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Bridging the Gap: Enhancing Naval Warfare Officer Training with STCW Civilian Accreditation

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ABBREVIATIONS

2OOW	Second Officer of the Watch
ATR	Afloat Training Requirements
BMOQ	Basic Military Officer Qualification
BWK	Bridge Watchkeeper
CAF	Canadian Armed Forces
CASC-P	Command Analytics Support Centre - Pacific
CFB	Canadian Forces Base
CMP	Chief of Military Personnel
CO	Commanding Officer
CRCN	Commander Royal Canadian Navy
DEO	Direct Entry Officer
HMAS	His Majesty's Australian Ship
HMCS	His Majesty's Canadian Ship
IMO	International Maritime Organization
JOOD	Junior Officer of the Deck
JOOW	Junior Officer of the Watch
MCDV	Maritime Coastal Defence Vessel
NABS	Navigation and Bridge Simulators
NEOC	New Entry Officers Course
NSCC	Nova Scotia Community College
NTG	Naval Training Group
NWO	Naval Warfare Officer

NWOPQ	Naval Warfare Officer Professional Qualification
OFP	Operational Functional Point
OOD	Officer of the Deck
OOW	Officer of the Watch
QSP	Qualification Standard and Plan
RAN	Royal Australian Navy
RCAF	Royal Canadian Air Force
RCN	Royal Canadian Navy
RN	Royal Navy
ROTP	Regular Officer Training Programme
SPE	Subjective Performance Evaluation
STCW	International Convention on the Standards of Training and Certification of Watchkeepers
SWO	Surface Warfare Officer
TES	Trained Effective Strength
USN	United States Navy
USNA	United States Naval Academy
XO	Executive Officer

ABSTRACT

Though the RCN has paid considerable attention to the development and preparation of its commanding officers, there is a gap in advocacy regarding junior officer development. While there have been some minor changes in course structure and qualification at the most junior ranks, the current system for NWO training remains the same as it has been for the last twenty years. The RCN should adopt a new training system that aligns NWO training with the civilian STCW. This will allow junior NWOs to join their ships with a BWK qualification and eliminate the need to gain commanding officer approval. This has been accomplished in both the RN and RAN and serves to speed up officer production and provide their fleets with a more well-rounded mariner. There are also several sociological benefits, such as eliminating toxicity by competition within the NWO occupation. Similar to what the RCAF did in 2019 with its pilot pay scales, aligning to STCW will allow for greater attention to compensation and benefits, enhancing recruitment from industry by offering higher pay scales and recognition of existing skills under STCW.

Keywords: Navy, STCW, Mariner, Navigation, Training

PREFACE

I chose this topic as my experiences in the RCN have led me to have a passion for officer training and development. As an NWO who has served as a navigator and operations room officer, and with Sea Training (Atlantic), I have noticed that there has been a degradation in the calibre of officers being produced. While this may be a subjective assessment, I attribute no fault to the training institution, but to the necessity to produce officers quickly to fill key positions at the Lieutenant (Navy) level. Therefore, I wanted to research whether the adoption of the civilian training system would streamline the training and, if possible, provide added benefits for the NWO occupation and additional avenues for recruitment.

I soon discovered that while metrics and data were available, they did not show the health of the occupation. There was much information about command development and training, but little to no research was done on junior officer development. As I delved deeper into the processes of allied navies, I also saw a lack of research there. Most military texts focused on the warfighting aspect of naval officers, and little attention had been paid to the mariner aspect. Therefore, I have inadvertently presented a novel study into how the NWO occupation should conduct its training. There is much room for further research in this area, and I would highly recommend to RCN leadership that before any new changes to the system are put in place, that a select few officers attend training at either RN or RAN establishments so that data can be obtained and compared to the RCN's current system.

ACKNOWLEDGEMENTS

I wish to acknowledge the support of my family. Without their love and compassion, I could not continue on this path of surface command. I thank them for allowing CFC to borrow me for this year so that I may return to the fleet. To my advisor, thank you for the support and for being a sounding board. To my former mentors and commanding officers, you have all influenced my perspectives. It is an honour to follow in your footsteps.

