



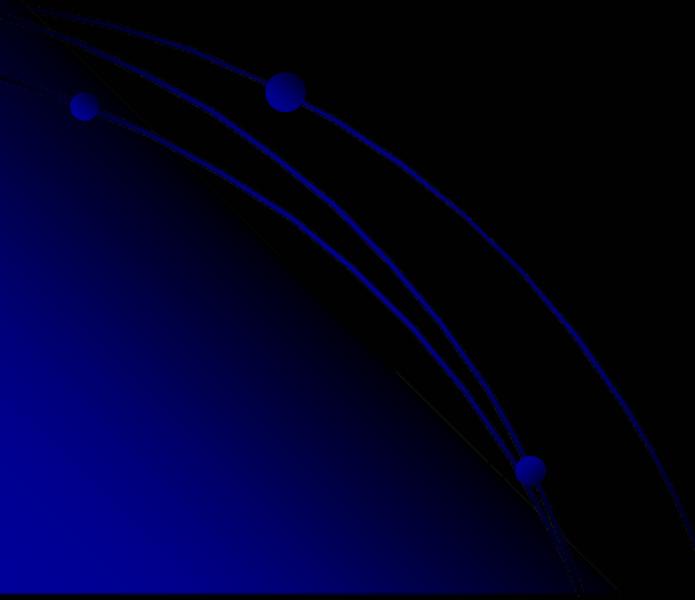
Hi-Viz Clothing & Worker Visibility

Jim Gaus

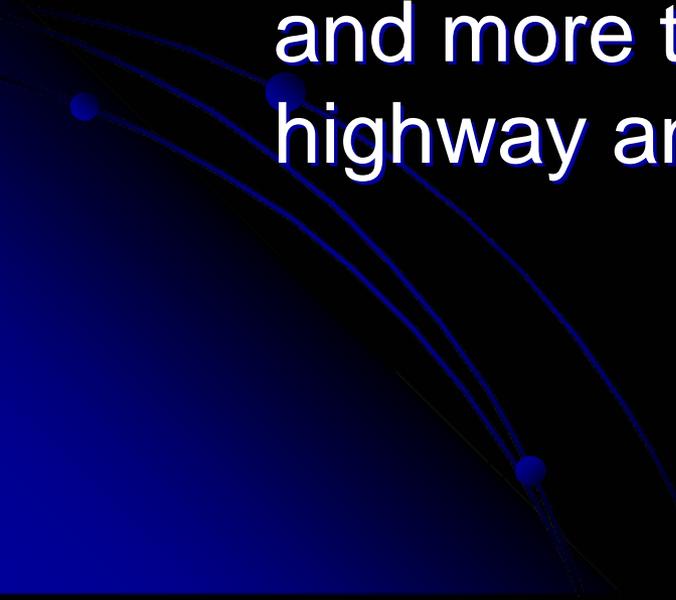
Michigan Dept. of Transportation
Safety & Security Administration
2009

What we'll review...

- Some reasons for wearing hi-viz clothing.
- Federal Rules for workers on the road.
- High Visibility clothing definitions and standards.



Why High Visibility Clothing?

- Centers for Disease Control and Prevention (CDC), National Institute for Occupational Safety and Health (NIOSH) press release, May 15, 2001:
 - Each year, nearly 100 workers are killed and more than 20,000 are injured in highway and street construction...
- 

NIOSH press release (continued)

- High-visibility apparel should be provided to all workers in highway construction zones, not just to workers who help direct traffic flow. Any worker routinely on foot in a work zone is at potential risk of injury.
- 

Law Enforcement Officer Fatalities

- The following slides contain information on law enforcement fatalities per the “Officer Down Memorial Page, Inc.”
<http://www.odmp.org/>
- This does not include data for injuries or ‘close calls’/‘near misses’.

