can not ride on a highway.

Some notes based on my experience.

Mopeds are considered motorcycles. There is no difference between a Harley and a Spree. The same rules apply. The only difference is that Mopeds can not ride on highways but only because they do not have an engine larger than 360cc which is the minimum required for a highway permit. If you get one in

your moped, then you should be ok.. I guess.. Those 70cc conversion for Mopeds \*are street legal\* in Puerto Rico and there are no pedal requirements for mopeds. On the down side, all mopeds must be registered, titled, insured, have a license plate and they must be inspected. Riding between cars is permitted.

On the fun side, Cayey municipal police used to ride on Yamaha scooters for police patrol at center of town. They changed to larger motorcycles when budget permitted. Also some kids where I used to live used to deliver the newspaper on Hondas Sprees. I guess they got tired of hauling papers on their bicycles.

Regard,

Luis Anaya [papo@dcentral.com](mailto:papo@dcentral.com)

## Rhode Island Moped Laws

## South Carolina Moped Laws

## **South Dakota - submitted by Jeff Coplan**

...  
Moped is defined as a motorized vehicle with two wheels that doesn't exceed 50 cc's and doesn't travel over 30 mph. Must have a headlight visible from 100 ft. Must have a tail light visible from 250 ft. Must wear eye protection. Must possess a driver's license (doesn't have to be motorcycle endorsed)  
...

## **Tennessee - submitted by Bridget Flynn**

Hi, Andy - I'm sending you this info so you could post it on your Moped Laws page...this is straight from the person (a state trooper) in our state's DMV who coordinates the state motorcycle safety program. He read it to me over the phone from TN statute, so I'd say it's pretty reliable.

Under 16 - motorscooter permit required 16 and up - regular driver's licence required (motorcycle license not required) All "motorized bicycles" including mopeds must have tags if they are to be driven on the road.

Interestingly, there is a local moped dealer who may get in a bit of trouble as a result of my inquiry...he's telling people that you don't need a license or tags with a moped. I came very close to buying one from him, and probably would've ended up getting stopped on my way home! Fortunately, he also charges WAY too much \$ and something told me, "there's something wrong with this guy." :-/ I notice he's not listed on your dealer list either.

## **Tennessee - updated on 10 Nov 2005 by Christian Griffith**

I have just investigated the official TN Code as of today, November 10, 2005, and here is what I found:

Under 55-3-101, "motorized bicycles" do not have to be registered with the DMV (you can voluntarily register your "motorized bicycle, if you want to). If you look at 55-8-101, you'll see that a "motorized bicycle" is any kind of moped or scooter that meets the following requirements:

- 1) Is not designed to travel faster than 30 MPH.

2) Motor is no greater than 50cc's and makes no more than 2HP.

Owners of "motorized bicycles," however, are required to wear a crash helmet, as stipulated by 55-9-302.

Also, here's some additional, helpful information: 55-8-101, while providing the official definition for "motorized bicycle," also states that these "motorized bicycles" MUST be driven by an individual with a valid operator's license (motorcycle endorsement not necessary) and can NEVER be driven on the highway.

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## **Tennessee - personal experience and law info from Wimperdink**

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### **Texas - submitted by vlad the imp@webtv.net**

Required: light (always lit), horn, directionals, tail light or reflector, stop light(s), r.v. mirror. Approved helmet required. No riders unless ped has 2 seats (sidecars excepted). Inspection sticker required for TX residents. 30mph limit, 50cc, 2 BHP. No muffler cutouts. Liability insurance required. Medical coverage required on rider. Class "M" Drivers Licence. Texas has reciprocity with all other states but Wisconsin & Michigan to allow passage of other state's peds and legal drivers IF THEY HAVE TAGS. Constant lights not required on pre-1975 models not so equipped.

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### **Utah Moped Laws**

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### **Virginia Moped Laws - as of August 2006**

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#### **Virginia - submitted by Bob Meadows**

I have a moped and checked with our DMV---seems that engines of < 85 cc and pedals are the only requirements. Helmets not req'd but suggested. Also no insurance, but a small "personal liability policy" is a good idea (\$50,000).  
Good luck and have fun.

---

#### **More on Virginia - submitted by Ted Schwartzbeck**

I bought a Yamaha Riva 49cc today, 6-17-98 in Herndon. No vehicle license, title or inspection is required; no drivers license is required; no insurance is required. Helmets are required of all moped drivers. Headlights, turn signals and brake lights are required. 2 passengers are permissible when there is the extra seat and footpegs. Mopeds may not be driven on highways or roads with permissible speed limits over 45 mph. If one's drivers license is suspended or revoked for any reason one cannot operate a moped so it is not an alternative to a car after a loss of license. Ted Schwartzbeck

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#### **Even more Virginia - sent by jlwoods@erols.com**

The 1999-2000 Virginia Driver's Manual p.3-10 specifies: "Mopeds: Under Virginia Law, a moped is a bicycle-like device with pedals and a helper motor. The motor cannot be rated at more than two horsepower or enable the moped to travel more than 30 MPH. Moped riders must be at least 16 years old and must obey all rules of the road. As a driver, treat moped riders with the same care given to any other vehicle driver. Although you do not need a driver's license to operate a moped, you may not

operate a moped if you have been adjudged a habitual offender and your license is suspended. You may not operate a moped if your license has been suspended for failure to file financial responsibility with DMV." There is no reference whatever to mopeds in the Virginia Motorcycle Operator Manual. There are numerous specifications for mopeds within the state Transportation Code, some of which are picayune, but common sense is the prime consideration (unlike Maryland or DC), and local jurisdictions may impose particular requirements more stringent than the state code.

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## **Yet another bit on Virginia - submitted by DGoncz@aol.com**

Here in the Commonwealth of Virginia, which separated from what is now West Virginia during the Civil War, the "State" defines a moped as a bicycle-like device with pedals and a helper motor. The last time I looked was in 1992, I think. The Fairfax County Regional Library has the Code, and I can look at it at the local branch, the Woodrow Wilson branch. Of course, the pedals must be working. The lockable pedals on my Derbi DS-50 were of concern to officers who stopped my uncle when he had the moped. A visit to court made a determination and that record also could be found and added to your site. Any kind of strap or kludge would be trouble. Proper operation of the Derbi pedals after stopping and engaging them immediately proves to the officer that "it's a moped". Mechanically, a broken decompressor valve will prevent you from demonstrating this operation to the officer, even though the engine might start and run. Keep them working!

The City of Falls Church requires a helmet, but I hadn't heard that the state does. Virginia did pass seatbelt and helmet laws within the last several years, and it's been years since I rode.

The horsepower rating is 2.0. Electric power is not specifically ruled out. Operation of any motorized vehicle, even an electric wheelchair or mobility assistance device, is not allowed in many parks, such as the well known Four Mile Run Trail. There are various parks, local, regional, and state. I am attempting to add a spare Derbi electric starter motor without the usual planetary gearing to the other side of my Derbi's engine, with the starter to provide an initial push in the usual way, and the ungeared starter motor operating at six times that speed providing a transition to around ten miles an hour. An old Interstate truck battery will provide the power. I'll let you know if I have legal trouble with this setup. I have a Honda Insight gas/electric parallel hybrid two place automobile owners manual which doesn't really say a lot about this and can explain torque and power to police officers most effectively with a chart I can draw up before I hit the road. The electric and gas engines complement each other well and can provide 2HP from stall to top speed when properly mated and rated.

Possession of a driver's license is not required in Virginia to operate a moped but the operator must be eligible for a license. A DWI suspension, or simply being too young to drive, means you can't operate a moped either. At least not legally.

---

## **Vermont - submitted by Mike Zylinski**

I am a resident of Vermont and recently bought a moped. Thought you might want to post the state laws on your page.