BRIDGING THE GAP: ENHANCING NAVAL WARFARE OFFICER TRAINING WITH STCW CIVILIAN ACCREDITATION

CHAPTER 1: INTRODUCTION TO RESEARCH

INTRODUCTION

The NWO occupation is the RCN's jack of all trades. Tasked with leading sailors and commanding ships at sea, these mariners maintain the ship on track, manage the daily programme, and pilot the vessel into and out of harbour. They are every bit as mariner as their civilian counterparts, but they are not assigned civilian accreditation upon completing their training. This Directed Research Project seeks to answer this question: "Can the RCN align NWO training to civilian standards, and what benefits will there be for the RCN and NWOs?" The project will argue that the RCN can align NWO training with their civilian counterparts and commence the realignment at the earliest opportunity to increase production of these highly specialized mariner officers. Examples will be provided from allied navies that have successfully integrated STCW standards, and the topic of removal of subjectivity and improved experiences for NWOs joining the fleet will also be discussed.

The above thesis is supported by chapters on the following topics: in what way the RCN trains its officers, how allied navies conduct their training, where the training is now and where it is going, expanding the focus on quality of experience for NWOs and eliminating toxic attitudes, and finally, the financial and personal benefits of realignment with civilian standards.

WHAT IS STCW

Created by the IMO on behalf of the United Nations, STCW is a governing document detailing the training and certification methods required to hold certain positions on board ships at sea. Adopted in 1984 by 25 participating nations, this convention is a governing document that

applies to all seafarers of the nations that have signed the agreement.[1] The original convention was adopted as a method of ensuring that, as the name suggests, standardization was occurring for what is in fact a global industry. Prior to the adoption, individual nations had been responsible for the training of their seafarers, and there was little standardization amongst them, even though shipping is an international venture. Therefore, as the title suggests, the convention was adopted to standardize mariner training worldwide.[2] Interestingly, Canada was not an original signatory to the convention. It signed the 1995 amendment, formally adopting its regulations,[3] and by 2018, over 99 percent of the world's shipping was signed on to the convention, representing 164 countries.[4]

In Canada, adherence to STCW is administered by Transport Canada through the *Canada Shipping Act.*[5] Transport Canada is the only body in Canada responsible for granting an IMO-recognized digital certification for deck officers and engineers. Therefore, Transport Canada recognizes all mariner schools in Canada as training institutions.[6] Transport Canada issues any changes to the Canada Shipping Act or recognition of new qualifications in the form of a Shipping Safety Bulletin (SSB), such as SSB 24/2023, officially recognizing RCN training as having civilian equivalencies.[7] However, despite this SSB, per article III(a) of the Convention

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[1] "International Convention on Standard of Training, Certification and Watchkeeping for Seafarers, 1978," accessed March 26, 2025, https://treaties.un.org/doc/Publication/UNTS/Volume%201361/volume-1361-I-23001-English.pdf.
[2] "STCW Convention," in *Wikipedia*, April 22, 2025, https://en.wikipedia.org/w/index.php?title=STCW_Convention&oldid=1286937941.
[3] Transport Canada, "Standard for Training, Certification and Watchkeeping - STCW," Transport Canada, January 14, 2010, https://tc.canada.ca/en/marine-transportation/marine-safety/standard-training-certification-watchkeeping-stcw.
[4] "STCW Convention."
[5] Minister of Justice, "Canada Shipping Act, 2001," June 22, 2023, https://laws-lois.justice.gc.ca/PDF/C-10.15.pdf.
[6] Transport Canada, "Examinations of Seafarers," Transport Canada, January 14, 2010, https://tc.canada.ca/en/marine-transportation/marine-safety/examinations-seafarers.
[7] Transport Canada, "Recognition of Royal Canadian Navy Competencies by Transport Canada - SSB No.: 24/2023," AMSP 19859349 (AMSP, November 29, 2023), https://tc.canada.ca/en/marine-transportation/marine-safety/ship-safety-bulletins/recognition-royal-canadian-navy-competencies-transport-canada-ssb-no-24-2023.

and Paragraph 7(1) of the *Canada Shipping Act*, vessels belonging to the Canadian Forces are exempted from the act, and nothing in the Convention will prevent a warship from conducting its operations on behalf of its registered state.[8] Therefore, the RCN has adopted a training method for its NWOs that is in the spirit of the convention. Still, differences in timelines, sea day requirements, and Chain of Command subjectivity allow for deviations from international policies.

