



Florida Department of Transportation

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ANANTH PRASAD, P.E.
SECRETARY

RE: Notice Regarding Use of Bike Racks on Buses

The Operations Section recently completed a review of headlight obstruction by bike racks, with and without loads, on buses. The initial concern was the obstruction caused by the 3 bike rack configuration and compliance with Florida statute. In visual observations it does appear that the lights are obstructed when using the 3 bike rack, and in even some cases a 2 bike rack. The Federal Transit Administration was asked the same questions related to compliance. FTA ruled that the racks are considered a temporary load, therefore they are not subject to the requirements in the Federal Motor Vehicle Safety Standards. The Federal Standards relate more to manufacturing rather than operation of a vehicle on public roads. The Operation of a motor vehicle on public roads is covered in state statute.

The Florida Statutes states:

316.237 Multiple-beam road-lighting equipment.—

(1) Except as hereinafter provided, the headlamps or the auxiliary driving lamp or the auxiliary passing lamp or combination thereof on motor vehicles shall be so arranged that the driver may select at will between distributions of light projected to different elevations and such lamps may, in addition, be so arranged that such selection can be made automatically, subject to the following limitations:

(a) There shall be an uppermost distribution of light, or composite beam, so aimed and of such intensity as to reveal persons and vehicles at a distance of at least 450 feet ahead for all conditions of loading.

(b) There shall be a lowermost distribution of light, or composite beam, so aimed and of sufficient intensity to reveal persons and vehicles at a distance of at least 150 feet ahead; and on a straight level road under any condition of loading none of the high intensity portion of the beam shall be directed to strike the eyes of an approaching driver.

An object, material, or covering that alters the headlamp's visibility from at least 450 feet for an uppermost distribution of light or at least 150 feet for a lowermost distribution of light may not be placed, displayed, installed, affixed, or applied over a headlamp.

(2) Every new motor vehicle registered in this state shall be equipped with a beam indicator, which shall be lighted whenever the uppermost distribution of light from the headlamps is in use, and shall not otherwise be lighted. Said indicator shall be so

designed and located that when lighted it will be readily visible without glare to the driver of the vehicle so equipped.

(3) A violation of this section is a noncriminal traffic infraction, punishable as a nonmoving violation as provided in chapter 318.

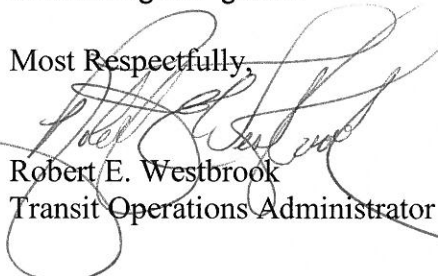
The statute doesn't provide guidance on how to determine or measure visibility at 150' / 450'. Through the FSU College of Engineering we tested buses with various bike racks. The tests measured light in lumens, which is a common means of measuring light intensity. All of our testing is now complete, and we found on average a 30% reduction of light, regardless of the type of rack. Lighting intensity varies greatly on current headlight designs. All modern headlights designs far exceed what is currently required in Florida statute. With a loaded rack, the lighting did have sufficient intensity and could reveal persons and vehicles at the distances defined in the statute. Even with the 30% reduction, as observed during testing, the lighting still meets the requirements of the statute as currently written.

It should be noted that we did identify two areas of concern that are not covered by Florida statute, but do raise concerns from a safety standpoint.

- Although the bike racks meet current statute, it should still be a safety concern for the agency. Changing the light intensity can alter what the driver is accustomed to seeing. The driver should be aware that a loaded bike rack will change the light intensity therefore change what they are accustomed to seeing. Based on this, we urge all transit agencies to take precaution when operating at night with the bike rack loaded on both the cutaway and the large coach. It is highly recommended that this become a standard part of driver training
- Also, on certain small buses (cutaway), a portion of the bike may be in the driver's line of sight. On a full size transit coach the driver is positioned in a way that allows them to look over the top of the bicycles. It only impedes vision for a short distance immediately in front of the coach. The placement of the racks on a small bus puts the rack further out front and may cause the top portion of the bike to enter into the driver's line of sight. While reviewing the lighting issue we discovered that the same rack that was designed for the fixed route coach is also used on a small bus. We are currently working with manufacturing to resolve this concern. We will be seeing design changes that will resolve this for small bus applications.

We sincerely appreciate the efforts of everyone involved with this issue. Public safety is always a primary concern, and we are all very sensitive to the needs of the transit agencies and passengers. It was our goal to not only answer the questions on compliance, but also have a safer more user friendly way to transport bikes on all types of transit buses. We will continue to monitor this and will continue to work on exceeding our goals.

Most Respectfully,


Robert E. Westbrook
Transit Operations Administrator