Drivers license only (no need for motorcycle)  
 Registration (\$15 for registration and plate)  
 Insurance  
 Inspection (\$20, need a horn headlights left mirror etc..)  
 No helmet law for mopeds

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## **Washington Moped Laws**

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## **West Virginia Moped Laws**

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## Wisconsin Moped Laws

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### **Alberta, Canada - submitted by [skylynx@yifan.net](mailto:skylynx@yifan.net)**

A moped is a vehicle that: has no driver operated clutch or gearbox that transfers power to the driving wheel; an engine displacement of not more than 50cc; can not go faster then 50km/h on level ground; weighs more than 35 kg and less than 55kg. To operate a moped you must hold a valid operator's licence (any class). No special examination or endorsement is required.

### More Alberta moped laws

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### **British Columbia, Canada - submitted by [Colin Ford](#)**

The moped regulations in BC are under the control of ICBC the government compulsory motor vehicle insurance. Insurance Corporation British Columbia. They are as follows: "Limited Speed Motorcycles" means a motorcycle that,

- a. is equipped with a motor having a piston displacement of not more than 50cc or a power source that produces a maximum of 1.5kW,
- b. has a power drive system that does not require clutching or shifting by the operator after the drive system is engaged,
- c. has a maximum attainable speed on level ground, with or without pedals, of 70kp/h,
- d. has a maximum weight of 60kg excluding fuel or batteries used to store energy for vehicle propulsion, and
- e. has wheels of a diameter of 254 mm or more. "Motorcycle" means a motor vehicle running on 2 or 3 wheels and having a saddle or seat for the driver to sit astride.

Hope this information is useful. This is the latest regulation dated 5/97

### British Columbia moped regulations - as of 2006

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### **Ontario, Canada - submitted by [bryde@netcom.ca](mailto:bryde@netcom.ca)**

- Your moped cannot exceed the speed limit of 50km/h- or it is considered a motorcycle by law
- You must wear a helmet at all times.
- You must have a combination of a g2 licence or a m class licence OR a offroad vehicle licence
- You must ride your moped on the side of the road, somewhat like you are riding a bike you cannot take your moped on a highway (like the 401 or queensway in ottawa)

I think that is it-but for more information go to your local police department, or buy the drivers handbook in your local bookstore(chapters, etc...)

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### **Ontario - updated on 14 Nov 2005 by Jason Fowler**

To ride a moped on a public street in Ontario:

- vehicle engine has to be less than 50cc gas or less than 1500watts electric
- vehicle cannot go more than 50km/h
- vehicle must have pedals otherwise considered a motorcycle regardless of displacement
- must have registration, current license plate and liability insurance
- must wear a DOT approved helmet
- must not carry passengers
- vehicle must be automatic transmission (no clutch or manually shifted gears)
- must have class G license (minimum age 16)

-vehicle must not weight more than 55kg

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## Ontario - updated on 28 Nov 2005 by Roy Holden

New licence for limited-speed motorcycle (LSM) and moped drivers

Effective November 28, 2005, there will be a new restricted Class M licence that restricts licence holder to operating a:

- limited-speed motorcycle (motor scooter) and
- motor-assisted bicycle (moped)

Starting November 28, 2005, moped drivers will have to hold a Class M licence or the new restricted Class M licence to operate their moped. You can no longer operate a moped holding any driver's licence. You need to pass a written test and starting Spring 2006 (when weather permits), you will need to complete both the M1 and M2 road tests and, if successful, you will receive a driver's licence that allows you to operate a limited-speed motorcycle (motor scooter) and moped only.

## Ontario - updated on 11 Oct 2006

## Quebec, Canada - submitted by Martin Levac

Rules and regulations concerning a moped driver's license, registration and definition of a moped in the province of Quebec, Canada.

The term in french is cyclomoteur.

The definition of a moped, cyclomoteur:

A 2 or 3 wheel motorized vehicle for use on public roads that has an engine displacement of no more than 50 cm<sup>3</sup> and an automatic transmission.

I haven't found any definition concerning electric engined mopeds.

The driver's license: Mandatory, class 6d or better.

Minimum age: 14 years of age.

Registration of the vehicle is mandatory.

To date, insurance for a moped is not mandatory but always a good thing for a new vehicle.

Have fun.

---

Need more information?

Check with your local [Department of Motor Vehicles](#) or try Cornell's "[Statutes by state](#)" site

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MOPED WIKI

**Moped Laws: United States**  
**From MopedWiki**

(Redirected from Moped laws)

The moped laws previously found on this page have been divided up by region. Don't see your state on the list? Do some research and add it!

U.S. Moped Laws by region	
<b>Northeast</b>	CT • ME • MA • NH • NJ • NY • PA • RI • VT
<b>South</b>	Florida • Georgia • Kentucky • Maryland • North Carolina • South Carolina • Tennessee • Virginia
<b>Midwest</b>	Illinois • Iowa • Kansas • Michigan • Minnesota • Missouri • Ohio • South Dakota • Wisconsin
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**See Also**

Moped Laws: Canada

Moped Laws: Europe

Search by Municipality -- search for local moped-related laws

**Chart of Requirements By State**

This is a summary chart of some of the most important points of moped state laws. Please note that blank squares mean "unknown", not "no". Also, it is assumed that the moped in question is under 50cc.

State	Driver's License	Motorcycle Endorsement	Titled	Registration	Insurance	Helmet
Alabama	Y 1	N	N	N	N	
Alaska	Y 2					
Arizona	Y 3		N	Y	Y	Under 18
Arkansas		Y 4		N		
California	Y 5	M1 or M2	N	Y	Y	Y
Colorado	Y 6			Y		
Connecticut	Y 7		N	N	N	
Delaware	Y 8			Y	N	N
District of Columbia						
Florida	Y 9		N	Y		N
Georgia	Y 10	N	N	N	N	Y
Hawaii						
Idaho	Y 11	N	N	N	N	Under 18
Illinois	Y 12		Y	Y	Y	N
Indiana	State ID+over 15 yrs old	N	N	N	N	Under 18
Iowa	Y 13	N	Y	Y		N
Kansas	Y (or moped-only license)	N	Y	Y	N	Under 18
Kentucky	Y 15					
Louisiana						
Maine	Y 16			Y	Y	
Maryland	Y 17			N		N
Massachusetts	Y 18	Option	N	Y	N	Y
State	Driver's License	Motorcycle Endorsement	Titled	Registration	Insurance	Helmet
Michigan	Y 19			Y	N	Under 19
Minnesota	Y 20		Y	Y	Y	Under 18

			Yes for roads	Yes for roads		
Mississippi						
Missouri	Y 21	N		N	N	N
Montana	N	N	N	N	N	N
Nebraska	Y 22	N	N	N	N	Y
Nevada						
New Hampshire	Option	Option	N	Y	N	N
New Jersey	Y 23		Y	Y	Y	Y
New Mexico	Y 24	N	N	N	N	N
New York	Y 25	Some	N	Some	Some	Some
Nevada	Y 26	N		N	N	
North Carolina	N	N		N	N	
North Dakota	Y 27	Y	Y	Y	Y	N
Ohio	Y 28	N	N	Y	N	Under 18
Oklahoma	N		Y	Y	Y	
Oregon	Y 29			Y	Y	Y
Pennsylvania	Y 30	N	Y	Y	Y	N
Rhode Island						
South Carolina	Y 31	N	N	N	N?	Under 21
South Dakota	Y 32	N	N	N	N	Under 18
Tennessee	Y 33	N	N	Optional	N	Y
Texas	Y 34	Y			Y	
Utah				N	N	
Vermont	Y 35			Y	Y	
Virginia	N		N	N	N	N
Washington	Y 36	N	Y	Y	Y	Y
West Virginia	N	N	N	N	N	Y
Wisconsin	Y 37	N	Y	Y	Y	N
Wyoming						

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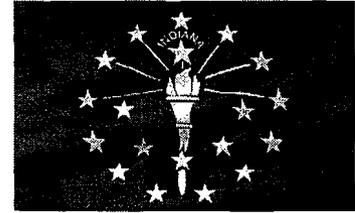
# What is a Motorized Bicycle?



