

## EVCO Response to Ministry of Transportation of Ontario Consultation on Power Assisted Bicycles (December 2004)

### Reference documents

- Transport Canada definition and discussion of Power Assisted Bicycles (Canada Gazette)
- Power Assisted Bicycle discussion document (Ministry of Transportation of Ontario)
- CCMTA Best Practices Guide for Power Assisted Cycles (CCMTA)
- Ministry of Transportation of Ontario minutes of consultation on Power Assisted Bicycles

### 1. General approach

- *EVCO agrees with Ministry of Transportation of Ontario (MTO)'s approach in general to treat power-assisted bicycles like other bicycles.*

A Power Assisted Bicycle (PAB) or electric bicycle is a new vehicle category defined by Transport Canada. PABs are carefully defined with a maximum allowable assist speed of 32km/h, a maximum continuous rated power of 500W and various specific safety features. These features allow a PAB to handle and perform essentially as a bicycle, while adding increased utility in terms of range and hill climbing ability. PABs travel at bicycle speeds and look and feel like bicycles.

A PAB is a bicycle with a small, clean, quiet electric assist. A PAB is different from a moped, motorcycle, scooter and is defined as a new, completely different vehicle category.

### 2. Definition

- *EVCO recommends adopting the Transport Canada (federal) definition of a power assisted bicycle in its entirety with no additions, deletions or modifications.*
- *EVCO recommends including all definitions defined by Transport Canada and no more.*

Transport Canada has a clear, concise and carefully worded federal definition of a PAB. In our discussions and in background papers prepared by MTO and CCMTA, the PAB has been defined several times in summary. In every case the summaries have been incomplete. We urge the MTO to take great care in accurately and precisely replicating the Transport Canada definition. Any changes at this point would introduce errors and inconsistencies in interpretation.

The best option would be to adopt the federal definition *by reference* only. That is, use the federal definition by referring to it, not by trying to replicate it. As Transport Canada gains experience with this vehicle class across the country, it is likely that minor improvements will be made in the definition. The Canada Gazette makes reference to this eventual possibility.

### 3. Wheel size

- *EVCO recommends excluding the minimum wheel diameter restriction that is described in the MTO proposal.*

Wheel size is not part of the Transport Canada definition. Restricting wheel size to a minimum diameter will exclude many practical bicycles from use with electric assist. This includes folding bikes and recumbent bikes that are currently on the market. These bikes have a long history of safe and satisfactory operation and are ideal candidates for electric

assist. Restricting wheel size or wheel base will eliminate many excellent designs that would otherwise fit in the federal PAB definition. If wheel size is restricted it will discourage the future development of innovative and practical PABs.

#### **4. Tire width**

- *EVCO recommends excluding the minimum tire width restriction that is described in the CCMTA guide.*

There is no tire width restriction in the federal definition. Many bicycles presently on the road today operate safely with narrow tires. Implementing a minimum tire width restriction would eliminate many otherwise suitable bikes from the PAB definition.

#### **5. Wheel base**

- *EVCO recommends that wheel base not be restricted in the definition of PABs.*

There is no minimum wheelbase restriction in the federal PAB definition. There is also no suggestion of wheelbase restriction in the MTO proposal nor in the CCMTA guide. There was a suggestion about restricting wheelbase in the first consultation meeting, but no rationale was provided other than to exclude certain "scooter" type vehicles, "pocket bikes" and children's bikes from the PAB definition. *Scooters and pocket bikes (mini-motorcycles) are already excluded by their lack of pedals.*

Limiting the wheel base of PABs will only serve to exclude bikes with smaller wheel base such as power assisted folding bikes and "short wheel base" recumbent bikes. It will not prevent children from riding them. If the intent is to prevent children from riding PABs, this would be better served by placing an age limit on the use of PABs.

#### **6. Vehicle definition, wheel size and age restrictions**

- *Instead of restricting wheel size and wheel base, EVCO recommends explicitly excluding children from riding electric assist bicycles and excluding "scooter" and "go-ped" from the category.*

The CCMTA recommendations include restricting wheel size. If the intent is to restrict the use of PABs by children this will not be effective. It will not prevent children from riding PABs with larger size wheels. Instead, it will only serve to restrict the use of PABs with smaller wheels, such as folding bikes and recumbent bikes, and will further limit innovation in new PAB designs. If the intent is to keep electric bikes away from children and youth, EVCO recommends setting an appropriate age limit.

If the intent is to restrict kick-scooters, go-peds and similar small-wheel vehicles then it would be better to restrict these vehicles outright. *Since kick-scooters and go-peds do not have pedals, they are already excluded from the PAB definition.* If the CCMTA wanted to restrict the wheel size for another reason, this is not explained in their recommendations.

