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FDIC Tech Meeting

Roger Lackore
Melissa Dobbs

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ARFF

Tague Johnson
(Rosenbauer)

Sarah Peck
(Akron Brass)

PUMP

Wayne Hable
(Darley)

Mike Sulmone
(Trident)

CHASSIS

Chris Crowel
(Cummins)

Dale Katz
(E-ONE)

BODY

Shelby Sutphen
(Sutphen)

Wyatt Compton
(Spartan ER)

ELECTRICAL

John Doperalski
(Harrison)

Peter Luhrs
(Fire Research)

AERIAL

Jim Garver
(Sutphen)

John Brady
(KME)

FOAM

Mike Dupay
(Fire Research)

Gregg Geske
(Waterous)

AMBULANCE

Steve Rowland
(Hale)

Brent Walker
(SoundOff)

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Buyer's Guide Progress

Thank you to the Board, Marketing Committee and Clarion for promoting the Buyer's Guides

Pending	14
Draft	0
To Board	6
Published	35

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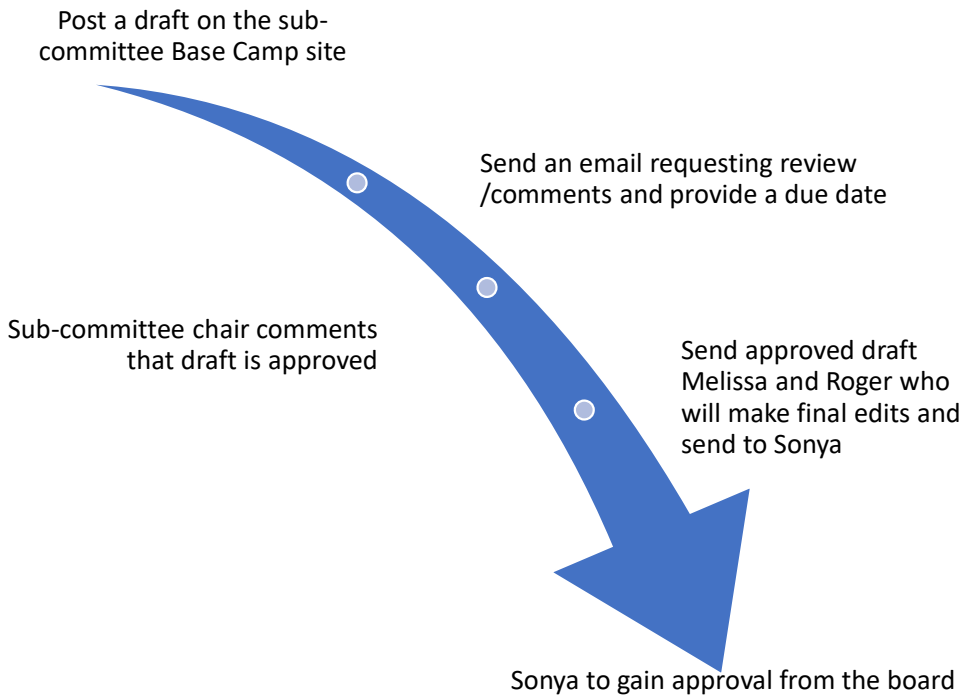
Process for Submitting Buyer's Guides for Review/Approval



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Aerial

John Brady
Jim Garver

Aerial	TC068	Buyers Guide - Aerial Rope Rescue Systems		Pending

Body

Shelby Sutphen
Wyatt Compton

Body	TC072	Buyers Guide - Brush Truck Apparatus	Bill Davidson - Skeeter	Pending
	TC073	Buyers Guide - Tanker and Tender Apparatus	Kraig Scholten – Midwest Fire	Board
	TC074	Buyers Guide - Wildland Apparatus	Bill Davidson - Skeeter	Pending
	TC075	Buyers Guide - Cold Environment Apparatus Design	Rick Suche – Fort Gary	Pending
	TC077	Buyers Guide - Hose Bed Sizing	Jay Farrell - Smart Power	Pending

