

Agricultural Machinery Illumination and Safety Act (AMISA)

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& many others.



KANSAS STATE
UNIVERSITY

Biological and Agricultural Engineering



WHY AG. LIGHTING AND MARKING?



Photo credit: Michael Rosenstein, Flickr.com

Imagine...

- It is early evening
- A soccer mom lost & running late to an unfamiliar town/city
 - Minivan with a load of unruly kids
 - Taking a short cut on a rural road (or just turning around)
- A farmer in the middle of harvest or planting season
 - Moving his machine to a new field
 - Tired and hungry from a long day in the field
- These two are about to meet on a stretch of road

The goal of Ag. Lighting and Marking

- This meeting is a non event.
 - Each driver sees the other
 - The driver the minivan understands the size and shape of the ag machine
- The two pass each other and go on about their business.

ORIGINS AMISA LAW

Agricultural Machinery Illumination and Safety Act



Agricultural Machinery Illumination and Safety Act (AMISA)

- Based on an ASABE* Standard S279
- Law was introduced in Congress in 2009
 - H.R. 3720
- Signed into law June 6, 2012
- USDOT rule writing from 2012 to 2016
- Published in Fed. Register June 22, 2016
- Takes effect June 22, 2017

* American Society of Agricultural and Biological

What it means

- All agricultural equipment sold after June 22, 2017
 - Must comply with ASABE standards S279 & S390
- All Equipment manufactured before June 22, 2017 is “Grandfathered”
 - Law does not apply.

Why the need for the law?



- **Farmers work across state lines**
 - Own property in multiple states
 - Buy and sell equipment across state lines
 - Potentially internationally -- Canada
- **Manufacturers sell products in all states**
 - Costs reduced if able to build product to meet only one law
 - The drivers behind the adoption of the law

Why the need for the law?

- **No uniformity for law enforcement**
- **Activist legislatures were a concern**
 - **Less rural representation**
 - **50 possible lighting & marking laws**
 - Increased costs to farmers for new equipment
 - Decreased resale values for used equipment
- **Promote more on-road safety of ag equipment**



Why use this standard?

- ASABE is a very credible standards writing body
 - Internationally recognized
- S279 was first drafted in 1954
 - Standard required to undergo regular reviews
 - Regularly updated to meet current technology
 - Currently on the 17th revision
- Law written to take advantage of standard process
 - Law stays current as technology advances

Background on Standards (In General)

Definition: A document established by **consensus** and approved by a **recognized body** that provides for **common and repeated use, rules, guidelines** or characteristics for activities or their results, aimed at the achievement of the **optimum degree of order** in a given context

- ASABE is the recognized body in this case.

Consensus from: ASABE Lighting and Marking Committee

- Broad spectrum of members
- Representatives from public & private organizations
 - Manufactures & Universities
- Many others besides those listed



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About the standards process

- A need for a standard is identified
- Need submitted to a standards writing body
 - ASABE in our case
- Project assigned to an appropriate committee
 - Working group formed--studies and writes a draft standard
- Draft standard brought before committee
 - Must have unanimous support before it is approved
- Draft standard goes to an oversight committee for approval
 - Must again reach unanimous support to be approved

About the standards process (cont'd)

- Approved standard is published
- Standard is reviewed at minimum every 5 years.
 - Reaffirmed if considered useful
 - Withdrawn if considered to be no longer useful

Enforcement of AMISA

- Details of law still trickling down to law enforcement
 - Has to work through layers of government
- Level of the law isn't a concern unless there is a fatality

Some key aspects of the AMISA

- AMISA = 49 CFR Part 562
- Applies only to NEW agricultural equipment
 - Equipment sold after June 22, 2017
- Agricultural Equipment as defined by ASABE Standard 390.4:
 - *“Agricultural tractors, self-propelled machines, implements, and combinations thereof designed primarily for agricultural field operations.”*

Does not apply to...

