

NFPA 1906 -2016 Edition
Standard for Wildland Fire Apparatus

TIA Log No.: 1267

Reference: 2.3.8, 14.1.1, 14.4, A.14.4, A.14.4.3.4, A.14.1.1(new), and E.1.2.4

Comment Closing Date: July 13, 2017

Submitter: James Juneau, Juneau, Boll, Stacy & Ucherek, PLLC

1. Delete an entry in 2.3.8 to read as follows:

2.3.8 SAE Publications. Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15096-0001

...

~~SAE J1194, Rollover Protective Structures (ROPS) for Wheeled Agriculture Tractors, 2009.~~

...

2. Revise 14.1.1 to read as follows:

14.1.1* Each crew riding position shall be within a fully enclosed personnel area ~~except as provided in Section 14.4.~~

3. Delete section 14.4 through 14.4.3.6 and associated Annexes A.14.4* and A.14.4.3.4 as shown:

~~**14.4* On-Board Pump and Roll Fire Fighting Position.**~~

~~**14.4.1** If an on-board pump and roll fire fighting position as described in this section is provided it shall be on a wildland fire apparatus with a GVWR of no more than 19,500 lbs.~~

~~**14.4.2** If an on-board pump and roll fire fighting position is provided, it shall include the following:~~

- ~~(1) A seat with an approved Type 1 seat belt for each fire fighting position~~
- ~~(2) Controls required by the operator within reach without removing the seat belt~~
- ~~(3) A means of communication with the driver~~
- ~~(4) One safety sign warning of the hazards of this riding position that is substantially similar to FAMA44, which warns of riding safety procedures, and the maximum speed of 10 mph visible from the pump and roll fire fighting position~~
- ~~(5) Safety sign FAMA45, which warns of driving safety procedures, and the maximum speed of 10 mph visible from the driver's position or visible to the driver while entering the cab~~

~~**14.4.3** If the seating position is located outside the cab, it shall meet requirements in 14.4.3.1 through 14.4.3.6.~~

~~**14.4.3.1** The seating position shall be located behind the cab and ahead of the rear axle.~~

~~**14.4.3.2** A protective structure shall be provided in compliance with the side impact and crush criteria from SAE J1194, Rollover Protective Structures (ROPS) for Wheeled Agricultural Tractors.~~

~~**14.4.3.3** The protective structure shall be designed to allow exit out of either side of the vehicle.~~

~~**14.4.3.4*** The protective structure shall include a perforated plate or mesh with openings no larger than 1.5 in. (3.8 cm) × 1.5 in. (3.8 cm) or other solid guard to protect from brush hazards at the front, the back, and the roof.~~

~~**14.4.3.5** A door or gate with a latching mechanism shall be provided on each side of the vehicle designed to allow exit out of either side of the vehicle.~~

~~14.4.3.5.1~~ The door or gate shall be designed to prevent outward swing even in the event of failure of the latching mechanism.

~~14.4.3.5.2~~ The door or gate shall be at least 48 in. (1200 mm) high from the walking surface below the firefighter's feet.

~~14.4.3.5.3~~ The door or gate shall be constructed so there are no horizontal or vertical openings below the 48 in. (1200 mm) minimum height greater than 24 in. (610 mm) in either direction.

~~14.4.3.6~~ Equipment located within the seating enclosure position protective structure shall meet the requirements of 14.1.10

~~A.14.4~~ Typically, while engaged in fire fighting operations on structural fires, apparatus are positioned in a safe location, and hose is extended as necessary to discharge water or suppressants on the combustible material.

~~In wildland fire suppression, mobile attack is often utilized in addition to stationary pumping. In mobile attack, sometimes referred to as pump and roll, water is discharged from the apparatus while the vehicle is in motion. Pump and roll operations are inherently more dangerous than stationary pumping because the apparatus and personnel are in close proximity to the fire combined with the additional exposure to hazards caused by a vehicle in motion. The personnel and/or apparatus could be subject to injury or damage due to accidental impact, rollover, and/or environmental hazards, including burn over.~~

~~To mitigate the increased risk inherent with pump and roll operations, the following tactics are recommended:~~

