

GETTING THE FIRE OUT

Getting the fire out is critical to reducing risk to both firefighters entering the structure and to trapped occupants. Fire Out, in the study, was defined as having both the attack line and the second hose line in place. There was a 2 min 14 s difference (8.1 %) in the Fire Out time between the 3- and 4-person crews. There was an additional 1 min 15 s difference (5.0 %) in the Fire Out time between the 4- and 5-person crews. (i.e., 5-person crews extinguished the fire 3 min 29 s faster than 3-person crews). Finally, There was a 7 min 2 s difference (25.6 %) in the Fire Out time between the 3- and 6-person crews.

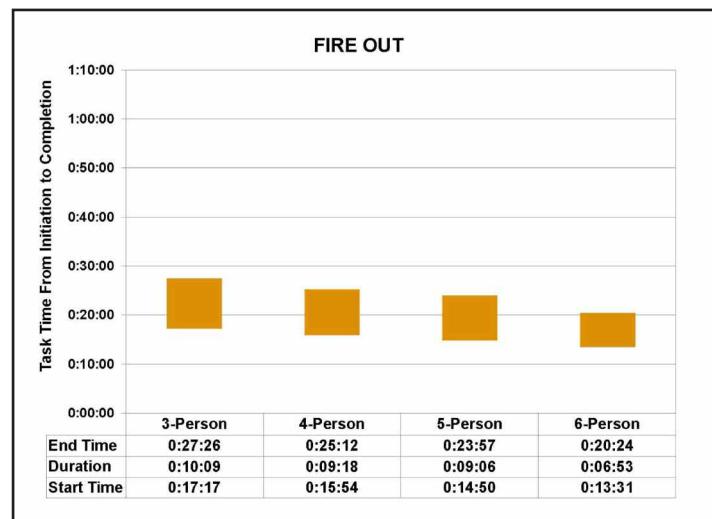
Average times for Water on Fire and Fire Out for the replicates of each crew size and ascent method, holding deployment (high/low) constant are shown in the table below. The rows in the table are sorted by time to Water on Fire, from longest time to shortest.

The first takeaway from the table is that, for each crew size, firefighters would be able to get water on the fire and put the fire out faster when taking the elevator to the staging area versus taking the stairs.

The second key point comes from examining the impact of stairs versus elevators across crew sizes. The table shows that the average Water on Fire time for a 4-person crew using the stairs is longer than the average Water on Fire time for a 3-person crew using the elevator. The average 4-person crew taking the elevator is also faster in getting water on the fire than the average 5-person crew and 6-person crew taking the stairs.

The third takeaway from the table is that the larger crews can make up the gains associated with using the elevators instead of the stairs. The 6-person crew using the stairs has a faster average Fire Out time compared to the 4-person and 5-person crews that had faster Water on Fire times.

These findings are based on hose placement and positioning and did not account for actual suppression activity. Therefore, these finding likely underestimate the differences in task times since larger crews fighting larger fires may have more difficulty extinguishing them.



Crew Size	Ascent Method	Average Water on Fire Time (MM:SS)	Average Fire Out Time (MM:SS)
3	Stairs	18:48	28:04
4	Stairs	17:01	26:22
3	Elevator	15:45	26:48
5	Stairs	15:19	24:33
6	Stairs	14:52	21:17
4	Elevator	14:47	24:02
5	Elevator	14:21	23:20
6	Elevator	12:10	19:32

Table 1: Comparison of the impact of crew size and ascent method on average firefighter suppression time.