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Chassis

Chris Crowell
Dale Katz

Chassis	**TC048**	**Buyers Guide - Suspensions - Front**	**Bob Albano - Hendrickson**	**Board**
	TC084	**Apparatus Electrification**	**Dale Eddy, Dale Katz**	**Pending**
	TC087	**Buyers Guide - Brakes**	**Mark Molitor**	**Pending**
	TC088	**Cab Air Purification**	**Phil Gerace**	**Pending**

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Electrical

Peter Luhrs
John Doperalski

Electrical	TC028	Vehicle Data Recorders FDSOA 2015	Ray Bell Jeff Zook	Pending
	TC029	Multiplexing FDSOA 2015	Jeff Zook David Lewis	Pending
	TC038	Buyers Guide - Line Voltage Generators	John Doperalski - Harrison	Board
	TC040	Buyers Guide - Headlights	Sam Massa - Hi-Viz	Board
	TC069	Buyers Guide - Vehicle to Vehicle Communications	Cory Hohs	Pending
	TC083	Buyers Guide - Drones in Fire Service Application	Peter Darley	Board

Foam

Gregg Geske
Mike Dupay

Foam	TC067	Buyers Guide - CAFS	Jeremy Fox - IDEX	Pending

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Pump

Wayne Hable
Mike Sulmone

Pumps	TC071	Buyers Guide - Deck Gun and Aerial Monitors	Pete Lauffenburger	Board
	TC076	Buyers Guide - Pump Control Location	Wyatt Compton - Spartan	Pending
	TC085	Pump Efficiency Test Method	Wayne Hable	Pending
	TC086	Pump Temperature Protection	Wayne Hable	Pending

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FDSOA Apparatus Conference

2024 Fire Apparatus, Specification, Maintenance and Fleet Management Conference

Here are dates for your planning:

January 17-20, 2024
Pre-Con Wednesday, Jan 17th
Full Conference Thursday, Jan 18 - Friday, Jan 19, 2024

Location:

Gilbert Public Training Facility (Same as in 2023)
Gilbert, Arizona

- FAMA is no longer coordinating FDSOA apparatus symposium speakers
- Companies may participate on their own by contacting FDSOA directly

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FAMA Forum Article Schedule

July-23	Frame Corrosion	Chassis	Roger Lackore TC080
August-23	Lavender Ribbon Report update (clean cab)	Chassis	Scott Beecher
September-23	Turbocharger Life and Engine Shut-Down Requirement	Chassis	Chris Crowel
October-23	Tire Life and Fire Service Ratings	Chassis	Patricia Meisenholder TC062 FAMA Safety Guide
November-23	Pump Primers	Pumps	Mike Sulmone TC070
December-23	NFPA 1900 update	All	Roger Lackore TC005
January-24	Deck Gun and Aerial Monitors	Pumps	Pete Lauffenburger TC071
February-24	Line Voltage Generators	Electrical	John Doperalski TC038
March-24	Tankers and Tenders	Body	Wyatt Compton TC073

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FDIC Tech Meeting Format

FAMA Technical Committee has been meeting at FDIC every year. Would you like this to continue, or should we consider changing to a virtual meeting on a different date?

- **Wednesday Afternoon**
- **Thursday Morning**

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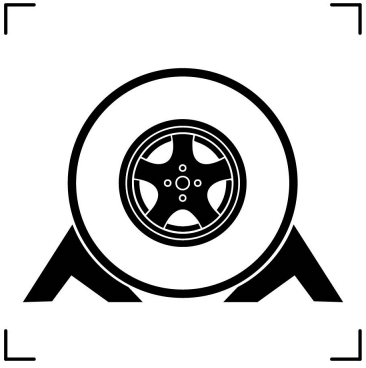
New Graphical Symbols

Approved

FAMA 09.94 Electric Motor Enabled



FAMA 09.95 Chock Wheels

FAMA 16.12 Battery Master

FAMA 16.13 EV Battery Thermal Event

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FAMA Safety Guide

Published

- **Updates being collected**

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NFPA Link

- **PDF Download of NFPA Standards No Longer Available**
- **Print copy**
  - **No search**
  - **No copy/paste**
- **Free Access**
  - **No search**
  - **No copy/paste**
- **NFPA Link**
  - **Online access to all NFPA standards for $100 per year**