- Personal equipment used by homeowners
 - Lawn tractors
 - Lawn mowers



Photo: deere.com



Photo: husqvarna.com

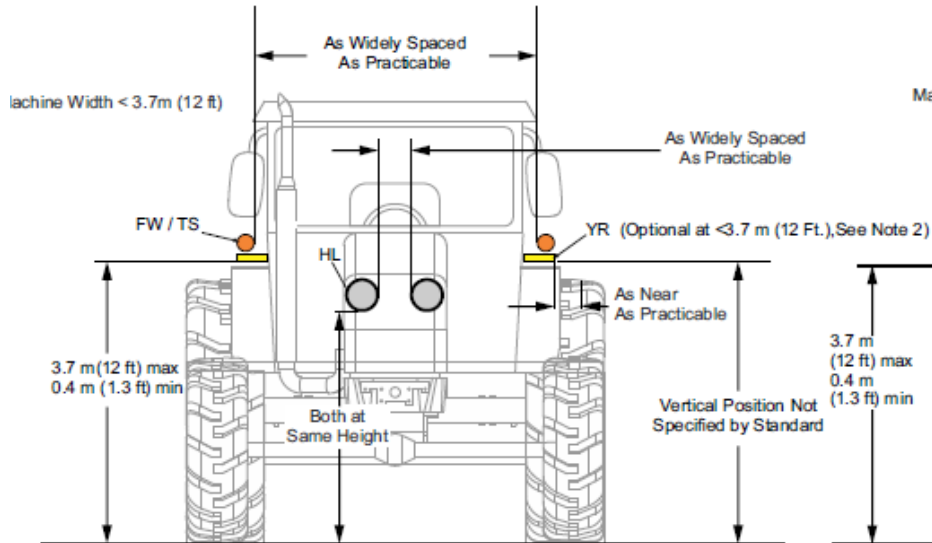
Basic Requirements – (Roughly)

- For Tractors & Self-Propelled equipment
 - Two headlights, two red tail lamps, two flashing amber lights
 - Certain mounting and placement requirements for these
 - Turn signals
 - Two red retro reflective devices
 - SMV
 - Conspicuity material if wider than 12'

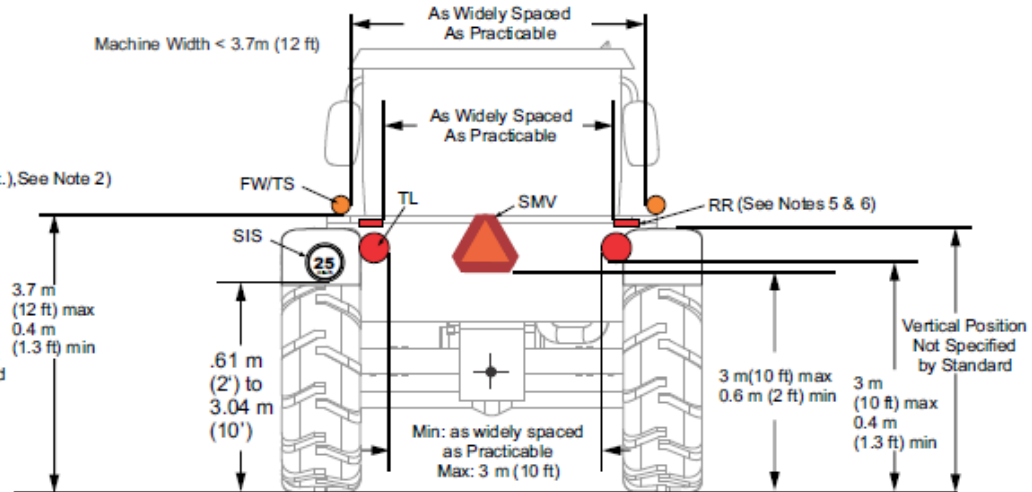


For tractors it looks something like this...