CHAPTER BY CHAPTER

CHAPTER 2: RESEARCH METHODS AND LITERATURE REVIEW

Heavy emphasis was placed on scholarly articles and open-source material in researching this Directed Research Project. Since the training system is consistently evolving, and given the limited time to produce what has become new research, no individual interviews were conducted. Other sources included articles and reports from the RCN's training institutions and personnel directorate. This research topic was chosen as there has been a lot of attention paid to command development in the RCN, as has been seen by changes to the Command Qualification process in 2019 and then again in 2025.[9] However, little attention has been paid to junior officer development and how this will affect the long-term health of the NWO occupation.

The research determined that latitude exists to realign NWO training to civilian standards, particularly regarding granting the BWK. Therefore, to determine if precedence exists with allied navies, the United States, Royal, and Royal Australian Navies were examined for context. While multiple journal articles explain how these allies train their warfare officer

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[8] Justice, "Canada Shipping Act, 2001"; "International Convention on Standard of Training, Certification and Watchkeeping for Seafarers, 1978."
[9] Commander, Royal Canadian Navy, "Revisions to Surface Command Development and Qualification Process," NAVGEN 001/25 § (n.d.).

communities and relate to each other, there is very little documentation on how the RCN fits in with its contemporaries. Therefore, it is determined that this Directed Research Project is a novel discussion on the subject, which should generate further research as the RCN seeks to transform its training system and rapidly progress its officers to TES.

CHAPTER 3: HOW WE TRAIN

The current training system sees candidates join from Canadian Society and commence the journey to becoming an NWO. Per the QSP for the NWO occupation, a new officer will complete BMOQ and then proceed through the NWO phase training, joining either the Pacific or Atlantic fleets upon completion.[10] This process takes a year and a half to complete for a DEO and four years for an officer in the ROTP who has completed paid education.[11] Officers on the ROTP path will complete their BMOQ and phase training in the summers between academic years. Upon being assigned to a fleet, they will commence the NWOPQ, an intensive training package that takes two years to complete.[12] Once they successfully complete their package, the officer will challenge a professional board, chaired by the deputy fleet commander. If successful, they will move to the TES list and be eligible for Lieutenant (Navy) promotion. Timing is contingent on sea time and platform availability.

As for civilian mariner training institutions, their candidates complete either a three- or four-year course that prepares them for the official examinations as per the Canada Shipping Act.

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[10] Royal Canadian Navy, "Royal Canadian Navy Qualification Standard and Plan - Naval Warfare Officer 00207," May 2022.

[11] "Naval Warfare Officer | Canadian Armed Forces," accessed February 23, 2025, https://forces.ca/en/career/naval-warfare-officer/.

[12] Commander Naval Personnel and Training Group, "Royal Canadian Navy Qualification Standard and Plan - Naval Warfare Officer Professional Qualification," May 2022, file:///C:/Users/JCSP51Student/OneDrive%20-%20CFC/Assignments/DRP%20Research/FW_%20Info%20for%202in1/Naval-Warfare-Officer.pdf.

They then go to the industry as qualified deck officers, and depending on their company, they can take a watch immediately.

CHAPTER 4: WHAT DO OUR ALLIES DO

The United States Navy was first examined to seek examples from other navies. Their NWO equivalents, the SWO, also enter their fleets through two separate pipelines: either directly from the street as a mature recruit or through their naval academy. Once SWO training commences, they are subjected to six months of classwork focused heavily on simulation, and then they proceed to their first ship for up to two years of on-the-job training. They serve a period as a Junior Officer of the Watch, signifying that they are under training and then move into an OOD position. The ship's navigating officer trains them on behalf of the training officer.[13] Interestingly, the USNA builds mariner training into the school curriculum; all midshipmen, regardless of trade, are mariners first.[14]

The British Royal Navy takes a phased approach to its warfare officer training. Their candidates undergo a militarization and marinerization phase of their training, including a navy-specific version of basic training. They then spend the next two years serving in tenders and larger warships as a 2OOW, accruing up to 600 hours of bridge experience before going back to their training institution for a period of classroom and simulator examination, in line with STCW. Upon completion, they are granted their OOW qualification and proceed into their respective warfare pipeline.[15]

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[13] *SWO Training Pipeline - Basic Division Officers Course*, 2020, https://www.youtube.com/watch?v=EVjrgXaNAXc.