[www.abateonline.org](http://www.abateonline.org)

TIAS  
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Ex. G

# Indiana Motorized Bicycle Code



## **IC 9-13-2-109 Motorized bicycle**

Sec. 109. "Motorized bicycle" means a two (2) or three (3) wheeled vehicle that is propelled by an internal combustion engine or a battery powered motor, and if powered by an internal combustion engine, has the following:

- (1) An engine rating of not more than two (2) horsepower and a cylinder capacity not exceeding fifty (50) cubic centimeters.
- (2) An automatic transmission.
- (3) A maximum design speed of not more than twenty-five (25) miles per hour on a flat surface.

The term does not include an electric personal assistive mobility device.  
*As added by P.L.2-1991, SEC.1. Amended by P.L.143-2002, SEC.3*

## **IC 9-21-11-12 Motorized bicycles; prohibitions on operation; conditions**

Sec. 12. A motorized bicycle may not be operated under any of the following conditions:

- (1) By a person less than fifteen (15) years of age.
- (2) By a person who has not obtained an identification card under IC 9-24, a permit under IC 9-24, an operator's license under IC 9-24, a chauffeur's license under IC 9-24, or a public passenger chauffeur's license under IC 9-24.
- (3) On an interstate highway or a sidewalk.
- (4) At a speed greater than twenty-five (25) miles per hour.

*As added by P.L.2-1991, SEC.9.*

## **IC 9-21-11-13 Persons under 18 years of age; operation of motorized bicycle; safety equipment**

Sec. 13. A person less than eighteen (18) years of age who operates or rides a motorized bicycle on a street or highway shall do the following:

(1) Wear protective headgear meeting the minimum standards set by the bureau or a helmet that meets the standards established by the United States Department of Transportation under 49 CFR 571.218 in effect January 1, 1979.

(2) Wear protective glasses, goggles, or a transparent face shield.

*As added by P.L.2-1991, SEC.9.*

## **IC 9-21-11-14 Violations; Class C infraction**

Sec. 14. A person who violates this chapter commits a Class C infraction.

*As added by P.L.2-1991, SEC.9.*

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UPC	614141000000

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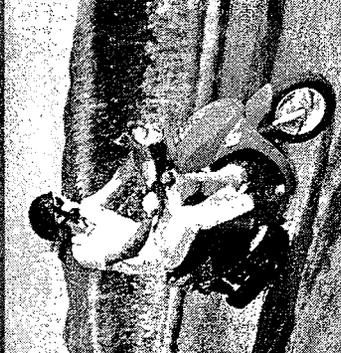
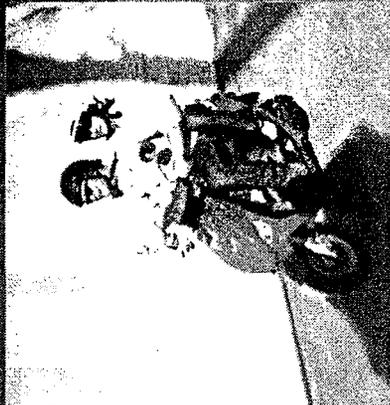
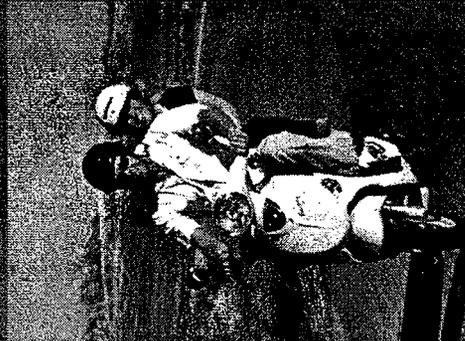
**DESCRIPTION** **CUSTOMER REVIEWS** **PRODUCT Q & A** **TOP ACCESSORIES**

**OVERVIEW**

The 48cc Mafrex Scooter is a great choice for a first-time scooter rider. It features a 48cc engine, a 16" wheel, and a top speed of 21.5-24.5 mph. The scooter is also equipped with a 47V battery and a 47A motor. The scooter is also equipped with a 47V battery and a 47A motor.

**FEATURES & BENEFITS**

- 48cc Engine
- 16" Wheel
- 47V Battery
- 47A Motor



WHAT DEFINES A MOTORIZED BICYCLE?

# Indiana Motorcycle Code

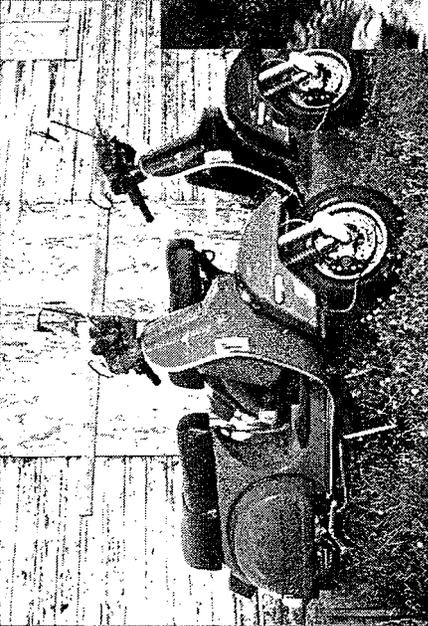
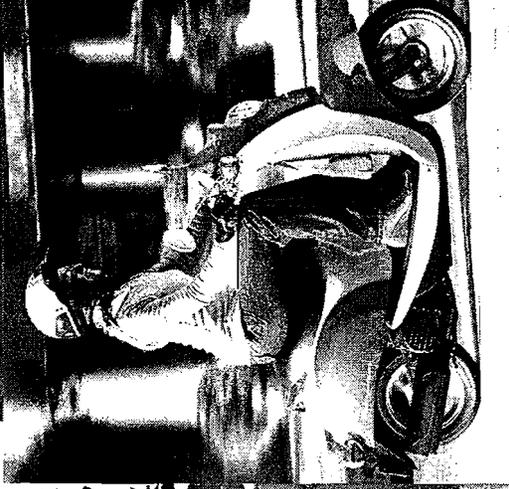
## DEFINITION:

### IC 9-13-2-108 Motorcycle

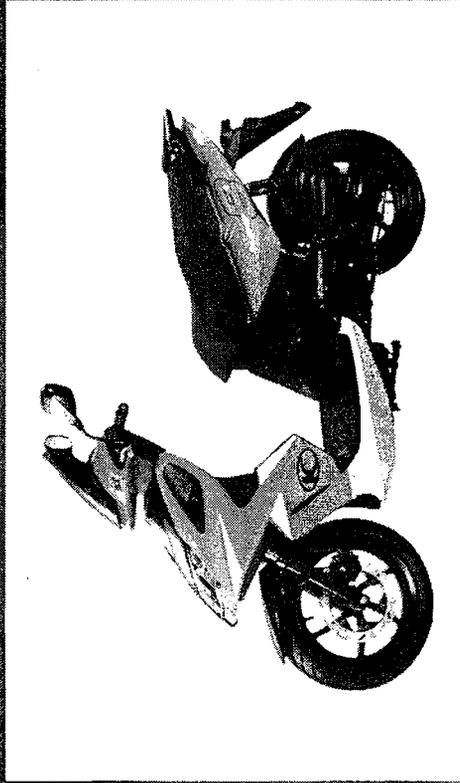
Sec. 108. "Motorcycle" means a motor vehicle with motive power having a seat or saddle for the use of the rider and designed to travel on not more than three (3) wheels in contact with the ground. The term does not include a farm tractor or a motorized bicycle.