Law Enforcement Officer Fatality Statistics 2007

- Of the 186 U.S. officers that died in the line of duty in 2007:
 - 65 Gunfire
 - 47 Automobile accidents
 - 7 Heart Attacks
 - 10 Vehicular assault
 - **9 Struck by vehicles (while outside of their own vehicles)**
 - 4 Accidental gunfire
 - 5 Bomb
 - 6 Vehicle pursuit
 - 0 Duty related illness
 - 3 Aircraft accident
 - 0 Training accident
 - 0 Stabbed
 - 7 Motorcycle accident
 - 3 Drowned
 - 3 Fall
 - 7 9/11 Related Illness
 - 10 Misc. Other

Law Enforcement Officer Fatality Statistics 2008

- Of the 132 U.S. officers that died in the line of duty in 2008:
 - 36 Gunfire
 - 39 Automobile accidents
 - 5 Heart Attacks
 - 11 Vehicular assault
 - **11 Struck by vehicles (while outside of their own vehicles)**
 - 2 Accidental gunfire
 - 2 Bomb
 - 3 Vehicle pursuit
 - 2 Duty related illness
 - 4 Aircraft accident
 - 1 Train accident
 - 2 Stabbed
 - 8 Motorcycle accident
 - 1 Drowned
 - 0 Fall
 - 1 9/11 Related Illness
 - 4 Misc. Other

FBI Statistics

- 2006 - 13 officers were struck and killed by vehicles; 9 of these victim officers were directing traffic/assisting motorists, etc., and 4 were performing traffic stops, instituting roadblocks, etc.
- 2005 - 11 officers were struck and killed by vehicles.
- **FBI Statistics show an average of 12 struck and killed per year from 1995-2004.*

Firefighters

- “As dangerous as firefighting is, transportation-related incidents claim about 20 percent of the roughly 105 firefighter on-duty deaths each year, and struck-by deaths account for a growing proportion.
- In June 2001, NIOSH reported that the number of firefighters struck and killed by motor vehicles had increased by 89 percent in the previous five years.
- 17 firefighters had been struck and killed between 1995 and 1999, compared to 9 between 1990 and 1994.”
 - Per the National Traffic Incident Management Coalition, Responder Safety, www.TIMcoalition.org

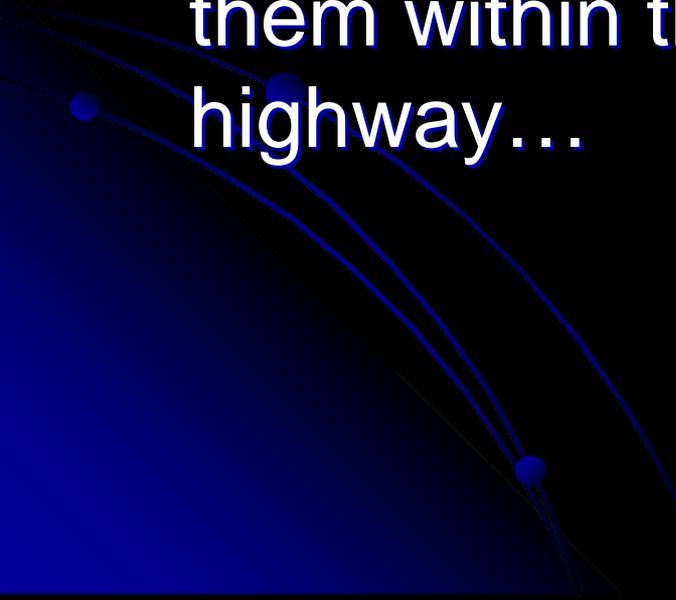
MMUTCD Federal (Michigan) Manual on Uniform Traffic Control Devices, Part 6.

