

A Hypothetical, Novel Employee Selection System to Reduce Adverse Impact and Improve Job Performance for Fire Lieutenant: Musings of a Practitioner

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An innovative approach to selection might help the fire service address two major, unrelated challenges faced in the selection of fire lieutenants: high adverse impact on minority applicants and low job performance. This approach emphasizes helping applicants to learn to do a job, and so may be applicable to a range of jobs, especially promotions within an organization. I describe the current selection system and its major problems and then present an approach designed to both improve job performance and reduce adverse impact.

Traditional Selection Systems for Fire Lieutenant

Fire lieutenants, almost all first-line supervisors, are usually selected from within the department. The traditional promotional process for fire lieutenant in larger cities, dating back more than 50 years (and perhaps a century), ranks applicants based a multiple-choice (M/C) test. Now many fire departments supplement the M/C test with another component, such as a structured oral interview or an assessment center (Frederick, Ho, Hester, & Peresie, 2009, page 31).

A typical promotional examination may include a minimum requirement of 3–5 years experience as a firefighter and an examination with one or more components, such as a M/C test covering fire science and supervision and an oral or practical exam covering such topics as strategy/tactics and interpersonal skills. Applicants are ranked based on the examination and promoted in order of overall score. The M/C test is typically based on a reading list of textbooks on such topics as supervision, strategy and tactics, fireground safety, building construction, and hazardous materials. Some departments also have questions on departmental standard operating procedures/guidelines. Typically fire departments do not train applicants to do the job tasks of promotional job titles (the SIOP amicus brief in the *Ricci* matter does not even mention training for promotion to fire lieutenant; Frederick, Ho, Hester, & Peresie, 2009).

Two Vexing Problems

Many and probably most municipalities experience adverse impact when making promotions to fire lieutenant (e.g., in the *City of New Haven*; Bishop & Thompson, 2009, page 22; Outtz, 2009b, especially slide 31). The adverse

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impact problem is very familiar to us: The M/C test often has adverse impact on minority applicants that may be attributed, in part, to the academic nature of many of the books on the reading list and the rote-recall nature of many of the test questions (Outz, 2009a, on crystallized intelligence). The books may provide comprehensive coverage of a topic rather than simply the information a fire lieutenant might need, and they may be difficult to read, particularly for firefighters who may have no college education and whose job duties do not include much reading. For example, the description of halo effect in a book often included in fire lieutenant exam reading lists begins as follows, “This effect is a phenomenon of assessment in which the company officer’s judgment of a subordinate’s ability is biased by an evaluation of some previously observed action or behavior” (Stowell, 2007, page 599). The adverse impact can lead to costly litigation. Even if there is no litigation, there is reduced diversity in the workplace.

When creating and administering fire incident simulations for promotion to fire lieutenant, I noticed that, often, all of the applicants were weak in strategy and tactics—the most important subject area for a fire lieutenant, especially at the scene of an emergency. A comparison of even the best applicants with the lieutenants and captains who were serving as subject-matter experts and examiners was telling. The examiners were much more capable than applicants in terms of sizing up fire emergencies and describing suitable strategies and tactics to address the pressing needs of the emergency. This lack of facility with strategy and tactics is a serious problem. A newly promoted fire lieutenant is immediately put in charge of a company of firefighters and is expected to take charge and deal with fire and other life-safety emergencies in the very crucial first minutes before a more senior officer arrives (e.g., positioning of fire engines, which may be impossible to reposition after hose is deployed and in operation; prioritizing actions and avoiding counterproductive actions, such as driving fire in the wrong direction by poor placement of fire streams; and calling for specific additional resources).

There appear to be several reasons why the promotional applicants are so poorly prepared. First, there is no department-sponsored training for promotion. Second, new building codes have resulted in many fewer fires than in the past, so many fire departments have relatively little experience fighting fires. Third, it is difficult to learn strategy and tactics from a textbook. Fire emergencies are quite diverse in cause, progression, and associated fire hazards and life-safety issues. It is difficult to present this complexity in a textbook. As a result, it can take 5–10 years, or more, before a fire lieutenant becomes really proficient in strategy and tactics, or so fire chiefs have told me (e.g., R. Arwood, personal communication, December 10, 2009; H. Lipe, personal communication, January 12, 2010).

Novel Employee Selection System

Working within the near universal “promote-from-within” system, I suggest a novel approach that would base promotion to fire lieutenant on taking and passing numerous pre-exam, multimedia, interactive courses, followed by a competitive exam, such as a structured oral. Instead of expecting applicants to teach themselves to be fire lieutenants by reading textbooks, the fire department would offer appropriate training for the promotional title. Applicants would have to take and pass various courses to be eligible to take the promotional exam. Retaking of courses would be allowed, as needed. This approach will probably be well received as many firefighters desire promotional training (e.g., Lewis, 1998, especially Appendix C). The promotional examination (e.g., a structured oral exam) would provide the basis for ranking.

