

02/09/2009

Study focuses on safe crew sizes

By
FireRescue1 Editor

Jamie

Thompson

MONTGOMERY COUNTY, Md. — Ask anyone in the fire service whether reducing crew sizes has an impact on both firefighter and civilian safety and their answer will be simple.

However, fire departments across the country are still facing cutbacks because of the economic downturn — and actually proving the advantages of a four-person engine over anything less can be challenging.

But firm evidence on whether crew size matters should be available in the coming months thanks to a landmark study.

One of the most critical parts of the study has been taking place at the Montgomery County, Md., Fire Rescue Training Center over the past two weeks, where about 50 firefighters from Montgomery and Fairfax County, Va., have been taking part in live-fire training.

The training has been specifically geared toward examining the effect of crew sizes (two, three, four and five persons per engine) and equipment arrival times on fire growth rates and a person's ability to survive in a building fire.

The results from the fireground experiments will compliment a fire incident survey involving 400 departments from across the country, and the results should help local government leaders see the effects of any proposed changes to fire service resources.

"Currently local governments rely on trial and error or a qualitative basis," said NIST researcher Jason Averill, co-principal researcher of the study. "When this study is complete, there will be objective data on



Photo courtesy of NIST

A firefighter ventilates the building during the study's live-fire training.

Related Articles:

→ [The Greater Good](#)

→ [The Kitchen Table: The Difference Between Fact and Fiction](#)

which to base these important decisions."

NIST is among several organizations taking part in the project, which also includes the Center for Public Safety Excellence, the IAFF, the IAFC, the Urban Institute and the Worcester Polytechnic Institute.

The \$1 million-a-year study has been funded by DHS and the AFG program, and researchers are working toward securing a third year of funding to develop and validate a computer model that will allow local government decision makers to conduct "what if" analyses in order to help them make informed choices about the deployment of resources.

"It will give them quantifiable results to understand changes to deployment, such as two, three, four or five-person staffing levels per apparatus," Averill said.

The live-fire training part of the study has also looked at the effects of apparatus arrival times, which will help to offer analyses on firehouse locations in relation to responses.

"This really is a landmark study and is the first of its kind," Averill said. "It will give fire service leadership and community officials the ability to understand the effect changes in deployment strategies will have on property protection, firefighter safety and life safety."

The results from the study are expected to be published in the fall, and Acting Fire Chief Richard Bowers, of the Montgomery County Fire and Rescue Service, said the study will have an immediate and direct impact on how departments respond to fires.

"Not only will this study provide scientific data to help local government decision makers with establishing an effective firefighting force, resource allocation and community risk assessment, it will furnish fire and emergency service leaders with the tools for a more efficient response to fire and EMS emergencies," he said.

[Back to previous page](#)