*As added by P.L.2-1991, SEC.1.*

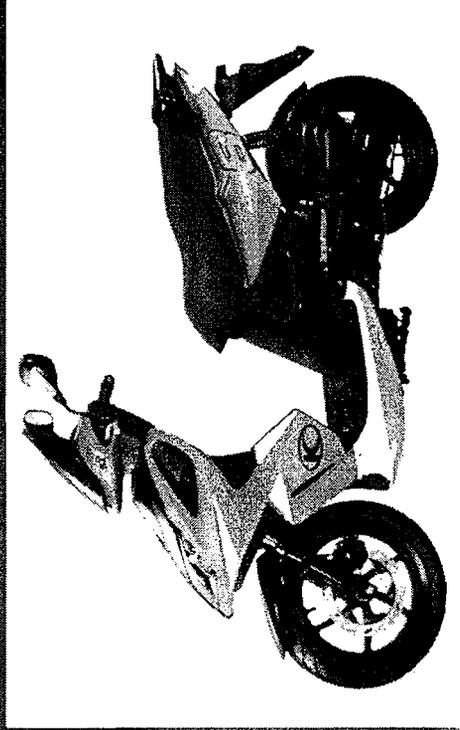




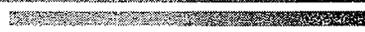
...BUT SO ARE THESE.



49.5 CC



125 CC



## Driver in Friday's mo-ped crash dies

The driver of a mo-ped in the May 16 Battle Ground crash died Sunday at St. Elizabeth Medical Center in Lafayette.

Jay M. Wood, 43, of Battle Ground, was driving a mo-ped south on North Ninth Street when he collided with a northbound truck as the driver tried to make a left turn onto Burnett's Road.

Wood was care unit w  
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ogy results  
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Donna Avo

## Columbus moped crash kills driver, 14

By Vic Ryckaert  
vic.ryckaert@indystar.com  
October 9, 2007

A 14-year-old boy died Monday at an Indianapolis hospital after a crash involving a car and a moped in Columbus.

T.J. Campbell, Columbus, was flown to Methodist Hospital Monday night crash in downtown Columbus, according to office and Columbus police.

A passenger on the moped, Justin Perry, 12, suffered a leg injury and was treated at a Columbus hospital, Columbus police Lt. S

## 19-year-old in LaGrange dies on moped

Becky Manley | The Journal Gazette

A LaGrange County man riding a moped died Wednesday after he ran a stop sign and struck another vehicle.

According to the LaGrange County Sheriff's Department, William J. Becker, 19, was riding a 2006 moped north on County Road 500 West before 3 p.m. when he failed to stop at the intersection with County Road 200 North. Becker's moped collided with a westbound Honda driven by Grant F. Newcomer, 35, also of LaGrange County.

Becker died from injuries suffered in the crash. Police said weather is considered a factor in the crash.

## 12-year-old dies in motorcycle crash

By THE ASSOCIATED PRESS

INDIANAPOLIS — Indianapolis police say a 12-year-old boy died in a motorcycle crash when he lost control of a vehicle going over a pothole cover.

Police say Dejuan Johnson

was not wearing a helmet when he lost control of the off-road-style motorcycle, which slid about 100 feet into a parked car.

Police say the boy was traveling faster than the 30 mph speed limit.

Authorities say the off-road

motorcycle had knobby tires, which are not designed for use on paved streets.

Police say the crash occurred about two blocks from the child's home.

They also say family members were present when the crash occurred.

THE TIMES  
nwi.com

## Mo-ped rider dies in crash

By Times Staff | Monday, September 15, 2008

A 68-year-old Gary man died in a mo-ped wreck Sunday afternoon, authorities said.

Everett Neely, of the Chase Street on Gary, was riding a moped when he crashed into a car. The crash involved two vehicles.

Gary police could not identify the driver of the car.

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INDYSTAR.COM

October 11, 2008

## Man dies at hospital after he falls onto street

A 49-year-old man died Friday night after he fell off a motor scooter on the Northeastside, police said.

Investigators were trying to determine if he died from injuries in the fall or from another cause.

The man, whose name was not immediately released, fell from the scooter about 7:45 p.m. in the 5400 block of East 56th Street, police said.

He was westbound on 56th when the scooter went into the eastbound lanes, and he fell off.

He was taken to Community Hospital North, where police said he died at 8:25 p.m.

MSNBC.com

### Bus accident raises questions about scooters

WTHR-TV  
Updated 11:15 a.m. ET, Sat Oct 22, 2008

Richard Essex/Eyewitness News

Logansport - Police say the driver of a motor scooter that may have played a part in Friday's school bus accident has a long history with the law.

According to The Cass County Sheriff's office, the dump truck that hit the school bus swerved to miss a motor scooter rider by Raymond Gust. Gust had slowed to turn into his driveway off U.S. 24, forcing the dump truck to try to avoid him.

Gust declined to talk to Eyewitness News on camera, but told us he didn't see the two dump trucks coming up behind him.

Records from the Cass County Sheriff's Office show that Gust has been convicted five times for driving related offenses and had his license suspended 11 times. His scooter is his only transportation.

What put a 50-year-old man with a suspended driver's license on a scooter on this road? It really begins with Indiana law, which says anyone over the age of 15 can ride a motor scooter without a driver's license or insurance on just about any road.

Dick Nilson of Logansport says his son and son-in-law both ride scooters and both have had driving-related convictions. His son, Tracy Nilson, has been convicted twice for driving under the influence.

"It's kind of a dilemma, because there are people that should never be on the road and it's kind of very touchy," Dick Nilson said.

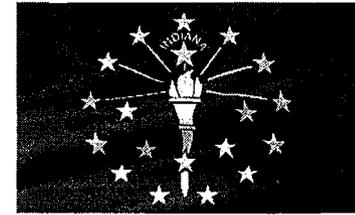
Tracy Nilson and thousands of other former licensed drivers are given this opportunity. They can go almost anywhere at 25 miles an hour. That is all the faster state law allows unlicensed drivers to travel.

U.S. 24 is a federal highway with a posted speed limit of 55 miles an hour. It's legal for Gust or anyone with a scooter to ride right along with traffic.

URL: <http://www.msnbc.msn.com/id/25919705/>

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# Indiana Motorized Bicycle Stats



Mopeds in Indiana	2004	2005	2006	2007	2008	2009	2010	TOTAL
Total Collisions found:	310	323	526	616	749	696	819	<b>4,039</b>
Collisions w/injury:	235	262	408	479	560	532	637	<b>3,113</b>
Collisions w/fatality:	10	9	12	7	17	19	8	<b>82</b>
Collisions w/property damage:	65	52	106	130	172	145	174	<b>844</b>
Total injuries:	269	308	548	531	632	596	710	<b>3,594</b>
Total fatalities:	11	9	12	7	18	19	8	<b>84</b>

Note: Data is derived from the Indiana State Police Automated Reporting Information Exchange System and is accurate as of June 20, 2011. All data is subject to change. Provided by the Indiana Criminal Justice Institute.



Governor's  
Council on Impaired  
& Dangerous Driving



# What's the answer?

State laws?

Licensing?

Registration?

Local ordinances?



[www.abateonline.org](http://www.abateonline.org)

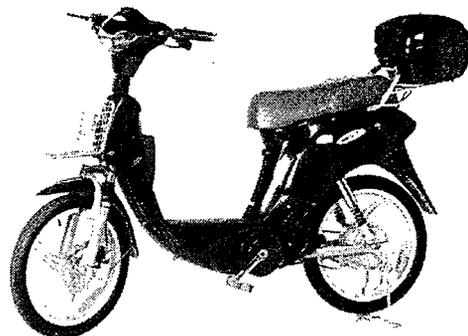


# Scooters, Mopeds, Electric bikes

## Information/Effects on Law Enforcement

Prepared by  
Detective Karin Montgomery  
Officer Sara Hilsmeier  
Evansville Police Department

## Electric Bike



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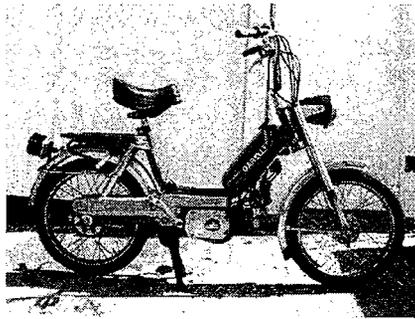
## Electric Bike Specifications

- 750watt maximum speed 20 mph
- 1000 watt maximum speed 30 mph
- Some have a constant 250 watt continuous but with pedal power, the watts can peak at 450 watt. The maximum speed being from 15-30 mph

## Advantages of Electric Bike

- Ecologically friendly
- Transportation that's less costly
- Readily available
- Requires only bike license

## Moped



## Moped specifications

- Garelli sold bikes with NOI style engines with 17, 20, 25, and 30mph top speed ratings. These different speeds were accomplished through a variety of means, including cylinder port area, head design, intake variance, various carbs and jettings, gearing, spark plug type, exhaust header diameter and shape, muffler restriction, and piston crown shape.

