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

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Abstract

Fleet Management in the Canadian Coast Guard (CCG) faces many of the same HR challenges as any shipping company, including recruitment and retention which we incorporate into the broader context of succession planning. CCG employs 800 Ships’ Officers and 1600 Ships’ Crew full-time, and succession planning is a continual process conducted in a highly dynamic and regulated environment.

Succession planning can be considered an equation, but it is more than simply offsetting annual attrition of Ships’ Officers through the recruitment of the same number of officers from various sources (right side). Successful succession planning relies on the accurate projection of attrition of certificates and related experience, and ensuring those certificates and commensurate experience can be replaced when they will be required. Therefore our projections are based on the analysis of certificate demographics instead of more traditional workforce demographics.

Certificate replacement begins through recruitment from three basic streams: (a) entry level graduates from the Coast Guard College; (b) qualified officers applying to CCG and (c) promotion from within our cadre of Ships’ Officers as they acquire higher certification. This latter stream allows officers to plan their career paths within the organization, leading to higher morale and retention. But certificates gained through recruitment and promotion from within may not entirely offset the certificates lost and most importantly, when they will be needed.

This paper illustrates this challenge using 3rd Class Engineer certificates as an example. The analysis of certificate demographics, combined with the impending impact of unexpected pressures from new sources of attrition, has shaken us from complacency to heightened anxiety. But there is a solution.

Normally it takes six years to “grow” a 3rd Class certificate: graduation from the four-year programme at the College with a 4th Class certificate, plus two more years to accumulate the sea time needed to obtain the 3rd Class. We have developed a strategy to tap into a previously overlooked source: qualified Ships’ Crew, many of whom already possess their 4th Class certificate. The Ships’ Crew Certification Program has established training modules to assist them to obtain their 3rd Class certificates in a one to two-year timeframe. This strategy will provide the flexibility we need to bring in mid-range certificates while providing career progression for our seagoing personnel.

Introduction

The Canadian Coast Guard (CCG) manages a fleet of 116 vessels and hovercraft, and a cadre of 800 full-time Ships’ Officers and 1,600 Ships’ Crew, comprising just over half of the entire CCG workforce. Our fleet operations are managed from five regional offices: St. John’s, Newfoundland and Labrador; Dartmouth, Nova Scotia; Québec City; Sarnia, Ontario; and Victoria, British Columbia.
In general, we manage our fleet in much the same as any commercial shipping company, although with some differences. As we are a Special Operating Agency within the Department of Fisheries and Oceans, and part of the Public Service of Canada, this affords us, and our mariners, certain advantages over our counterparts in the commercial sector. However, we are public servants immersed in a culture that is firmly entrenched in a traditional office-based cubicle environment.

Shipboard occupations and the related operational environment experienced by mariners are quite distinct from those encountered by office workers. Ships remain at sea for extended periods of time; the work is demanding and often performed under difficult physical conditions.

Our HR challenges are similar, including the recruitment and retention of qualified seagoing personnel. One area in which we differ however is staffing. CCG is governed by Public Service staffing processes which are unique, stringent and within our department, take an average of five months to complete.

Obviously, to meet regulatory certification requirements we cannot wait on lengthy staffing processes, so we rely heavily on acting appointments to fill vacant positions as a temporary to medium-term solution to keep our ships sailing. The need to provide relief officers has been taken into account in analyzing our overall certificate requirements.

For the most part, our operations at sea are conducted year-round; however, due to seasonal constraints and the requirement to remove ships from service for planned maintenance and/or unplanned repairs, operations can vary throughout the year. For these and related reasons, Fleet Management avails itself of the flexibilities offered through the hiring of up to 300 term and casual employees over the course of a year.

This paper focuses on one of many HR challenges facing CCG today: a significant projected increase in attrition of our marine engineers. The importance of proper succession planning for our professional mariners is stressed, with the emphasis on attrition and the replacement/promotion of engineering certificates, rather than on the numbers of Ships’ Officers per se. This runs contrary to traditional HR practices which are centred on people.

