

Canadian
Forces
College

Collège
des
Forces
Canadiennes



ALTERING THE COURSE: PRODUCTION OF SUBMARINERS IN THE RCN

LCdr E. Kerr

JCSP 41

PCEMI 41

Master of Defence Studies

Maîtrise en études de la défense

Disclaimer

Opinions expressed remain those of the author and do not represent Department of National Defence or Canadian Forces policy. This paper may not be used without written permission.

Avertissement

Les opinions exprimées n'engagent que leurs auteurs et ne reflètent aucunement des politiques du Ministère de la Défense nationale ou des Forces canadiennes. Ce papier ne peut être reproduit sans autorisation écrite.

© Her Majesty the Queen in Right of Canada, as represented by the Minister of National Defence, 2015.

© Sa Majesté la Reine du Chef du Canada, représentée par le ministre de la Défense nationale, 2015.

CANADIAN FORCES COLLEGE – COLLÈGE DES FORCES CANADIENNES
JCSP 41 – PCEMI 41
2014 – 2015

MASTER OF DEFENCE STUDIES – MAÎTRISE EN ÉTUDES DE LA DÉFENSE

ALTERING THE COURSE: PRODUCTION OF SUBMARINERS IN THE RCN

By LCdr E. Kerr

“This paper was written by a student attending the Canadian Forces College in fulfilment of one of the requirements of the Course of Studies. The paper is a scholastic document, and thus contains facts and opinions, which the author alone considered appropriate and correct for the subject. It does not necessarily reflect the policy or the opinion of any agency, including the Government of Canada and the Canadian Department of National Defence. This paper may not be released, quoted or copied, except with the express permission of the Canadian Department of National Defence.”

Word Count: 14081

“La présente étude a été rédigée par un stagiaire du Collège des Forces canadiennes pour satisfaire à l'une des exigences du cours. L'étude est un document qui se rapporte au cours et contient donc des faits et des opinions que seul l'auteur considère appropriés et convenables au sujet. Elle ne reflète pas nécessairement la politique ou l'opinion d'un organisme quelconque, y compris le gouvernement du Canada et le ministère de la Défense nationale du Canada. Il est défendu de diffuser, de citer ou de reproduire cette étude sans la permission expresse du ministère de la Défense nationale.”

Compte de mots : 14081

TABLE OF CONTENTS

Table of Contents	ii
List of Tables	iii
Introduction	1
Chapter 1 – SUBMARINES AND SUBMARINERS IN CANADA	6
Chapter 2 – COMPARABLE MODELS AND CAREER PATHS	29
Chapter 3 – A NEW APPROACH AND OPTIONS FOR THE FUTURE	42
Conclusion	63
Bibliography	66

LIST OF TABLES

Table 1: Canadian Submarine Force NCM Establishment by Occupation	15
Table 2: Occupational Health Status for the Big Four Submarine Occupations	22
Table 3: Status of Submariner NCMs by occupation	24
Table 4: Risks to Implementation of a New Occupation	57

LIST OF FIGURES

Figure 1: Current NCM Submarine Structure	46
Figure 2: NCM Structure as an Occupation	46

INTRODUCTION

Life at sea is tough; life at sea in submarines is very tough. Even the Army's Special Force soldiers deployed on operations in Afghanistan enjoy more of the normal trappings of life than submariners.

- Rear Admiral Rowan Moffitt RAN, *The Moffitt Report*¹

Since its inception, more than a century ago, the Royal Canadian Navy (RCN) has faced and overcome many challenges, internally and externally, domestically and abroad. On the domestic front, the Navy has assisted in disaster relief, fisheries enforcement, illegal migrant interception and counter drug operations, not to mention providing security for international events such as the 2010 Winter Olympic Games in Vancouver. Historically, one of the most crucial roles for the RCN has been to ensure the sovereignty of Canada's territorial waters, which has been accomplished through a presence, deterrence and cooperation with Allies. Internationally, Canada's Navy has punched above its weight as a medium power fleet, contributing sea power and forces around the world, in conventional battles such as two World Wars and in more asymmetric conflicts such as anti-piracy operations off the coast of Somalia and the Global War on Terror (GWOT).

The RCN is the smallest of the three military environments in the Canadian Armed Forces (CAF), and with arguably the most complex weapons platforms in its arsenal, shifts in government, policies and budgets all have an immense impact on the Navy's operations. Despite Canada's three oceans and boasting the largest coastline in the world, the RCN has continually needed to reassert its relevance in the CAF, to the government and to Canadians. The

¹ Rowan RAdm RAN Moffitt, *Report of the Review of Workforce Sustainability*, (RAN, 2008).

government has emphasized a need for a balanced yet combat-capable fleet; capable of a fulfilling a multitude of roles. The Navy has consistently delivered.

The most complex element of a balanced naval fleet is its submarine force and the generation of a submarine capability is one of the most advanced things a navy can do.² The materiel or physical component of this unique capability is profoundly multifaceted all on its own. In regards to Canada's Victoria Class Submarines (VIC Class), the Commander RCN (CRCN), Vice-Admiral Norman argues that the complete engineering overhaul and subsequent return to sea of the most complex weapons system in the CAF inventory is a clear indication of success.³ Consequently endeavours related to recruiting, training and sustaining personnel to crew submarines is as equally challenging and warrants proportional attention and action.

This paper emphasizes the requirement for an innovative and holistic philosophy towards the Canadian submarine service and proposes methods to improve and maintain the production of a sufficient cadre of submariners for the RCN of the future. Challenges and concerns pertaining to the generation of submariners are not novel in the RCN, with limited and incomplete adjustments having been made to rectify the problems. Several in-depth analyses of the issues and challenges that plague the generation and sustainment of these essential naval personnel has taken place, yet the proposed solutions

² Brigadier Berry, "The Military Balance 2015" (Toronto, Ontario, 16 April 2015).

³ Jean Grace, "Fleet in Transition: Facing Fragility Today, the RCN Lays Foundations for Tomorrow," last accessed 22 April 2015, <https://janes.ihs.com/CustomPages/Janes/DisplayPage.aspx?DocType=News&ItemId=+++1707979&Pubabbrev=JN I>.

have gained limited traction outside of the dockyard gates. The majority of past analysis has been conducted by and at the behest of the submarine community, at times generating interest but rarely eliciting action within the strategic level personnel staffs at the RCN headquarters or by the Chief of Military Personnel (CMP) in Ottawa. While there will be some lessons offered regarding Officer production, the nexus of this paper will be to focus on the generation of personnel in the Non-Commissioned Member (NCM) occupations, specifically those occupations which are generated by the navy.

Ultimately, there is a requirement to raise the status, profile and management of the submarine force within the Navy and the CAF. The work done in submarines is crucial and is a decidedly unique employment stream, not unlike a Search and Rescue technician or Special Forces Operator. As such this group deserves access to the management functions, employment structures and opportunities that complement their distinctive status. At present, the submariner profession does not warrant access to the basic management functions and processes that each of nearly 100 CAF occupations has, let alone any special considerations given their unique skill set and the challenges faced below the sea. Submariner as a vocation has long been populated by the various sea-going occupations that crew Canadian submarines. This paper proposes that a more individual identity for the submarine force will set the stage for improved personnel production.

An examination into the evolution of Canada's submarine force is necessary to demonstrate how it has been influenced and attained its current state. Specifically, the government, the public and especially the media in Canada have all been instrumental in shaping where the submarine force is today.

The approach used for this examination will include a review of the experiences of other nations and explore approaches used by Allies. Drawing on recent CAF employment studies, conducted on occupations and career streams experiencing similar issues to that of submariners will contribute to recommendations. Furthermore, analysis of occupational, personnel and positional data will be conducted to substantiate the requirement to alter the course for future submariners and formalize their exclusive employment in the CAF. Lastly, alternatives to the current submariner production model will be introduced, setting the stage for a new employment model, fitting for the unconventional and select environment in which these undersea warriors operate.

CHAPTER ONE – SUBMARINES AND SUBMARINERS IN CANADA

Submarines provide Canada with a versatile operational capability to contribute to maritime and collective security in an unparalleled dimension. This technically complex capability has come at a high cost for Canada, in much more than simply a fiscal sense. After decades of operational and materiel setbacks, the often maligned Vic Class finally reached their full operating capability, in early 2015. Upon reaching this significant milestone, it will be critical to ensure that submarine personnel are appropriately managed, by taking full advantage of the human resources mechanisms available in the CAF and capitalizing on the occupational analysis and recommendations that have been conducted to date.

Both the force generation and production of submariners has been a long standing issue in the RCN. Ensuring sufficient numbers of qualified and experienced personnel to crew the Vic Class continues to be a challenge for the Commander Canadian Submarine Force (CCSF)⁴, who has been entrusted with this responsibility on behalf of the CRCN.

Service in submarines constitutes a unique employment stream, which requires submariners to undergo specialized *dolphin training*⁵ and ultimately operate in a much more demanding environment in contrast to their surface ship peers. Despite the exclusive and specialized work accomplished in submarines, a posting to a submarine is considered a *routine* sea posting and the length of a *tour* is comparable to one in a surface ship – normally two to

⁴ The Capt(N) position of CCSF was established in 2012. Previously the position was entitled director and upgraded from Cdr.

⁵ Dolphin training is named after HMS Dolphin in the UK, where Canadian submariners first trained or submarine service. Once training is complete, submariners are entitled to wear the dolphin badge,

three years.⁶ This paper will show that employment as a submariner is anything but routine; and likewise that a *tour* in a submarine is far from conventional. Not only are submariners part of an exclusive culture, but they have adopted their own communication signals known as *the dolphin code*. This code was created by Canadian submariners and subsequently adopted by submariners around the world.⁷

*Submarines are special; submarines are unique and if you have navy, submarines are indispensable.*⁸

Julie Ferguson, *Deeply Canadian: New Submarines for a New Millennium*

Vice Admiral Mark Norman, CRCN decreed that: “Success in operations requires the ability to have control above, on, and below the surface of the sea.”⁹ Despite the end of the Cold War, a number of nations are expanding their submarine fleets with more technologically advanced platforms. Submarines remain an essential partner for surface ships and maritime aircraft to hone much needed anti-submarine (ASW) skills. Stealthy, lethal and demonstrating superior endurance, submarines provide strategic value to a nation. Unlike other vessels and platforms, submarines can conduct surveillance patrols and monitor illegal activity while avoiding detection. Quiet and versatile, they are adept at a number of exclusive tasks such as covertly inserting or evacuating Special Forces, or prosecuting a target. Further submarines are not easily impacted by the weather unlike a drone or satellite, which is prone to fragility.¹⁰ Equally important, in a fiscally restrained environment, submarines cost much less to build and

⁶ DMARBERS, DAOD 5003-1, *Service in Submarines* (2002).

⁷ Julie H. Ferguson, *Through a Canadian Periscope: A History of the Canadian Submarine Service* (Toronto: Dundurn Press, 1994), 364.

⁸ Julie H. Ferguson, *Deeply Canadian: New Submarines for a New Millennium* (Port Moody, B.C.: Beacon Pub., 2000), 228.

⁹ Nathan Greenfield, "Under Pressure," *The Walrus*, April 2015, 2015, 26-31.

¹⁰ Paul Mitchell, "Full of Holes: Byers and Webb on Canada's Submarine Program," *CDFAI* (2013).

operate at sea than a frigate or destroyer.¹¹ Finally, deploying a sub involves much less people than a major warship.

Demonstrating a great display of flexibility, Canada has utilized submarines in a variety of missions including; counter drug patrols the Caribbean, NATO operations and exercises, during the multinational Rim of the Pacific (RIMPAC) exercise and in the Arctic for joint and interagency Operation NANOOK exercise. Clearly a simplified assertion, in his award winning essay, political science scholar Matthew Gillis opined that it seems a combination of constabulary roles and support for our allies is the best argument for why Canada needs submarines.¹² For the future, Vice Admiral Norman anticipates longer and farther reaching deployments for the subs.¹³

If you don't have a submarine for an ASW navy, it's like playing hockey without a puck

- Donald Brown – retired CPO1 and Canada's oldest submariner

One Hundred Years and Little Change

Canada has a long history with submarine operations, with the year 2014 marking a century in this field. Between the First and the Second World War, Canada operated six

¹¹ *Ibid*

¹² J. Matthew Gillis, "An Undersea Identity Crisis: Evaluating Realistic Roles for Canada's Submarine Fleet," *Canadian Naval Review* 4, no. 4 (2009).

¹³ Jean Grace, "Fleet in Transition: Facing Fragility Today, the RCN Lays Foundations for Tomorrow," last accessed 22 April 2015, <https://janes.ihs.com/CustomPages/Janes/DisplayPage.aspx?DocType=News&ItemId=+++1707979&Pubabbrev=JN I>.

submarines attained by various means. The first two were built in Vancouver for Chile, subsequently abandoned and purchased in a controversial deal by the province of British Columbia, for the protection of Canada's Pacific waters.¹⁴ These ships were rarely operational and most only saw service for a few years at best. The last of this era was U119, which was surrendered by the Germans to the RCN in May 1945 and briefly commissioned into service. Post WW2, west coast based, HMCS Grilse was leased from the USN from 1961 until it was paid off in 1969. The first of the three OBERON class submarines HMCS OJIBWA was commissioned in 1965, followed by HMCS ONONDAGA in 1967 and HMCS OKANAGAN in 1968. Each would see over 30 years of service.

