The Next Generation in Firefighter Selection: A New Model for a New Generation

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John M. Ford
History of Public Safety Selection

Whoever is Available - Historical

Who you know - Patronage

The Bravest and the Strongest - 1900's (Physical Ability)

The Smartest - 1960's (IQ / Cognitive Testing)

The Right Profile - 1980's (Personality Testing)

Diverse Well Rounded Leaders - Today (MQ Testing)
Next Generation Firefighter

- Is physically fit
- Is cognitively, emotionally, and socially intelligent
- Is flexible and can adapt to change
- Is motivated to do a variety of routine and heroic jobs
- Is a leader – can make independent & good decisions
Hiring the Next Generation Firefighter
Selecting the Next Generation of Firefighters

- Recruitment
  - It all starts here
  - You have to find & attract the next generation firefighter

- Testing
  - Change the model
  - Test for the next generation firefighter
Goal of Recruitment

- Increase the size of the applicant pool
- Increase the number of quality candidates in the applicant pool
- Increase diversity of applicant pool through targeted recruitment of minorities and women
- Increase success of selection process by
Recruitment & Hiring Barriers

- Not knowing where to recruit.
- Failing to advertise widely.
- Recruitment practices that overlook or fail to seek all qualified individuals.
- Reliance on informal networks of recruitment or word-of-mouth.
- No formal systems for recruitment.
- Limited pool of targeted groups of persons with required qualifications.
- Unsupportive work environment
- Counterproductive behavior and harassment in the workplace.
Learning About FF Job Openings
Ethnic Comparison

<table>
<thead>
<tr>
<th>Category</th>
<th>White %</th>
<th>Black %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Member</td>
<td>42</td>
<td>40</td>
</tr>
<tr>
<td>Friend or Family</td>
<td>36</td>
<td>36</td>
</tr>
<tr>
<td>Website</td>
<td>39</td>
<td>23</td>
</tr>
<tr>
<td>Radio</td>
<td>15</td>
<td>7</td>
</tr>
<tr>
<td>Called Dept.</td>
<td>15</td>
<td>7</td>
</tr>
<tr>
<td>Want Ads</td>
<td>12</td>
<td>7</td>
</tr>
</tbody>
</table>
Importance of Diversity

- Increase your talent pool
- Improve leadership
- Build better teams
- Increase innovation
  - Creativity
  - Problem solving
  - Varying viewpoints/ideas
- Represent the community
- Create a better public image
- Create an environment that is comfortable for everyone, including minorities
- Save money
  - Legal costs
  - Innovation
Even the Best Assessment Cannot Overcome Serious Deficiencies in Recruitment!
## Entry Level Selection Methods

### Traditional vs. Progressive

<table>
<thead>
<tr>
<th>Traditional</th>
<th>Progressive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recruitment not emphasized done by referring people we know</td>
<td>Target recruitment to represent community and attract diversity</td>
</tr>
<tr>
<td>Written ŃIQ type test, Oral Boards, Physical Ability as multiple hurdles</td>
<td>Use more of a compensatory model; multiple strengths may outweigh some weaknesses</td>
</tr>
<tr>
<td>Measure narrow range of skills in each hurdle</td>
<td>Measure more of the WHOLE PERSON by assessing a wider range of skills at each step</td>
</tr>
<tr>
<td>ŃSchool knowledge tested; what you know &amp; test taking ability</td>
<td>ŃLife knowledge &amp; experience tested; what you can do with what you know</td>
</tr>
<tr>
<td>Goal to hire individuals with the same strengths considered most important</td>
<td>Goal to hire individuals with complimentary strengths for a strong whole</td>
</tr>
</tbody>
</table>

June 26, 2006
Written Testing

The most effective written tests will:
- Measure more than reading, writing, arithmetic
- Measure interpersonal, emotional, and practical skills
- Evaluate situational judgment
- Be validated statistically (not just content)
- Have low adverse impact and high validity, without lowering standards
Written Test Adverse Impact

Select Top 200 Applicants Out of 500 Total

Traditional Cognitive Model

- 188 Whites
- Adverse Impact

New Multiple Dimension Model

- 160 East
- 40 Blacks
- No Adverse Impact
Written Testing for the Next Generation
Measuring Multiple Dimensions

- Practical Skills
- Emotional Skills
- Interpersonal Skills
- Basic Educational Skills
Advantages Multiple Dimensions

- Predicts more of the critical aspects of performance
- Predicts job performance better than traditional tests
- Reduces adverse impact if designed properly
- Important in group/team performance
Reducing group differences begins with the job analysis.

- Typical job analysis overemphasizes educational skills (traditional cognitive ability).
- Job analysis is so heavily weighted toward traditional cognitive aspects, that multiple dimensions get buried.
- Increase the job analysis domain to capture the full range of KSAs.
- Focus on non-traditional elements that the next generation firefighter needs to be successful.
Demographics of Participating Departments for Job Analysis