**Operational HR Issues in the Maritime World**

Our world is governed by public service regulations, rules and guidelines created from the perspective of an office-centric world. Therefore, Fleet Management adheres to the same HR principles for its seagoing personnel as those applied to shore-based employees in the public service. But seafarers work in a highly regulated environment dictated by international convention and established Acts.
Seagoing personnel must meet professional competency requirements (certificates) in accordance with marine personnel regulations, as set by the Canada Shipping Act (2001), which in turn are based on international conventions adopted by the International Maritime Organization. Through our CCG Fleet policies we meet or exceed international convention and Transport Canada requirements for professional certification and technical training for our seagoing personnel.

In this context Coast Guard has developed Ships’ Crewing Profiles and has implemented them throughout the Fleet. These profiles establish the minimum certification, technical training and experience required for each position on each ship, in accordance with Transport Canada’s regulations. Unlike most office situations, if a seagoing employee is unable to report for work, his/her replacement must also be qualified in accordance with the Ship’s Crewing Profile before the ship can sail. Finding qualified and experienced replacements on short notice is a regular challenge, hence maintaining a cadre of certificated officers and qualified crew is an integral part of Fleet operational HR planning.

Coast Guard has traditionally looked at three streams for meeting our certification requirements on an ongoing basis:

1. The Officer Training Program at the CCG College;
2. Promotion of Ships’ Officers from within Fleet;
3. Hiring certificated officers from outside CCG.

Our principal source of Ships’ Officers is through our four-year Officer Training Program at the Canadian Coast Guard College, located in Sydney, Nova Scotia. Officer Cadets receive their entry-level certification upon graduation, signifying that they have received all of the theoretical and practical training required to be in charge of a watch at sea, but also preparing them to take the exams and eventually apply for the highest levels of certification, the Master Mariner or 1st Class Motor, respectively. However, it may take the graduate between ten and twelve years to acquire the requisite sea time and voyage requirements.

This is a good example of one of the fundamental differences between the seagoing and office worlds: after new Ships’ Officers join the Fleet, as part of their career progression as a professional mariner, it is up to the individual to record sea time, pursue higher certification and subsequently seek promotion commensurate with their experience. This differs from professional positions ashore, such as a research scientist, where one must first earn professional accreditation (BSc, MSc or PhD) before being eligible to apply for a suitable position within the Public Service of Canada.
In the seagoing world, succession planning is not simply offsetting the annual attrition of Ships’ Officers through the recruitment of the same number of officers from various sources. We are losing valuable certificates and related experience, and it is those entities that must be replaced, and in a timely fashion. The analysis of certificate demographics is more than estimating attrition as a function of an officer’s age and number of years’ service. With the long lead-time associated with acquiring the sea time to gain experience and obtain higher certification, we must examine our current requirements and forecast the attrition of certificates, and compare these projections against our existing inventory. We must then estimate the potential of individuals to obtain higher certificates to meet those projections.

The following simple example will demonstrate how the analysis of certificate demographics is an integral part of our succession planning.

**Attrition of 3rd Class Motor Certificates**

We start by presenting the basic statistics – the number of certificates required and available – and then analyze the impact of impending attrition and the demographics of the available certificates to replace those expected to be lost.

Nationally, the CCG Fleet requires 372 Engineer (Motor) certificates and we have 394 certificated Ships’ Officers, for a net surplus of 22. With an average annual rate of attrition over the past five years of approximately 3.9% (representing about 15 officers), the naïve manager would be reasonably comfortable assuming we have a net surplus of seven certificates.

But this simple summary does not take into account the requirements for each certificate, by region. Although all five regions have similar patterns, we have chosen three to illustrate the problem. Tables 1, 2 and 3 show the certificate requirements and availability, and the net cumulative surplus/gap for the Newfoundland & Labrador (N&L), Québec and Pacific Regions, respectively. These tables should be interpreted in the following way:

The first two columns list the number of certificates required and available. The third column reflects the surplus or gap between required and available. The last column is the important one, since it defines the net cumulative gap. Given that the requirement for a given level of certificate can be met by the holder of that certificate or a higher one, the net cumulative gap is the sum of the requirements for certificates down to that level, minus the sum of the available certificates at the required level and higher.
Table 1 shows that Newfoundland & Labrador Region requires 16 1<sup>st</sup> Class and 23 2<sup>nd</sup> Class certificates, or a total of 39. There are 30 1<sup>st</sup> and 22 2<sup>nd</sup> Class certificates available (total of 52), thus, we have 52 minus 39 for a total of 13 more 1<sup>st</sup> and 2<sup>nd</sup> Class certificates than required. Similarly, we require 60 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> Class certificates, and we have 73 available. Therefore, the net surplus remains at 13. Once the 4<sup>th</sup> Class certificates are factored in, the net surplus is reduced to 12, which would appear to be adequate, at least for now.