In addition to operating submarines, Canadian shipyards in Vancouver and Montreal were heavily involved with the building of several submarines for the war efforts. Many Canadian volunteers for the war effort ultimately served in submarines with the Royal Navy. On the 100th anniversary of the service, VAdm Norman decreed "The dedicated members of Canada's 'silent service' operate in the most demanding and unforgiving conditions. They truly represent some of the very best of our fighting service."¹⁵

Early Manning Problems

The first evidence of manning problems with Canadian submariners arose before Canada had its own legitimate submarine fleet. After WW2, Canadian submariners continued to crew

¹⁴ J. David Perkins, *The Canadian Submarine Service in Review*, 1st ed. (St. Catharines, Ont.: Vanwell Pub., 2000), 208.

¹⁵ Royal Canadian Navy, "100th Anniversary of Canadian Submarines," Government of Canada, accessed March 10, 2015, <http://www.navy-marine.forces.gc.ca/en/navy-life/sub-centennial/sub-centennial.page>.

Royal Navy (RN) submarines in the UK, through various arrangements. In order to maintain and cultivate ASW expertise in the wake of a growing Soviet submarine threat, the RCN arranged training with both the RN and the USN.¹⁶ The most comprehensive of these arrangements involved Canadian sailors partially crewing RN submarines based in Canada and the UK and the ultimate creation of the RN Sixth Submarine Squadron (SM 6) in Halifax in 1955.¹⁷ Initial reports indicated that Canadian volunteers for submarines were plentiful and the integration of RCN sailors into RN training and submarines was relatively seamless.¹⁸ Despite the original success of this program, once initial engagements expired, the RCN experienced difficulty in attracting replacements. Compensation and promotion opportunities were thought to be the main cause of these initial manning shortfalls. By the late 1950's it became apparent to naval planners that Canada might need their own submarines, for more than ASW training proficiency.

The lease from the United States and commissioning of HMCS GRILSE in 1961 served to rejuvenate the submarine service on the West Coast. The GRILSE was predominantly used as an ASW training platform, maintaining a high operational tempo, with the crew affecting repairs and conducting training onboard. The Commanding Officer developed a unique badge for members of the unit to brandish, inspiring pride and cohesiveness. Consequently morale in this unique unit was excellent and the GRILSE reportedly maintained the lowest levels of attrition of any RCN Ship.¹⁹ In 1968, a former USN Tench Class submarine was purchased and arrived on the West Coast. Commissioned as HMCS RAINBOW, she capably took on the ASW training

¹⁶ Perkins, *The Canadian Submarine Service in Review*, 1st ed. (St. Catharines, Ont.: Vanwell Pub., 2000), 208.

¹⁷ *Ibid*

¹⁸ *Ibid*

¹⁹ Ferguson, *Through a Canadian Periscope : A History of the Canadian Submarine Service* (Toronto: Dundurn Press, 1994), 257.

role, relieving the aging GRILSE, which was due to be returned to the US in 1969.²⁰ By 1974, due to rising fuel costs and the need for repairs, RAINBOW was decommissioned.

Notwithstanding much grander plans for considerably more platforms and a nuclear powered capability, Canada would end up with only three Halifax based submarines. With the arrival of the first Canadian Oberon O-Boat, purchased from the UK, SM6 was scaled down and the Canadian Submarine Squadron (CANSUBRON ONE) was stood up in 1966.²¹ Submarine crewing shortages persisted and USN submariners were briefly used for augmentation. British trained Canadian submariners, now had to assume both the operator and maintainer roles where it was expected that one person is able to do both jobs.²² This was dissatisfactory to the crew and more than half of the sailors requested to return to the surface fleet upon the arrival in Halifax of HMCS OJIBWA, which was the first of the Canadian O-Boats. Despite initial plans for an enhanced role, the Oberons initially continued as ASW training aids for the surface fleet. It was not until they were ultimately updated in the 1980's after the Submarine Operational Update Project (SOUP) were they used to perform more of an operational ASW role. In February 1996, due to budgetary considerations, the Submarine Squadron was dissolved and the assets and personnel were reorganized under the Maritime Operations Group Five (MOG-5). This was demoralizing for the squadron in several ways as it ceased to have its own command and control and ultimately identity, having been absorbed into a squadron of minor war vessels (MCDVs) which were predominantly crewed by Reservists.

The Victoria Class

²⁰ *Ibid*

²¹ Perkins, *The Canadian Submarine Service in Review*, 1st ed. (St. Catharines, Ont.: Vanwell Pub., 2000), 208.

²² *Ibid*

Yet again in the 1980's, several options for a submarine replacement were seriously considered and plans consequently amended, commensurate with the whims of government, politicians of the day and the DND officials involved. During this protracted period, budgets, bureaucracy and personalities all impacted decision making. First diesel-electric options were initially considered, followed by an intense competition between French and British Nuclear powered design options to be built in Canada. At the height of the project, during the Cold War, as many as 17 nuclear submarines were being recommended for Canada's three-ocean navy. In the end, post-Cold War, and likely due to numerous concerns, the government reneged on the plan for SSNs. Finally in 1998 the government hastily announced and the RCN finalized the deal to acquire four surplus Upholder submarines from the Royal Navy at a cost of \$750 million. The cost was considered a bargain compared to what it would have cost to build a comparable version.²³ The years leading up to this acquisition would be some of the most difficult in the history of the submarine service, with submariners unsure what their future would hold, and often wondering if Canada's Navy would include submarines.²⁴

The Effect of the Media

The handicap of modern submarines is that they are black, threatening and not good at hosting cocktail parties

-Cdr (ret'd) Mike Young

²³ *Ibid*, 158

²⁴ Ferguson, *Through a Canadian Periscope: A History of the Canadian Submarine Service* (Toronto: Dundurn Press, 1994),329.

The Canadian public is afflicted with an absence of sea consciousness²⁵ and a case of maritime blindness, a term first coined by former Chief of Maritime Staff Vice Admiral Paul Maddison²⁶. This terminology highlights the disregard that is pervasive in mainstream society concerning the importance of Canada's oceans to its security and prosperity. In contrast, the media has been seized with the acquisition and ramp up of the Vic Class. Little of the attention has been positive and most of it has been sensational, with catchy headlines referring to *leaks*, *sinking*, *rock bottom* and *duds*. Even supportive articles evoke negative attitudes with titles including *Full of Holes* and *Under Pressure*. Proactive government media updates have attempted to provide an informative and positive dimension to the story, but tend to attract far less attention than the naysayers. Historian Julie Ferguson's book "Deeply Canadian" is a rare work that showcases and elevates the often overlooked submarine community.

Persistent negative attention and misunderstanding of submarines and the submarine service, from the general public and surface ship sailors, make it difficult to generate interest in joining the submarine service, let alone support it. To be sure, the Victoria Class submarines have been plagued with a series of tragic and unfortunate incidents. These incidents have sparked much criticism of the submarine program and questioned whether Canada requires a submarine capability. The most serious of which was the fire in HMCS CHICOUTIMI in 2004, resulting in the tragic death of Lt(N) Chris Saunders²⁷ and several injuries and the grounding of HMCS

²⁵ Nathan Greenfield, "Under Pressure," *The Walrus*, April 2015, 2015, 26-31.

²⁶ Naval Review, "Maritime Blindness You Say?" last accessed 2 May 2015, <http://www.navalreview.ca/wp-content/uploads/public/vol6num3/vol6num3art1.pdf>.

²⁷ Canadian Centre for Policy Alternatives, "That Sinking Feeling: Canada's Submarine Program Springs A Leak" last accessed 22 April 2015, <https://www.policyalternatives.ca/sites/default/files/uploads/publications/National%20Office/2013/06/ThatSinkingFeeling.pdf>.

CORNER BROOK in 2011,²⁸ causing structural damage and minor crew injuries. Electrical issues, broken down engines and depth limiting rust problems have also beleaguered the fleet which have all caught the attention of the media and prompted copious Access to Information (ATI) requests, aiming to fuel criticism of this purchase. Arguably, a general lack of understanding regarding the complexity of submarines and exaggeration of their problems, adds to the negativity in the media. Furthermore, the intrigue and seemingly exorbitant costs associated with submarines adds to the incessant media interest.

Morale and Attitudes

Research has shown that a limited number of personnel from the surface fleet are interested in becoming submariners. A 1992 study showed that 93% of those interviewed from this surface ship group were unlikely to volunteer. Some of the positive attitudes towards submarine service that were found to impact propensity to join, included the perception that submarines were an elite service, that submariners were respected members of the fleet, and part of a group with special traditions and who participate in a desirable adventures.²⁹ At the same time, 16% of submariners indicated they were likely to leave the submarine service. The study found that much of the influence for these intentions was the result of negative attitudes towards submarine employment. Not surprisingly, for submariners themselves the study determined that these attitudes affect intentions to stay or leave the submarine service. Such attitudes include:

²⁸ *Ibid*

²⁹ Reeves, D.T. LCdr and Bradley, J.P. Maj, *Naval Attitudes Toward Submarine Service Working Paper 92-6* (Willowdale, Ontario: CFPARU,1992).

submarines always being an integral component of the RCN fleet, elite service, special traditions, adventure and unacceptable working conditions and spaces.³⁰

The Submarine Division relies on maintaining a dedicated long-term cadre of experienced personnel in order to sustain the high level of technical expertise essential to the efficient running of the submarines

- David J Perkins - author of Canadian Submarine Service in Review

Submarine Selection

Canada's Victoria Class submarines require personnel from a number of Canadian Armed Forces Officer and NCM occupations. These submarines are crewed predominantly by Navy managed operator and technical occupations (commonly referred to as hard sea trades and force generated by the RCN) as well as cooks and physicians assistants who are force generated by CMP. The NCM establishment for the Canadian Submarine Force is illustrated in Table 1. Each submarine has a total of 48 established positions which is commensurate with the number of bunks onboard. The remainder of the positions are held in the training establishment, sea training and in support of the submarine force.

Table 1: Canadian Submarine Force NCM Establishment by Occupation

Occupation	Positions
Weapons Engineering Technician	83
Marine Engineer	61
Electronics Technician	50
Sonar Operator	46

³⁰ *Ibid*

Naval Communicator	20
Naval Combat Information Operator	19
Cook	10
Physician's Assistant	4
Steward	4
Total (including trainee positions)	297

Canadian submariners are normally volunteers, however in the event that vacancies cannot be filled, will be selected from already qualified submariners or may be specifically targeted, depending on CAF requirements.³¹ Due to a lack of submarine volunteers in the 1980's this policy was enacted in order to boost numbers and proved to be effective, with many electing to stay longer than required.³² For a time, potential submariners were recruited to go to sea without requisite training; however excessive untrained personnel onboard actually had a negative effect on morale. As a result of human rights legislation, improved conditions in the VICTORIA CLASS and desire to widen the potential applicant pool, Canada was one of the first navies to allow women to join submarines in the early 2000's. Canada now has a total of six women receiving their Dolphin qualification to date.³³ A number of other Navies have followed suit including the RAN, USN in 2010 and the Royal Netherlands Navy (RNLN).

Submariners are selected in accordance with DAOD 5003-7 which requires that applicants undergo special medical screening and a pressure tolerance test. To further assess

³¹ DMARBERS, DAOD 5003-1, *Service in Submarines* (2002).

³² Ferguson, *Through a Canadian Periscope : A History of the Canadian Submarine Service* (Toronto: Dundurn Press, 1994), 364.

³³ Visit to HMCS WINDSOR during the JCSP ELV, September 2014

mental fitness for submarines, a rudimentary psychiatric screening interview is conducted as part of the medical examination. This interview aims to rule out any indications of claustrophobia, anxiety or panic disorders, depression or substance abuse.³⁴ Due to the demanding and unique work in submarines the personnel selection (PSEL) community has recommended psychological testing for submariners, such as what is used in the USN, yet this has not been adopted.³⁵ At the request of the Navy, an initial look at selection measures for submariners was conducted in 2010, but did not go any further than a literature review. It stands to reason that a more robust selection process would improve morale and alleviate attrition.

The minimum occupational qualification to proceed on dolphin training is dependent on the member's individual occupation, but normally requires reaching a minimum of the Operational Functional Point (OFP). For Non-Commissioned members (NCMs) the OFP is usually Qualification Level (QL) 3 or one's basic trade qualification course. Reaching the OFP normally allows a member to fill an entry level position and accomplish a job at the apprentice level. In cases such as Marine Engineering (Mar Eng) and Electrical Technician (E Tech) occupations, the DAOD stipulates that they must have reached QL5 prior to joining submarines. As is the case with their surface ship counterparts, prospective submariners, not previously trained for seagoing employment require completion of Basic Naval Environmental training (NETP). This would normally be required training for a medical technician or cook who has not previously served in a seagoing capacity.

