THE OHIO STATE UNIVERSITY EXTENSION

FACT SHEET

Agriculture and Natural Resources

AEX-596.4-09

Lighting and Marking Recommendations for Buggies and Wagons

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Introduction

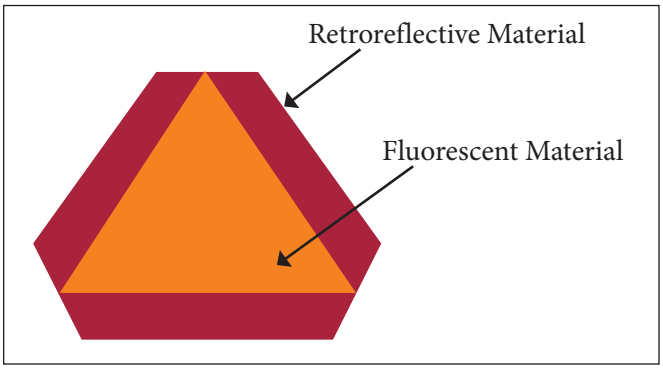
Horse-drawn buggies have been used by the Amish as the primary means of transportation for generations. While this use of buggy transportation has remained constant, rural populations have grown, and tourism in Amish communities has increased. This leads to many more motorists sharing the same roads as buggies. Amish acceptance of a universal buggy lighting and marking practice may be one way to increase public awareness of buggies on the roadway and decrease buggy/motor vehicle crashes.

Ohio State University Extension, both at the state and county levels, law enforcement officers, and a safety committee of Amish have worked together to establish a recommended practice for marking and lighting of Amish buggies. These recommendations are the result of research and community demonstration projects conducted since 1994 with Amish representatives playing a very active role. One additional source of information that provided guidance was the American Society of Agricultural and Biological Engineers (ASABE).

In August 2001, ASABE proposed an engineering practice for lighting and marking of animal-drawn vehicles, including buggies. The purpose of this engineering practice is to provide a unique lighting and marking pattern for use solely on animal-drawn vehicles. Compliance with this engineering practice, while remaining acceptable for local Amish culture, is the goal of this effort. The document was updated in 2008, and is presented on the following page.

The Slow Moving Vehicle (SMV) Emblem

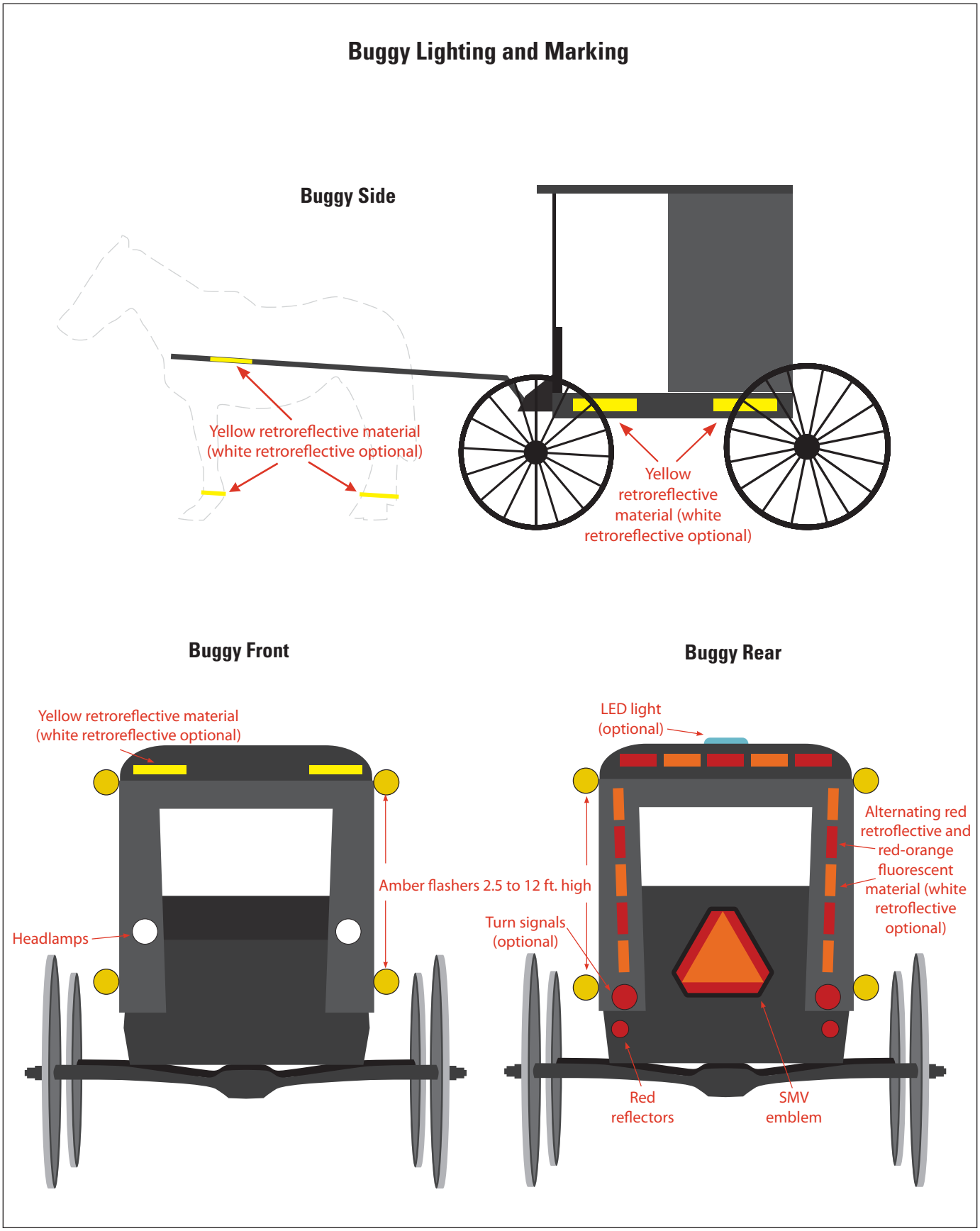
The SMV emblem is a unique identifying marker indicating a vehicle traveling slower than 25 mph. Studies show that two out of three highway crashes involving slow-moving vehicles are rear-end collisions. Of these rear-end collisions, nine out of ten occur during daylight hours. During the day, the bright, fluorescent orange triangle of the SMV emblem gains the attention of approaching motorists from more than 1,000 feet. This provides motorists ample time to slow down before it is too late. At night, the reflective border of the SMV emblem glows brilliantly in the path of approaching headlights. The distinctive, retroreflective red triangle surrounding the fluorescent orange center immediately identifies a slow-moving vehicle.