- ~~(1) Driver is located inside the apparatus in a seated, belted position within the enclosed cab. Fire fighter(s) located outside the cab, walking alongside the apparatus, in clear view of the driver, discharging water with a short hose line.~~
- ~~(2) Driver and fire fighter(s) are located inside the apparatus in a seated, belted position within the enclosed cab. Water is discharged via a monitor or turret that is controlled from within the apparatus.~~
- ~~(3) Driver is located inside the apparatus in a seated, belted position within the enclosed cab with one or more fire fighters seated and belted in the on-board pump and roll fire-fighting position as specified in Section 14.4.~~
- ~~(4) Driver and fire fighter(s) are located inside the apparatus in a seated, belted position within the enclosed cab, but water is discharged with a short hose line or hard line out an open cab window.~~
- ~~(5) And under no circumstances is it ever considered safe practice to ride standing or seated on the exterior of the apparatus for mobile attack other than seated and belted in an on-board pump and roll fire fighting position. (See Section 6.3 of NFPA 1500.)~~

~~The on-board pump and roll fire fighting position should only be used when the following conditions are met:~~

- ~~(1) The apparatus is actively engaged in mobile attack on the fire line.~~
- ~~(2) The fuel model is characterized as fine fuels.~~
- ~~(3) The ground is level, flat, and free of obstacles.~~
- ~~(4) Driver visibility is unobstructed.~~
- ~~(5) Vehicle speeds are no greater than 10 mph.~~
- ~~(6) Fire fighter is wearing full protective NFPA 1977 compliant personal protective equipment and is equipped with a fire shelter.~~

~~A.14.4.3.4 This is to protect against objects such as limbs entering the seating enclosure. Woven wire cloth with ¼ in. (0.6 cm) diameter wire spaced at 1¾ in. (4.4 cm) on centers is commonly used in the forestry industry to provide this protection.~~

4. Add new A.14.1.1 to read as follows:

A.14.1.1 Typically, while engaged in fire-fighting operations on structural fires, apparatus are positioned in a safe location, and hose is extended as necessary to discharge water or suppressants on the combustible material.

In wildland fire suppression, mobile attack is often utilized in addition to stationary pumping. In mobile attack, sometimes referred to as “pump-and-roll,” water is discharged from the apparatus while the vehicle is in motion. Pump-and-roll operations are inherently more dangerous than stationary pumping because the apparatus and personnel are in close proximity to the fire combined with the additional exposure to hazards caused by a vehicle in motion, often on uneven ground. The personnel and/or apparatus could thus be more easily subject to injury or damage due to accidental impact, rollover, and/or environmental hazards, including burn over.

To potentially mitigate against the increased risk inherent with pump-and-roll operations, the following alternatives are provided for consideration:

- (1) Driver and fire fighter(s) are located inside the apparatus in a seated, belted position within the enclosed cab. Water is discharged via a monitor or turret that is controlled from within the apparatus.
- (2) Driver and fire fighter(s) are located inside the apparatus in a seated, belted position within the enclosed cab, but water is discharged with a short hose line or hard line out an open cab window.
- (3) Driver is located inside the apparatus in a seated, belted position within the enclosed cab with one or more fire fighters seated and belted in the on-board pump-and-roll fire-fighting position as described in a following section.
- (4) Driver is located inside the apparatus in a seated, belted position within the enclosed cab. Fire fighter(s) is located outside the cab, walking alongside the apparatus, in clear view of the driver, discharging water with a short hose line.

Under no circumstances is it ever considered a safe practice to ride standing or seated on the exterior of the apparatus for mobile attack other than seated and belted in an on-board pump-and-roll fire-fighting position.

The on-board pump-and-roll fire-fighting position should only be used when the following conditions are met:

- (1) The apparatus is actively engaged in mobile attack on the fire line
- (2) The fuel model is characterized as fine fuels
- (3) The ground is level, flat, and free of obstacles
- (4) Driver visibility is unobstructed
- (5) Vehicle speeds are no greater than 10 mph and
- (6) Fire fighter is wearing full protective NFPA 1977-compliant personal protective equipment and is equipped with a fire shelter

On-Board Pump-and-Roll Fire-Fighting Position.

If an on-board pump-and-roll fire-fighting position as described as follows is provided, it should only be on a wildland fire apparatus with a GVWR of no more than 19,500 lb.