³⁴ L.C.M Poirier, "Technical Note – Literature Review on Submariner Selection Research" (DGMPRA, May 2010), 3.

³⁵ A.C. Okros, "Psychological Fitness for Submariners: A Proposal for Screening and Monitoring" (CFPARU, Toronto Ontario, 1989), 2.

A recent initiative, due to the limited attraction of personnel from the surface fleet and with a view to improve attrition in the submarine fleet is to post newly qualified QL3's directly to submarines. Upon arrival to the submarine, they complete the requisite medical screening and attend the next available BSQ. This fast tracking to submarine service allows streamlined and coordinated screening without the member being constrained or distracted by the requirements of life in a surface ship. At the same time, it ensures that the newly trained sailor does not become accustomed to the surface ship comforts such as space and internet connectivity that have become indispensable for younger generations. The intended result of this initiative is to get members to join submarines while they are more junior and consequently reduce attrition.

Recruiting

We're starting to see improvements in terms of experience levels and the number of people who are wanting to join the submarine service. In this context, success begets success.

– Vice-Admiral Norman³⁶

Other than setting requirement for sufficient quality and quantity of personnel, the RCN has very little involvement with the process of recruiting its members. This function is the responsibility of CMP and is carried out by the Canadian Forces Recruiting Group (CFRG). Like most CAF organizations, resources have been cut back and CFRG has been forced to conduct more efficient operations. Regrettably, CFRGs transformation took place on the heels of a shift from the high intake/low attrition experienced in the mid-2000s to a period of higher attrition and reduced intake. This has resulted in the overall size of the Regular Force of the CAF shrinking,

³⁶ Grace, *Fleet in Transition: Facing Fragility Today, the RCN Lays Foundations for Tomorrow*, last accessed 22 April 2015, <https://janes.ihs.com/CustomPages/Janes/DisplayPage.aspx?DocType=News&ItemId=+++1707979&Pubabbrev=JN I>.

putting pressure on the health of occupations in the RCN and elsewhere. Reflective of the Canadian job market as a whole, recruiting much needed technical occupations is an ongoing challenge. For the RCN this is most evident in the E Tech and Mar Eng NCM occupations. In addition to the recruiting challenges, attrition of these marketable tradespeople has been higher than expected.³⁷

The growing lack of sufficient personnel for the CAF and particularly the RCN managed occupations that crew the surface fleet will have a follow on challenge for the recruitment of submarine personnel, given that there will be less of a pool to draw from.

Similar to the trend with overall enrolments, the RCN is having the most difficulty attracting E Techs and Mar Engs to join submarines. Unlike other solicitations for personnel, no formal or coordinated process is in place for attracting submariners to the submarine fleet. There is no website for submarine recruitment and there has been little success with the issuance of sporadic NAVGEN messages to solicit volunteers. The submarine community itself has proved to be the best recruiters and have generated interest through networking with their surface fleet peers and targeting QL3 courses. Given the submarine force often has specific shortages for particular onboard jobs, this necessitates strategically head hunting from the fleet. Again, this tends to be necessary most often to fill more senior E-Techs and Mar Eng positions. The career manager must use his ad-hoc approach to find the requisite specially qualified member who isn't likely to be imminently promoted or in the retirement zone. Often these members are persuaded to join

³⁷ Director Personnel Generation Requirements, *PARRA Report*, (2015).

submarines and are reluctant volunteers, poached from ships destined for refit, reduced readiness or decommissioning. Not unexpectedly, this group tends not to be as easily assimilated into submarine life as the more junior cohort recently finishing their QL3. This problem is exacerbated further by the emergence of a *hollow force* of members with 20 years of service, as a result of the Force Reduction Plan (FRP) which took place in the early to mid 1990's which aimed to reduce the strength of the CAF. During the FRP years, minimal personnel were recruited to the CAF, while high numbers of personnel were enticed to leave.

Recently some career managers have taken to FACEBOOK to elicit volunteers for submarine training. Faced with a surplus of trained Maritime Surface and Sub-surface (MARS) Officers awaiting Director Level training, the MARS career manager enticed Officers via social networking to choose submarine training or risk excessive wait times or a less desirable career path with the likelihood of stalled career progression. For these MARS Officers, the advantages were apparently clear, and consequently all the Officer spots were filled within a week of the original request.

Submarine Training and Production

The Basic Submarine Course (BSQ) is the core training that all potential submariners must complete whether Officer or NCM. Possession of this specialty (SS) enables personnel to perform general duties required while serving in submarines in a safe and competent manner.³⁸ Training for the Dolphin qualification takes three months in the classroom, followed by approximately fifteen days of on the job consolidation at sea. This intense training culminates

³⁸ Chief of Military Personnel, A-PD-055-003/PQ-001, *BASIC SUBMARINE QUALIFICATION* (Canada, 2013).

with a qualification board where upon completion; submariners receive the qualification badge known as “Dolphins” to signify that they now hold the respected submarine qualification. With this qualification comes a dolphin badge and submarine allowance, which starts at \$451 a month.³⁹ This allowance accounts for more than sea duty allowance but considerably less than the special operations allowance earned by some members in CANSOFCOM. The rigorous training program involves learning every aspect of the platform, with a particular focus on emergency drills and escape. There is no margin for error as a simple mistake at any time while the submarine is submerged could have catastrophic consequences for the entire crew. On the job training (OJT) in submarines requires sea time. Now that the Victoria Class has turned the proverbial corner, the RCN goal of having one submarine on both coasts available for operations while a third is utilized for training is viable.⁴⁰ This additional sea time is having a positive impact on training and experience levels, which have been deficient in recent years.

While a submariner completes the requirements for their *dolphins*, they will normally fill a training position onboard. Before a submariner can be assigned to an entry level position onboard the submarine they must also complete a specialty course for submarines associated with their occupation. This level of coursing ranges in length from four to ten weeks, depending on the member’s individual occupation. On occasion, due to scheduling needs, a submariner trainee may complete their dolphin requirements concurrently with their special occupational requirements. Once this training is complete,

³⁹ Canadian Armed Forces, “CBI 205.37 Allowances for Officers and NCMs”, last accessed 2 May 2015, <http://www.forces.gc.ca/en/about-policies-standards-benefits/ch-205-officer-ncm-allowance-rates.page>.

⁴⁰ Grace, *Fleet in Transition: Facing Fragility Today, the RCN Lays Foundations for Tomorrow*, last accessed 22 April 2015, <https://janes.ihs.com/CustomPages/Janes/DisplayPage.aspx?DocType=News&ItemId=+++1707979&Pubabbrev=JN I>.

the member can fill their first apprentice job onboard. The next career milestone is attendance on the surface ship oriented journeyman level (former QL5) course, followed by another submarine specialty course to prepare for the next level position onboard. Dependent on the number of jobs and positions available associated with an occupation, progression may continue with a series of career courses and specialty courses for a number of years.

Unfortunately, particularly with Mar Eng and E Tech, there are RCN wide shortages of personnel to supply the higher level courses and positions. Table 2 illustrates the occupational health status and shortages of personnel by occupation for the four biggest occupations which supply personnel to the submarine force. In most cases, BTL numbers are not sufficient to alleviate these shortages and recruiting intake lags behind attrition in the occupations as a whole.

Table 2: Occupational Health Status for the Big Four Submarine Occupations⁴¹

Occupation	PML	TES	TES vs PML	Shortage	BTL	Attrition vs Intake
Sonar Op	438	418	95%	-20	18	30 out 4 in
E Tech	431	384	89%	-47	17	37 out 25 in
Mar Eng	992	877	88%	-115	67	109 out 43 in
W Eng	1243	1319	106%	+76	108	74 out 34 in

Source: extracted from Dec 31 2014 PARRA Report

When analyzing the current status of the NCM submarine force a similar but direr situation is evident. The NCM submarine force as a whole has only 71% of its PML trained. This TES shows qualified submarine personnel by occupation, but does not factor in who is actually available. The reality is such that only about 86% of these personnel are actually available for employment in submarines due to occupational requirements elsewhere. As a result, the situation is worse than depicted. In addition in most occupations there is insufficient BTL to compensate for the difference. Furthermore, when annual attrition of 9% is applied and 9% training attrition is factored in, the best case scenario sees the submarine force regenerating in approximately four years.⁴² When occupations are examined individually, shortages are even more acute, consequently making recovery more challenging. Table 3 shows the current status of the NCM submarine force.

⁴¹ Adapted from the Dec 31 2014 PARRA Report. This was the most recent data available on the DPGR website. Although this is a snapshot in time, it illustrates that ¾ of these occupations are experiencing health challenges. At the end of the third quarter, recruiting intake through CFRG, is well below annual targets. Attrition/Intake data does not reflect occupational transfers in or out.

⁴² Attrition rate taken from the SWIM database and applied to current TES and BTL numbers and assumes that 50 of 60 training starts per year will be NCMs and that members will take no more than 1 year to be submarine TES.

Table 3: Status of Submariner NCMs by occupation⁴³

Occupation	TES	PML	TES vs PML	Shortage	Pers Under Training
Sonar Op	32	38	84%	6	7
E Tech	29	42	69%	13	4
Mar Eng	25	53	47%	28	14
W Eng	55	75	73%	20	7
Nav Comm	22	20	110%	+2	2
NCIOP	12	19	63%	7	2
PAs	2	4	50%	2	2
Cook	8	10	80%	2	1
Steward	4	4	100%	0	1
Total	189	265	71%	76	40

Source: extracted from the Submarine Workforce Information Management database, 15 January 2015 (courtesy of CCSF).

Management of Submariners

That many of the same manning and training issues persist after 45 years of post-war submarine operations is testament to the difficulty of nesting a small specialist organization with a larger force

- 2011 Submarine Capability Study

In 2011 the CRCN, assembled a team to ascertain the state of the Navy's submarine personnel which resulted in the release of the "Milestone All Round Look: Report of the 2011

⁴³ SWIM. PML in this chart does not show the additional 32 positions that are allocated for training. Total PML is actually 297 as depicted in Table 1 and Figures 1 and 2.

Submarine Capability Study".⁴⁴ The objective of the team was to determine a way-ahead to ensure sufficient quality and quantity of submariners to bring the Vic Class into the future. Interestingly, several of the issues identified had been brought forward in previous reports, most notably the Pollard report of 1988.⁴⁵ The 2011 study acknowledged that as had been the case in the past, much effort had been focused on the platform or material aspect of the submarine force, at the expense of the personnel dimension of force generation.⁴⁶ The results of this report were largely related to the symptoms: lack of personnel to crew submarines; lack of sea time for submariners and lack of experience.

A supplemental report was released by the Commander Submarine Force in 2013, based on a Maritime Forces Pacific (MARPAF) study, which expanding upon the 2011 report, aimed at addressing the underlying systemic causes affecting the sustainability of submarine personnel. Essentially the causes were deemed to be twofold, and emanating from the flawed and incompatible crew design used for the initial organizational structure of the Vic Class adopted from the RN.⁴⁷ The first cause was attributed to unsupportable rank to rank ratios (R^3) within the four major occupations crewing submarines (Sonar Op, Mar Eng, WEng and ETech). These ratios are normally applied to evaluate the sustainability of whole occupations or sub-occupations by ensuring there are sufficient positions at lower rank levels of the occupation to maintain throughput to the higher levels. The ratios are not designed for application to an individual unit. Likewise they are not for calculations of small specialized groups which

⁴⁴ CCFL, 3371-1080-1, "Milestone all Round Look:Report of the 2011 Submarine Capability Study," (SCST, 2011).

⁴⁵ *Ibid*

⁴⁶ *Ibid*

⁴⁷ Commander Submarine Force, 0097-3000-4, *Submarine Personnel Report*, (2013).

comprise only a small portion of the greater occupational structure. The second underlying cause addressed by the MARPAC study related to the inability to manage personnel in a Special Personnel Qualification Requirement (SPQR) group.⁴⁸ SPQRs describe those additional tasks required for employment in a specific job, where the required competencies are not described in either an occupational rank or job qualifications.⁴⁹ In the case of submarines, all positions onboard have an SPQR associated with them and require training outside of the standard occupational requirements. SPQRs are not meant to organize personnel into groups nor are they designed to be used as a personnel management tool.

What is clearly highlighted by this 2013 assessment is that there is a clear disconnect between the personnel management processes in the CAF, which are organized along occupational lines and the structure of the submarine force which is based on and supported by specialty qualifications. Ultimately, in its current design, it was assessed that the force is not sustainable for the future. The workarounds that have held things together to date, such as over-ranking, under/over promoting and Acting While So Employed (AWSE) have only aggravated problems and have had a detrimental effect on occupations that are already experiencing health challenges.

⁴⁸ *Ibid*

⁴⁹ Director Personnel Generation Requirements, APD 055- Vol 1, *THE CANADIAN ARMED FORCES MILITARY EMPLOYMENT STRUCTURE*, (Government of Canada, draft).