### Moped Specifications

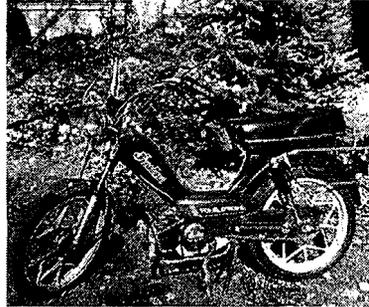
Top speed on flat surface is  
USUALLY not more than 30 mph.

Speed is effected by the weight of  
the rider and the driving surface.

Manufacturers offer after market  
enhancement kits to enable them  
to operate at faster speeds.

Mopeds, when originally  
designed, had pedals.

Moped can be pedaled or driven  
by a low powered gas engine.



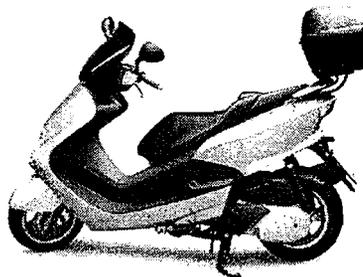
## Scoters

Three wheel scooter  
designed for two riders.



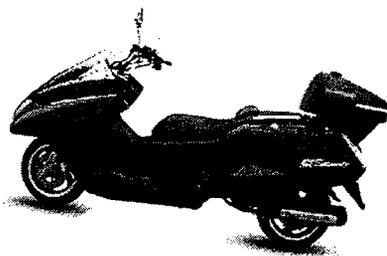
## Scooters

49CC model—  
designed for one.  
(no foot pegs for  
passenger)



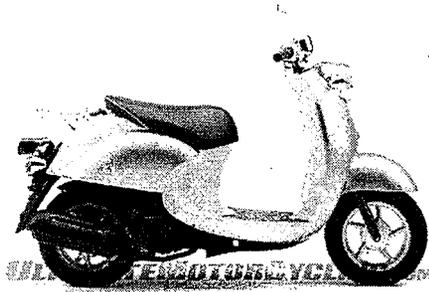
## Scooters

250cc scooter



## Scooters

49cc scooter. Designed for one person.



## Scooter specifications

- 49cc motor
- Top speeds 30-50 (depending on weight of rider, road surface, manufacturer)
- Designed for a single rider (no foot pegs)
- A scooter is a vehicle with two/three wheels and a gas engine geared to a rear wheel.

## BMV memo

- According to Indiana BMV dated 06/14/2006:
  - Motorized bicycle means a 2 or 3 wheel vehicle propelled by an internal combustion engine or battery powered motor and if powered by internal combustion engine,
    - Must not exceed 2hp and 50cc
    - Have an automatic transmission
    - Max design speed less than 25mph on flat surface  
(BMV will title as ATV but will not register)

## BMV Memo

- BMV provided photos of their memos that included mopeds, scooters and dirt bikes.
- BMV showed a photo of the 49CC scooter and stated the design speed is OVER 25 mph therefore it will be titled and registered as a motorcycle and a motorcycle endorsement is required to operate it.

## NHTSA definition

- Motorcycle is defined as a motor vehicle with motive power having a seat or saddle for the use of the rider and designed to travel on not more than three wheels.
- If a motor scooter is designed to travel 20 mph and is equipped with components (lights, mirrors, signals) that are needed for on road use, NHTSA will regard it as a motor vehicle.

## State Forms for Indiana Crash Reports

- On page 75 of the Indiana Crash Report manual, motorcycle is defined as:  
  
"A 2 or 3 wheeled motor vehicle designed to transport 1 or 2 people. Included are motor scooters, mini bikes and mopeds."

## 2010 Scooter Accidents

- In 2010, EPD worked 31 accidents involving scooters
- Five of the accidents were single vehicle
- None of the involved scooters were insured
- Only 9 of the scooter operators had a driver's license

## Accidents





### Scooter thefts June 2011 Evansville, Indiana

- 56 citizens reported their scooter/moped stolen in June 2011
- Of the 56 victims, less than half (22) had valid license
- 8 were HTV, 6 were suspended prior, 9 were suspended infractions, 1 had a learners permit and 15 were unlicensed
- **ONLY ONE HAD A MOTORCYCLE ENDORSEMENT**

## Certificate of Origin



The certificate of origin issued for a vehicle when a subject purchases a car or motorcycle is the same as the one issued when a subject buys a motor scooter.

## Scooter laws other states

Ohio- must register, title and insure. Rider must be 16 years of age, licensed with a motorcycle endorsement. Must meet Federal Motor Vehicle Safety Standards.

Kentucky-Rider must be 16 years of age. If rider doesn't have motorcycle endorsement, they must apply for permit through BMV for moped license.

Illinois- must register, title and insure. Must carry a valid license with an endorsement.

New Jersey- must register, title and carry liability insurance. Must carry a moped license and can obtain that at 15 yoa.

Colorado- must register and carry liability insurance.

Oregon-must register, title and insure. Rider must be 16 years old with valid license.

## What Law Enforcement Needs in regards to motor scooters

- Require registration--Often times victims leave their original documents with the scooter. When it is stolen, they can't provide any information on the scooter. Allows for better tracking. Requires scooter owners to pay the tax for road use.
- Require Insurance – when a scooter causes an accident, they are not insured. The other party is victimized twice—once from the accident and then again when their insurance is raised due to the repairs having to come out of their uninsured motorists fund.

## Needs continued

- Licensing/safety classes –motorcyclists have to attend classes to get their endorsement. (Scooter riders are not required to be licensed or attend any scooter safety class)
- Eliminate the need for law enforcement to discern between engine size. If the motor driven vehicle is on our roadways, make all the motor vehicle laws apply.

Testimony from Senator Sue Landske, Representative Randy Truitt, and Dr. Marvin Scott  
on behalf of the Midwest Interstate Passenger Rail Commission

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To the Indiana Joint Study Committee on Transportation and Infrastructure Assessment and Solutions  
September 20, 2011

Chairman Soliday, members of the Joint Study Committee on Transportation and Infrastructure Assessment and Solutions: as part of the record of this committee, we submit the following written testimony regarding Indiana's current and future passenger rail needs.

First, some brief background information about the Midwest Interstate Passenger Rail Commission (MIPRC). Indiana was one of the first states to ratify this interstate compact, so has been a member state since its inception in 2001. Four residents of each state are appointed to the commission –two legislators and two gubernatorial appointees. Sen. Landske and Rep Truitt serve as the legislative designees, appointed by our respective Indiana legislative bodies. The two Indiana gubernatorial appointees are INDOT Commissioner Michael Cline and private sector designee Dr. Marvin Scott. There are currently 11 member states: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio and Wisconsin.

MIPRC was formed because state legislators and governors in our region wanted to work together on passenger rail development, and believed advancing those plans required the same federal partnership that has historically benefited other modes of transportation such as highways and aviation (passenger rail is the only mode of transportation that has no dedicated source of federal funding).

The commission also believes that our region will benefit from viewing transportation development as a system, rather than through the silos of the various modes. Studies show that passenger rail is generally the best option for transporting people who are traveling between 100 and 600 miles. It can also be a strong transportation alternative in certain types of weather and under emergency situations. When the passenger rail transportation "leg" is weak, congestion, lost travel time and decreased fuel-efficiency often result (please see the accompanying chart for passenger rail's energy efficiency).

Over the past 10 years, passenger rail ridership in the Midwest has grown steadily, and, over the past five years, it has increased pretty dramatically, especially on the shorter distance routes of less than 600 miles. These "corridor" routes are largely state-supported, meaning that, in response to their citizens' request for better, more frequent passenger rail, states have paid for increased service.