- Section 6D.03 Worker Safety Considerations:
 - Worker Safety Apparel—all workers exposed to the risks of moving roadway traffic or construction equipment should wear high-visibility safety apparel...
- Section 6E.02 (Traffic Regulators) High-Visibility Safety Apparel (MI):
 - For daytime and nighttime activity, traffic regulators shall wear safety apparel...
 - For nighttime activity...Class 3...should be considered for traffic regulator...
 - “When uniformed law enforcement officers are used, high-visibility safety apparel as described in this Section should be worn by the law enforcement officer.”

FHWA 23 CFR Part 634

- Federal Highway Administration, Worker Visibility, Final Rule, Issued 11/24/06.
- **“All workers within the ROW of a Federal-aid highway, who are exposed either to traffic (vehicles using the highway for purposes of travel) or to construction equipment within the work area, shall wear high-visibility safety apparel.”**
- Compliance date: November 24, 2008.

FHWA Final Rule Key Definitions

- **High Visibility Apparel:** “...clothing during daytime and nighttime usage, and that meets the (ANSI 107) performance Class 2 or 3...”
 - **Workers:** “...people whose duties place them within the ROW of a Federal-aid highway...”
- 

FHWA Workers definition

- Construction and maintenance forces
- Survey crews
- Utility crews
- Adopt-a-highway volunteers
- News Media crews
- Responders to incidents within the ROW
 - EMS, Firefighters, Tow truck drivers, etc.
- Law enforcement when:
 - Directing traffic
 - Investigating crashes
 - Handling lane closures
 - Obstructed roadways
 - Disasters”

Per the Final Rule,
this does not
include routine
traffic stops.

Proposed Revision to MUTCD

- Federal MUTCD to add 23 CFR Part 634 Final Rule into 23 CFR Part 655 (Federal MUTCD).
- Therefore, requirements for worker visibility will be incorporated into MUTCD and therefore applicable to ALL roads!
- Revised Federal MUTCD likely to be published in 2009.

Why Hi-Viz / Reflective Material?

Notice the
sight distance
for the
walking
worker.

Click in
middle of
screen if
video
does not
start.

Hi-Viz Clothing Defined

- American National Standards Institute and the International Safety Equipment Association has standard ANSI/ISEA 107-2004.
- Defines hi-viz clothing as: “...intended to provide conspicuity during both daytime and nighttime usage.”
- Defines amount of hi-viz background and reflective material.
- All must provide 360 degree visibility.
- (Note: ...and “shall be marked” (labeled) with the specific standard.)

Class 1

(not allowed per FHWA)

- Recommended when:
 - Low hazards.
 - Low speed (less than 25 mph).
 - Parking lot attendants, warehouse workers, delivery vehicle drivers, etc.



Class 2

- Recommended when:
 - Working in close proximity to traffic.
 - Speeds above 25 mph.
 - When workers are not watching traffic.
 - Greater visibility in poor weather.
 - Road Workers, Utility Crews, Law Enforcement, etc.



Class 3

- Recommended when:
 - No or limited separation from traffic (e.g.: no workzone).
 - High vehicle speeds.
 - Reduced sight distances.
 - Workers with high task loads.
 - Night time work.



Class E

- Waistband trousers or shorts.
- Ensemble accessory. Not intended to be worn without Class 2 or 3 garment.
- When worn with Class 2 or 3 garment, the whole ensemble shall be classified as Class 3.



...but even if it's a Class 2, please
make sure its in good shape...



Class 2 vs. Class 3 Vest



Vest not recommended for highways... (No Class!)



ANSI/ISEA 207

- A new standard was released late 2006 specifically addressing high visibility clothing for public safety officials - **ANSI/ISEA 207-2006**.
- Primary difference between ANSI 207 and ANSI 107: required area of fluorescent background material (450 sq. in.) falls between ANSI 107 Class 1 (217 sq. in.) and ANSI 107 Class 2 (775 sq. in.).
- Not intended to replace or to be interchangeable with ANSI 107 (“public safety” vs. “construction”).
- Incorporates the same amount of retro-reflective material required by ANSI 107.