Key Players

As shown the submarine career manager plays a crucial role in the personnel process, is co-located with the conventional CAF and RCN career managers and in frequent contact with the personnel sustainment section of the CSF. This is a unique position in that he is responsible for personnel from a variety of occupations and rank levels, whereas other career managers have responsibilities along occupational lines. The creation of this position was recommended in the 1988 Pollard report; and a position was loaned so that a Submariner Career Manager could be posted into the Directorate of Military Careers (DMilC) in 2011. There has been no move to formally establish this position.

The CRCN is the managing authority for all navy managed occupations and exercises this role through the Directorate of Naval Personnel and Training (D Nav P&T). Each navy managed occupation has a resident occupation manager who is charged with ensuring the health of their assigned occupations.⁵⁰ For NCM occupations these managers are Chief Petty Officers. Unlike the loaned career manager position in D Mil C, there is no one in D Nav P&T at the strategic personnel level assigned responsibility for submarine management issues. This role is de facto assigned to CSF and exercised by their personnel sustainment cell, situated at the tactical level within the CSF. This cell conducts longer range planning and forecasting of occupational requirements as well as assisting with day to day personnel challenges.

The transformation of the CAF and RCN has seen a number of positive changes made to the submarine force. Submarines are currently operational on both coasts with a Captain (Navy)

⁵⁰ Health is measured by comparing Trained Effective Strength (TES) to Preferred Manning Level (PML).

Commander reporting to the west coast fleet commander. The Commander CSF also reports to Commander MARLANT and MARPAC based on his dual role as both a force generator and force employer.

The Canadian Submarine Force has faced considerable challenges. These challenges have been material, operational and personnel related and have affected the image and health of the force. The 1988 Pollard Report and subsequent investigations and analysis have considered various options to revitalize and fix the submarine force, yet many of their substantive recommendations have not gained traction. The Vic Class have seen operational improvements and Canada now has operational submarines on both coasts. Despite this success, little has been accomplished in the realm of improving submarine personnel generation and the force remains understrength. Unless deliberate action is taken to revisit the occupational structure and personnel generation for submariners, this group is unlikely to recover.

CHAPTER TWO – COMPARABLE MODELS AND CAREER PATHS

Canadian submariners are not the only force to have faced personnel challenges. Other navies, in particular the RAN submarine force have faced nearly identical issues as the RCN. With nearly 100 occupations in the CAF and an established personnel management framework, there are many examples, experiences and tools available for the RCN to reflect on as its submarine force heads into the future.

United States Navy

The United States is Canada's closest ally and neighbour and the RCN operates alongside the USN on a regular basis, conducting counter-drug operations in South America waters, in the Arabian Gulf and monitoring North American waters and airspace at NORAD/NORTHCOM. Bi-ennially RCN and USN surface and sub-surface counterparts have exercised in multinational RIMPAC exercises in the Hawaiian operating areas. Despite this close relationship and interoperability, the submarine services of both nations couldn't be more different.

The USN's 60,000 submariners are roughly the size of the CAF's regular forces and make up only a small proportion of their navy. They are volunteers who are targeted for submarine service, based on their initial test scores received during the recruiting process. Potential submariners will undergo further testing as part of a specialized screening and selection process. Due to the size of the USN and its submarine fleet, issues such as limited sea time, experience levels, sea/shore ratios and throughput are not as prevalent as is the case in smaller "middle power" navies.

The US military is inherently selective and sets high standards in its recruiting endeavors and has been successful in meeting its targets with an all-volunteer force for over 40 years.⁵¹ These high standards have paid off and attrition among USN submariners is no different than in the surface fleet. The USN also uses various mechanisms to ensure they maintain sufficient numbers of personnel such as bonus points for recruiters who attract suitable submariners to the esteemed nuclear community.⁵² Once nuclear training is completed personnel can be assigned to either aircraft carriers or submarines. In addition, when needed, the USN recruiting and retention cash bonuses can be utilized as incentives to attract and retain personnel.⁵³

Admiral Hyman Rickover is widely known to be the founding father of the nuclear navy. Advocating the highest standards for those entering the nuclear navy and personally interviewing candidates during the four decades that he was leading the program, his methods remain germane.⁵⁴ With an entirely nuclear fleet of submarines, the USN treats its submariners as a special community that is thought to be highly superior. Personnel are exclusively selected and tested, to ensure accidents are prevented and the nuclear program is preserved. USN submariners enjoy a special brotherhood, morale is generally good and the quality of these sub-surface sailors is considered high.⁵⁵

⁵¹ Barbara A. Bicksler et al., *The all-Volunteer Force: Thirty Years of Service*, 1st ed. (Washington, D.C.: Brassey's Inc., 2004), 384.

⁵² Tim Thurston LtCdr USN, conversation with author, 15 April 2015.

⁵³ Sheila Nataraj Kirby et al., *Enlisted Personnel Management: An Historical Perspective* (Santa Monica, CA: Rand, 1996), 160.

⁵⁴ Dave Oliver, *Against the Tide: Rickover's Leadership Principles and the Rise of the Nuclear Navy* (Annapolis, Md.: Naval Institute Press, 2014), 178.

⁵⁵ Tim Thurston LtCdr USN, conversation with author, 15 April 2015.

Australia

Canada and Australia are often coined ‘like-minded countries’ and as such are close international allies. Both are maritime nations with extensive coastlines and a rich naval history dating back over a century. Each of these two Commonwealth nations have comparable systems of government, similarly sized active (regular) forces and an engaged media which helps, hinders and shapes public opinion of the military. Headlines pertaining to harassment, procurement debacles and submarine sustainability have sparked lively debate and have a history of tormenting both governments.

Likewise, countless parallels can be drawn between the Royal Australian Navy (RAN) and the RCN, and many interdependencies exist between these two navies. The RAN and the RCN regularly conduct bilateral staff talks, participate in exercises and conduct personnel exchanges including two submarine exchange officer positions at the RANs submariner training facility HMAS STIRLING. Consequently, both nations have had similar needs for sub-surface capabilities, each employing the British built diesel-electric Oberon Class from the 1960’s to early 2000. These submarines, in their early days, were considered the quietest and most capable submarines in their class.⁵⁶ Inevitably both navies commenced sourcing suitable replacements during the 1980s, each flirting with several options including quieter but more expensive nuclear powered options. Ultimately each nation pursued entirely different options. Australia, capitalizing on the success of the home grown combat system built for its Oberon’s, chose to reap the industrial and technological benefits of embarking on its own submarine construction

⁵⁶ Perkins, *The Canadian Submarine Service in Review*, 1st ed. (St. Catharines, Ont.: Vanwell Pub., 2000), 143.

program.⁵⁷ Canada, with similar requirements for a submarine replacement, sought a long range, stealthy submarine with extended endurance and seriously considered purchasing the Swedish designed, Collins Class submarine from the Australians.⁵⁸

Despite the trials and tribulations which have dogged the RAN submarine project with problems since its inception, ultimately six Collins class submarines were delivered, culminating with HMAS RANKIN in 2003. Aside from shipbuilding issues, technical problems, cost overruns and public opinion debacles in the early days of the project, one of the most concerning and enduring challenges for the RAN has been maintaining a cadre of submarine personnel. Specifically Australia was having difficulty operating their submarines due to an inability to maintain sustainable crews which they defined as a workforce that they can plan for many years and consistently rotate people throughout their submarine career.⁵⁹ By 2009, the RAN was able to turn things around and had sufficient qualified personnel to crew just three of their six boats and could put only one to sea, crews were burning out and in danger of a catastrophic accident.⁶⁰ By 2012 sustainability reports indicated a change of tide in that the submarines were well

⁵⁷ Peter Yule and Derek Woolner, *The Collins Class Submarine Story: Steel, Spies, and Spin* (New York: Cambridge University Press, 2008), 41.

⁵⁸ *Ibid*, 31.

⁵⁹ Admiral Russ Crane, "Media Conference regarding Navy's Workforce Sustainability Program," accessed 4 April 2015, www.defence.gov.au/media/speechtpl.cfm?Currentid=8983.

⁶⁰ Max Blenkin, "Navy Plans to Boost Submariner Numbers," (2014).

crewed.⁶¹ As of 2014, reports indicated that up to three Collins class could deploy at any one time, indicating that personnel concerns have been largely alleviated.⁶²

The Australian government considers the Collins Class submarine to be an essential component of national security and has made the sustainment of the Collins Class a high priority.⁶³ In 2008, in response to significant and well publicized submarine workforce challenges, the Australian Chief of Navy commissioned a submariner, Rear-Admiral Rowan Moffitt to conduct a submarine workforce sustainability review. Moffitt's comprehensive report, detailed 29 implementable recommendations aimed at improving the workforce situation.⁶⁴ A number of these proposed solutions were bold ideas which would challenge the norms commonplace in the submariner world.⁶⁵ As a testament of Moffitt's work, all of the recommendations were accepted by the Chief of Navy and swiftly acted upon. As of 2015, RAdm Moffitt is the deputy project director for Australia's Submarine replacement program. The RAN leadership fully embraced and acknowledged the underlying causes for their problems; specifically: how the Navy manages and treats submariners; the way the Navy operates submarines and the mission focused attitude of the submarine force.

⁶¹ Minister for Defence, "Joint Media Release - Final Report of Coles Review into Submarine Sustainment," accessed 4 April 2015, www.minister.defence.au/2012/12/12minister-for-defence-materiel-and-minister-for-finance-and-deregulation-joint-media-release-release-of-final-report-of-coles-review-into-submarine-sustainment/.

⁶² Max Blenkin, "Collins Subs Performing," [news.com.au](http://www.news.com.au/national/breaking-news/govt-backs-away-from-12-subs-plan/story-e6frku9-1226877693875), accessed 2 April 2015, <http://www.news.com.au/national/breaking-news/govt-backs-away-from-12-subs-plan/story-e6frku9-1226877693875>.

⁶³ Minister for Defence, *Joint Media Release - Final Report of Coles Review into Submarine Sustainment*, accessed 4 April 2015, www.minister.defence.au/2012/12/12minister-for-defence-materiel-and-minister-for-finance-and-deregulation-joint-media-release-release-of-final-report-of-coles-review-into-submarine-sustainment/.

⁶⁴ Rowan RAdm RAN Moffitt, *Report of the Review of Workforce Sustainability*, (RAN, 2008).

⁶⁵ *Ibid*

Many of the recommendations in the Moffitt report addressed concerns with submariner experience levels, recruitment and retention. Recommended improvements included enhancements to quality of life, training amendments and organizational changes. Most notable of the Moffitt proposals were those that focused on increasing the overall quantity of submariners, thereby spreading the work burden among the sailors and reducing the high operational tempo. This was accomplished by increasing the crew sizes, delinking crews from platforms and employing aggressive measures to recruit and retain personnel. Some of these aggressive and novel measures to recruit personnel included establishment of a cell focused on poaching sailors from other navies such as the RCN and the Royal Navy (RN) and enticing retired Aussie submariners to re-engage. Incidentally, the Royal Canadian Air Force (RCAF) has a similar initiative with the intent of attracting foreign pilots, often from the United Kingdom to join their officer ranks.⁶⁶

Moffitt felt that their personnel management system was flawed and stated “there seems to be a need to consider a different model for managing submariner careers broadly”.⁶⁷ He advocated that recruiting submariners needed to be core of the Navy’s business and opined that the RAN had lost management focus in regards to submariner careers.⁶⁸ In Australia, much like in Canada, success in military recruitment tends to have an inverse relationship with the state of the economy. In the late 2000’s Western Australia boasted a burgeoning mining industry, resulting in the RAN facing similar recruiting and retention challenges as the CAF experienced

⁶⁶ 2013 RCAF Pilot AMOR

⁶⁷ Rowan RAdm RAN Moffitt, *Report of the Review of Workforce Sustainability*, (RAN, 2008).

⁶⁸ *Ibid*

in Western Canada.⁶⁹ Aggressive and innovative recruiting techniques persist today in the Australian Defence Force. Moffitt's recommendations live strong and to become a submariner in the RAN, one can join at a variety of entry points, namely anywhere on the spectrum from a seasoned sailor in the surface fleet to *off the street*. Aimed at broadening the applicant selection pool, aspiring RAN submariners can also signal their interest in joining the submarine service from basic recruit or at any time during occupational training. For the completely uninitiated, their navy has instituted a program whereby potential recruits can *try before they buy* and embark on *seven days of virtual submarine service* while following a submarine crew online.⁷⁰ With a view to increasing interested submariners at the recruit school level, Moffitt suggested that a submariner be posted to recruit school. Furthermore, the top ten sailors from each recruit school class were given the 'opportunity' to immerse in the submarine community in the hope that they would be enticed to join the ranks of this rare breed of sailors.

Moffitt introduced a number of unique personnel management solutions and ideas to improve the RAN submariner situation. The RAN responded and demonstrated considerable risk tolerance in adopting all of his recommendations. Lastly, much like Rickover, Moffitt's 24th recommendation suggested that it was important to single out the best recruits and deliberately promote submarines and submariners as an elite force.⁷¹

⁶⁹ Admiral Russ Crane, "Media Conference regarding Navy's Workforce Sustainability Program," last accessed 22 April 2015, www.defence.gov.au/media/speechtpl.cfm?Currentid=8983

⁷⁰ Royal Australian Navy, "Seven Days of Service", last accessed 2 May 2015, <http://www.defencejobs.gov.au/navy/>

⁷¹ Moffitt, *Report of the Review of Workforce Sustainability* (RAN, 2008).