Over the past five years, overall passenger rail ridership on the Midwest's shorter-distance corridors has grown 55 percent. Attached are two pages of charts showing those routes and their ridership growth, as well as growth in long-distance passenger rail service ridership.

Several of our neighboring states have seen that when they increase frequencies and improve service, even without making improvements to the track, people will increasingly choose to take the train. Two brief examples are Illinois and Missouri.

Illinois is an excellent example of how passenger rail development can benefit a state and a region. In FY 2007, Illinois doubled the frequency of passenger rail service on its three routes. Over the last five years, the number of riders on the service has grown tremendously. For example, during FY 2010, ridership on Illinois' state-supported *Lincoln* service – four daily roundtrips between Chicago and St. Louis – grew by more than 13 percent; over the last five years, it has grown by **136 percent**.

Ridership on Missouri's twice-daily roundtrip service between St. Louis and Kansas during FY 2010 was up 14.4 percent over FY 2009. Over the past few years, Missouri has concentrated on improving on-time performance of its trains, and has seen a very positive response to its now-stellar on-time record.

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Ex I

Both states first increased their frequencies and now are working on making infrastructure improvements to decrease the time it takes to get from point A to point B – both are important, and both do entail some investment.

Last fall, Illinois began upgrading approximately 90 miles of existing track along the Chicago-to-St. Louis route to prepare for future passenger train operations up to 110 mph. This is the first phase of construction on the route, made possible by the \$1.1 billion the state has been awarded through federal funding for intercity passenger rail capital improvements. Missouri has been awarded \$34.5 million in funding through the High Speed Intercity Passenger Rail program for various improvements along the St. Louis-to-Kansas City line.

But perhaps all this doesn't apply in Indiana? Do people and will people take the train here? The answer is yes. Let's look at ridership on the *Hoosier State* service between Indianapolis and Chicago. It only runs once a day right now, and is quite slow and inefficient because of poor track and competing with a lot of freight traffic. Still, ridership has increased considerably over the past few years. The most recent comparative data shows that ridership on that route rose 6.5 percent just during the 1<sup>st</sup> half of Amtrak's FY 2011 fiscal year. Five year growth between FY 05 and FY 10 on the *Hoosier State* was **66 percent**.

The number of people getting on or off trains at a state's stations is another good indicator of demand. In Indiana, the number of people boarding or de-boarding a train increased by 8.2 percent in FY 2010 over FY 2009. For more information, see the attached chart "Amtrak Station Ridership - Boards & Deboards for Stations Located Within the State of Indiana."

In closing, where do we envision Indiana going with passenger rail development? The Indiana DOT has participated for more than a dozen years in a partnership among the Midwestern state DOTs to develop a plan for faster, more frequent service. The Midwest Regional Rail System (MWRRS) envisions a 3,000-mile system across the Midwest, using existing rail rights-of-way.

MIPRC strongly supports this multi-state plan. Why? Because for a very reasonable investment, our states will significantly strengthen both their passenger rail service and their economic development.

The 2009 Indiana Rail Plan provides a good, succinct explanation of the envisioned system. It states:

"In addition to providing shorter travel times, reducing congestion on all modes of travel, and improving the environment, the MWRRS is designed to provide economic benefits and new jobs by reinvigorating the region's manufacturing, service, and tourism industries. Freight rail operations also will benefit from reduced congestion and enhanced safety as a result of MWRRS track and signal improvements in shared corridors. The MWRRS Executive Report estimated a benefit/cost ratio of 1.8 for the project, one of the highest returns for any regional rail system in the United States."

The 2009 state rail plan goes on to explain that in Indiana alone, this would equate to 4,540 new permanent jobs, \$86 million in extra household income, and \$350 million in increased joint development potential. That economic information, and more, is in the pamphlet "Benefiting Indiana's Economy" which is the last item attached to this testimony. Also, because of the increase in passenger development, more train cars will be in need of maintenance, and many will be shipped to the Beechgrove maintenance facility for repair, adding to job creation in the Indianapolis area.

*Testimony from Senator Sue Landske, Representative Randy Truitt, and Dr. Marvin Scott  
on behalf of the Midwest Interstate Passenger Rail Commission*

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Yes, improvements will need to be made to tracks, stations and equipment, so that frequencies can be increased and travel times decreased. These will be *incremental* improvements, with reasonable costs. The build-out of the entire nine-state system is estimated to cost less than \$10 billion, with economic benefits of about \$23 billion.

The MWRRS plans are beginning to see implementation in states such as Illinois, Michigan and Missouri, which applied for and received funding under the nascent federal High Speed/Intercity Passenger Rail (HSIPR) program (which has given three rounds of awards, starting in 2009). Indiana does have one HSIPR grant, for a rather short, but significant portion of the Chicago to Detroit corridor between Porter and the Illinois/Indiana state line that has been a chokepoint for congestion.

The main Indiana routes envisioned for development under the Midwest's plans are Chicago-Indianapolis-Cincinnati and Chicago-Cleveland. The Chicago to Indianapolis route would have six roundtrips a day, at times competitive with driving. The route would also continue on to Cincinnati five times a day. Eight frequencies are envisioned for Chicago to Cleveland/Toledo route, with travel times quite a bit better than driving. (Please see "Benefiting Indiana's Economy" pamphlet.)

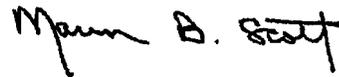
We hope this has served as a quick but helpful overview of the current status and potential for passenger rail in Indiana. The Midwest Interstate Passenger Rail Commission would be glad to be of service in any future hearings, studies or deliberations. Please let us know if we can be of any further help. You may also contact MIPRC's director, Laura Kliewer, at 630.925.1922 or [lkliwer@miprc.org](mailto:lkliwer@miprc.org). Also, much information can be found on MIPRC's website, at [www.miprc.org](http://www.miprc.org).



Sue Landske  
Indiana State Senate, #6  
Commissioner, MIPRC



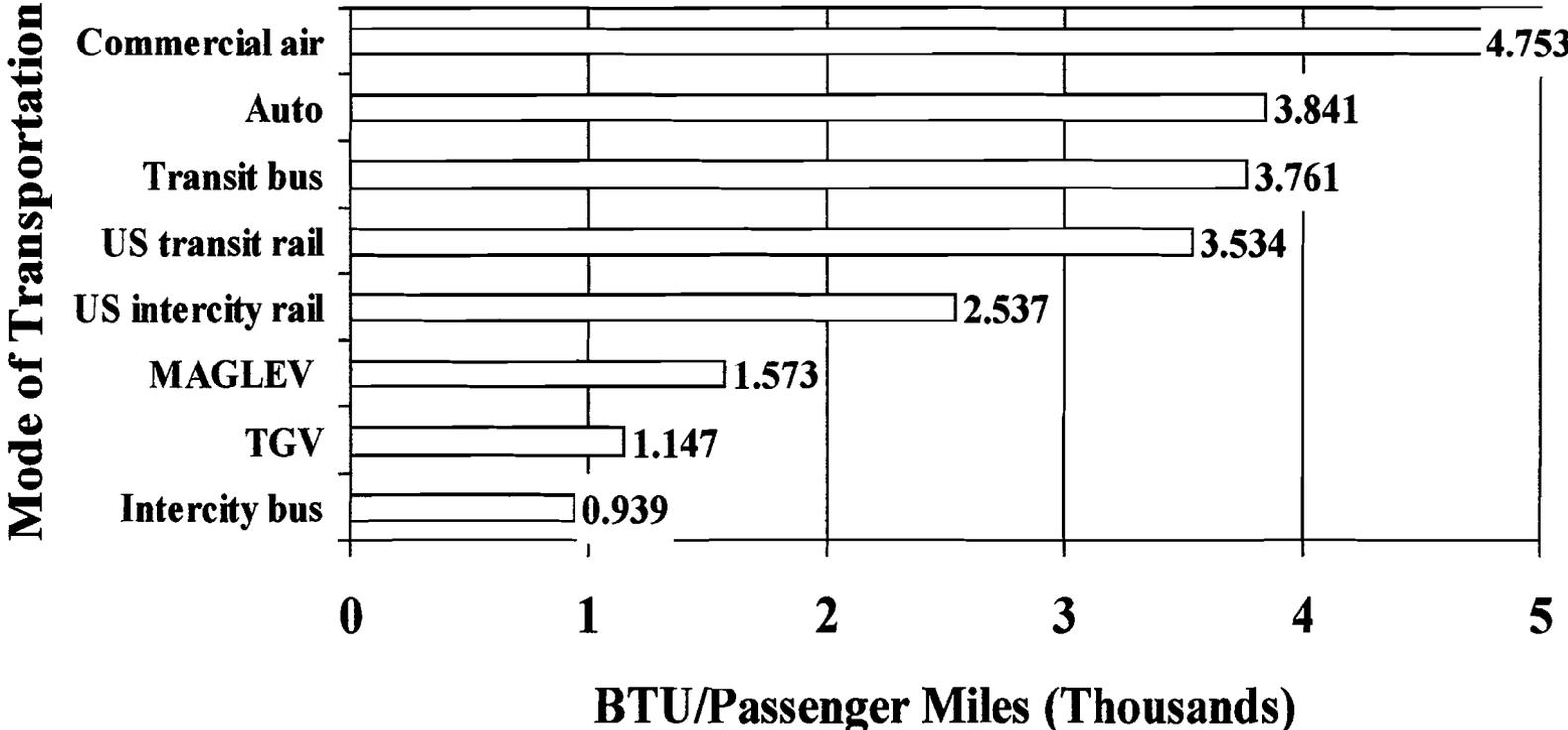
Randy Truitt  
Indiana State Representative, #26  
Commissioner, MIPRC