Of course this table really tells us that we have individuals in certain positions on our ships whose certification exceeds the requirements for those positions. We will revisit this situation shortly.

Table 1: Cumulative Surplus/Gap of Engineer Certificates in Newfoundland & Labrador Region

<table>
<thead>
<tr>
<th>Newfoundland &amp; Labrador Region</th>
<th>Certificates</th>
<th>Surplus/Gap</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Required</td>
<td>Available</td>
<td>By Certificate</td>
<td>Cumulative</td>
</tr>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt; Class</td>
<td>16</td>
<td>30</td>
<td>14</td>
<td>14</td>
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<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>
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<td>12</td>
</tr>
<tr>
<td>Total</td>
<td>99</td>
<td>111</td>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

Table 2: Cumulative Surplus/Gap of Engineer Certificates in Québec Region

<table>
<thead>
<tr>
<th>Québec Region</th>
<th>Certificates</th>
<th>Surplus/Gap</th>
<th></th>
<th></th>
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</thead>
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<tr>
<td></td>
<td>Required</td>
<td>Available</td>
<td>By Certificate</td>
<td>Cumulative</td>
</tr>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt; Class</td>
<td>9</td>
<td>15</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt; Class</td>
<td>10</td>
<td>23</td>
<td>13</td>
<td>19</td>
</tr>
<tr>
<td>3&lt;sup&gt;rd&lt;/sup&gt; Class</td>
<td>18</td>
<td>14</td>
<td>-4</td>
<td>15</td>
</tr>
<tr>
<td>4&lt;sup&gt;th&lt;/sup&gt; Class</td>
<td>32</td>
<td>20</td>
<td>-12</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>69</td>
<td>72</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

In Table 2, Québec Region’s apparent gaps of 4 3<sup>rd</sup> Class and 12 4<sup>th</sup> Class certificates is actually offset by the surplus of 2<sup>nd</sup> and 1<sup>st</sup> Class certificates; in other words the engineers in lower positions have higher certification than required, which puts them in good stead for advancement as opportunities arise. However, the net cumulative surplus of three certificates does not really provide a lot of room for comfort.
Table 3: Cumulative Surplus/Gap of Engineer Certificates in Pacific Region

<table>
<thead>
<tr>
<th>Pacific Region</th>
<th>Certificates</th>
<th>Surplus/Gap</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Required</td>
<td>Available</td>
<td>By Certificate</td>
<td>Cumulative</td>
</tr>
<tr>
<td>1st Class</td>
<td>2</td>
<td>8</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>2nd Class</td>
<td>20</td>
<td>18</td>
<td>-2</td>
<td>4</td>
</tr>
<tr>
<td>3rd Class</td>
<td>18</td>
<td>17</td>
<td>-1</td>
<td>3</td>
</tr>
<tr>
<td>4th Class</td>
<td>44</td>
<td>34</td>
<td>-10</td>
<td>-7</td>
</tr>
<tr>
<td>Total</td>
<td>84</td>
<td>77</td>
<td>-7</td>
<td></td>
</tr>
</tbody>
</table>

These tables provide only a snapshot and the maritime HR world is anything but static: it is very dynamic and our emphasis must be on defining the impact of attrition and our capacity to offset the loss of certificates to ensure we can put our ships to sea.

Attrition of our Ships’ Officers is due to various factors, primarily: retirements, pursuing opportunities ashore, and joining commercial companies. In the past, it has sometimes been difficult for Officers with a higher level of certification than required at their substantive position to seek promotion. Senior Officers do not necessarily retire at the age of which they become eligible and staffing processes take a very long time to fill vacant positions. This could be a contributing factor for those mariners leaving for opportunities elsewhere, taking their certificates with them. Others will leave for personal reasons, such as the desire to start and raise a family. The dynamic nature of seafaring and the need to meet the regulatory requirements in which we operate translates into attrition based less on retirement, and more on the other three factors.

Although our national annual rate of attrition over the past five years is relatively low, approximately 3.9%, we have to predict which certificates will be lost, and when, and then look at the demographics of our remaining certificates to identify plans for succession; plans that will identify a clear path with timelines needed to replace the certificates and experience that will be lost.