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FAMA NFPA Representation

18/18A - Standard on Wetting Agents / Standard on Water Additives for Fire Control and Vapor Mitigation
- Principal Jerry Halpin
- Alternate Mike Dupay

414+/ARFF - Standard for Aircraft Rescue and Fire-Fighting Vehicles
- Principal Duane Kann
- Alternate Tague Johnson

1451 - Standard for a Fire and Emergency Service Vehicle Operations Training Program
- Principal Roger Lackore
- Alternate OPEN / TBD

1500 - Standard on Fire Department Occupational Safety, Health, and Wellness Program
Principal Roger Lackore
Alternate OPEN / TBD

1585 - Standard on Contamination Control
Principal Scott Beecher
Alternate Roger Lackore

1901 - Standard for Automotive Fire Apparatus
Principal Sam Massa
Alternate Philip Gerace

1917 - Standard for Automotive Ambulances
Principal Steve Rowland
Alternate Chuck Hutchins

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Aerial Ladder Spacing Initiative

- **NIOSH completed a ladder climbing study**
- **Routley and Wilbur wrote an article requesting aerial ladder rung spacing be reduced to 12 inch max.**
- **Likely topic for next NFPA revision.**

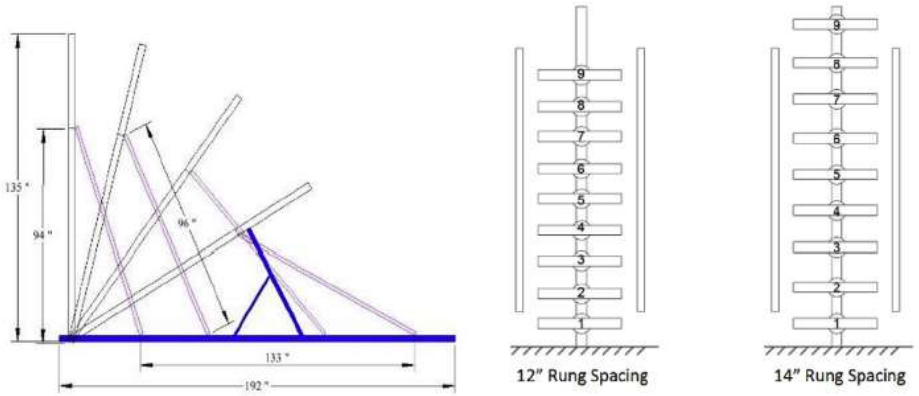

Fig. 1. Adjustable ladder with instrumented rungs and rails.

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Canadian ULC Standard

- **S515 has not been updated since 2013**
- **The committee is considering how to rely on NPFA 1900 rather than maintaining S515**

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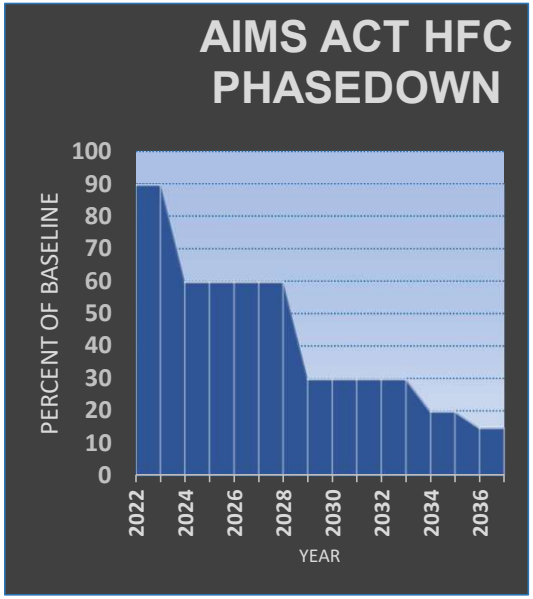
Air Conditioning Refrigerant R134 to R-1234yf

In Process

- Each vehicle vocation must submit an application to the EPA to approve the use of 1234YF.
- Truck and Engine Manufacturers Association (EMA) is developing an application that will cover fire apparatus, so there is nothing we need to do at this time.
- FAMA has reached out to EMA to offer assistance if they need it.