Marvin Scott  
Commissioner, MIPRC

# Passenger Mile Energy Usage

BTU to Move passenger one mile



**Table 4: Amtrak Ridership on Midwestern Routes Five-Year Trends (FY 05 to 10)**

**Ridership on Corridor Service in the Midwest**

Route	Five-Year Growth (FY 05 to FY 10)*	Average Annual Growth (05 to 10)*	Percent Change FY 09 to FY 10	FY 10	FY 09	FY 08	FY 07	FY 06	FY 05
Chicago-St. Louis ( <i>Lincoln</i> service)	136%	27%	13.1%	572,424	506,235	476,427	408,807	262,320	242,144
Kansas City-St. Louis ( <i>Missouri River Runner</i> service)	26%	5%	14.4%	172,554	150,870	151,690	116,517	119,257	136,701
Chicago-Milwaukee ( <i>Hiawatha</i> service)	49%	10%	6.1%	783,060	738,231	749,659	595,336	580,333	525,239
Chicago-Detroit/Pontiac, MI ( <i>Wolverine</i> service)	18%	4%	8.0%	479,782	444,127	472,393	449,107	438,529	406,499
Chicago-Grand Rapids, MI ( <i>Pere Marquette</i> service)	6%	1%	-1.3%	101,907	103,246	111,716	104,819	101,932	96,471
Chicago-Port Huron, MI ( <i>Blue Water</i> service)	41%	8%	18.7%	157,709	132,851	136,538	127,642	123,823	111,630
Chicago-Carbondale, IL ( <i>Illini/Saluki</i> services)	107%	21%	2.0%	264,934	259,630	271,082	228,695	136,640	127,808
Chicago-Quincy, IL ( <i>IL Zephyr/Carl Sandburg</i> services)	77%	15%	3.4%	209,466	202,558	202,814	169,258	119,719	118,493
Chicago-Indianapolis ( <i>Hoosier State</i> service)	66%	13%	7.1%	33,600	31,384	31,774	26,347	20,096	20,191
<b>Ridership Totals*</b>	<b>55%</b>	<b>11%</b>	<b>8.0%</b>	<b>2,775,436</b>	<b>2,569,132</b>	<b>2,604,093</b>	<b>2,226,528</b>	<b>1,902,649</b>	<b>1,785,176</b>

**Ridership on Long-Distance Routes Serving the Midwest**

Route	Five-Year Growth (FY 05 to FY 10)*	Average Annual Growth (05 to 10)*	Percent Change FY 09 to FY 10	FY 10	FY 09	FY 08	FY 07	FY 06	FY 05
<i>Cardinal</i> [Illinois; Indiana; Ohio; Washington, D.C.; New York]	18%	4%	-1.4%	107,053	108,614	109,195	96,896	95,076	90,542
<i>Empire Builder</i> [Illinois; Wisconsin; Minnesota; North Dakota; Montana; Idaho; Washington/Oregon]	12%	2%	3.5%	533,493	515,444	554,266	504,977	497,020	476,531
<i>Capitol Limited</i> [Illinois; Indiana; Ohio; Pennsylvania, Maryland, West Virginia, Washington, D.C.]	12%	2%	1.7%	218,956	215,371	216,350	193,748	198,044	195,051
<i>California Zephyr</i> [Illinois; Iowa; Nebraska; Colorado; Utah; Nevada; California]	9%	2%	9.4%	377,876	345,558	352,563	329,840	335,443	347,856
<i>Southwest Chief</i> [Illinois; Iowa; Missouri; Kansas; Colorado; New Mexico; Arizona; California]	16%	3%	7.7%	342,403	318,025	331,143	316,668	300,416	295,515
<i>City of New Orleans</i> [Illinois; Kentucky; Tennessee; Mississippi; Louisiana]	25%	5%	16.6%	229,270	196,659	197,394	180,473	175,237	183,237
<i>Texas Eagle</i> [Illinois; Missouri; Arkansas; Texas (3/week on to New Mexico; Arizona; California)]	20%	4%	10.2%	287,164	260,467	251,518	218,321	232,654	239,276
<i>Lake Shore Limited</i> [Illinois; Indiana; Ohio; Pennsylvania; New York/Massachusetts]	17%	3%	9.0%	364,460	334,456	345,632	312,643	323,480	312,779
<b>Ridership Totals*</b>	<b>15%</b>	<b>3%</b>	<b>7.2%</b>	<b>2,460,675</b>	<b>2,294,594</b>	<b>2,358,061</b>	<b>2,153,566</b>	<b>2,157,370</b>	<b>2,140,787</b>

Source: Amtrak

\*Ridership totals, average annual growth and total increase compiled by MIPRC



**Amtrak Ridership on Midwestern Corridor Routes First Half of FY 2011 v FY 2010**

Route	March Ridership			October-March Ridership		
	Percent Change March 2011 over March 2010	March 2011 ridership	March 2010 ridership	Percent Change First 6 months of FY 2011 over first 6 months of FY 2010	First 6 months FY 2011 ridership	First 6 months FY 2010 ridership
Chicago-St. Louis ( <i>Lincoln service</i> )	12.7%	57,070	50,629	11.3%	291,108	261,552
Kansas City-St. Louis ( <i>Missouri River Runner service</i> )	13.6%	17,662	15,543	14.4%	87,858	76,781
Chicago-Milwaukee ( <i>Hiawatha service</i> )	9.0%	69,511	63,778	6.5%	388,734	365,079
Chicago-Detroit/Pontiac, MI ( <i>Wolverine service</i> )	8.1%	41,051	37,971	16.3%	243,185	209,091
Chicago-Grand Rapids, MI ( <i>Pere Marquette service</i> )	10.0%	8,881	8,076	6.7%	48,787	45,732
Chicago-Port Huron, MI ( <i>Blue Water service</i> )	25.2%	16,006	12,780	26.2%	85,823	68,030
Chicago-Carbondale, IL ( <i>Illini/Saluki services</i> )	19.2%	28,087	23,563	14.8%	149,440	130,158
Chicago-Quincy, IL ( <i>IL Zephyr/Carl Sandburg services</i> )	11.0%	19,243	17,343	8.4%	107,144	98,829
Chicago-Indianapolis ( <i>Hoosier State service</i> )	6.5%	3,685	3,461	9.0%	17,556	16,105
Midwest Ridership Totals*	12.0%	261,196	233,144	11.7%	1,419,635	1,271,357