An outline of the ASABE recommendations is presented here.

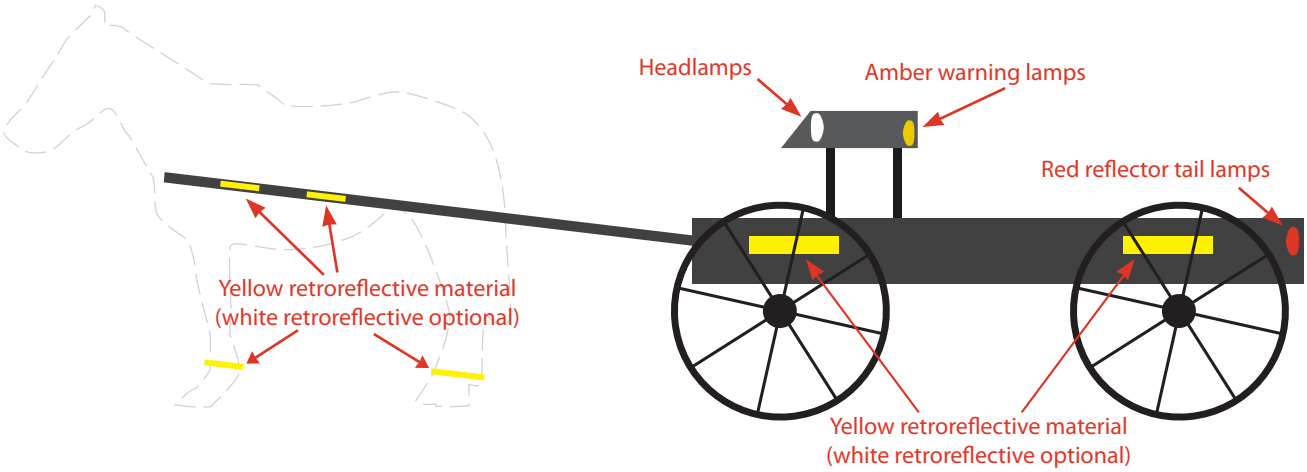
Buggy and Wagon Lighting and Marking				
Item	**2008 ASABE Recommendations**			**Options**
	Number	**Color**	**Mounting**	
SMV Emblem (Rear)	1	RED retroreflective border surrounding fluorescent ORANGE center	Rear center, mounted 2 to 6 feet from the surface of the road.	No alternative options exist for an SMV emblem.
Headlights[1] (Front)	At least 2	WHITE	Symmetrically around centerline, mounted between 2.5 and 12 feet high, visible to the front and the rear.	As an alternative to headlamps and taillamps, at least two double-faced lamps protruding from the sides at the widest point can be used. The lamps will have a CLEAR lens to the front and a RED lens to the rear.
Tail Lights[1] (Rear)	At least 2	RED	Symmetrically as widely spaced as possible, between 2.5 and 12 feet high.	A turn signal system may be incorporated into the rear RED tail lamps or the flashing AMBER lamps. In that case, the lamp that is positioned on the side of the turn should flash and the lamp on the side away from the turn should go to steady burn. An L.E.D. (Light Emitting Diode) light may be mounted on the top center.
Hazard Flashers[1] (Front and Rear)	At least 2	AMBER	Symmetrically, visible to front and rear, between 2.5 and 12 feet high.	No other options exist for AMBER flashing lights.
Retroreflective Material (Rear)	2 inch x 9 inch strips	Alternating RED retroreflective and ORANGE RED fluorescent material	Outlining the sides and top of the rear of the vehicle.	Where local culture uses WHITE retroreflective material, it should be at least 1 inch wide. If this option is chosen, two red reflex reflectors or red retroreflective material should be mounted symmetrically around centerline, as widely spaced as possible.
Retroreflective Material (Front)	At least two 2 inch x 9 inch strips	YELLOW retroreflective material	Symmetrically as widely spaced as possible.	Where local culture uses WHITE retroreflective material, it should be at least 1 inch wide.
Retroreflective Material (Side)	At least two 2 inch x 9 inch strips	YELLOW retroreflective material	Symmetrically along each side of vehicle frame. If vehicle has a tongue or shaft visible on the outside of the animal, at least one additional yellow strip should be placed on outside of the tongue or shaft.	Where local culture uses WHITE retroreflective material, it should be at least 1 inch wide. YELLOW or WHITE retroreflective material may be attached to the harness, to the animal's legs, or both.
[1]Animal-drawn vehicles with a lighting system should be equipped with a battery operated or generator powered system. Batteries may be typical storage, deep cycle or gel cell conforming to SAE J537.				