There are existing courses that could serve as components or models for the training programs. My initial thought is to have many mini courses rather than a few longer courses. The courses would cover incidents involving strategy and tactics, supervision, leadership, interpersonal skills, hazardous materials, building construction, and so forth. Basing each course on one incident would allow for in-depth coverage of the material. Entrance to the promotional examination might require completion of certain core courses and perhaps also a certain number of elective courses. I envision completion of many (perhaps 100+) such courses, each taking a few hours to master. I expect that such training courses will be more effective than typical textbooks in teaching strategy and tactics and other complex subject matter. A few dozen 1- to 3-hour courses are already available, online, from the U.S. Fire Administration (usfa.dhs.gov), along with longer courses.

Such a training-based approach is expected to be practical for three reasons. First, most firefighters have down time in the fire station that could be used for study. The work schedules for firefighters have long stretches of time at the fire station. For example, they may be on the job for 24 hours and off for 24 hours, followed by on the job for 48 hours and off the job for 48 hours. Second, incumbent fire lieutenants work the same type of schedule and so should have time to teach the required courses, if appropriate curriculum material was available. Alternatively, multimedia courses could be made available online, perhaps with the assistance of the National Fire Academy. Finally, some larger fire departments have experience developing training programs based on practical exercises.

The assembled promotional examination might take the form of a structured oral interview, fire/emergency incident simulations, or an assessment center. The examination subjects might include the same topics as the training courses. The promotional examination could be used to create a ranked list of qualified applicants.

We need to consider possible constraints due to state or local civil service law. In some jurisdictions the nature of civil service exams is fixed by law or union contract. However, in many jurisdictions there is no civil service law, and the format of the exam is determined by management. Even where there is a strong civil service law, the appointing (or examining) authority often has wide leeway in the type of examination to use. For example, employee performance evaluations are specifically allowed as an examination component by law in some large jurisdictions (e.g., all the cities in the commonwealth of Massachusetts, including Boston), even if they are rarely used.

Any new approach to selecting among applicants for promotion will be carefully scrutinized by the applicants and may encounter resistance, especially in the fire service, which emphasizes tradition. However, both applicants and management recognize the need for better trained incoming fire lieutenants and may see this new approach as helping to achieve that goal.

A Note on Adverse Impact

There are three reasons to think this new selection system will have reduced adverse impact. First, the pass–fail nature of the course approach will serve to reduce adverse impact as compared to traditional M/C tests on a textbook reading list. Second, ranking based on oral exams will have less adverse impact because structured oral exams, in general, are valid and show less adverse impact than M/C tests (e.g., Bobko, Roth & Potosky, 1999; Huffcutt, Conway, Roth, & Stone, 2001; Ployhart & Holtz, 2008). Third, the relatively supportive environment of taking a live or even a multimedia online course may reduce adverse impact over the more traditional textbook reading list approach to learning. Wiesen and Ammerman (2008, page 17) showed that few new firefighters fail the fire academy program that is required prior to placing a new firefighter on the job. I think that is because such academies include considerable hands-on instruction and offer coaching when needed. Others have found that training can exacerbate adverse impact (Ceci & Papierno, 2005). However, Ceci and Papierno’s study concerned mainly young students and focused on mean test performance, whereas the proposed new selection system involves employees and focuses on percent of people who master the material at a pre-determined level. Also, the current system envisions self-paced training, coaching, and multiple opportunities to take the courses, which were not considered by Ceci and Papierno. For these reasons, it may be that the proposed new selection system will reduce rather than exacerbate adverse impact in passing rates.

A Note on Validity

I think this new selection system will work better than typical, traditional systems in so far as the new hires are expected to do dramatically better on the job, and there would be less adverse impact. How much of the expected

improved job performance is due to validity and how much to training will be difficult to ascertain. However, at the least, structured oral exams are generally valid (Huffcutt, Conway, Roth, & Stone, 2001), and there is some indication that using a pass–fail screen maintains much of the validity and utility of the selection system (Wiesen & Aguinis, 2010), perhaps especially when some of the graded portions of the selection battery are correlated with the pass–fail screen. To the extent that there is less *g* loading in job performance than training, allowing more of the motivated applicants to complete training may increase validity by reducing irrelevant variance in the predictor. Further, availability of suitable training may be seen as a context variable (as in the *in situ* model of Cascio & Aguinis, 2008), affecting job performance but largely independent of the traditional staffing model, which focuses on attributes of individuals to predict job performance. It may be that we, as practitioners, need to pay more attention to such variables if we wish to maximize our beneficial impact on organizations. In any case, it is hard to argue with dramatic improvements in job performance.

Conclusion

I presented here a skeleton of an approach that is scientifically sound, will be appreciated by potential applicants, and can be implemented with current technology and at a modest cost. Only after a few implementations will we know how difficult it will be to put these ideas into practice. But based on my understanding both of the fire service and of test development and validation, I think the implementation can be straightforward. The approach suggested here is designed for a particular application to address particular problems that include but go beyond personnel selection. I do not offer this approach as a panacea for the job of fire lieutenant nor for all job titles but can envision adaptations of this approach that would be appropriate to other promotional job titles, with promise of lower adverse impact and higher job performance.

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