[14] "USNA Core Curriculum *," accessed April 16, 2025, https://www.usna.edu/Academics/Majors-and-Courses/Course-Requirements-Core.php.

[15] Matthew Windwood, "RN / RAN Junior Officer Development: Comparisons and Contrasts," *Headmark: Journal of the Australian Naval Institute*, no. 150 (December 2013): 38–43, https://doi.org/10.3316/informit.846032615527785; "BRNC Dartmouth | Royal Navy," accessed March 23, 2025, https://www.royalnavy.mod.uk/locations-and-operations/bases-and-stations/brnc-dartmouth; Mitch Lt McGuffie, "A

Finally, the Royal Australian Navy relies heavily on simulation in the training of its SWOs. The training system puts them through a series of examinations, during which the candidate is subjected to every kind of evolution that an officer of the watch would be expected to know. Upon completion of the training, they join their first ships as qualified watch officers. Sea time is gained in small tenders and is less emphasized than the experience in simulation.[16]

CHAPTER 5: REALIGNMENT OF TRAINING

The RCN faces the challenge of delivering NWOs to TES fast enough to outpace attrition. In 2023, Naval Training Group contracted CASC-P to conduct a study into the problem, where it was supposed that the RCN's current production model would require a 106 percent increase in sea days if it were to outpace NWO attrition.[17] Given the sundowning of the *Kingston*-Class vessels in the RCN, reduction in sea days of the *Halifax*-Class, and limited space in the *Harry DeWolf*-Class, it is assessed that a new model is required. Therefore, an opportunity has presented itself to align with STCW.[18]

This chapter proposes resequencing training to mirror civilian institutions. It recommends the amalgamation of NWOPQ and NWO phase training, supported by civilian-style work terms. Upon completion, the candidates would be granted their BWK, assigned to TES, and eligible for Lieutenant (Navy) promotion. They then proceed down their chosen warfare pipeline as per the Royal Navy system.

Rude Awakening," U.S. Naval Institute, January 1, 2009, https://www.usni.org/magazines/proceedings/2009/january/rude-awakening.

[16] Windwood, "RN / RAN Junior Officer Development."

[17] Command Analystics Support Centre - Pacific, "CASC-P Analytics Research Report NWOPQMI" (Esquimalt, December 7, 2023).

[18] Lieutenant-Commander Justin Robicheau, "CHARTING A COURSE FOR READINESS: THE CASE FOR AN EMERGENCY ROYAL CANADIAN NAVY WARSHIP PROCUREMENT," *DS545 Service Paper*, January 29, 2025.

CHAPTER 6: SOCIOLOGICAL / MENTAL HEALTH BENEFITS

Realignment would result in several benefits related to the increased well-being of NWOs working in the fleet. The first is that removing the commanding officer's subjectivity will eliminate competition, subjectivity, and toxicity amongst the RCN's officer cadre. This will also help the officers' mental health during the training. Once aboard a ship, in the STCW model, as 2OOW, their only job would be furtherance of training; there would be no expectation to achieve their BWK as it is completely removed from this training phase. Further, the onus for training this cadre of officers is removed from the ship. There is an expectation that they are there to learn. Still, there is no expectation to bring them to a certain level to meet attrition levels and ensure the fleets have a healthy supply of Lieutenants. This will belong solely to the schoolhouse.

CHAPTER 7: OTHER BENEFITS

An examination of the pay scale shows potential for an increase in pay for NWOs similar to that of the Royal Canadian Air Force's pilots.[19] This pay raise would account for the additional risk that those commanding at sea versus shore-based officers assume. This would align with the industry where chief officers and master mariners are paid exponentially more for the roles and education they must take on.[20]

Alignment will also open a deeper recruitment pool, pulling in qualified personnel from civilian industry. The use of higher pay scales will make the RCN more attractive to mariners who are looking for work following their initial education. While conventional research suggests

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[19] National Defence, "Regular Force Pay by Rank," January 19, 2024, https://www.canada.ca/en/department-national-defence/services/benefits-military/pay-pension-benefits/pay/regular.html.
[20] "Seafarers Salary in 2025 - Data and Analysis. Maritime Salary Calculator." accessed April 15, 2025, https://maritime-zone.com/en/analytics.

that bringing in a new officer laterally from civilian industry is difficult, the Naval Training Group could begin developing an ROTP program for cadets wishing to join from a civilian university or delta program to militarize civilian mariners.