ANSI 207-2006

- Incorporates some special (optional) features for the law enforcement and emergency response workers:
 - Adjustable sides
 - Access to belt-mounted equipment (guns and radios).
 - (Main reason for less background material.)
 - Microphone clips.
 - Chest pockets.
 - “Tear-away” features.
 - ID badge holders.
 - Means to identify public safety entities through the use of specific color markings.

Examples of ANSI 207-2006



Photos courtesy of Safety Gear Corp @
<http://www.safetygearonline.com/>

ANSI 207 vs. 107 vs. "No class"



ANSI 207 during traffic control



ANSI 207 allowed by FHWA!

- In a letter from Federal Highway Administration dated 2/4/08:
 - The ANSI 207 standard was not completed in time of the release of the Federal Final Rule.
 - FHWA found this standard (ANSI 207) compatible with ANSI 107 Class 2 requirements.
 - Public safety vests (ANSI 207) an option for incident responders and law enforcement. (Incorporated into proposed MUTCD changes.)

National Fire Protection Association (NFPA)

- 1901 Standard for Automotive Fire Apparatus 2009 Edition
- Chapter 6 Initial Attack Fire Apparatus, 6.7.3 Miscellaneous Equipment:
 - (15) One traffic vest for each seating position, each vest to comply with ANSI/ISEA 207, *Standard for High-Visibility Public Safety Vests*, and have a five-point breakaway feature that includes two at the shoulders, two at the sides, and one at the front.
- 1500 Standard on Fire Department Occupational Safety and Health Program 2007 Edition
- Chapter 8, Emergency Operations:
 - 8.7.10* When members are operating at a traffic incident and their assignment places them in potential conflict with motor vehicle traffic, they shall wear a garment with fluorescent and retro-reflective material visible from all directions.

What about “Turnouts”?

- On November 21, 2008, the FHWA issued an interim final rule revising the Worker Visibility rule (23CFR 634) to create an exemption for the firefighting community. This interim Final rule allows firefighters or other emergency responders working within the right-of-way of a Federal-aid highway and engaged in emergency operations that directly expose them to flame, fire, heat, and/or hazardous materials to wear retroreflective turn-out gear that is specified and regulated by other organizations, such as the National Fire Protection Association (specifically NFPA 1971).
- Firefighters or other emergency responders working within the right-of-way of a Federal-aid highway and engaged in any other types of operations shall wear high-visibility safety apparel as defined in this rule. The FHWA decided to issue this interim final rule to address safety concerns raised by fire fighting community. The interim final rule was published in the Federal Register today and goes in effect on November 24, 2008.

Final Rule Enforcement

- MDOT Contractors, Permits and Utilities:
 - Frequently Used Special Provision (FUSP) 03SP104D requiring that contractor's workers wear high visibility clothing.
 - Construction Advisory approved advising MDOT staff to document and report non-compliance issues.
- MIOSHA recognizes the FHWA Worker Visibility Final Rule and the ANSI 107 standards. They will enforce it under the "General Duty Clause".
 - With the revised Federal 2009 MUTCD Part 6 and subsequent Michigan MUTCD, MIOSHA can update their rules allowing for enforcement of high visibility apparel at all times.

Examples...early morning or early evening advantages...



Crash
clean-
up in
Grand
Rapids

...or incident response...



Diesel fuel clean-up
after crash on I-275

...or snowy weather...

- Michigan State Trooper, at scene of minor crash. 2/19/2009.



Courtesy of
Angie Kremer

Think about it....

- High visibility clothing should not take the place of good vehicle placement or good work zone set-up or smart worker behavior.
- Are other measures in place to improve safety?
 - Temporary traffic control (cones)?
 - Night time lighting?
- PPE is the last measure, but high visibility is required for “workers”.

Recap

See the
4
people?

Click in
middle of
screen if
video
does not
start.

Clip 4

Questions?

- If you have any questions, contact:
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