The federal PAB definition is presently robust, and clearly states that *if* it has pedals and fits within the speed and power and safety limitations then it *is* a Power Assisted Bicycle. Therefore "scooters" and "go-peds" and motorized children's toys are already explicitly excluded.

Wheel size and wheel base are no measure of bike safety. Good bike handling is more complex and includes many other technical issues. EVCO does not support restricting the development of power assist bikes with provincial restrictions that are designed into the definition for the wrong reasons. The federal definition is complete and sufficient.

## **7. Weight**

- *EVCO recommends that there should be no weight restriction for PABs.*
- *EVCO recommends that if weight restrictions ARE implemented, that exceptions be made for tandem bikes and three wheeled bicycles (adult tricycles).*

Whereas weight is not part of the Transport Canada definition, the CCMTA paper suggests a maximum weight of 50kg. In practice, most PABs weigh half this amount. Weight is a major factor in the selection of all bicycles. A PAB that weighs 50kg will suffer a marketplace disadvantage and will not sell.

On the other hand, some of the bikes most needing power assist are those designed with three wheels. Imagine a "granny" trike with a shopping basket on the back, those designed to carry light cargo, or tandem bikes. These bikes are precisely those that could most benefit in an electric assist to aid in hill climbing.

## **8. Multiple motors**

- *The number of motors should not be restricted as long as the combined power output of the motors in operation does not exceed the maximum allowable power output.*

This item was clarified in the federal definition and described in the "Regulatory Impact Statement, Motor Vehicle Safety Regulations" in the Canada Gazette (2003):

The definition of "power-assisted bicycle" would be amended to permit more than one electric motor to be fitted to a power-assisted bicycle. This would be permitted only when the combined output of the motors does not exceed the limit prescribed in the Regulations.

See <http://canadagazette.gc.ca/part1/2003/20030201/html/regle7-e.html>

## **9. Shifting transmission**

- *EVCO does not support restricting the use of a shifting transmission.*

Some of the wording in the CCMTA guide appears to have been borrowed from motorcycle or moped definitions (federal) and is not applicable to a PAB. CCMTA guidelines state that: *"...motor...must not require or allow clutching or gear shifting by the operator after the motor assist system has been engaged."* This restriction is not a part of the federal PAB definition and should not be implemented.

Most bicycles sold today have shifters and a simple transmission that allows the rider to choose the appropriate gear for efficient pedaling. Several common models of PAB transfer the power of the electric motor through the regular bicycle chain and transmission for best efficiency and to enable the use of a smaller, less powerful motor. The ability to shift gears is

central to bike riding and is currently easily accomplished on most bicycles with minimum effort or attention.

Restricting the use of a shifting transmission would disallow several models of safe, high quality PABs that are presently on the market and that presently qualify under the federal PAB definition. (Both models of PAB that were demonstrated at the MTO consultation session in November 2004 are of this design.)

#### **10. Operator requirements and rules of the road**

- *EVCO supports a minimum allowable operator age of 14-16yrs.*
- *Any adult of 18yrs or older should be free to operate an electric bike without a license or permit.*
- *EVCO recommends enforcing age limits for PAB in a manner similar to those techniques currently used to enforce age requirements for helmet use.*
- *EVCO does not support creating additional rules of the road specific to PABs.*

EVCO believes it is unnecessary to revise current bicycle rules of the road or create new rules to address PABs. PABs are in all practical terms of handling and performance like a bicycle. No special rules are required. Rules that presently apply to bicycles are appropriate for electric-assisted bicycles. With respect to rules of the road and enforcement, if a cyclist is breaking the rules of the road, police are currently able to stop the cyclist and ask for the cyclist to identify themselves. They may charge the cyclist with traffic offenses. Any cyclist appearing in court may challenge the age restriction at that time.

#### **11. Safety items**

- *EVCO recommends PABs be required to have the same safety equipment as required on a regular bicycle: an audible signaling device, sufficient lights and reflectors if operated at night, and effective brakes.*
- *EVCO recommends that brakes for a PAB should be equivalent to the brakes required for all bicycles. However, MTO should examine the braking requirement for all bicycles in more detail.*

*Signaling device - bell or horn:* A suitable bell or horn to warn pedestrians should be required, as for bicycles.

*Lights:* Lights and reflectors should be required for operation at night, as for bicycles. A bicycle that is ridden during the day does not require lights, nor should a PAB.

*Brakes:* A PAB should meet the same braking standards as all bicycles. All bicycles should be able to stop in a reasonable, safe distance.