LINKING THOUGHTS

Throughout this process, it became clear that there is a lack of research surrounding the training of the RCN's NWO cadre. It is assessed that this is attributable to the small size of the RCN, and its challenges are being overshadowed by those of other trades in a state of duress. Therefore, research had to be directed at allied navies and the benefits that have befallen them. The initial intent of this Directed Research Project was not to present novel research, but to build upon what may already have been available in academia. However, it has become clear that the discussion around RCN NWO training has received little attention and should be further reviewed as the RCN seeks to bring more officers to TES.

CHAPTER 2 – RESEARCH METHODS AND LITERATURE REVIEW

INTRODUCTION

The author of this Directed Research Project has served 17 years in the RCN. They are an NWO who has served as a ship's navigator throughout the FELEX update years in destroyers and oilers, as an operations room officer in a frigate, and as an operations officer with Sea Training (Atlantic). This career path has sparked a deep interest and passion for NWO training, having seen countless officers progress through the fleet and achieve their milestones. After being heavily involved in the training of NWOs for such an extensive period, the author decided to research whether civilian standards aligned with what the RCN is currently doing for training and if there was room to adopt similar methods to improve NWO throughput to TES and what that would look like. What follows is an examination of the research methods used and a description of some of the literature leveraged in the writing of this project. This chapter will culminate with an assessment of where this paper fits in the broader range of available research and makes a call for further evaluation of the NWO career path with due regard to the civilian mariner counterparts.

RESEARCH METHODS

Primary source documents were taken from the Defence Wide Area Network and RCN-related databases to source relevant information. Where possible, open-source documents were also used to draft this paper. Interestingly, the USN is very open with its curriculum; regular internet access could be used in accessing career path information for SWOs and course calendars for the US Naval Academy. YouTube also proved invaluable in detailing how each allied navy, discussed in chapter four, conducted its training. Additionally, the Naval Training Group and the Directorate of Naval Personnel were used to source material supporting the health

of the NWO occupation. As a testament to the resources available in 2025, AI, ChatGPT and Microsoft Copilot were used to organize thoughts and as a search engine to find scholarly articles and journals to support the research,[21] with Grammarly serving as an AI editor during the drafting of this paper. The advisor assigned by the Canadian Forces College, Dr. Christopher Spearin, conducted final revisions. While not a source material or academic, Wikipedia provided historical context of different organizations or training institutions.

PRIMARY SOURCE MATERIAL

THE INTERNATIONAL CONVENTION FOR THE STANDARDS AND CERTIFICATION OF WATCHKEEPERS

The International Maritime Organization adopted this document in 1978, which came into effect in 1984. The adoption was based on the standardization of training across all seafaring nations, allowing for predictability in the quality of officers and standardized education.[22] This document discusses the qualifications required for the various positions aboard civilian ships. It further breaks down the qualification levels required based on the size of the vessel, with attention paid to watch officers, masters, and engineers.[23]According to Transport Canada's website, Canada officially signed on to the 1995 amendment, establishing a standard training plan for all of Canada's nautical institutions.[24]

CANADA SHIPPING ACT

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[21] "Copilot | Microsoft 365 Copilot," accessed March 5, 2025, https://m365.cloud.microsoft/chat?fromcode=edgentp&internalredirect=CCM&auth=2. "ChatGPT," *Open AI*, n.d., http://chatGPT.com.
[22] "International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978," accessed March 26, 2025, https://www.imo.org/en/OurWork/HumanElement/Pages/STCW-Convention.aspx.
[23] Ibid.
[24] Canada, "Examinations of Seafarers."

This act outlines additional regulations that all vessels must adhere to when operating in Canadian waters. It does not replace the STCW; it amplifies the duties and responsibilities of individual positions aboard ships, especially concerning the Master of the vessel. The RCN and Canadian Armed Forces are exempted from the act not to impair their ability to operate as ships of war or for another military purpose. However, the act does specify that these vessels should adhere as closely as possible to this act when practicable.[25]