Overall, the tables above indicate that we have reasonable availability of certificated engineers to meet the normal attrition of 1st and 2nd Class certificates. While there are exceptions, there is a general correlation between age and the level of certificate, which reflects the need to accumulate sea time to attain higher certification. Although retirement is a contributing factor to attrition, Fleet has historically lost valid middle to higher level certificates to other federal departments such as Public Works and Government Services Canada (ship procurement projects) and Transport Canada (technical inspection), as well as to commercial fleets.
However, Coast Guard has embarked on two initiatives with the potential to create a requirement for 96 marine engineer positions ashore over the next three years, the vast majority of whom will likely come from seagoing personnel in Fleet. Needless to say, this will add significantly to the rates of attrition for our marine engineers. The two initiatives are:

- **Integrated Technical Services** (for increased maintenance requirements under the Vessel Maintenance Management Program), and

- **Major Crown Projects** (as project directors, project managers or technical experts for the development of specifications and contract management for new vessel construction).

These initiatives are very positive for the Coast Guard but they will undoubtedly put additional strain on Fleet’s capability to replace seagoing personnel, particularly at the 3rd Class certificate level. As stated, overall we are reasonably well placed to fill positions requiring 1st and 2nd Class certificates. But at the same time our source for higher level certification is the pool of 3rd Class certificates and they are the group most targeted by our colleagues within the Coast Guard. Nationally over the past five years, 3rd Class certificates accounted for approximately 35% of all those lost through attrition. In Newfoundland & Labrador Region alone, 67% of all engineer certificates lost through attrition were 3rd Class.

With this in mind, we have to start looking at the demographics of our current certificates to see how well we are positioned to meet these challenges over the next three years. We will use the same three regions to illustrate the potential magnitude of the problem, starting with retirement.

The following three figures display the demographics of our 3rd Class certificates. The stacked histograms show the sum of the age and number of years’ service of each employee (the certificate holder). Overall, the graphics present a logical picture: the number of years’ service and age descend together. In the Public Service, eligibility for retirement is based on the sum of the employee’s age and number of years of service. The yardstick for retirement eligibility is typically 85 years, as depicted by the dotted line. However, many of our officers are CCG College graduates and their employment in the Public Service of Canada began when they enrolled at the College, so they may reach 30 years’ service before their 55th birthday (the earliest at which they can begin to collect a pension). Hence, for seagoing personnel it is more likely that the total of 90 years for age and service represents a more realistic indicator of retirement eligibility, as shown by the dashed line.
Recall that Table 1 showed that Newfoundland & Labrador Region has a reasonable margin of comfort with a net surplus of 12 engineer certificates.

We applied the 90-year criterion to all four classes of engineers. Ten certificates (9%) will reach retirement eligibility in the next three years: five 1st, three 3rd, and two 4th Class. The net surplus of 12 certificates for the region (Table 1) would be reduced by 10 retirees, leaving a surplus of only two. Ongoing recruitment of entry-level certificates from the CCG College would provide some relief, but this stream of new graduates may not provide the certificates required at the mid to higher levels.
In Québec Region, it is expected that 13 certificates (18%) will be eligible to retire in the next three years based on the 90-year criterion: three 1st, two 2nd, five 3rd, and three 4th Class. Québec’s net surplus of 3 certificates (Table 2) will be replaced by a gap of 10. This gap could be reduced with entry-level graduates from the CCG College, but this will not be sufficient to fill all of the required certificates.

Although our focus here is on three regions, we have also analyzed the situations for the Maritimes and Central & Arctic Regions. Maritimes Region requires a total of 75 Engineer certificates and has 84 available, for a net surplus of 9. However, 9 certificates (2 1st, 3 2nd, 3 3rd and 1 4th) will be eligible to retire in three years. Moreover, an additional 8 certificates will be aged 60 or over also in three years, so the net surplus drops to a range from zero to a gap of up to eight. Central & Arctic Region’s projected loss will be two, reducing their net surplus from five to three.

But as mentioned above, there are other factors contributing to attrition, in addition to the need to fill increased fleet maintenance and vessel project management positions ashore also over this three-year horizon.