Elite Forces

In its purest form the term elite translates in the choice or most carefully selected part of the group

- Martin Kitchen

There are many definitions of elite forces amongst military historians and strategists. Most agree that elite military groups are specially trained, compensated and tasked missions not otherwise suited for conventional forces. In his Masters thesis pertaining to the need for elite forces in the Canadian Army, LCol Fred Lewis asserted that elite forces needed to be volunteer based, small in size, undergo special training and selection and be assigned special, often hazardous missions, in line with their capabilities. In addition, he surmised that they should be available immediately and rapidly deployable.⁷² If these requirements were applied to Canada's submarine service, all would be easily applicable, save the latter stipulation, due to a history of persistent operability issues. Given recent improvements in this regard, LCol Lewis's last characteristic may soon be achievable. Special Operations expert Dr Bernd Horn is more particular and warns that "being different and/or performing a unique task is far from being a de facto elite".⁷³ Echoing Moffitt's view, in his introductory remarks at the 2014 Naval Association of Canada's conference entitled "Canada and Submarines: Past and Present" the Deputy Commander RCN (DCRCN), Rear-Admiral Lloyd decreed that "submariners have been our navy's special forces."⁷⁴

⁷² Frederick A. Lewis, "Is there A Place for Elite Forces in the Canadian Army?" (Master of Military Art and Science, US Command and General Staff College), 89.

⁷³ Bernd Horn, "Love 'Em Or Hate 'Em: Learning to Live with Elites," *Canadian Military Journal* (Winter 2007-8).

If you are so good, why aren't you in submarines?

- Dolphin Code 32

Submariners are often referred to as a 'rare breed', renowned for enduring long periods submerged at sea, hot bunking and employing questionably hygienic ablutions. The negative aspect of this unique culture was brought to light in the 1990's as a result of sensational allegations of assault, abuse and harassment against the Commanding Officer of HMCS Ojibwa, LCdr Dean Marsaw. In her thesis exploring the subject of Marsaw's court martial, Cdr M.E. Clark contends that Canada's submarine service is a subculture of the broader Navy.⁷⁵ In Canada, as in other militaries, the mention of an elite force or subculture often has a negative connotation, particularly in the wake of the disbandment of the Canadian Airborne Regiment, as a result of the deplorable actions of a few of its members.

As a result, the notion of elites and subcultures within the Canadian Military is rarely heard nor advocated. More commonly, although they do not brand themselves as such, we acknowledge our Special Operations Forces (SOF) as an elite force. With their members much decorated from operations around the world and particularly in Afghanistan, the Canadian Special Operations Command (CANSOFCOM) now has its own command alongside the Canadian Army, RCAF and RCN. NCMs employed in this independent and proven organization within the greater CAF are generated through both distinct occupations and as a managed specialty (MS). Both of these different personnel production streams will be explored further to examine how they might be applicable for the submarine service.

⁷⁴ Ron RAdm DCRCN Lloyd, *Opening Remarks - NAC Conference: Submarines Past, Present and Future*, Vol. Published in Starshell - Autumn 2014).

⁷⁵ M. E. Clark and Canadian Forces College, "The Court Martial of Lieutenant-Commander Dean Marsaw: Lessons on Culture, Leadership, and Accountability for the CF" Canadian Forces College),22.

The SOF community is inherently attractive and draws from a large section of the CAF, annually there are up to 500 volunteers from the regular and reserve forces seeking to enter the various SOF communities.⁷⁶ SOF Selection is grueling and successful completion of this phase does not guarantee a training opportunity. Joint Task Force Two (JTF 2) assaulters and supporters are currently treated as a MS in the CAF, although there is some thrust for this to be a third occupation along with the Special Forces Operator (SF Op) and Chemical, Biological, Radiation and Nuclear Operator (CBRN Op) occupations who also fall under the SOF umbrella.⁷⁷

The Canadian Special Operations Regiment (CSOR) originated in 2006, at which time personnel in possession of the special operator basic qualification could serve as operators in the Regiment but remained in their parent occupations. This came to present human resource challenges with recruitment, career management, promotions, training, retention and compensation. These specialists, who were all doing the same job, emanated from different occupations and were managed independently. Progression for this specialty was not synchronized with the needs of Special Forces employment or leadership, as personnel continued to be managed by their parent occupation. Amid concerns that these issues would impact the operational effectiveness of the unit and its ability to meet its mission, a occupational study was initiated to determine suitable options. After analysis it was concluded that a new occupation

⁷⁶ CCFL, 3371-1080-1, "Milestone all Round Look:Report of the 2011 Submarine Capability Study," (SCST, 2011).

⁷⁷ DPGR, MESIP to Create the New SF Op Occupation (15 November 2012).

would best remedy the issues. The ensuing SF Op occupation would encompass different employment streams but no sub-occupations.⁷⁸

Another crucial specialty nested in CANSOFCOM is the responsibility for CBRN defense. Similar to the Special Forces capability, operational effectiveness was undermined due to the construct of the CBRN organization. CANSOFCOM sought long term occupational sustainment for this capability rather than treating CBRN as a secondary duty. CBRN issues requiring resolution related to personnel selection, management, retention and training. Like SF Op, CBRN Op became a single occupation with no sub-occupations.⁷⁹ Both CBRN and SF Ops remain within the CANSOFCOM management umbrella while Asst CMP retains the occupation authority role.

Military Employment Structure (MES)

The MES is driven by the strategic requirements and capabilities assigned to the CAF by the government of Canada. It supports these objectives by organizing CAF work into fundamental elements, namely: occupations; sub occupations, jobs and work while providing a framework for personnel management activities throughout the CAF spectrum.⁸⁰ The guiding principle of the MES is to support the operational effectiveness of the CAF, through the

⁷⁸ *Ibid*

⁷⁹ DPGR, *MESIP For the New CBRN Occupation* (1 January 2010).

⁸⁰ Chief of Military Personnel, *DAOD 5070-0, Military Employment Structure*, (2014).

optimization of work scope, training and careers.⁸¹ The MES incorporates both qualitative and quantitative controls within these personnel management activities.

The CAF must ensure effective recruiting and selection, personnel generation, employment and sustainment of CAF members. Personnel generation refers to the process of providing individually qualified CAF members to meet employment requirements. This includes planning, attraction, recruiting, selection, retention, professional development and career management. CMP is charged with the responsibility for all aspects of military personnel management and governance, including military personnel requirements and production. As an occupation authority (OA), the RCN is responsible to advise CMP regarding requirements for changes to policy and plans for military requirements and production.⁸² This input and advice from OAs is critical for the development of suitable employment structures for their assigned occupations.

There are a number of CMP processes available to OAs, in order to assist with personnel production planning. One of the fundamental tools is the Annual Military Occupation Review (AMOR) which includes a complete analysis of all issues pertaining to occupational health including numbers of trained effective strength (TES) personnel, preferred manning level (PML) positions, size of the basic training list (BTL), advanced training requirements (ATL) and detailed demographics. Recruiting and attrition trends are examined and taking into consideration all relevant factors, plans formulated for the future. Suitability for recruiting allowances, medical employment limitations (MELs) and voluntary occupational transfers

⁸¹ Director Personnel Generation Requirements, APD 055- Vol 1, *THE CANADIAN ARMED FORCES MILITARY EMPLOYMENT STRUCTURE*, (Government of Canada, draft)

⁸² Chief of Military Personnel, *DAOD 5002-0, Military Personnel Requirements and Production*, (2009).

(VOTs) may be discussed with a view to improving or maintaining requisite occupational health levels. These controls can be applied by CMP when necessity requires.

CHAPTER THREE: A NEW APPROACH AND OPTIONS FOR THE FUTURE

It must be recognized that submariners are not warships painted black. In some ways they most nearly resemble aircraft. They are uncomfortable, crowded and the consequence of error can be particularly unpleasant. Given the harsh circumstances of their daily lives at sea, every effort must be made to instil a very high esprit de corps.

- The Pollard Report

As CRCN has noted, the Victoria Class submarines have turned the corner for the future. These subsurface boats are going to sea for viable operations and training and are being equipped with exciting technology and equipment such as the new Mark 48 torpedo and the state of the art BTU 10 sonar which are also used by the USN's latest Virginia class submarines. At the same time, the Canadian Forces Naval Operations School (CFNOS) school is employing the newest simulators to train the submarine force.⁸³ Despite recent recruiting challenges and higher than expected attrition, navy managed occupations are healthier than their Army, Air Force and Support counterparts and personnel are slowly moving through the training system. Meanwhile surface ship opportunities for sailors are more limited due to reduced platform availability as a result of life extensions, upgrades and ship retirements. Much work has been done and the time is opportune to make a whole scale change in the RCNs approach to submariners and submarine personnel generation.

First, regardless of the exact mechanism that is used to do so, RCN and the CAF need to embrace the importance of the work that is being done by those in the submarine fleet and manage them accordingly. As advocated by RADM Moffitt with reference to RAN submariners and echoed by the RAN Chief of Navy⁸⁴, the 1988 Pollard report fully supported that submarine

⁸³ Randall Truscott Cdr, telephone conversation with author, 15 January 2015.

manning should be the first priority for the Canadian navy.⁸⁵ Yet again, the 2011 MARCOM analysis argued that the RCN “needs to pay the submarine service first”.⁸⁶ This does not refer to a need for better enumeration but is a clear indication that submariners are not prioritized appropriately.

Former VCDS, LGen Sutherland decried that “the *people challenge* facing the Canadian Forces has created a need for a war on three fronts: first, a war for the hearts and minds of Canadians who will in the final analysis determine the future construct of the CF; second, a war for the hearts and minds of our people; and third, a war for talent which is intense and intensifying”.⁸⁷

If submariners are treated as an inferior force, or a subordinate culture and absorbed within the construct of their individual occupations in the Navy, it becomes problematic to sustain and grow this force, from both a retention and attraction perspective. More so, it becomes increasingly challenging to motivate the best and brightest to join their ranks. The government has invested billions into these complex underwater strategic assets, it stands to reason that the personnel investment be equally as worthy. Furthermore as Rickover is known for challenging aspiring submariners: “Why not the best?”⁸⁸

⁸⁴ Admiral Russ Crane, "Media Conference regarding Navy's Workforce Sustainability Program," last accessed 22 April 2015, www.defence.gov.au/media/spechtpl.cfm?Currentid=8983

⁸⁵ MARCOM, *Report on the Personnel Structure of the Submarine Service of Canada*, (22 April 1988).

⁸⁶ CCFL, 3371-1080-1, "Milestone all Round Look:Report of the 2011 Submarine Capability Study," (SCST, 2011).

⁸⁷ Canada. Dept. of National Defence and Canada. Ministre de la defense nationale, *Military Personnel Management Doctrine*, Vol. 1.0 (Ottawa: Issued on authority of the Chief of the Defence Staff, 2008).

⁸⁸ Rickover interviewed future president Jimmy Carter queried him why he had not topped his class at the naval academy, despite a very respectable overall standing. Carter entitled his biography “Why Not the Best” Sherry

Submariner as a Standalone Occupation

Regardless of the exact approach pursued, the submariner vocation is in need of a brand makeover that suits the positive direction the submarine fleet is headed. It is clear that submariners lack a positive organizational identity and that the mainstream CAF, RCN and public know little about the important work they do. Association with an occupation would give submariners the identity that they are lacking and an opportunity to positively promote their calling. Meanwhile, the RCN and the submarine force could gain access to the management expertise and corporate CAF processes available, to improve personnel generation and ensure sustainability. Occupations are the cornerstone of the employment structure and the primary mechanism used in the CAF to link jobs and personnel performing similar duties and tasks requiring comparable competencies.⁸⁹

A unique submariner occupation, regardless of the form it takes would require a complete job analysis of the work accomplished by submariners. This type of analysis is normally a significant undertaking, requiring detailed examination and considerable staff effort. Given that submariner work is conducted in a reasonably contained community, it is entirely possible, with a team of subject matter experts that this effort might not be as time consuming. This was the case with CBRN and SF Op studies, where focused teams from the SOF and CMP communities were able to complete the necessary work within one year. This option, while completely reinventing the branding of submariners with the creation of a new and unique occupation, would essentially put submariners in a new league. The setup and structuring of a new

Sontag, Christopher Drew and Annette Lawrence Drew, *Blind Man's Bluff: The Untold Story of American Submarine Espionage* (New York: Public Affairs, 1998), 352.

⁸⁹ Director Personnel Generation Requirements, APD 055- Vol 1, *THE CANADIAN ARMED FORCES MILITARY EMPLOYMENT STRUCTURE*, (Government of Canada, draft)

occupation would require changes to how training and jobs are organized within the job based MES. Submariner positions could be restructured from the ground up to ensure a workable job structure, but would not necessarily require changes to the individual jobs. In the event that amendments to the occupational structure were required in the future as a result of changing technology or requirements, it would be possible to do so within the new occupational framework and would be considered steady state maintenance.⁹⁰

Given the government and RCN are committed to the Vic class submarines for the foreseeable future, the benefits of a new occupation would be worth the undertaking but not without some risks. Table 3 outlines risks associated with implementation of a new occupation. Using this analytical tool, when the risk factors are applied against the new occupation option, the risks remain low and easy to mitigate.