COURSE CALENDARS

Calendars for Memorial University's Marine Institute, Nova Scotia Community College's Nautical Institute, and the Canadian Coast Guard College were evaluated. All three provided detailed breakdowns of their watch officer training programmes, what courses were required, and what qualifications their cadets received. Timelines for training and sea time varied by programme, with the Marine Institute being the longest course at four years, with the most sea time required, and the Nautical Institute the shortest at just under three years.[26] Additionally, the course calendar for the USNA was examined. Though not offered as a degree, all midshipmen who attend the college must take some fundamental courses in navigation and basic seafaring. This ensures that all officers graduating from the Naval Academy in the USN are educated in seafaring.[27]

QUALIFICATION, STANDARDS, AND PLAN

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[25] Justice, "Canada Shipping Act, 2001."
[26] Canadian Coast Guard Government of Canada, "Marine Navigation Training," May 22, 2019, https://www.ccg-gcc.gc.ca/college/officer-training-formation-officier/nav-training-formation-nav-eng.html; "Fisheries and Marine Institute of Memorial University of Newfoundland," accessed February 23, 2025, https://www.mi.mun.ca/calendar/current/programinformation/30technologyandtechniciandiplomaandtechnicalcertificateprograms/#techcert_bw; "Marine Navigation Technology | Programs | NSCC," accessed February 23, 2025, https://www.nscc.ca/programs-and-courses/programs/plandescr.aspx?prg=MNTD&pln=MNTECHDIP.
[27] "USNA Core Curriculum *."

These documents, known colloquially by their acronym, QSPs, break down how training is delivered in the CAF. This paper pulls heavily from the NWO and NWOPQ QSPs to compare what is taught in civilian institutions. They detail how an NWO joins the RCN schoolhouse at His Majesty's Canadian Ship *Venture* and progresses through NWO Phase training over the next year and a half to two years, starting with basic seafaring and naval history in Phase Two, and progressing into navigation, shiphandling, and warfare in Phases Three and Four.[28] NWOPQ then further expands on the training by providing the newly minted sub-lieutenants with an on-the-job training package, which is ideally completed within two years of serving in the Pacific or Atlantic fleets.[29]

COMMAND ANALYTICS SUPPORT CENTRE – PACIFIC REPORT ON NWOPQ MODEL IMPROVEMENT

This document is featured heavily throughout this paper. It details an assessment made by CASC-P into the health of the NWO trade and what must be done to ensure the occupation can bring NWOs to TES to outpace attrition. It proposes three models and the projected number of potential candidates. Models Two and Three recommend a significant change in NWO training and reliance on external agencies for sea days.[30] Evidence presented in Model Two supports the use of simulation to grant the coveted BWK qualification. This training model aligns closely with STCW and inspires Chapter Five's recommended NWO training revision.

SCHOLARLY ARTICLES

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[28] Royal Canadian Navy, "Royal Canadian Navy Qualification Standard and Plan - Naval Warfare Officer 00207."
[29] Commander Naval Personnel and Training Group, "Royal Canadian Navy Qualification Standard and Plan - Naval Warfare Officer Professional Qualification," May 2022.
[30] Command Analystics Support Centre - Pacific, "CASC-P Analytics Research Report NWOPQMI."

Although the articles primarily focused on civilian mariners and the use of simulation to maintain skills, some were also related to USN SWO training. One article by Roman La Map sought to examine with scientific data the performance of officers of the watch and why many shipping accidents are related to human error. Factors such as training, fatigue, and stress were considered, but no recommendations were proposed.[31] In examining the effects of toxic leadership in the USN, particularly amongst the SWO community, Mamaril conducted interviews with SWOs of varying rank and experience to determine the effects. There is a direct connection to high stress and the desire to perform for demanding bosses that significantly affects the mental health of USN SWOs.[32] In researching the training of USN SWOs, Robinson presented a history of the Initial Training of SWOs from the Second World War to 2008. However, this document focused primarily on warfare training and did not discuss the maritime aspect.[33] During the research, it was noted that a great deal of scholarly dedication has gone into examining how Warfare Officers fight their ships as technology evolves,[34] but little research has been done on assessing their mariner skillsets.

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[31] Romain Le Map, *Assessing Nautical Officers of the Watch Performance* (ENSM, 2023), https://www.researchgate.net/profile/Romain-Le-Map/publication/374151798_Assessing_Nautical_Officers_of_the_Watch_Performance/links/65103a7c61f18040c220daad/Assessing-Nautical-Officers-of-the-Watch-Performance.pdf.

