Projection of Attrition and Replacement of Ships’ Officers in the Canadian Coast Guard Through the Analysis of Certificate Demographics

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• Recruitment and promotion, while important, are only part of the challenges faced by Canadian Coast Guard

• Emphasis is not solely on replacing Ships’ Officers with Ships’ Officers

• It is all about **loss of certificates and replacing them**

• We will demonstrate using a simple example: 3rd Class (Motor) certificates
Coast Guard manages and operates 116 ships, cutters and hovercraft, employing 800 Ships’ Officers and 1600 Ships’ Crew on permanent basis and additional 300 Term and Casual seagoing personnel.

CCG Fleet Management faces many of same HR challenges as shipping companies, including recruitment and retention of Ships’ Officers and Ships’ Crew.

However we are Public Servants so there are differences (pro and con) in how we deal with them.
CCG as a Shipping Company

Similarities:

- We are all seafarers
- Our Ships’ Officers are certificated in accordance with the Marine Personnel Regulations of the *Canada Shipping Act* (2001) and with International Conventions within STCW 95
- Recruitment and retention are major issues
- Collective Bargaining

Differences:

- CCG seagoing personnel are Public Servants and our employer is the Treasury Board of Canada
- Seafaring occupations and highly regulated operational environment very different than vast majority of public servants in office environment
- Collective Bargaining is tripartite:
  - Coast Guard (The Manager)
  - Bargaining Agents (for SO’s and SC’s)
  - Treasury Board (The Employer)
CCG seagoing personnel are public servants first and seafarers second - therefore subject to two sets of regulations:

- Seafarers and management must adhere to Treasury Board and Public Service of Canada acts, regulations, policies, directives and guidelines.
- As seafarers our SO’s and SC’s must obtain and maintain professional certification through Transport Canada in accordance with Marine Personnel Regulations under *Canada Shipping Act 2001* and STCW.

Fleet management must be innovative to meet both sets of regulations and constraints.
Traditional HR versus Certificate Demographics

- Think of succession planning as an equation:
  - Offset attrition through recruitment and promotion
- Coast Guard traditionally depended on three streams to compensate for attrition of **Ships’ Officers**:
  - Long term: Officer Training program at CCG College
  - Mid term: Promotion of Ships’ Officers from within Fleet
  - Short term: Hiring certificated officers from outside CCG
- Worked reasonably well in past under steady-state conditions
- But traditional projections based on HR demographics (age and number of year’s service) are inadequate
- We require accurate forecasts of **attrition of certificates** (which certificates and when) and certificate availability or lead-time to obtain them
- **Lost certificates means lost experience**
Basic Statistics (Traditional Approach)

Step One: Engineers Needed and Available

- CCG Fleet requires 372 Engineers
- 394 certificated Ships’ Officers on strength => Net surplus of 22
- Average annual rate of attrition over past five years = 3.9% (about 15 SO’s)
- The naïve manager would be reasonably comfortable assuming we have net surplus of 7 Engineers

Step Two: Need and availability by Certificate

- Next three slides present static information only
- Requirement for given level can be met by holder of higher certificate
- Therefore cumulative surplus/gap is sum of requirements down to that level minus available certificates at that level or higher
### Distribution of Engineer Certificates
#### Newfoundland & Labrador Region

<table>
<thead>
<tr>
<th>Certificates</th>
<th>Required</th>
<th>Available</th>
<th>By Certificate</th>
<th>Cumulative</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt; Class</td>
<td>16</td>
<td>30</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt; Class</td>
<td>23</td>
<td>22</td>
<td>-1</td>
<td>13</td>
</tr>
<tr>
<td>3&lt;sup&gt;rd&lt;/sup&gt; Class</td>
<td>21</td>
<td>21</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td>4&lt;sup&gt;th&lt;/sup&gt; Class</td>
<td>39</td>
<td>38</td>
<td>-1</td>
<td>12</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>99</strong></td>
<td><strong>111</strong></td>
<td></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

- Apparent gap of one 2<sup>nd</sup> Class certificate is met by surplus 1<sup>st</sup> Class;
- Similarly gap of one 4<sup>th</sup> Class is met by surplus of higher certificates;
- Appears to have adequate surplus based on the numbers, at least for now.

This table really shows many engineers are in positions for which they have higher certification than required.
Distribution of Engineer Certificates
Québec Region

<table>
<thead>
<tr>
<th></th>
<th>Certificates</th>
<th>Surplus/Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Required</td>
<td>Available</td>
</tr>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt; Class</td>
<td>9</td>
<td>15</td>
</tr>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt; Class</td>
<td>10</td>
<td>23</td>
</tr>
<tr>
<td>3&lt;sup&gt;rd&lt;/sup&gt; Class</td>
<td>18</td>
<td>14</td>
</tr>
<tr>
<td>4&lt;sup&gt;th&lt;/sup&gt; Class</td>
<td>32</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>69</td>
<td>72</td>
</tr>
</tbody>
</table>

- Apparent gaps of four 3<sup>rd</sup> Class and 12 4<sup>th</sup> Class offset by surplus 1<sup>st</sup> and 2<sup>nd</sup> Class (engineers in lower positions have higher qualifications)
- Net cumulative surplus of three certificates does not leave room comfort
Distribution of Engineer Certificates
Pacific Region