<table>
<thead>
<tr>
<th>Department</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>N</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>Whites</td>
<td>644</td>
<td>766</td>
<td>585</td>
<td>399</td>
<td>263</td>
<td>190</td>
<td>2847</td>
<td>72.4</td>
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<tr>
<td>Blacks</td>
<td>54</td>
<td>145</td>
<td>45</td>
<td>234</td>
<td>102</td>
<td>25</td>
<td>605</td>
<td>15.4</td>
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<tr>
<td>Hispanics</td>
<td>198</td>
<td>54</td>
<td>125</td>
<td>12</td>
<td>1</td>
<td>0</td>
<td>390</td>
<td>9.9</td>
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<tr>
<td>Asians</td>
<td>9</td>
<td>22</td>
<td>10</td>
<td>8</td>
<td>4</td>
<td>0</td>
<td>53</td>
<td>1.3</td>
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<tr>
<td>Nat Amer</td>
<td>14</td>
<td>16</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>33</td>
<td>0.8</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>882</td>
<td>904</td>
<td>732</td>
<td>550</td>
<td>342</td>
<td>215</td>
<td>3625</td>
<td>92.2</td>
</tr>
<tr>
<td>Women</td>
<td>37</td>
<td>99</td>
<td>33</td>
<td>105</td>
<td>30</td>
<td>1</td>
<td>305</td>
<td>7.8</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>919</td>
<td>1,003</td>
<td>765</td>
<td>655</td>
<td>372</td>
<td>216</td>
<td>3930</td>
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</table>
## Demographics of Job Analysis Participants

<table>
<thead>
<tr>
<th>Race/Group</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whites</td>
<td>535</td>
<td>57%</td>
</tr>
<tr>
<td>Blacks</td>
<td>131</td>
<td>14%</td>
</tr>
<tr>
<td>Hispanics</td>
<td>117</td>
<td>13%</td>
</tr>
<tr>
<td>Asians</td>
<td>10</td>
<td>1%</td>
</tr>
<tr>
<td>Native Americans</td>
<td>14</td>
<td>1%</td>
</tr>
<tr>
<td>Other or Missing</td>
<td>128</td>
<td>14%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>935</td>
<td></td>
</tr>
<tr>
<td><strong>Men</strong></td>
<td>826</td>
<td>88%</td>
</tr>
<tr>
<td><strong>Women</strong></td>
<td>92</td>
<td>10%</td>
</tr>
<tr>
<td><strong>Missing</strong></td>
<td>17</td>
<td>2%</td>
</tr>
</tbody>
</table>

**Total** = 935
Job Analysis Support for Measuring Multiple Dimensions

Importance Ratings

- Emotional Outlook: 4.24
- Practical Skills: 4.17
- Interpersonal Skills: 4.15
- Educational Skills: 3.81
- Mechanical Aptitude: 3.95
- Physical Ability: 4.35

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Test Components and Dimensions in the Next Generation Test
Interpersonal Skills

- Ability to Get Along with Others
- Teamwork
- Compassion
- Acceptance of Diversity
- Customer Service
Emotional Outlook

- Handling Difficult Situations
- Effectiveness Under Stress
- Ethics, Integrity, & Honesty
- Work Ethic
- Self-Control
- Personal Responsibility
- Respect for Authority
Practical Skills

- Decision Making & Decisiveness
- Judgment, Reasoning, & Common Sense
- Problem Identification & Analysis
- Safety Awareness
Basic Educational Skills

- Reading Comprehension
- Writing Skills/Grammar
- Mathematical Ability
Mechanical Aptitude

- Use of Leverage & Force
- Workings of Gears & Pulleys
- Reading Gauges
Validity of the Next Generation Test
Incumbent Test Taker Sample

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>Whites</td>
<td>173</td>
<td>59%</td>
</tr>
<tr>
<td>Blacks</td>
<td>51</td>
<td>17%</td>
</tr>
<tr>
<td>Hispanics</td>
<td>60</td>
<td>20%</td>
</tr>
<tr>
<td>Asians</td>
<td>4</td>
<td>1%</td>
</tr>
<tr>
<td>Native Americans</td>
<td>5</td>
<td>2%</td>
</tr>
<tr>
<td>Men</td>
<td>253</td>
<td>86%</td>
</tr>
<tr>
<td>Women</td>
<td>42</td>
<td>14%</td>
</tr>
<tr>
<td>Total</td>
<td>295</td>
<td></td>
</tr>
</tbody>
</table>
## Criterion Validity

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Interpersonal Skills</td>
<td>.35**</td>
</tr>
<tr>
<td>Emotional Outlook</td>
<td>.33**</td>
</tr>
<tr>
<td>Educational Skills</td>
<td>.26**</td>
</tr>
<tr>
<td>Practical Skills</td>
<td>.25**</td>
</tr>
<tr>
<td><strong>Total Test</strong></td>
<td>.39**</td>
</tr>
</tbody>
</table>

Significant at the 0.01 level; N= 295
Adverse Impact of the Next Generation Test
Adverse Impact: SD Differences

Applicant Data

N = 3955

- Expected B-W Diff: 1
- Previous Test B-W Diff: 0.52
- Black: 0.44
- Hispanic: 0.23
- Minority: 0.28
- Female: -0.09

N = 3955
Adverse Impact: Pass Rates

Percent Pass at each Cut Point by Ethnicity

- White
- Black
- Hispanic
- Minority

4/5ths rule

N = 3955
Conclusions

- The Next Generation test demonstrates validity that is equal to or higher than any comparable entry-level firefighter written examination.

- The Next Generation test demonstrates less adverse impact than any comparable entry-level firefighter written examination.

- The Next Generation is one example of what can be accomplished by using selection measures that tap into multiple dimensions to better evaluate the whole person.
Selection is a Process

“There is no permanent solution.”

– Price Pritchett

• Evaluate your process

• Consider your values, recruitment strategy, diversity issues, testing, and legal issues

• Measure how well your process works

• Consider alternatives

• Do it all again as things change!
References & Additional Reading


References & Additional Reading