Keeping in mind that up to now 35% of all engineer certificates lost through attrition were from 3rd Class, and that we can expect that the biggest drawdown to fill many of the shore-based engineering support positions will also come from these certificates, succession planning strategies for our marine engineers are of critical importance.
Succession Planning in Fleet

The traditional approach to succession planning in the Public Service’s office world can be summed up in a simple equation: the objective is to offset attrition by promotion from within and/or through recruitment. Often the focus is on attrition – the left side of the equation (typically expressed along the lines of: “We are going to lose 25% of our workforce over the next five years as baby boomers retire!” without addressing the ongoing recruitment and retention measures happening in the background, which form the right side of the equation.

Succession planning involves the forecasting of attrition (who and what level of expertise), outreach, recruitment, promotion and retention, with as accurate an estimate as possible of attrition projected over many years.

As stated in the introduction, Fleet has traditionally recruited marine engineers from three major sources. The first, and most obvious, is through the CCG Officer Training Program at the CCG College. Graduating officers will have obtained their entry-level 4th Class Engineer Certificate (or Watchkeeping Mate for navigation officers).

These officers have received all of the theoretical and practical instruction needed to attain the highest certification in their respective disciplines, and in some cases, they will receive credit for or exemptions from certain exams. Graduates of the Marine Engineering program will have to accumulate 12 months of sea time (typically taking two years) before they will be eligible to write the necessary exams to obtain their 3rd Class certificate. Thus it takes a total of six years to “grow” a 3rd Class certificate, starting as a first-year Officer Cadet. Our problem is finding 3rd Class certificates over a three-year horizon or less.

The next source for 3rd Class certificates is the pool of Ships’ Officers who already possess a 4th Class certificate. Although there would appear to be a high number of 4th Class certificates in the fleet, 48% of them are attached to Search and Rescue (SAR) lifeboats. Many of these engineers stay in the “small vessel fleet” by choice and hence the pool of holders of 4th Class certificates prepared to obtain their 3rd Class certificate is considerably less. We discourage graduating engineers from taking positions on smaller vessels so they can work towards the higher certificates for which they have been trained.

Tables 1 through 3 showed that the requirement for 4th Class certificates was virtually met when higher certificates were taken into account, although Pacific Region had a net gap of seven certificates. Figures 4 through 6 present the demographics of 4th Class certificates in the three regions we have been following. In general there appears to be a significant number of 4th Class certificates well under the projected 90-year line. But again, half of them are attached to SAR lifeboats and other smaller fleet units. So although those engineers who successfully obtain their 3rd Class certificates will reduce that projected gap, the total pool of Ships’ Officers with 3rd and 4th Class certificates may not be sufficient to meet the combined need.
Figure 4: Demographics of 4th Class Certificates – Newfoundland & Labrador Region

Figure 5: Demographics of 4th Class Certificates – Québec Region

Figure 6: Demographics of 4th Class Certificates – Pacific Region
The third source of certificates – professionally qualified mariners from outside Coast Guard – are welcomed into Fleet; however they will not help to eliminate the projected shortfall.

However, there is a fourth source for certificates that has been previously overlooked and which we are now targeting through our new Ships’ Crew Certification Program which will generate mid-level certificates in a shorter time-frame.

**The Ships’ Crew Certification Program**

Many of our Ships’ Crew (SC’s) already possess a 4\textsuperscript{th} Class certificate. Their certificates were obtained through their own initiative, based on sea time and experience they gained as Engine Room Technicians or Assistants. These employees have already demonstrated their aptitude and initiative to warrant more professional development. They have made the commitment to a seagoing career and therefore represent a potential source of higher level certificates and career advancement as Ships’ Officers.

There are approximately 20 Ships’ Crew 4\textsuperscript{th} Class certificates in four of the regions; Central & Arctic has only three, but there are fewer larger vessels in that region on which they can gain the requisite experience to be eligible to apply for higher certification.

Figures 7 through 9 present the demographics of 4\textsuperscript{th} Class certificates held by Ships’ Crew in the three regions we are examining.