Source: Amtrak

\*Ridership totals compiled by MIPRC



# NATIONAL RAILROAD PASSENGER CORPORATION (AMTRAK)

## Amtrak Station Ridership - Boards & Deboards For Stations Located Within the State of Indiana

For the Fiscal Years Ended September 30, 2010 and 2009

Code	Station	State	Fiscal Year 2010			Fiscal Year 2009		
			Ons	Offs	Total	Ons	Offs	Total
COI	Connersville, IN	IN	297	362	659	258	288	546
CRF	Crawfordsville, IN	IN	2,787	2,701	5,488	2,623	2,675	5,298
DYE	Dyer, IN	IN	1,093	1,164	2,257	1,144	1,180	2,324
EKH	Elkhart, IN	IN	7,200	8,880	16,080	5,742	7,633	13,375
HMI	Hammond-Whiting, IN	IN	3,058	3,580	6,638	2,758	3,254	6,012
IND	Indianapolis, IN	IN	16,495	15,630	32,125	16,742	15,804	32,546
LAF	Lafayette, IN	IN	12,879	12,926	25,805	12,171	12,506	24,677
MCI	Michigan City, IN	IN	1,348	2,047	3,395	857	1,431	2,288
REN	Rensselaer, IN	IN	907	941	1,848	842	978	1,820
SOB	South Bend, IN	IN	10,284	10,779	21,063	9,089	9,347	18,436
WTI	Waterloo, IN	IN	10,720	10,652	21,372	9,438	9,636	19,074

**State Total by Fiscal Year**

**67,068    69,662    136,730**

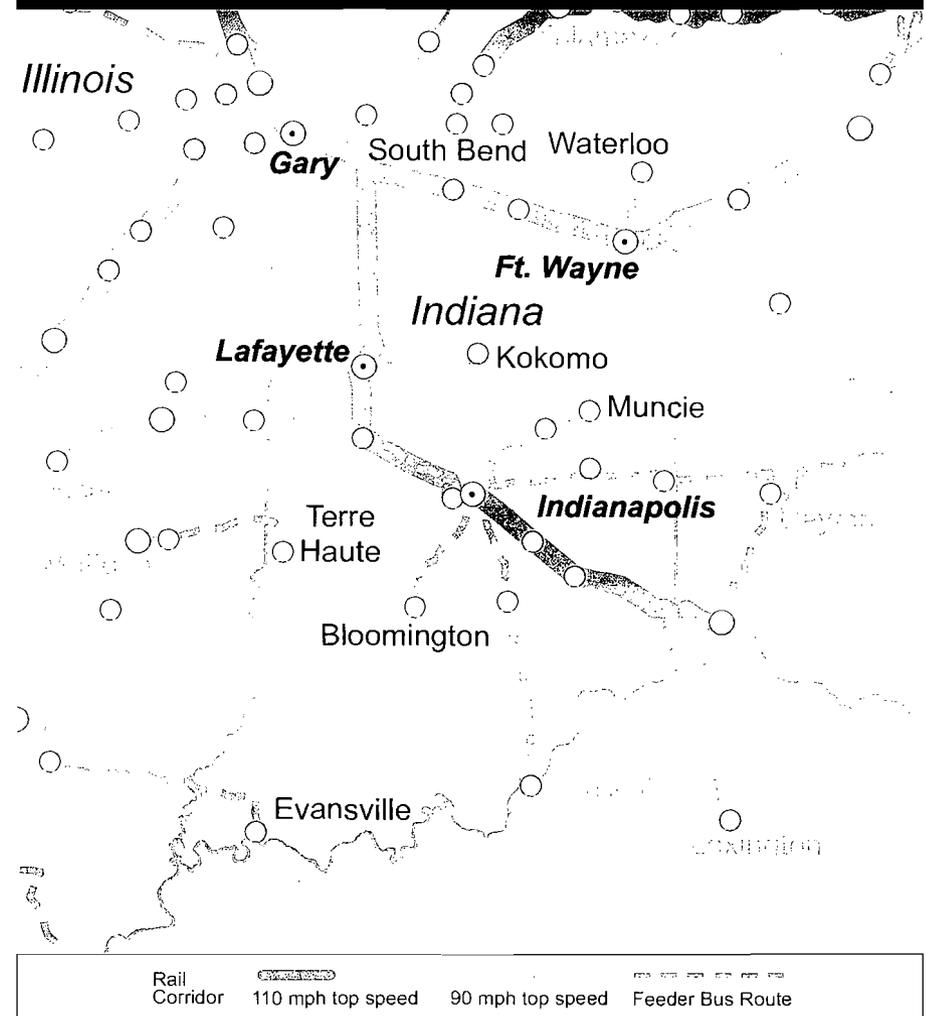
**61,664    64,732    126,396**

In an environment of rising oil prices, MWRRS will offer an energy-efficient and cost-effective alternative to air and automobile travel that will connect businesses and individuals with cities and towns across the Midwest.



**For more information, please contact:**  
Indiana Department of Transportation  
Rail Office  
IGCN Room N955  
100 North Senate Avenue  
Indianapolis, IN 46204  
(317) 232-1491  
[www.in.gov/dot/modetrans](http://www.in.gov/dot/modetrans)

## Benefiting Indiana's Economy



### The Midwest Regional Rail System is a transportation network for the 21st Century.

- 3,000-mile rail network connecting Indiana with 8 other Midwest states
- Speeds up to 110-mph, resulting in significantly reduced travel times
  - Increase in train frequencies
  - Improved on-time performance

# Introduction

The Midwest Regional Rail System (MWRRS) will significantly improve the level and quality of passenger rail service in Indiana. The system will contribute to economic growth and strengthen the state's manufacturing, service, and tourism industries.

## User Benefits

MWRRS will generate a \$2.3-\$3.5 billion user benefit for Indiana; this represents the overall savings to users of the state's transportation network derived from the system. Sources that produce this benefit are:

- The reduction in travel times that users of MWRRS receive (shown below)
- The reduction in travel times and costs that users of other transportation modes receive as a result of lower congestion levels
- Reductions in emissions as a result of travelers being diverted from air, bus and auto to MWRRS

### EXAMPLE TRAIN TRAVEL TIMES FOR INDIANA ROUTES

City Pairs	Current Service	MWRRS (EXPRESS)	Auto Drive Time
Chicago-Fort Wayne	(no service)	1hr 43min	3hr 17min
Fort Wayne-Cleveland	(no service)	2hr 40min	3hr 33min
Chicago-Indianapolis	4hr 50min	2hr 41min	2hr 57min
Indianapolis-Cincinnati	3hr 7min	1hr 27min	1hr 55min

# Community Benefits

MWRRS will improve access between Indiana communities. This access supports existing industries, fosters the growth of new small businesses and encourages large businesses to distribute their operations more widely throughout Indiana.

**4,540 New Permanent Jobs in Indiana**  
**\$86 Million of Extra Household Income in Indiana**

## Station Development Benefits

Increased train operations from MWRRS will lead to rising property values and significant joint (public-private) development opportunities near stations. These multimodal stations will bring together many modes of travel at a single location.

Increased Joint Development Potential in Indiana (in \$ millions):	
<u>Station</u>	<u>Property Value Increase</u>
Indianapolis	\$121-\$182
Lafayette	\$39-\$58
Gary, Airport	\$32-\$48
Fort Wayne	\$26-\$38
Plymouth	\$21-\$32
Hammond-Whiting	\$16-\$25
Michigan City	\$12-\$18
Warsaw	\$10-\$15
Indianapolis, International Airport	\$7-\$10
Shelbyville	\$0.9-\$1.4

## Environmental Benefits

MWRRS provides a good alternative to auto and air travel that promotes environmental benefits, including reduced air pollutant emissions, less land use, and fewer habitat and water resource impacts compared to expanding existing highways and airports.