Table 4: Risks to Implementation of a New Occupation

Risk	Risk Assessment	Outcome
Impact on operations	Low	Improved
Effect on Recruitment of Entry Standard Changes	Low	Improved
Negative Impact of Reassignment	Low	Nil
Management of Structure	Medium	Improved
Security Clearance	Low	Nil
Medical Standards	Low	Nil
Establishment Changes	Low	Minor

⁹⁰ *Ibid*

Sustainability	Low	Improved
Ops/Non Ops Jobs	Low	Improved
Conversion Training Required	Low	Minimal
Individual Training Required	Medium	Requires attention

Source: Adapted from DPGR Risks to Implementation Template⁹¹

With numerous emerging capabilities in the CAF such as cyber and space, growing organizations such as CANSOFCOM and the need to look after CAF ill and injured, there is a constant demand for positions. Given that demand is greater than the supply in this domain, there is no room for an increase to submariner positions to assist with their structural issues. There are currently 32 positions divided amongst the four Vic Class submarines that are designated for trainees. These positions are in place to allow career managers to post occupationally qualified, submariner trainees to them. In the event that submariner became a standalone occupation, it would have the added benefit of its own BTL and the positions previously used for trainees could therefore be used to build a sustainable structure from the bottom up and generate and develop a healthy cohort of personnel. There are no hard limits on the size of the BTL, however its proportions are directly related to the success of filling the Strategic Intake Plan (SIP), which is negotiated during the AMOR and adjusted as required throughout the year. Additionally, from a training standpoint, BSQ starts are capped at 60 trainees a year, including Officers, which is not a limiting factor.

⁹¹ DPGR, Risk Analysis Template

It is worth noting that the same number of bunks would be needed for submariner trainees, however the positions could be used to strengthen the sea-shore ratios and build back-up crews. The RAN has structured their submarine crews in this manner, in order to build redundancy and reduce their high operational tempo. With the success of their recruiting and retention efforts, they have been able to create and fill four larger crews for three Collins submarines.⁹² Figure 1 illustrates the current NCM submarine force structure and Figure 2 shows the structure with a BTL and the trainee positions structured to employ qualified submariners. This structure, although generic in nature proves that as a standalone occupation, the NCM submarine force would have a firm base from which to generate and grow.

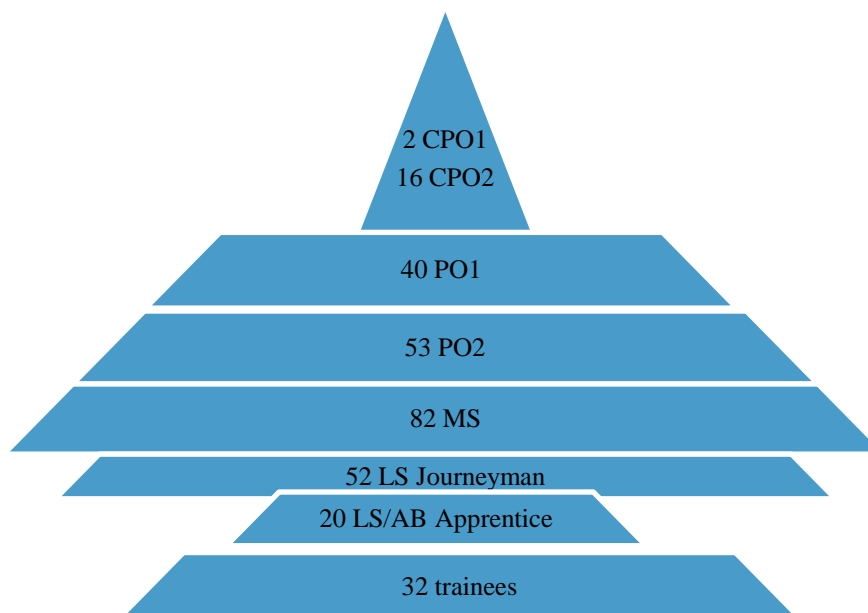


Figure 1: Current NCM Submarine Structure

⁹² Admiral Russ Crane, "Media Conference regarding Navy's Workforce Sustainability Program," last accessed 22 April 2015, www.defence.gov.au/media/speechtpl.cfm?Currentid=8983

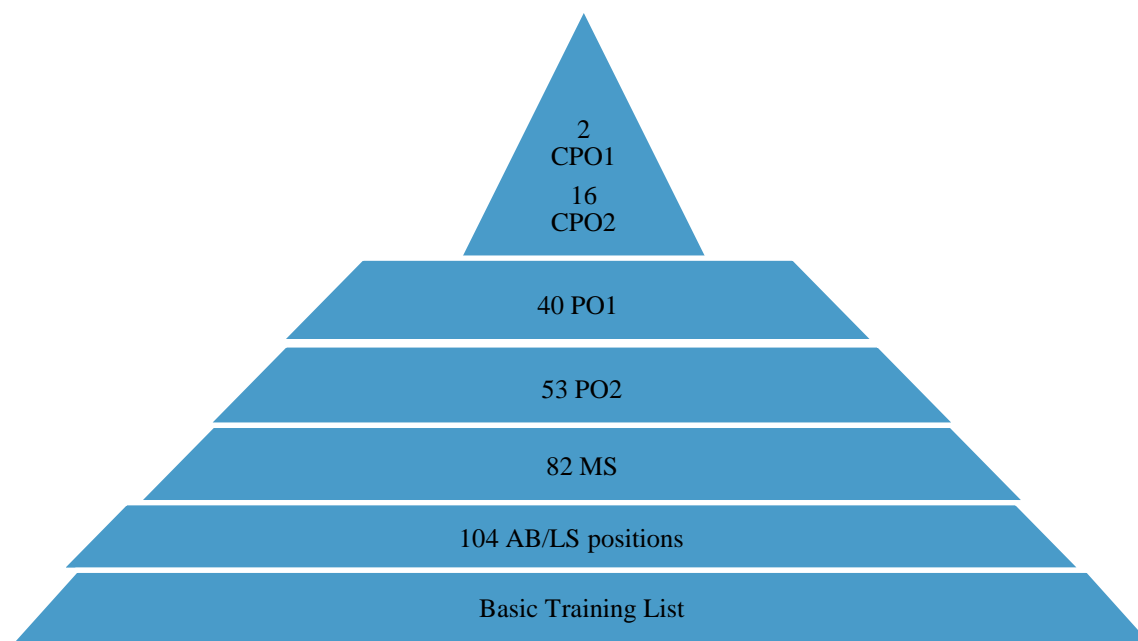


Figure 2: NCM Structure as an Occupation

There are a number of considerable advantages to having an individual occupation, the greatest of which is access to the considerable proven management practices available. In addition to the annual check-up through the AMOR, CMP responsibilities include reporting to the CDS on the state of all occupations, and monthly analysis of occupational health, recruiting, attrition and BTL levels. Rather than creatively accounting for trained surface fleet personnel as BTL submariners, personnel could be monitored in their rightful occupations. From a career management perspective, the establishment of a permanent career manager would be necessary, who would be responsible for the organization of an individual merit board and promotion lists. Although the submarine force has benefitted from Director General Military Personnel Research and Analysis (DGMPRA) research in the past, as an occupation, submariners would benefit from an annual detailed demographic assessment and attrition analysis in conjunction with the

AMOR. This DGMPPRA expertise is a critical component to the forecasting and modelling that can then be adjusted throughout the fiscal year as variables such as intake and attrition change.

The Director General Personnel Generation Requirements (DPGR) provides detailed monthly intake reports such as the SIP (Strategic Intake Plan) Scorecard, occupational health and status reports such as the monthly Personnel Attrition, Recruiting, Retention Analysis (PARRA) and annual forecasts such as the Personnel Status Report (PSR) to occupation stakeholders. These reports are also used as a baseline to assist with decision making in CMP and the VCDS. CMP staff uses these occupation health status indicators for a variety of reasons including: determining if an understrength occupation could be entitled to recruiting allowances; retention of personnel with Medical Employment Limitations (MELs) and/or restrictions made on the number of occupational transfers to other occupations.⁹³ The VCDS also uses this occupation information to analyze establishment change requests and in determining if the CAF structure meets capability requirements. These mechanisms are in place to help improve occupational health and ensure that positions are appropriately balanced among occupations. Occupations also have access to Base Line Manning Control (BLMC) positions⁹⁴ otherwise known as generic positions managed by DPGR which are currently outside of the submariner realm. These could help improve Sea-shore ratios⁹⁵ and provide employment flexibility as the occupation becomes more established.

Submariner as a Receptor Occupation

⁹³ Occupation Transfer Limitations are detailed in the DPGR Occupational Status and Out Cap Report

⁹⁴ BLMC is an administrative process that assigns a PML credit for a generic position. A position designated ATR (Any Trade Requirement) could be assigned to a number of NCM occupations.

⁹⁵ Sea-shore ratio is the ratio of sea-going positions to shore based positions. It is desirable to have a balanced ratio 1:1. In some NCM occupations 2:1 is acceptable.

A unique submariner occupation could be set up in a number of ways, each with its own benefits and risks. One simple and proven setup would be as a receptor occupation, where intake is conducted purely through VOT, from already qualified personnel, as is the case with Search and Rescue Technicians (SAR Techs), Clearance Divers and Non-Destructive Technicians (NDT Techs). Each of these extremely popular receptor occupations draws from a different group of personnel. In the case of SAR Techs, they solicit from any CAF occupation and select based on success at their two week selection camp. For Clearance Divers, selection takes place from personnel in navy occupations who have military diving qualifications and based on their performance during a preliminary assessment. For the RCAF's smallest occupation, NDT Techs are selected from specific air force technical occupations.

A receptor occupation for submariners would be reasonably easy to structure as it would be similarly designed to the current setup. As demonstrated by the sample of receptor occupations above, the RCN could draw from whatever group they desired. The most obvious method would be to feed from the occupations that are currently crewing the Vic Class such as Sonar Ops and E Techs. Rather than simply a posting to a submarine, as is currently the case, the qualified member would transfer to the BTL of the new submariner occupation. This method would be structurally more sound but potentially problematic in soliciting volunteers who would not necessarily want to abandon the comforts of the surface fleet. In addition, by leaving their occupation, they would be risking career implications if not successful in submarine training. Similar risks exist for personnel moving to other receptor occupations, however in those cases there is much more of a desire to be part of those communities, with some members often competing year after year to join them.

By no means is the job of a submariner similar to that of an SF or CBRN Op. What is similar is the uniqueness of the community and the special quality of the work. When the CBRN and SF Op occupations were first established, most of the already specialty qualified personnel were offered occupational transfers to the new occupations at an appropriate rank. After the initial transfers, much of their intake takes place by way of VOT. Both of these occupations also component transfer already qualified personnel from the Reserves. Although not yet actively used, each of these occupations were designed to recruit personnel through direct entry. Each of these receptor occupations has a special individual selection process, with the involvement of personnel selection officers (PSEL) and are generally very competitive in nature. Along with a robust selection process, most of these receptor occupations, in particular the SOF occupations have a solid attraction process. Base personnel selection offices normally advertise opportunities, conduct information briefings, and a CAF wide CANFORGEN is released annually. For the SOF occupations as well as JTF 2, there is a vigorous recruiting campaign, including travelling demonstrations, information sessions and a useful website to assist aspiring new members.

Other than a VOT program that specifically requires transfer from targeted naval occupations, an occupation could accept intake from any CAF NCM reserve or regular force occupation or could recruit direct entry personnel through CFRG or a combination of the various options. If open to direct entry, there may also be a viable opportunity to recruit from community college programs or subsidize new members to attend appropriate programs through the Non-Commissioned Member Subsidized Education Program (NCM SEP). Most NCM occupations use a variety of entry streams for their intake. While this is riskier, due to an increased training investment and lack of military or naval experience, the benefit is a much

more diversified (both in age and experience) pool to draw from. Experienced sailors in the navy have a better educated idea of what they are getting into, particularly given the sometimes unfavorable opinion of submarine service and may make a conscious choice not to join. With new occupations there is also the opportunity to phase-in riskier intake plans once the occupation becomes more established.

To mitigate potential lack of understanding and experience for the uninitiated candidate, a procedure such as the Naval Officer's Assessment Board (NOAB) could be instigated. The NOAB, funded by the Navy was implemented for a number of years, to assess potential Naval Officers for suitability to join. Partially used as a recruiting tool, in familiarizing potential recruits with naval life, the NOAB permitted the Navy, along with recruiters from CFRG, the opportunity to conduct a suitability assessment. This tool was very successful in that most of participants were very eager to join the navy after their NOAB experience. This tool was eventually abandoned as a result of recent years of successful recruiting, lowered failure rates in Officer training and the costliness of the program. The NOAB bears a close resemblance to RAdm Moffitt's submariner recruitment initiation program for the RAN.