Tractor Front



Tractor Rear

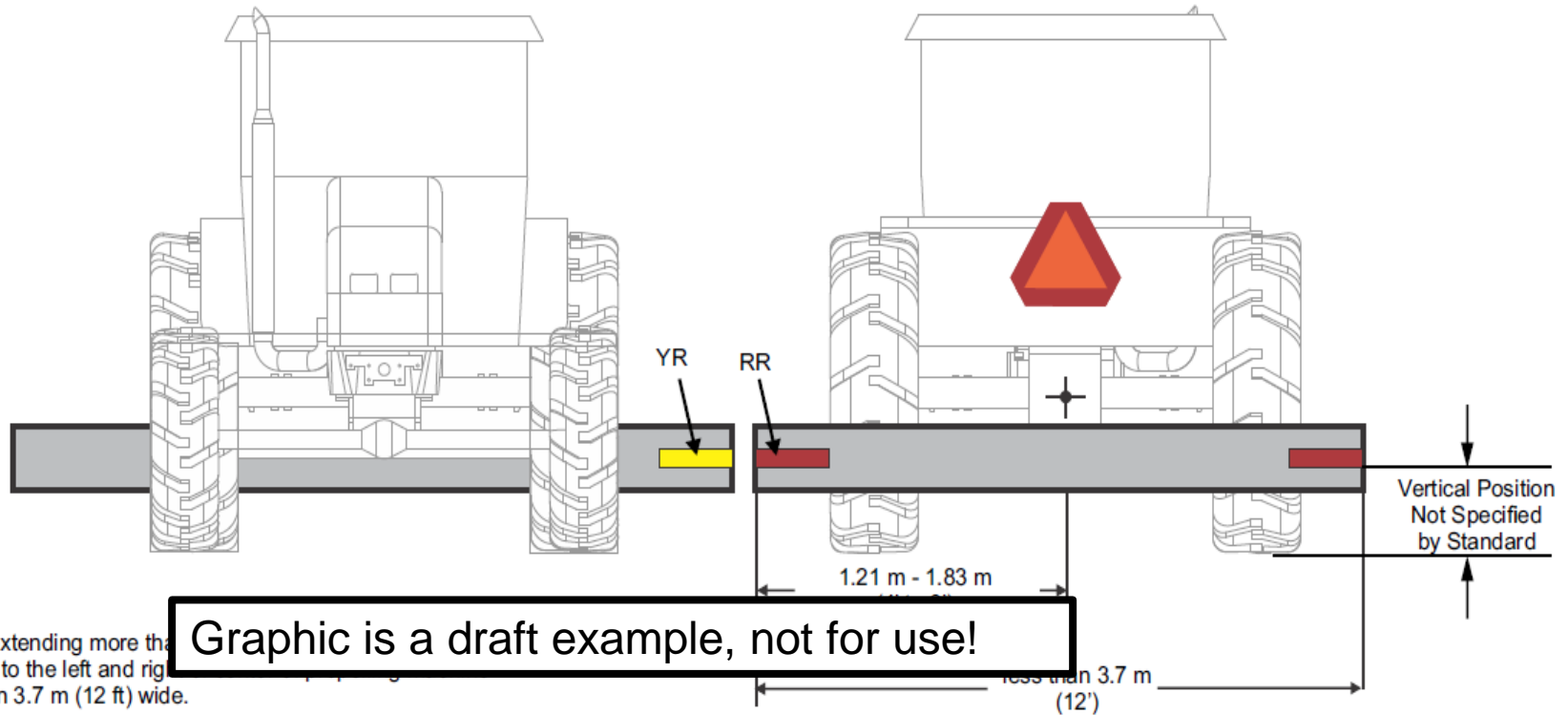


Graphic is a draft example, not for use!