#### **12. Education**

- *EVCO recommends that MTO support municipalities and non-government organizations in administering and conducting cycling safety education programs as well as safe driver programs.*
- *EVCO recommends that MTO develop and implement a public education campaign that is designed to increase awareness of alternative vehicles on the road and to provide guidelines for road users.*

Many municipalities and non-government organizations provide courses in safe and effective cycling. MTO is encouraged to support the development and delivery of these courses. All cyclists will benefit from an effective cycling course. Road safety depends on many factors including education and enforcement. MTO should provide additional resources to identify opportunities for cycling education and to develop and support existing safe cycling programs. Motorist also need to learn more about road sharing skills.

The safety of the road environment will be enhanced with increased acceptance of slower speed vehicles such as bicycles and electric assist bicycles. Increased numbers of (and greater acceptance of) bikes and pedestrians has a calming effect on all traffic generally, leading to a safer road environment.

EVCO is already playing a leading role in educating the public about electric vehicles, including electric assisted bicycles. EVCO has a Web site at [www.evco.ca](http://www.evco.ca) that can be used as a medium to help educate the public.

### **13. Testing, licensing, registration and insurance**

- *EVCO does not support a requirement for PAB liability insurance.*
- *EVCO does not support licensing for PABs.*
- *EVCO does not support requiring a written test for adults. However, a written test may be appropriate for those between 14 and 18 years of age. Equivalence may be given for those who have completed a safe cycling course.*

It is presently unclear whether liability insurance is available for bicycles or for electric assisted bicycles. Since the operating and handling characteristics of a PAB is the same as a bicycle, the liability issues are the same.

*Liability insurance:* Since a PAB travels at bicycle speeds and the weights are similar to or only marginally greater than a regular bike when loaded (including rider), then the potential for liability to third parties remains similarly low as for a bicycle. Low speeds and low vehicle weights ensure that risk to other road users remains insignificant compared to the equivalent risk of operating a car or truck.

*No vehicle registration or plate required:* Licensing bicycles has been shown to reduce ridership and is a disincentive to use. Registration also implies enforcement activities for police to recover stolen bicycles which they are presently unable to do.

*No written test required for adults:* A written test requirement for ages 14-18 might encourage learning road skills through third-party training in addition to ensuring adequate knowledge of the rules of the road. Completion of an effective cycling course could be considered as an alternative to a written test.

### **14. Rules of the road and enforcement**

- *The same rules of the road that currently apply to bicycles should also apply to PABs.*
- *Traffic offenses and penalties that currently apply to bicyclists should also apply to PAB operators.*
- *EVCO recommends that MTO provide more support to police, municipalities, and non-*

*government organizations for traffic enforcement and driver (both motor vehicle and cyclist) education.*

Traffic enforcement needs more support to ensure that all road users, motorists and cyclists alike, respect the existing rules of the road. Police have limited resources to enforce traffic laws and need more support in this area. Education of all road users, coupled with effective enforcement are both required. All vehicle operators, motorists and cyclists, need to be adequately educated to understand not only the rules, but also how to share the road with other road users.

Cyclists operating a PAB should be required to identify themselves at the request of a police officer. Note that exclusion of an electric assisted bicycle from the "motor vehicle" definition (by defining it as a bicycle) does not preclude the ability to charge an impaired operator under the Criminal Code of Canada.

### **15. After-market PAB conversion kits**

- *EVCO supports the original CCMTA recommendation that kits and modifications be allowed within the prescribed limits.*

The MTO summary of the CCMTA guidelines states that after-market kits should be prohibited. This is an error as both the CCMTA guidelines and the federal definition clearly permit after market kits and modifications, as long as the vehicle falls within permissible guidelines.

### **16. Electrical safety features**

- *EVCO feels that secure drive systems, secure batteries and properly insulated electric terminals are important, but need not be regulated.*

Many other items are required to create an electrically safe system, including adequate fuse protection, correct wire size and quality of components. Safety features such as these are already included in the manufacture and design of consumer electric systems including those that are installed on PABs. It is impossible to legislate all the factors that affect safe design and product implementation.

EVCO agrees with the need for both safe and secure electrical systems but not with the need to specify every design feature in the Highway Traffic Act. Otherwise, other technical safety items should be added such as fused protection of batteries and circuits, minimum safe wire size for various parts of the system, physical security of other parts of the system such as controls, wiring, electronic controllers, chargers and so on.

### **17. Generators**

- *EVCO feels that it is unnecessary to exclude the use of an internal combustion generator since this is already covered in the federal PAB definition.*

This item is already covered in the federal PAB definition and does not need to be repeated. CCMTA recommendations prohibits a gas powered generator. Since the federal definition already excludes generators, this need not be repeated in the MTO definition. Any gas powered bike would be a moped.