The clear benefit of utilizing the direct entry plan for recruitment is the access to a greater reaching applicant pool and the resources of CFRG such as an online application system and an extensive web presence. Although the current practice of using submariners to find interested people to join submarines has heeded some success, using the resources of BPSO Offices and/or CFRG opens up greater options and opportunities. The recruiting group in particular has access to much better resources such as advertising, guidance counsellors, community college job fairs and a robust online and traditional store front presence. Using selection tools such as the job

interview, aptitude and personality tests would assist in helping to identify the most suitable and potentially successful candidates. Posting submariners into recruiting centers in key areas such as Halifax and Esquimalt would assist, as well as providing CFRG with interesting recruiting materials to promote service in submarines.

In 2011, rudimentary consideration was given to the creation of a unique occupation for submariners however it was abandoned in favour of the MS option.⁹⁶ This occupation option has been brought up in much of the previous analyses but often discarded due to the belief that a small sized occupation would not be sustainable. The reality is that there are several small sized occupations in the CAF with a sustainable structure and no glaring occupational health issues. In addition to CBRN and SF Operators, AESOPs, NDT Techs, Geo Techs and Postal Clerks all fall in this category. The MS option was not pursued after the 2013 study due to the belief that the underlying problems were a result of R³ and SPQR issues and that these could be solved as a result of occupation amalgamation initiatives.⁹⁷

Managed Specialty

The benefit of a MS as a management tool is that it allows personnel to step outside of the typical bounds of their occupation for the purposes of conducting a particular type of special work or employment. In essence, members enjoy the best of both worlds: the benefits of the specialty; with the fallback network of their occupation. The best and only current example of this in the CAF is the JTF 2. The use of the MS allows members to progress within their

⁹⁶ CCFL, 3371-1080-1, "Milestone all Round Look:Report of the 2011 Submarine Capability Study," (SCST, 2011).

⁹⁷ Randall Truscott Cdr, email correspondence, 10 February 2015.

specialty rather than be managed or accounted for by their various parent occupations.⁹⁸ They technically belong to their parent occupation, but progression and pay are linked to the MS, under the purview of CANSOFCOM. Parent occupations receive a recruiting credit to mitigate for the *paper loss* of the member. In the JTF 2 context, the MS is both a blessing and a curse. On one hand, members are not constrained by the training and career progression of their occupations and are essentially inaccessible to their former environmental commands (ECS), which is most often the Canadian Army. Conversely, should they choose to go back to their parent occupation, they would more than likely be over ranked and undertrained, in particular if they come from an occupation other than infantryman.⁹⁹

MS was investigated as an option by the Submarine Force during the 2011 study and was considered for several advantages but this alternate personnel management model was not pursued. For submariners the benefit of such a scheme would be akin to that of the JTF 2. No longer constrained by occupational requirements, members could focus on their requirements as a submariner, progress as required within the submarine force and not have to be concerned with when they might have to attend an occupational course or fill a requirement outside of submarines. They would also be entitled to a separate merit list and promotion board. Overall, the MS concept could provide stability, flexibility and control to the submarine force.

As a MS, there would be less of an identity crisis and a member's affiliation would be clear, the stability causing members to stay with the force longer and minimizing overall attrition. In the event that the member did want to go back to the surface fleet, it would be

⁹⁸ CWO Tom Verner, *The Managed Specialty*, (2015).

⁹⁹ Most of the JTF 2 assaulters come from the infantryman occupation. The JTF 2 assaulter career path is based on the infantry model.

reasonably easy to revert to their parent occupation, without the need to conduct an occupational transfer. The affiliation and cohesion associated with a more unique and separate group might enhance the attractiveness of the submarine force, improving recruiting and retention. Unlike JTF 2, which has the complicating factor of ensuring the security of its personnel, there would be no need for security of information in HRMS, which tends to cause this specialized unit administrative and accounting difficulties. Furthermore, the MS could apply to both Officers and NCMs alike, as both groups may be inclined to spend an entire career with the submarine force.

As evidenced with JTF 2 experience, there is a downside to a MS. The MS is not managed within the framework of the MES so does not benefit from the management services that CMP has to offer such as occupational modeling through DGMPPRA and the rigorous analysis conducted during the AMOR. Should a member in the MS need to leave and return to their parent occupation, it may be difficult to find employment at their current rank, resulting in a need to revert in rank or undergo training at a more junior level. Additionally, an NCM would not have access to the key positions and appointments available outside of the MS. Career progression could be more limited, albeit mitigated financially by progression through the submarine allowance tiers. Age and deterioration of personnel, spending an entire career in the MS, would likely have a lesser effect on submariners, than is the case with JTF 2 personnel. In a MS or an individual occupation, vacancies are filled from within, which may limit the overall number of promotions.

The MS or standalone occupation option also has far greater control over the management of personnel and may provide some flexibility in developing their own personnel procedures and requirements such as promotion board criteria and composition of intake.

Although not scientifically proven, there is a concern that submariners don't always fare as well as their surface ship counterparts on promotion boards.¹⁰⁰ As a result, there has been a concerted effort to write better quality Performance Evaluation Reports (PERs) for submariners.¹⁰¹ PERs and promotions are an emotional subject for sailors and any indication that submariners are being disadvantaged will impact the motivation of personnel to join submarines. In 2005, when it was necessary to surge recruiting efforts to provide troops for operations in Afghanistan, then Chief of Defence Staff, General Hillier, directed that personnel who worked in the recruiting enterprise would receive extra points on their PERs. The main reason for this initiative was to attract better and brighter personnel to the recruiting enterprise, as personnel were reluctant to take a posting to a recruiting centre believing they would not fare well on merit boards. If indeed, submariners are being disadvantaged through merit boards, this would be a useful mechanism to enhance attractiveness of this profession, in particular for more senior sailors.

Occupation Amalgamation and Sub-Occupations

Looking ahead to technological advancements of the future fleet and the corporate emphasis to cut back on positions, the RCN is actively investigating alternative crewing arrangements. As a result the RCN in conjunction with CMP is presently in the initial stages of investigating the utility of combining occupations with overlapping job requirements and eliminating occupations which are no longer relevant. Although it is outside the scope of this paper to ascertain exactly what efficiencies are to be gained by doing so, it is anticipated that at junior levels, there would be training rationalizations to be gained. Future mega-occupations in the RCN may be

¹⁰⁰ Arnold CPO1, telephone conversation, 16 April 2015.

¹⁰¹ Randall Truscott Cdr, telephone conversation, 28 April 2015

constructed along technical and operator lines and sub-divided into sub occupations with unique or specialized work. Should this be implemented, each of these proposed mega-occupations could contain a submarine sub-occupation. Figure 3 illustrates how such a naval operator occupation might be designed, using a parent occupation with several sub-occupations including sub-surface.

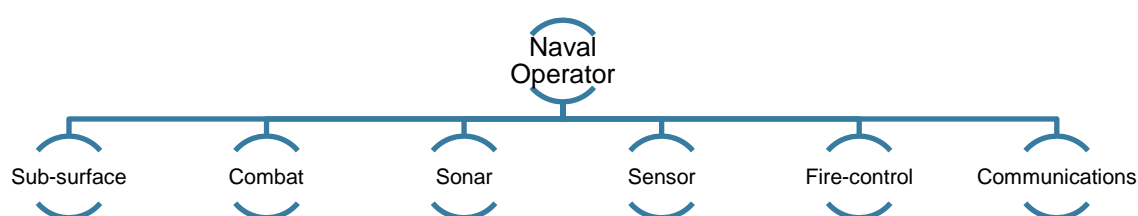


Figure 3: Example of a parent occupation construct¹⁰²

The greatest benefit of this adopting this model would be that any in-depth analysis conducted would capture submarine employment and jobs and ensure that it is part of the solution. Structural or other improvements to the submarine employment stream could dovetail nicely with those being made as a result of the amalgamations. Should this be the chosen route taken by the RCN, it allows more control over how the sub-occupations are filled. Once members are assigned to the parent occupation, the RCN could then dictate which sub-occupations are filled based on requirements. This particular construct would normally require

¹⁰² This figure is an example only and does not reflect any of the work currently being accomplished pertaining to occupation amalgamations

that a member complete an entry level or apprentice job in the parent occupation before moving on to training in the more specialized sub-occupation.

As a sub-occupation of a larger parent occupation, issues with production and sustainability will not necessarily be solved. In fact it may complicate matters for submariners in that they will be one of several sub-occupations and possess less of an identity than is currently the case. In the case of the naval technical occupations, there could easily be up to ten sub-occupations and the size of the occupation could be unwieldy. Initial training is already extensive; therefore by combining a number of trades into one, the super-technician might require even more training to be able to accomplish an entry level job.

This option would not address the need for a unique identity associated with submarine employment or necessarily improve issues with recruitment or retention, nor sustainability. As seen with the MS option, again there would be no direct access to CMP management processes that facilitate occupational health. In fact, as long as the overall amalgamated occupation remained healthy, the individual sub-occupations would be unlikely to gain any attention or needed scrutiny outside of naval circles. Management could be left to the naval occupation managers whose role would need to be enhanced to analyze the multiple components within their mega-occupation. This total reorganization of naval occupations would entail a considerable overhaul which is likely take a prohibitively long time. There is much hope in the submarine force, that this restructuring plan which has some initial momentum will be the remedy to the ongoing submarine personnel issues.¹⁰³

¹⁰³ Randall Truscott Cdr, telephone conversation with author, 27 April 2015.

Should the aforementioned amalgamation of naval occupations be prohibitive, a similar alternative would be to include submariner as a sub-occupation of the various navy managed occupations, in their current format. As a sub-occupation, submariners may benefit from having their structure assessed and adjusted; however they would remain absorbed by the various parent occupations without a distinct identity. This sub-occupation remedy doesn't serve to improve the submariner personnel situation holistically, but rather occupation by occupation. Figure 4 provides an example of the existing Sonar Op occupation with a submariner sub-occupation.

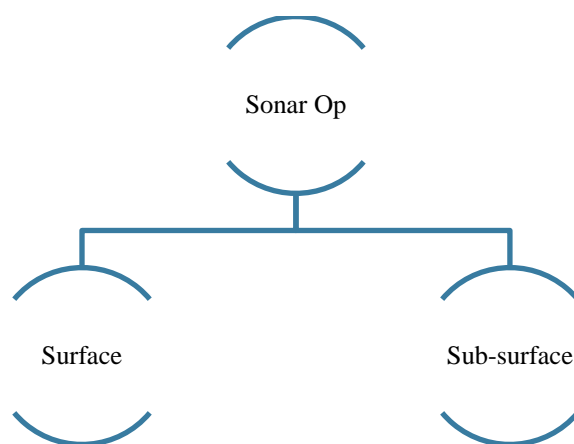


Figure 4: Example of a current occupation construct with sub-surface suboccupation

Currently in the CAF, there is a strong inclination toward occupation amalgamations and the associated creation of sub-occupations. The RCN has experienced some early success with this concept, particularly for MARS officers and W Eng Techs. Although still early to fully ascertain the impact of doing so and declare complete victory, the 2011 amalgamation of the naval weapons technician (NWT) occupation with the three electronics technician (NET A/T/C) occupations has proven to be a useful model and is believed that it could be a viable model for

other NCM occupations.¹⁰⁴ The recently amalgamated W Eng Tech occupation remains healthy overall, with a sufficient BTL, however severe shortages exist in the individual sub-occupations and at crucial qualification levels. Despite the initial implementation of this newly constructed occupation in 2011, work is still underway to ensure training documentation is updated. Notwithstanding structural improvements in this occupation, training continues to be extensive and expensive, particularly when approaching the journeyman or technician level.

The inclusion of a subsurface component as a sub-occupation to the various naval managed occupations would ensure that the submariner vocation heeds more attention with the occupation managers; however it would remain immune to the management processes conducted by CMP.

The issues brought forward in the various analyses and in the different options presented, highlight the inconsistency between CMPs larger focus on occupations, while the RCN is concentrating on the needs of a small specialist service.¹⁰⁵ Most evident is the need to bring these two elements closer together to effect improvements to the management and structure that envelops the submarine force. Although still in the initial stages, the RCN has embarked and taken the lead in creating a management system that may assist with this evolution and help enable OAs to better analyze occupational health issues.¹⁰⁶

¹⁰⁴ As stipulated at the 2014 W Eng Tech AMOR, held January 2014

¹⁰⁵ CCFL, 3371-1080-1, "Milestone all Round Look:Report of the 2011 Submarine Capability Study," (SCST, 2011).

¹⁰⁶ MEMS is a Military Employment Management System which draws information provided from Monitor Mass.

Regardless of the alternative that is ultimately pursued by the RCN, it is evident that a more concerted effort to recruit and retain submariners would improve their health. It is similarly clear that an improved identity would improve morale and general attractiveness of the submarine service. Whatever the path is that is undertaken to evolve the submariner vocation, it will be necessary to redefine their employment as a unique opportunity to work with superior sailors undertaking critical functions for the Navy. Messaging will be a key component in order for this to be successful.