Buggy Lighting and Marking

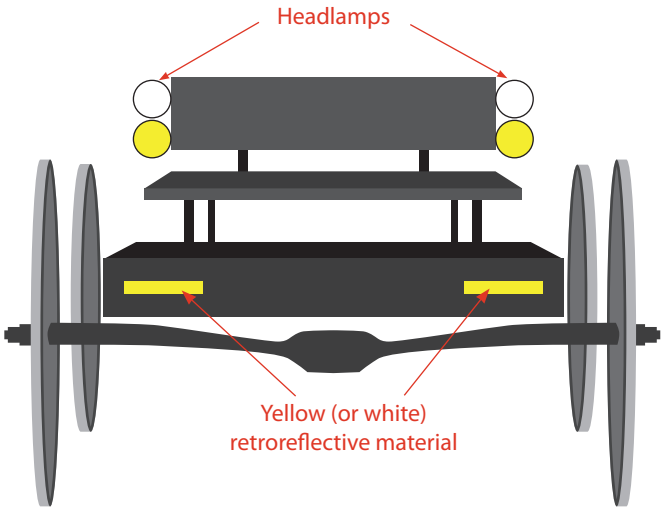


Wagon Lighting and Marking

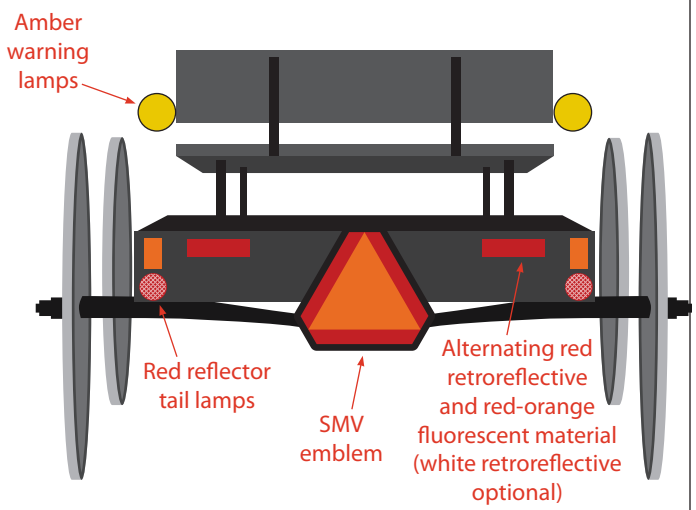
Wagon Side



Wagon Front



Wagon Rear



Reference

ANSI/ASAE, EP576.1 July 2008, Lighting and Marking of Animal-Drawn Equipment, ASAE Standards, American Society of Agricultural Engineers (ASAE), St. Joseph, MI 49085.

Resources

Retroreflective Material, American Society of Agricultural Engineers (ASAE), S279.11, April 2001.

Lighting and Marking of Agricultural Equipment on Highways, ASAE S279.13, DEC 2005.

Slow-Moving Vehicle Identification Emblem, ASAE, S276.6, JAN 2005.

Headlamps for Agricultural Equipment, SAE J975, JUN93.

Tail Lamps (Rear Position Lamps) for Use on Motor Vehicles Less Than 2032 mm in Overall Width, SAE J585, MAR 2000.

Flashing Warning Lamp for Agricultural Equipment, SAE J974, AUG 2002.

Reflex Reflectors, SAE J594, DEC 2003.

Storage Batteries, SAE J537, SEPT 2000.

For additional information, visit the following web site at **http://www.agsafety.osu.edu** or request a listing of the available fact sheets from your local OSU Extension office.

Acknowledgments

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