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PPE Update

Should the firefighter drag device remain mandatory?

There's a lack of evidence that drag rescue devices have ever worked in the field, yet abandoning an established rule has risk

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The Drag Rescue Device became a mandatory feature of firefighter protective clothing as part of the 2007 edition of **NFPA 1971**. The DRD was perceived as a necessary life-saving device that was could be deployed to extricate downed firefighters under difficult working fire circumstances.

This need arose after reports from several fatal fires that the lack of appropriate handholds hampered efforts to rescue an incapacitated firefighter from the structure.

Up until that time, different manufacturers had developed various harness-like systems to enable other firefighters to grab a downed firefighter and more easily move them out of the building under rugged physical conditions. Some designs were patented and still are, but before 2007, the DRD or its predecessor designs were an option.

The NFPA 1971 committee undertook a comprehensive review of the requirements needed to provide a DRD-type of feature as part of turnout clothing. Work in this area had to balance between standardizing some attributes versus not making the DRD component restrictive or infringing on intellectual property already held.

The committee determined that there was a specific need to standardize some aspects of its design — namely to enable rapid deployment as well as the overall configuration for securing the upper torso or shoulders of the firefighter so that it pulled directly on the body and not just on the coat.

The committee attempted to minimize any specific design criteria to enable manufacturers to be innovative in how they approached their design of coats with installed DRD.

Testing it

The committee also came up with a test method and performance requirement for demonstrating its use and its ability to be readily deployed.

The test involved the manikin wearing a 60-minute rated SCBA and being on its side on a concrete surface. The test technician had to wear structural firefighting protective gloves and was timed on how long it took to deploy the DRD and drag the manikin 2.5 meters.

The performance criteria included a maximum 10-second deployment/drag time in combination with no movement of the manikin's SCBA.

Because DRDs are part of the overall firefighter protective ensemble, they had to have flame and heat resistance applied to materials and heat-resistant thread used in their construction. They also had to meet certain strength requirements for the seams of the webbing or other materials and have separate labeling and user instructions.

From 2007 on, manufacturers installed DRDs into their coats with many offering several design variations to accommodate different product configurations. Each is required to meet the function test and other NFPA 1971 criteria.

Is it used?

In most cases, the DRD appears to be a figure eight where a strap attached at the junction of the loops is used as the pull tab. The two loops are fitted around both arms on between the liner and the shell. In some cases, heavy cording is used instead of webbing.

The pull strap for the DRD is typically under the back of the collar where it can be accessed above the top of the SCBA. Some form of cover or flap covers the strap's access point to prevent liquid from entering the coat.

Since its introduction, we have not been able to find any reports where a DRD has actually been deployed under emergency conditions. This lack of use comes as a surprise because it was originally argued that the DRD would be life-saving feature to prevent future fatalities.

While many departments train their members for using the DRD in an emergency, some firefighters say that it can be difficult to find and deploy under the poor visibility, confused conditions inside a structural fire. Many of these same firefighters say it is easier to grab the firefighter by their SCBA to immediately move the firefighter as needed.

In addition to deployment issues, some complain that DRDs cause premature wear to the moisture barrier, which may allow liquids into the coat.

Moreover, the DRD must be properly installed for it to work. But it is often not properly put back after it has been removed for the coat to be cleaned. There have been further questions about how the DRD should be cleaned as part of the coat.

Under review

Question about the DRD arise now because NFPA 1971 is about to undergo its revision to the next edition in 2018.

Absence statistics indicating that it has been used as intended, some pundits say the added cost of the DRD, approximately \$100 per turnout set, could be spent on other things such as a second set of clothing, proper care and servicing of firefighter clothing, or other operational needs.

Some argue that fire departments should be permitted to specify other methods of extrication through their standard operating procedures and that the requirement should be part of **NFPA 1500**, Fire Department Occupational and Safety Program. This standard dictates the type of PPE program departments should have in place and addresses fire department operations related to safety practices.

Arguments for keeping the DRD mandatory state that it has been specified for the past two editions of NFPA 1971 (nearly 10 years) and that any downgrade in the requirements could result in fire departments not having any means of emergency extrication for their members just for saving the cost of a DRD.

Furthermore, the DRD should be required and standardized so that it has interoperability between departments, especially since mutual aid is commonplace and individuals must have similar training to work together under emergency conditions. Lastly, some say the DRD should be further standardized in NFPA 1971 to remove its current deficiencies and to promote a more recognizable, consistent design for easy deployment.

It is difficult to remove a requirement that has been in place for some time. Yet, it is hard to ignore the lack of a reported use of a DRD under actual emergency conditions.

We advocate that NFPA 1971 retain requirements for a DRD, but that it be an optional feature of turnout clothing. To strengthen this position and to ensure that the fire service still has practices in place to address emergency extrication of down firefighters, we further recommend that NFPA 1500 include requirements to address either coats having a DRD or the fire department having an appropriate SOP for emergency extrication of firefighters.

It is uncertain how this matter will be resolved. But this debate will certainly encourage rethinking how the fire services approaches some parts of its emergency practices.

About the author

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Jeffrey and Grace Stull are president and vice president, respectively, of International Personnel Protection, Inc. They are members of several NFPA committees on PPE as well as the ASTM International committee on protective clothing. Mr. Stull was formerly the convener for international work groups on heat/thermal protection and hazardous materials PPE as well as the lead U.S. delegate for International Standards Organization Technical Committee 94/Subcommittees on Protective Clothing and Firefighter PPE. They participate in the Interagency Board for Equipment Standardization and Interoperability and have authored the book, "**PPE Made Easy**." Send questions or feedback to the Stulls via **email**.

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