<table>
<thead>
<tr>
<th>Certificates</th>
<th>Surplus/Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required</td>
<td>Available</td>
</tr>
<tr>
<td>1st Class</td>
<td>2</td>
</tr>
<tr>
<td>2nd Class</td>
<td>20</td>
</tr>
<tr>
<td>3rd Class</td>
<td>18</td>
</tr>
<tr>
<td>4th Class</td>
<td>44</td>
</tr>
<tr>
<td>Total</td>
<td>84</td>
</tr>
</tbody>
</table>

- This region is in a precarious position already
The Real Challenge: Forecasting Attrition

• Involves more than looking at rate (national average 3.9% over five past years)
• Key: determine which certificates will be lost and when
• General correlation between level of certificate and age
• Appear to have sufficient number of 1st and 2nd Class certificates
• But problem will be 3rd Class
• In addition CCG embarking on two new initiatives:
  • Integrated Technical Services’ Increased vessel maintenance initiative
  • Major Crown Project’s requirement for project direction and technical support
Competition for 3\textsuperscript{rd} Class Certificates

- The competitors:
  - Pool for 2\textsuperscript{nd} and 1\textsuperscript{st} Class certificates in CCG Fleet
  - Opportunities with Public Works and Government Services Canada and Transport Canada
  - New CCG initiatives

- Historical loss through Attrition:
  - 35\% nationally of all engineer certificates
  - 67\% in N & L Region

- Conclusions:
  - We may not be in such a comfortable position in short order
  - We had better look at our sources for replacing these certificates
Applying 90-year criterion to all four classes of certificates, we could reasonably expect to lose a total of 10 certificates over next three years:

- 1st Class: 5
- 2nd: 0
- 3rd: 3
- 4th: 2

Referring to Table 1 the region would have a net surplus of two engineer certificates.

Ongoing recruitment from College will alleviate somewhat, but will require two more years to be eligible for 3rd Class certificates.
Applying 90-year criterion to all four classes of certificates, we could reasonably expect to lose a total of 13 certificates over next three years:

- 1st Class 3
- 2nd 2
- 3rd 5
- 4th 2

Referring to Table 2 the region’s surplus drops from a surplus of 3 to a gap of 10 engineer certificates
Certificate Demographics: Pacific

• Applying 90-year criterion to all four classes of certificates, we could reasonably expect to lose a total of 10 certificates over next three years:
  • 1\textsuperscript{st} Class  2
  • 2\textsuperscript{nd}  4
  • 3\textsuperscript{rd}  3
  • 4\textsuperscript{th}  1
• Referring to Table 3 the region’s gap increases from -7 to -17
Replacement versus Recruitment

• Taking stock:
  • Static information showed we appeared to be in reasonably good shape
  • Projected retirement indicates we will face gaps
  • Other causes of attrition will add to problem
  • Two new CCG initiatives will increase pressure even more

• Traditional approach: Recruitment (refer to three streams on Slide 5)
  • Hiring certificated officers – relatively few
  • CCG Officer Training Program – 6 Years to “grow” a 3rd Class certificate
    – Four years’ study => graduate with 4th Class (Or Watchkeeping Mate)
    – Two more years required to acquire sea time to take exams for 3rd Class
  • Promotion of Ships’ Officers from within

• No longer a question of recruitment – we need replacement strategy
The Time Factor

• Recruitment replaces officers with officers – not necessarily certificates with certificates

• Time element is essential for Replacement:
  • When do we expect to lose the certificates (and commensurate experience)
  • How long will it take to replace them

• Where do we find 3\textsuperscript{rd} Class certificates in short term?

• Start with pool of 4\textsuperscript{th} Class certificates
Significant number are below 90-year line

BUT almost half are required for SAR Life Boats
• Many Engine Room Technicians / Assistants have made commitment to seagoing career:
  • Obtained 4th Class certificates on own initiative
  • Accumulated sea time as Acting Engineers
• Available 4th Class certificates:
  • Approximately 20 per region except Central & Arctic (3)
The Big Question:
How many want to and can receive instruction towards 3rd Class exams?
Ships’ Crew Certification Program

• Many of our SC have potential to attain higher certification
• Big jump from 4th to 3rd Class
  • Requires formal classroom instruction (notably advanced mathematics and physics) and practical preparation
  • Investment of [their] time and [our] funding/accommodation
• SC Certification Program will involve detailed syllabus for each certificate required (engine room and deck)
• Will be parallel to OTP but comprised of modules
• Program will serve two purposes, providing:
  • New stream of certificates but faster than full OTP program and additional years to go beyond entry-level certification
  • Career development and progression opportunities for interested and qualified personnel – increases retention
Conclusion

• Traditional thinking is no longer viable
• Real issue is certificate demographics: attrition and replacement of certificates, not replacement of officers with officers
• Time element is essential consideration in succession planning:
  • Accurate forecast of which certificates will be lost and when
  • Lead time to replace certificates and experience
• This analysis has shaken us from relative complacency to heightened anxiety over potentially serious problem
• There is a viable solution / strategy to mitigate problem
This was an easy example...