[32] Emmanuel E. Mamaril, "A Phenomenological Analysis of the Effects of Leader Toxicity: Examining the Lived Experiences of U.S. Naval Officers Exposed to Toxic Leadership," *ProQuest Dissertations and Theses* (PhD Thesis, 2023), https://www.proquest.com/dissertations-theses/phenomenological-analysis-effects-leader-toxicity/docview/2818474157/se-2?accountid=9867 http://linksource.ebsco.com/linking.aspx?sid=ProQuest+Dissertations+%2526+Theses+Global&fmt=dissertation&genre=dissertations&issn=&volume=&issue=&date=2023-01-01&spage=&title=A+Phenomenological+Analysis+of+the+Effects+of+Leader+Toxicity%253A+Examining+the+Lived+Experiences+of+U.S.+Naval+Officers+Exposed+to+Toxic+Leadership&atitle=&au=Mamaril%252C+Emmanuel+E.&isbn=9798379568092&jtitle=&btitle=&id=doi:

[33] James T. Robinson, "Initial Training of Surface Warfare Officers: A Historical Perspective from World War II to 2008," accessed March 22, 2025, https://apps.dtic.mil/sti/citations/ADA502172.

[34] "Initial Training of Surface Warfare Officers: A Historical Perspective from World War II to 2008," accessed May 6, 2025, https://apps.dtic.mil/sti/citations/ADA502172; Andrew Livsey, "The Royal Navy's Principal Warfare Officer Course, 1972–2015," *The Mariner's Mirror* 103, no. 3 (July 3, 2017): 300–312, https://doi.org/10.1080/00253359.2017.1340426.

PROFESSIONAL JOURNAL ARTICLES

Most of the reviewed journal articles were written from the point of view of serving members of individual navies, and a great deal focused on comparisons between them. Examples include McGuffie's *A Rude Awakening*, where he details his experience and compares his training as a USN SWO to his Royal Navy counterparts.[35] A second article by Windwood discusses the differences between Warfare Officer training in the Royal Navy and the Royal Australian Navy.[36] Additional articles that support the USN aligning SWO training with the STCW standard could also be sourced.[37] However, little documentation could be found throughout this process discussing how the RCN trains its NWOs and how it could be improved.

WHERE DOES THIS RESEARCH FIT?

While this paper is on theme with some of the scholarly articles regarding mariner training, there is not a plethora of literature on the subject regarding the RCN and its particular challenges. This is concerning because, as detailed in an earlier service paper and the CASC-P report, the RCN is entering a period of reduced sea days and platform availability.[38] Therefore, this paper should serve as a starting point and highlight the need for further research into the training of the RCN's NOW occupation. As seen above, and as will be detailed in Chapter Four, there have been calls for the USN to adopt a civilian standard. The RN and RAN have already taken this approach to their training.

CONCLUSIONS

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[35] McGuffie, "A Rude Awakening."
[36] Windwood, "RN / RAN Junior Officer Development."
[37] "Surface Warfare Should Adopt Commercial Training Standards," U.S. Naval Institute, March 23, 2020, https://www.usni.org/magazines/proceedings/2020/march/surface-warfare-should-adopt-commercial-training-standards.
[38] Command Analystics Support Centre - Pacific, "CASC-P Analytics Research Report NWOPQMI"; Robicheau, "CHARTING A COURSE FOR READINESS: THE CASE FOR AN EMERGENCY ROYAL CANADIAN NAVY WARSHIP PROCUREMENT."

To fully understand if there is merit to this research and if the proposed training plan is viable, it is recommended that CRCN direct the NTG to create a program that closely resembles STCW standards in line with our allied counterparts in Britain and Australia. Until such a time as this program can come into being, it is recommended that junior officers at the fundamental level use the REGULUS Programme to conduct exchange training programmes with these allied navies so that a more fulsome study of the calibre of training can be examined in a Canadian context. A recruiting drive through the civilian mariner institutions should also be reviewed to bring in qualified mariner talent.

CHAPTER 3: HOW WE TRAIN, WHERE ARE WE GOING, AND IS IT ENOUGH?