CONCLUSION

This paper has introduced a number of alternatives to evolve and improve the personnel management and ultimately the long term sustainability of the Canadian Submarine Force. These new approaches range from the creation of a separate standalone submariner occupation to maintaining the status quo and simply adding a submariner sub-occupation to the current construct. The creation of a new occupation would be a fundamental and holistic alteration from how the submarine force is currently organized, and it is a proposal that has been brought forward time and time again. This option would give the RCN the ability to conduct the complete *cradle to grave* overview of the personnel issues associated with the submarine service. This option allows for a reinvention of the submarine profession without being absorbed by the greater requirements of the navy. The notion of a unique occupation is one that is supported by the experiences of the RAN, the USN and that of Canada's Special Forces. With an occupation comes a host of personnel management functions within CMP and a massive amount of horsepower to assist in maintaining and sustaining occupational health and supporting the operational requirements associated with the capabilities that the RCN brings to the government of Canada.

The view that submariners are members of an elite group and warrant specialized screening and selection has been introduced by variety of esteemed sources. This is an area that in itself deserves further assessment and the RCN could certainly benefit from the expertise of a branding or marketing expert. The further development of submariner screening tools such as those used in the USN, might serve to better select personnel and improve attrition.

The government is clearly committed to submarines, as is the RCN. To date nearly one billion CAD has been spent on the development, maintenance and refurbishment of the VIC Class. Furthermore the government has pledged 1.5 billion CAD on this capability over the next decade.¹⁰⁷ This commitment demands that a strategic look be oriented toward this strategic force.

This paper is not meant to advocate the need for submarines or for the acquisition of replacements for the Victoria Class which are approaching their midlife. In the absence of an announced plan for replacement for the Victoria Class, it is encouraging that discussions are underway in Ottawa to consider sustainment of this capability for the future. It is hoped that they can be extended until 2040 and evident that there will be a need for a robust submarine force until that time. Announcement of these extensions and updates would surely improve the view for the future for Canada's submariners and give them and future submariners something to be excited about.

The RAN experience and timeline has paralleled the Canadian one in many ways. The Australians have made bold moves regarding their submarine force and it has paid dividends. At the same time, while they have just recently reached the operational capability that they have been working toward for years, they are already planning for their next submarine fleet. They appear to have learned from their mistakes and grown stronger as a result.

Finally, if sailors are the RCNs greatest resource, and submarines are its greatest strategic weapon, shouldn't the utmost effort be extended to ensure their future?

¹⁰⁷ Grace, *Fleet in Transition: Facing Fragility Today, the RCN Lays Foundations for Tomorrow*, last accessed 22 April 2015, <https://janes.ihs.com/CustomPages/Janes/DisplayPage.aspx?DocType=News&ItemId=+++1707979&Pubabbrev=JN I>.

BIBLIOGRAPHY

Books

- Allen, Thomas B. and Norman Polmar. *Rickover: Father of the Nuclear Navy. Military Profiles.* Washington, D.C.: Potomac Books, Inc., 2007.
- Bicksler, Barbara A., Curtis L. Gilroy, John T. Warner, and Donald Rumsfeld. *The all-Volunteer Force: Thirty Years of Service.* 1st ed. Washington, D.C.: Brassey's Inc., 2004.
- Burgess, Robert Forrest. *Ships Beneath the Sea: A History of Subs and Submersibles.* New York: McGraw-Hill, 1975.
- Canada. Dept. of National Defence and Canada. *Ministre de la defense nationale. Military Personnel Management Doctrine. Cfjp 1.0. Vol. 1.0.* Ottawa: Issued on authority of the Chief of the Defence Staff, 2008.
- Duncan, Francis. *Rickover: The Struggle for Excellence.* Annapolis, Md.: Naval Institute Press, 2001.
- Ferguson, Julie H. *Deeply Canadian: New Submarines for a New Millennium.* Port Moody, B.C.: Beacon Pub., 2000.
- Ferguson, Julie H. *Through a Canadian Periscope : A History of the Canadian Submarine Service.* Toronto: Dundurn Press, 1994.
- Harris, Brayton and Walter J. Boyne. *The Navy Times Book of Submarines: A Political, Social, and Military History.* 1st ed. New York: Berkley Books, 1997.
- Kirby, Sheila Nataraj, Scott Naftel, United States. Dept. of Defense. Office of the Secretary of Defense, and National Defense Research Institute. *Enlisted Management Policies and Practices: A Review of the Literature.* Santa Monica, CA: Rand, 2001.
- Kirby, Sheila Nataraj, Harry Thie, National Defense Research Institute, and United States. Department of Defense. Office of the Secretary of Defense. *Enlisted Personnel Management: An Historical Perspective.* Santa Monica, CA: Rand, 1996.
- Last, David Murray, Bernd Horn, and Queen's University . School of Policy Studies. *Choice of Force: Special Operations for Canada.* Montreal: Published for the School of Policy Studies, Queen's University by McGill-Queen's University Press, 2005.
- Last, David Murray, Bernd Horn, J. Paul de B. Taillon, and Queen's University . School of Policy Studies. *Force of Choice: Perspectives on Special Operations.* Montreal: Published for the School of Policy Studies, Queen's University and by McGill-Queen's University Press, 2004.
- Oliver, Dave. *Against the Tide: Rickover's Leadership Principles and the Rise of the Nuclear Navy.* Annapolis, Md.: Naval Institute Press, 2014.

Perkins, J. David. *The Canadian Submarine Service in Review*. 1st ed. St. Catharines, Ont.: Vanwell Pub., 2000.

Polmar, Norman and Thomas B. Allen. *Rickover*. New York: Simon and Schuster, 1982.

Sontag, Sherry, Christopher Drew, and Annette Lawrence Drew. *Blind Man's Bluff: The Untold Story of American Submarine Espionage*. New York: Public Affairs, 1998.

Yule, Peter and Derek Woolner. *The Collins Class Submarine Story: Steel, Spies, and Spin*. New York: Cambridge University Press, 2008.

Wool, Harold. *The Military Specialist; Skilled Manpower for the Armed Forces*. Baltimore: Johns Hopkins Press, 1968.

Journals and Magazines

"Canada's Military Wants New Drones, Fighter Jets, and the Arctic." *Military Technology* 28, no. 9 (09, 2014): 64-65.

Gillis, J. Matthew. "An Undersea Identity Crisis: Evaluating Realistic Roles for Canada's Submarine Fleet." *Canadian Naval Review* 4, no. 4 (2009).

Grace, Jean. "Fleet in Transition: Facing Fragility Today, the RCN Lays Foundations for Tomorrow." . Accessed Apr/22, 2015.
<https://janes.ihs.com/CustomPages/Janes/DisplayPage.aspx?DocType=News&ItemId=+++1707979&Pubabbrev=JNI>.

Greenfield, Nathan. "Under Pressure." *The Walrus* (April 2015, 2015): 26-31.

Horn, Bernd. "Love 'Em Or Hate 'Em: Learning to Live with Elites." *Canadian Military Journal* Winter 2007-08, (Winter 2007-8).

Wilson, Jeremy M. *Police Recruitment and Retention for the New Millennium: The State of Knowledge*. Rand Corporation Monograph Series. Santa Monica, CA: Rand, 2010.

Reports and Papers

Chief of Military Personnel, , A-PD-055-003/PQ-001, Basic Submarine Qualification.

D Nav Pers, DAOD 5003-1, Service in Submarines, 2002.

Berry, Brigadier. "The Military Balance 2015." Toronto, Ontario, 16 April 2015.

- Bradley, L. and Canada. Canadian Armed Forces. Maritime Command. Personnel Applied Research. Mixed Gender Crewing in Victoria Class Submarines. Maritime Staff Research Report. Vol. 99-1. Halifax, N.S.: Maritime Command, 1999.
- Canadian Armed Forces, "CBI 205.37 Allowances for Officers and NCMs", last accessed 2 May 2015, <http://www.forces.gc.ca/en/about-policies-standards-benefits/ch-205-officer-ncm-allowance-rates.page>.
- CCFL. "Milestone all Round Look:Report of the 2011 Submarine Capability Study." CCFL:337-1080-1 (SCST), (2011).
- Chief of Military Personnel, DAOD 5002-0, Military Personnel Requirements and Production 2009.
- Chief of Military Personnel, DAOD 5070-0, Military Employment Structure 2014.
- Clark, M. E. and Canadian Forces College. "The Court Martial of Lieutenant-Commander Dean Marsaw: Lessons on Culture, Leadership, and Accountability for the CF." Canadian Forces College, 2007.
- Commander Submarine Force, Submarine Personnel Report, 2013.
- DHRIM. Military Personnel Reports, 2015.
- Director Personnel Generation Requirements. APD 055- Vol 1 THE CANADIAN ARMED FORCES MILITARY EMPLOYMENT STRUCTURE: Government of Canada, draft.
- DPGR. PARRA Report 2015.
- DPGR. Strategic Intake Plan (SIP) Scorecard 2015.
- Lewis, Frederick A. "Is there A Place for Elite Forces in the Canadian Army?" Master of Military Art and Science, US Command and General Staff College, 2002.
- Lloyd, Ron RAdm DCRCN. Opening Remarks - NAC Conference: Submarines Past, Present and Future. Vol. Published in Starshell - Autumn 2014.
- MARCOM. Report on the Personnel Structure of the Submarine Service of Canada, 22 April 1988.
- DPGR, MESIP to Create the New SF Op Occupation (15 November 2012).
- DPGR, MESIP for the New CBRN Occupation (1 January 2010).
- Moffitt, Rowan RAdm RAN. Report of the Review of Workforce Sustainability: RAN, 2008.
- Okros, A.C. "Psychological Fitness for Submariners: A Proposal for Screening and Monitoring" (CFPARU, Toronto Ontario, 1989).
- Poirier, L.C.M. "Technical Note – Literature Review on Submariner Selection Research" (DGMPPRA, May 2010).

- Reeves, D.T. LCdr and Bradley, J.P. Maj. Naval Attitudes Toward Submarine Service Working Paper 92-6. Willowdale, Ontario: CFPARU, 1992.
- Schank, John F., National Defense Research Institute, and Rand Corporation. Learning from Experience. Rand Corporation Monograph Series. Vol. MG-1128/4. Santa Monica, CA: Rand, 2011.
- Schank, John F. Learning from Experience. Rand Corporation Monograph Series. Vol. MG-1128/1. Santa Monica, CA: Rand, 2011.
- Sea Power Centre Australia, Gregory Philip Gilbert, and Nick Stewart. Australian Maritime Issues 2008: SPC-A Annual. Papers in Australian Maritime Affairs. Vol. 27. Canberra: Sea Power Centre Australia, 2009.
- Young, Mike Cdr Ret'd. Submarines & Sovereignty: From the Oberons to the Victorias., 2014 - presentation to the NAC 2 Oct 2014 ed.
- Verner, CWO Tom. The Managed Specialty 2015.

Electronic Sources

- Australian Defence Force. Accessed April/4, 2015.
<http://www.defencejobs.gov.au/navy/submariners/>.
- Admiral Russ Crane. "Media Conference regarding Navy's Workforce Sustainability Program." . Accessed 04/04, 2015. www.defence.gov.au/media/spechtpl.cfm?Currentid=8983.
- Blenkin, Max. "Collins Subs Performing." news.com.au. Accessed April/2, 2015.
<http://www.news.com.au/national/breaking-news/govt-backs-away-from-12-sub-plan/story-e6frku9-1226877693875>.
- Blenkin, Max.. "Navy Plans to Boost Submariner Numbers." Last accessed 22 April 2015,
<http://www.smh.com.au/breaking-news-national/navy-plans-to-boost-submariner-numbers-20090408-a0mf.html>
- Canadian Centre for Policy Alternatives, "That Sinking Feeling: Canada's Submarine Program Springs A Leak" last accessed 22 April 2015,
<https://www.policyalternatives.ca/sites/default/files/uploads/publications/National%20Office/2013/06/ThatSinkingFeeling.pdf>.
- Minister for Defence. "Joint Media Release - Final Report of Coles Review into Submarine Sustainment." Accessed 4/4, 2015. www.minister.defence.au/2012/12/12minister-for-defence-materiel-and-minister-for-finance-and-deregulation-joint-media-release-release-of-final-report-of-coles-review-into-submarine-sustainment/.

Mitchell, Paul. "Full of Holes: Byers and Webb on Canada's Submarine Program." CDFAI, last accessed 2 May 2015, <http://www.cdfai.org.previewmysite.com/PDF/Full%20of%20Holes.pdf>

Royal Australian Navy, "Seven Days of Service", last accessed 2 May 2015, <http://www.defencejobs.gov.au/navy/>

Royal Canadian Navy. "100th Anniversary of Canadian Submarines." Government of Canada. Accessed March/10, 2015. <http://www.navy-marine.forces.gc.ca/en/navy-life/sub-centennial/sub-centennial.page>.

Royal Canadian Navy. "Royal Canadian Navy Submarines: Fleet Status." Government of Canada. Accessed Apr/10, 2015. <http://www.navy-marine.forces.gc.ca/en/news-operations/news-media-submarine-fleet-status.page>.