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PFAS Free Foam

NEW

- **PFAS-Free may be too thick to work with some foam systems.**
- **Need to develop some guidance for the industry**

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Parking Lot Initiatives

EV Charging Infrastructure for Fire Stations – Guide

Clean Cab Guide

NHTSA Fire Apparatus Recall Guide

Engine Emissions & GHG Guide

Buyers Guide Videos

Size and weight by state update

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J. Gordon Routley
Assistant Directeur - Montreal Fire Department
Aerial Ladder Ergonomics and the NIOSH report

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Aerial Ladders

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You build them… We climb them.

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Sometimes it is a long way to the top…

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…Especially wearing turnout gear, including heavy boots and an SCBA and carrying equipment.

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NIOSH Recommendation

FIRE AERIAL LADDERS:

IMPROVING EASE AND SAFETY WITH SMALLER RUNG SPACING

Currently, fire aerial ladders have 14" rung spacing, which may not be the best ergonomic design for firefighters. Researchers tested 12" rung spacing and compared it to 14" rung spacing.

Reduced rung spacing resulted in:

- Increased climbing speed
- Increased toe/foot clearance
- Reduced ankle twisting
- Reduced hand forces
- Reduced foot forces

Potential benefits:

- Lower muscle/joint stress
- Lower risk of tripping
- Better climbing efficiency
- Better climbing safety

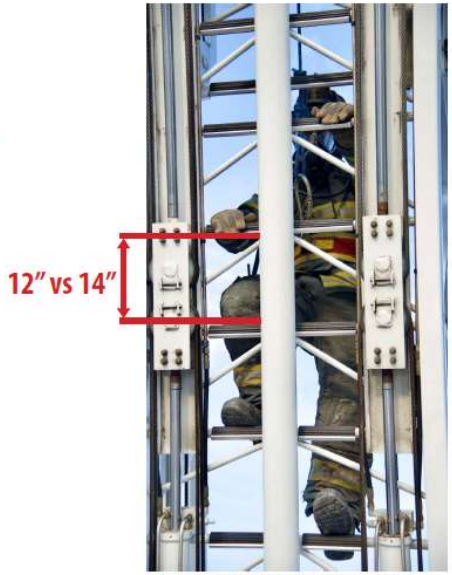

Photo courtesy of: Emily Renner and The Granville Volunteer Fire Department

For more information visit: WWW.CDC.GOV/NIOSH/FIREFIGHTERS/

JUNE 2022

Simeonov P, Hsiao H, Armstrong T, Fu A, Woolley C, Kau T-Y. (2020). Effects of aerial ladder rung spacing on firefighter climbing biomechanics. Applied Ergonomics 82, 102911. https://doi.org/10.1016/j.apergo.2019.102911

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EPA and Carb Emissions 2027 Highlights

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Future Emission Regulations

	2021	2024	2027	2030	2031
Medium Duty	EPA Ph II GHG Step 1 EPA 0.2 NOx 185k mi EUL 100k mi Warranty	EPA Ph II GHG Step 2 EPA 0.2 NOx 185k mi EUL 100k mi Warranty	EPA Ph II GHG Step 3 EPA 0.035 NOx 350k mi EUL 280k mi Warranty	EPA Ph III GHG EPA 0.035 NOx 350k mi EUL *(650k In-Use)* 280k mi Warranty	
Heavy Duty	EPA Ph II GHG Step 1 EPA 0.2 NOx 435k mi EUL 100k mi Warranty	EPA Ph II GHG Step 2 EPA 0.2 NOx 435k mi EUL 100k mi Warranty	EPA Ph II GHG Step 3 EPA 0.035 NOx 750k mi EUL (650k In-Use) 450k mi Warranty	EPA Ph III GHG Step ? EPA 0.035 NOx 750k mi EUL *(650k In-Use)* 450k mi Warranty	

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CARB Engine Emissions 2024

FAMA initiative to engage with States to determine if they will adopt the CARB emergency vehicle emissions exemption.

In Process

Regulation Begins	State	Status
2024	California	Exempt
2024	Oregon	?
2025	Massachusetts	Exempt
Pending	New Jersey	Exempt
Pending	New York	?
Pending	Colorado	?
Pending	Maryland	?
Pending	Pennsylvania	Exempt
Pending	Maine	?
Pending	Washington	?