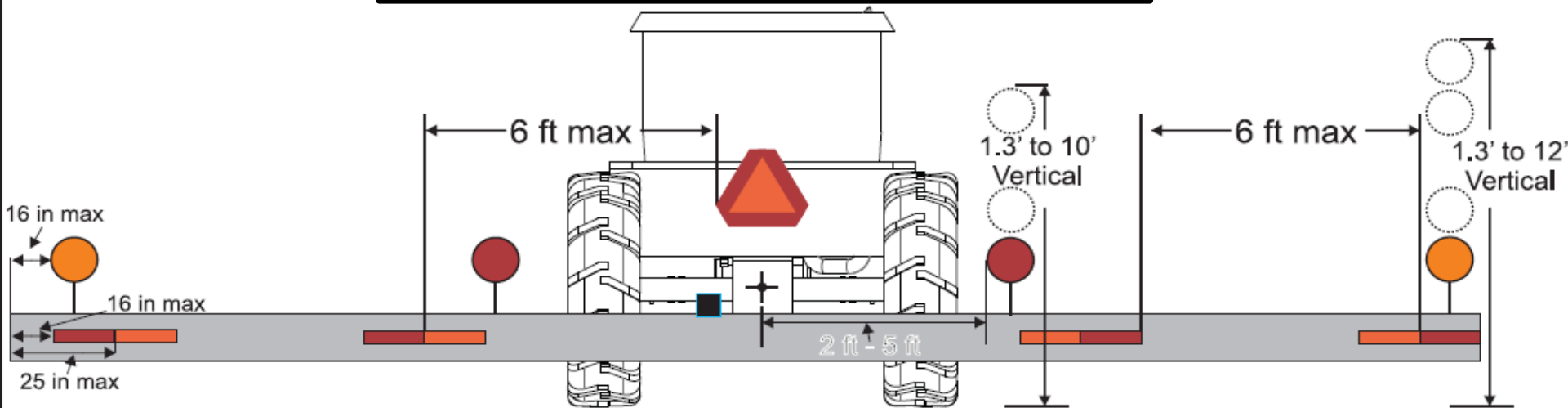
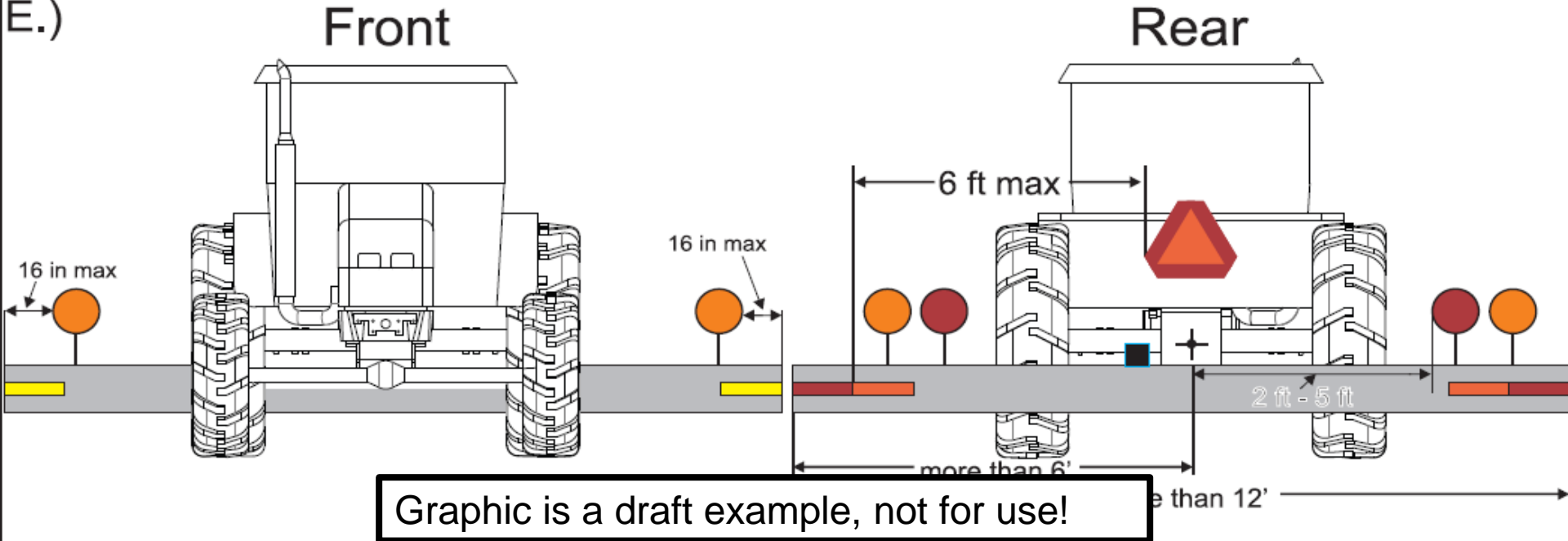
Basic Requirements – (Roughly)