If an on-board pump-and-roll fire-fighting position is provided, it should, at minimum, include the following safety-related attributes:

- (1) A seat with an approved Type 1 seat belt for each fire- fighting position
- (2) Controls required by the operator within reach without removing the seat belt
- (3) A means of communication with the driver
- (4) One safety sign warning of the hazards of this riding position that is substantially similar to FAMA44, which warns of riding safety procedures, and the maximum speed of 10 mph visible from the pump-and-roll fire-fighting position and
- (5) Safety sign FAMA45, which warns of driving safety procedures, and the maximum speed of 10 mph visible from the driver's position or visible to the driver while entering the cab

If the seating position is located outside the cab, it should also meet the following requirements:

- (1) The seating position should be located behind the cab and ahead of the rear axle
- (2) A protective structure should be provided in compliance with the side impact and crush criteria from SAE J1194, *Rollover Protective Structures (ROPS) for Wheeled Agricultural Tractors*
- (3) The protective structure should be designed to allow exit from either side of the vehicle
- (4) The protective structure should include a perforated plate or mesh with openings no larger than 1.5 in. (3.8 cm) × 1.5 in. (3.8 cm) or other solid guard to protect from brush hazards at the front, the back, and the roof. This is to protect against objects such as limbs entering the seating enclosure. Woven wire cloth with ¼ in. (0.6 cm) diameter wire spaced at 1¾ in. (4.4 cm) on centers is commonly used in the forestry industry to provide this protection and
- (5) A door or gate with a latching mechanism should be provided on each side of the vehicle designed to allow exit out of either side of the vehicle.
 - a. The door or gate should be designed to prevent outward swing even in the event of failure of the latching mechanism
 - b. The door or gate should be at least 48 in. (1200 mm) high from the walking surface below the fire-fighter's feet and
 - c. The door or gate should be constructed so there are no horizontal or vertical openings below the 48 in. (1200 mm) minimum height greater than 24 in. (610 mm) in either direction.

Equipment located within the seating enclosure position protective structure should meet the requirements of 14.1.10.

Development of this Design.

Fire-fighting is an inherently dangerous operation. This is especially true of fighting a moving wildland fire in fine fuels. There are many techniques used and a great deal of discussion about the safest way to fight these fires. Over the years, many fire companies and apparatus manufacturers have developed techniques and equipment for fighting wildland fine-fuel fires. These have included fighting fire from seats mounted to front bumpers, sitting on hoods or hose reels, standing on flat beds, standing in step wells on the side of apparatus, standing on

running boards, or walking alongside a moving apparatus. All of these approaches are extremely dangerous. The Fire Department Apparatus Committee did extensive work to try to come up with a safer solution. We looked at the available apparatus and techniques that have been historically used in the industry. The preceding suggestions are safer than any of these ad-hoc techniques. The Fire Service Occupational Safety and Health Committee (NFPA 1500) does not approve of any fireground operations that permit the fire-fighter to ride outside the fully enclosed cab of a moving apparatus.

5. Add new entry to E.1.2.4 to read as follows:

E.1.2.4 SAE Publications. Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15096-0001

...

SAE J1194, Rollover Protective Structures (ROPS) for Wheeled Agriculture Tractors, 2016.

...

Substantiation: There currently exists a direct conflict between the requirements of NFPA 1906 §14.4 (which allows for an optional exterior pump-and-roll fire-fighting position on certain wildland apparatus) and the requirements of NFPA 1500 §6.3 (which expressly prohibits riding on the exterior of the apparatus when a firefighter is not seated and belted in an approved riding position). The NFPA 1500 Committee specifically disapproves of the type of pump-and-roll firefighting operations from a moving wildland apparatus that were envisioned by the NFPA 1906 Committee at the time that the option for an exterior pump-and-roll fire-fighting position was considered and ultimately included in the 1906 Standard. Given that such exterior pump-and-roll operations from the moving wildland apparatus are specifically prohibited in NFPA 1500, the conflicting equipment-related text in NFPA 1906 §14.4 should be removed from the main body of the Standard.

Emergency Nature: The NFPA Standard contains a conflict within the NFPA Standard or within another NFPA Standard. The proposed TIA intends to offer to the public a benefit that would lessen a recognized (known) hazard or ameliorate a continuing dangerous condition or situation.

Anyone may submit a comment by the closing date indicated above. To submit a comment, please identify the number of the TIA and forward to the [Secretary, Standards Council](#), 1 Batterymarch Park, Quincy, MA 02169-7471.