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Pennsylvania

- **Pennsylvania follows the CARB requirements for heavy duty diesel emissions, but it specifically exempts emergency vehicles.**

§ 126.504. Exemptions.

The following new heavy duty diesel engines and vehicles are exempt from the Pennsylvania Heavy-Duty Diesel Emissions Control Program requirements of this subchapter:

(1) Emergency vehicles.

(2) A heavy-duty diesel vehicle transferred by a dealer to another dealer.

(3) A heavy-duty diesel vehicle transferred for use exclusively off-highway.

(4) A heavy-duty diesel vehicle granted a National security or testing exemption under section 203(b)(1) of the Clean Air Act (42 U.S.C.A.

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New Jersey

- **New Jersey adopted California LEV program for passenger cars and light trucks. Even for these vehicles they exclude emergency vehicles.**

7:27-29.2 Purpose

(a) This subchapter establishes in the State a LEV program, which incorporates the requirements of the California LEV program.

(b) The LEV program shall apply to all model year 2009 and subsequent motor vehicles that are passenger cars and light-duty trucks subject to the California LEV program and delivered for sale in New Jersey on or after January 1, 2009.

(c) The prohibitions contained in (a) above shall not apply to passenger cars and light-duty trucks that are:
1. Held for daily lease or rental to the general public or engaged in interstate commerce, that are registered and principally operated outside of New Jersey;
2. Test vehicles and emergency vehicles;

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Massachusetts

- **FAMA reached out to Massachusetts officials and they responded that since emergency vehicles are exempt from CARB emissions requirements in California, they are exempt in Massachusetts as well.**

Subject: [EXTERNAL] RE: FAMA Engine Emissions Question

You don't often get email from ngoc.hoang@state.ma.us. Learn why this is important

Dear Roger,
Under federal law, MassDEP may only adopt vehicle standards that are identical to California's. Since California Vehicle Code 27156.2 exempts certain emergency vehicles from California standards, there are no California standards that Massachusetts could adopt (or has adopted) applicable to such vehicles. Therefore, fire apparatus emergency vehicle sales are not prohibited by the Massachusetts Advanced Clean Trucks or Heavy-duty Omnibus regulations. I hope this information is of help to you.
Regards,
Ngoc

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Emergency Vehicles Still Exempt from Driver Inducements caused by Low DEF

40 CFR § 1036.115 Other requirements.

(h) Defeat devices. You may not equip your engines with a defeat device. A defeat device is an auxiliary emission control device (AECD) that reduces the effectiveness of emission controls under conditions that may reasonably be expected in normal operation and use. However, an AECD is not a defeat device if you identify it in your application for certification and any of the following is true:

(1) The conditions of concern were substantially included in the applicable procedure for duty-cycle testing as described in subpart F of this part.

(2) You show your design is necessary to prevent engine (or vehicle) damage or accidents. Preventing engine damage includes preventing damage to aftertreatment or other emission-related components.

(3) The reduced effectiveness applies only to starting the engine.

(4) The AECD applies only for engines that will be installed in *emergency vehicles,* and the need is justified in terms of preventing the engine from losing speed, torque, or power due abnormal conditions of the emission control system, or in terms of preventing such abnormal conditions from occurring, during operation related to emergency response. Examples of such abnormal conditions may include excessive exhaust backpressure from an overloaded particulate trap, and running out of diesel exhaust fluid for engines that rely on urea-based selective catalytic reduction.

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EPA2024 Engines & Aftertreatment

Transition to EPA24 – similar to the 2021 transition

- The CO_2 reduction / fuel economy improvements are being made primarily through internal changes and tuning
  - All engines: New ECM / software / control system
  - B6.7: Turbo actuator & AT mixer / doser improvements. Ratings changes in the lower HP range
  - L9: Internal changes only
  - X12: Turbo actuator & AT mixer / doser improvements.
  - X15: Turbo actuator improvements. New aftertreatment assemblies with longer SCR section and mixer / doser improvements.

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Subcommittee Breakouts

Front of Room

Body

ARFF

Electrical

Foam

Pump

Aerial

Ambulance

Chassis

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