- Towed equipment (implements)
 - SMV required on implement
 - If it obscures tractor SMV
 - Longer than 16'
 - Yellow retro reflective material visible to front if wider than 8'
 - More required if greater than 12' in width
 - If it obscures tail lamps, implement must have tail lamps
 - Anything obscured on tractor must then be on implement
 - Must use 7 pin SAE J560 trailer plug

12' wide or less towed example

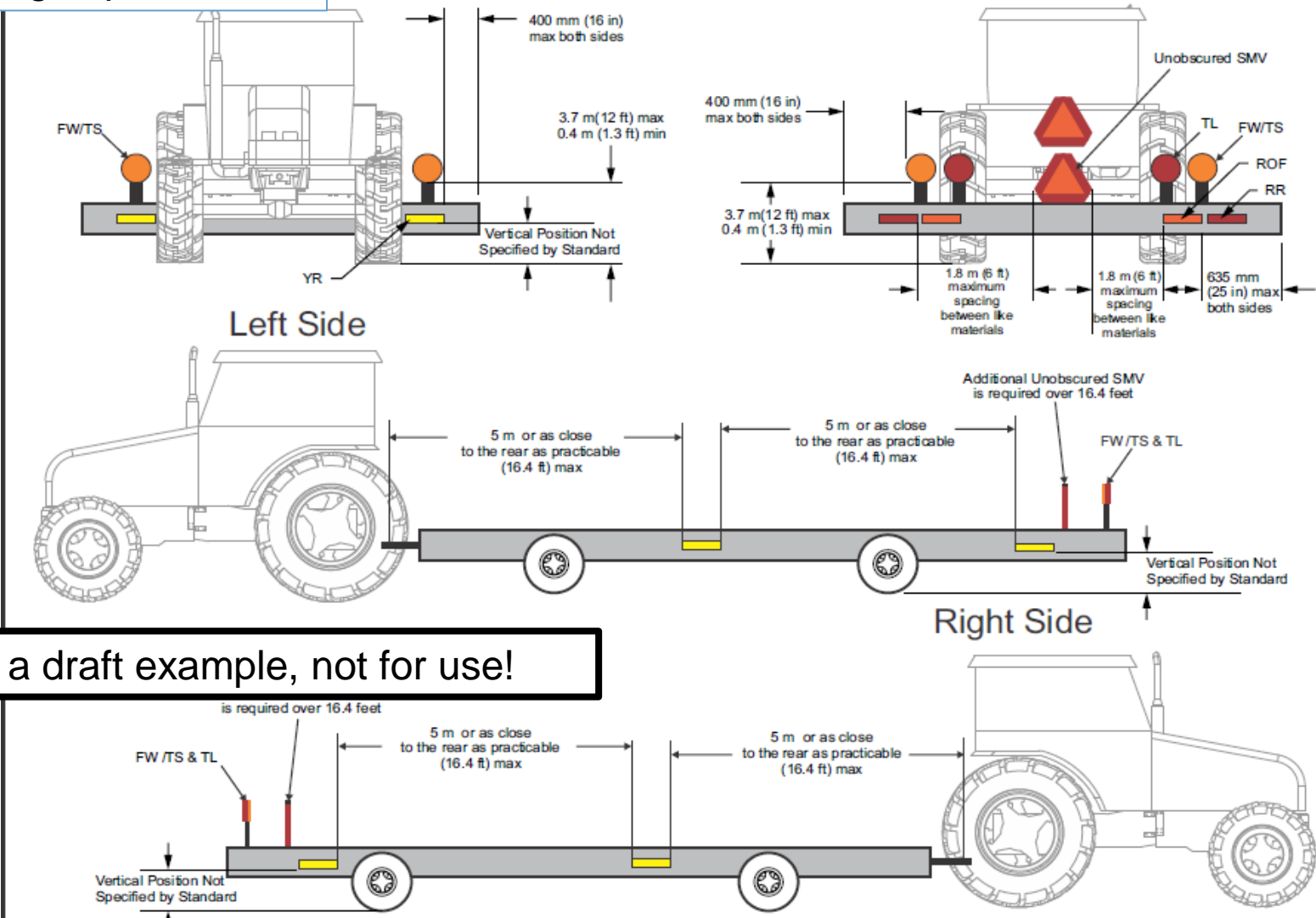


E.)