Figure 7: Demographics of 4\textsuperscript{th} Class Certificates (Ships’ Crew) – Newfoundland & Labrador Region

![Demographics of 4\textsuperscript{th} Class Certificates](image-url)
While many of these employees have the potential to attain higher certification, the jump from 4th Class to 3rd Class is significant, requiring formal study and the application of elements in physics and advanced mathematics in particular. To meet the immediate and mid-term need for specific certificates, in accordance with operational requirements and to provide needed flexibility in the future, CCG is developing a Ships’ Crew Certification Program.
This program will be complementary to the Canadian Coast Guard Officer Training Program. The latter is our established program to train Officer Cadets to become senior officers. In that context the OTP should be considered an integral part of a 15-year program of formal training (four years) and the accumulation of sea time (10 – 12 years) required to attain certification up to Master Mariner or 1st Class (Motor). It is expected that many of those graduating officers who wish to pursue their careers will obtain their certification and seek opportunities for promotion to senior positions in the fleet. But, as discussed, the time to “grow” 3rd Class certificates through the OTP is six years.

The Ships’ Crew Certification Program offers a quicker solution and flexibility to fill lower and intermediate certificates with qualified, experienced and committed Ships’ Crew. We are developing a detailed syllabus for each certificate required, including among other subjects: physics, advanced mathematics, and CCG Operations, to prepare selected Ships’ Crew to write requisite exams. The framework for this program has been created and it is expected that the modules for our first priority, the 3rd Class certificate, will be developed and we will begin implementation in the current fiscal year.

The program will be expanded to include a navigation (deck) component as a function of Fleet’s requirements and availability of suitable candidates. Candidates will be selected based on requests noted within their Individual Learning Plans as part of their annual Performance Reviews and on the recommendation of the Commanding Officer or other Senior Ship’s Officer. If additional sea time as a watchkeeper is required for eligibility, arrangements will be made to provide that experience on ships within the home region or extended to other regions.

This initiative will thus serve two purposes: (1) it will provide another source of suitable certificated and trained Ships’ Officers and (2) it will provide career development and progression opportunities for interested and qualified seagoing personnel. The program will also strengthen our retention strategy as it draws upon employees who have already made a commitment to a seafaring career, and want to advance their careers, and have demonstrated the capacity to do so. As such we believe the Ships’ Crew Certification Program will form one of the key elements of succession planning and career progression for seagoing personnel.
Conclusion

This paper set out to demonstrate the importance of looking at succession planning in the maritime world and to take into account operational HR considerations not encountered in the traditional office environment. Therefore, our emphasis has been on certificates and their demographics, rather than on the individuals themselves.

In looking at sources for filling engineering certificates at all four levels we start with the long-term investment into our Officer Training Program. The four-year program is only part of it; the total investment in time is 15 years to attain the highest certification in Marine Engineering or Navigation. Similarly, given that it takes four years to produce entry-level certificates, the actual need four years after the intake of new Officer Cadets cannot be predicted accurately.

Several years ago we inducted a larger number of graduating officers in both disciplines than were actually required four years after recruitment, and the program was subsequently reduced to the point that there were fewer graduates when we needed more four years later. Therefore we are introducing strategies to build more flexibility into our recruitment into the entry-level and mid-range certificates by encouraging qualified Ships’ Crew to increase their certification. This will provide a shorter time-frame to react to fluctuating requirements due to significant events beyond our capability to predict. Examples include a severe economic downturn (which unfortunately occurs periodically to various degrees) or Coast Guard’s new initiatives which will result in the opening of a significant number of marine engineering opportunities ashore.

We have also introduced the time element to succession planning in terms of predicting when (and which) certificates will be lost through attrition and how well we will be positioned to replace them when they will be needed. Statistically, to date only 34% of our Ships’ Officers will retire upon reaching eligibility. On the one hand, this is good for the fleet as higher level certificates are retained. On the other hand, we have to be cognisant that many officers at senior levels may leave at the same time. Therefore, prediction taking lead time into account is an essential consideration in our succession planning.

The analysis of certificate demographics, combined with the impending impact of an unexpected and significant impact on the attrition of 3rd Class Motor certificates, has shaken us from relative complacency to heightened anxiety. But there is a solution.

In addition to our traditional sources of recruitment and promotion from within, we have devised a strategy to tap into a previously overlooked source: qualified Ships’ Crew, many of whom already possess their 4th Class certificate. The Ships’ Crew Certification Program has established training modules to assist them to obtain their 3rd Class certificates in a one to two-year timeframe. This strategy will provide the flexibility we need to bring in mid-range certificates while providing career progression for our seagoing personnel.