S279 4.2.3.3 Equipment extending more than 6 ft to the left or right of center of propelling machine or more than 12 ft wide.

For Towed Long implements



Graphic is a draft example, not for use!

General thoughts

- New equipment from major manufacturers complies
 - Producers will need to maintain lighting and marking features on this equipment.
- Old equipment in use is grandfathered in
 - Producers should consider making the lighting and marking updates.
 - For general safety if on the road a lot

General thoughts (Cont'd)

- Exceptions where producers might need to be concerned
 - Equipment purchased from smaller manufacturers
 - Welding shops, startup manufacturers
 - Home built equipment
 - FFA projects
 - Implement trains



Example shown: Tractor, air seeder, seed tender, NH3 trailer in on train

Information is being made available

- See the full text of the AMISA rule?

- <https://www.gpo.gov/fdsys/pkg/FR-2016-06-22/pdf/2016-14571.pdf>

- Get copies of the referenced standards?

- ASABE publishes an annual CD
 - ASABE members get access to 5 standards annually
 - ASABE sells individual copies
 - <http://www.asabe.org/publications/order-publications/standards.aspx>
 - Many consultants have access to these documents

- Graphic drafts shown Association of Equipment Manufacturers (AEM) is developing

- Availability to be determined



ASSOCIATION OF
EQUIPMENT MANUFACTURERS

WHILE I HAVE YOUR ATTENTION!

We need to talk about the SMV...



53 Years Ago...



- The SMV Emblem was researched at The Ohio State University
- The next year the SMV became an ASABE standard

And for 52 years...



...it has been misused!

CFR 1910.145(d)(10)

- Slow-moving vehicle emblem. This emblem (see fig. J-7) consists of a fluorescent yellow-orange triangle with a dark red reflective border. The yellow-orange fluorescent triangle is a highly visible color for daylight exposure. The reflective border defines the shape of the fluorescent color in daylight and creates a hollow red triangle in the path of motor vehicle headlights at night. The emblem is intended as a unique identification for, and it **shall be used only on, vehicles which by design move slowly (25 m.p.h. or less) on the public roads.** The emblem is not a clearance marker for wide machinery nor is it intended to replace required lighting or marking of slow-moving vehicles. Neither the color film pattern and its dimensions nor the backing shall be altered to permit use of advertising or other markings. The material, location, mounting, etc., of the emblem shall be in accordance with the American Society of Agricultural Engineers Emblem for Identifying Slow-Moving Vehicles, ASAE R276, 1967, or ASAE S276.2 (ANSI B114.1-1971), which are incorporated by reference as specified in Sec. 1910.6.

Remember! The SMV is for “slow-moving” vehicles – not stationary objects...



Take home message

- AMISA is a benefit to everyone
 - Driving public, farmers & equipment mfg's
- If you have old equipment, it will not be in violation of the law
- Most new equipment already complies.
- Information for compliance is available:
 - For smaller manufacturers, welding shops and do it yourselves
- Don't put SMV's on stationary objects.

Questions and additional discussion?



Contact Information

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EXTRA SLIDES...

Have not decided to use or not use....

S279 Major sections of the Ag Lighting & Marking Standard

4.1 Lighting and marking of tractors and self-propelled equipment



4.2 Marking of non-self-propelled equipment



4.3 Lighting of non-self-propelled equipment

4.3.1 Lighting of equipment that obscures vehicle illumination

4.3.2 Lighting for equipment width

4.3.3 Lighting for equipment length

4.3.4 Lighting for equipment speed



Annex A (normative)

Relationship with ISO 16154:2005 Tractors and machinery
for agriculture and forestry - Installation of lighting, light
signalling and marking devices for travel on public roadways