INTRODUCTION

This chapter outlines how the RCN trains its officers and compares the training to civilian nautical training establishments. Though the RCN remains exempt from the STCW and the Canadian Transportation Safety Board regulations,[39] it operates close enough to civilian standards that, with moderate changes to the QSP, RCN training can be brought in line with Canadian STCW standards. Indeed, when compared to civilian colleges, the RCN is already semi-aligned. For civilian mariners, time on major platforms is observed during summer periods and breaks in learning, and given that an NWO spends the bulk of years three and four at sea on a major warship, it is safe to assume the sea times are equivalent. College Syllabi will provide further analysis from the Canadian Coast Guard, NSCC Nautical Institute, and MUN's Marine Institute. RCN NWO training will be examined in the year following initial enrollment in the CAF to evaluate and compare it to the civilian training method correctly.

Typically, a freshly recruited NWO will follow this career path: In year one, they will complete BMOQ, followed by NWO Phase Two and Three, which usually bridge between years one and two. Moving into their second year, that same officer will complete NWO Phase Four and be assigned to a ship on either coast. Once aboard their first ship, they will be expected to complete their NWOPQ over the next two years. During this time, they will also earn their commanding officer's trust, obtain a BWK, and challenge the NWOPQ board before being deemed to have achieved the OFP and eligible for Lieutenant (Navy) promotion.

NWO training is stringent yet deeply rooted in subjectivity, allowing COs to assess their officers when they arrive aboard ship. It was not until recent revisions to the QSP that a package

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[39] Justice, "Canada Shipping Act, 2001."

or performance factor was established to provide a CO with data, and assessments were based on advice from other officers and personal observations.[40] In contrast, civilian master mariners do not have this luxury. If the RCN is already at a civilian standard for training in terms of content, then it should be able to shift to this model. This will be examined using the QSP for each key NWO milestone as the officer progresses.

YEAR ONE

BMOQ AND NWO II

Each course that an NWO must complete follows a similar model. An officer commences training in a classroom setting, completing key academic milestones before moving into practical assessments both in simulators, known in the RCN as NABS, and at sea.[41] NWO training does not commence in earnest until the candidate has completed BMOQ.

The first 12 weeks of an NWO's career usually occur at the Canadian Forces Leadership and Recruit School in Saint-Jean-sur-Richelieu, Quebec. This phase is common to all officers of the CAF and is based on the "soldier first" principle.[42] Most of these principles are unique to military occupations and have no real bearing on an officer's ability to be a mariner. All members of the CAF must meet the Common Military Fitness Evaluation Standard, which includes being able to "escape to cover, complete vehicle extrication, [pick and dig,] carry a stretcher, build a

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[40] Commander Naval Personnel and Group, "Royal Canadian Navy Qualification Standard and Plan - Naval Warfare Officer Professional Qualification."
[41] Royal Canadian Navy, "Royal Canadian Navy Qualification Standard and Plan - Naval Warfare Officer 00207." Page 3-1
[42] National Defence, "DAOD 5023-0, Universality of Service," policies, November 13, 2013, https://www.canada.ca/en/department-national-defence/corporate/policies-standards/defence-administrative-orders-directives/5000-series/5023/5023-0-universality-of-service.html.

sandbag fortification, and carry pickets and wires."[43] Further to this, employability as a member of the CAF also requires that an NWO be able to,

> fire and maintain a personal weapon, conduct individual nuclear, biological and chemical (NBC) drills, perform simple NBC monitoring, provide initial firefighting response to firefighting emergencies, administer first aid, perform cardiopulmonary resuscitation, perform drill, communicate using a radio, prepare written military correspondence, secure and lock up work areas, and enforce hygiene and sanitation standards.[44]

Once these objectives have been met to the CAF standard, the officer moves to the parent organization, the RCN, in an NWO's case. They will relocate to His Majesty's Canadian Ship *Venture*, the training establishment in Esquimalt, British Columbia, and begin their journey to becoming a mariner, commencing with NWO Phase Two.[45]

As the QSP details, this training provides fundamental naval knowledge through both theoretical lessons and hands-on practice. It aims to develop and evaluate essential mariner skills while introducing trainees to the maritime setting.[46] The NWO Two course best describes an officer's Naval Basic Training. Over the following 40 working days (not including weekends and holidays), the NWO will learn the fundamentals of the naval drill and focus on the basics of conning a ship, the international rules for preventing collisions at sea, navigation aids, and the key deck fittings aboard HMC Ships. Additionally, the officer will spend time in the NABS, the fundamentals of being a member of a watch on deck, before going to sea aboard an Orca-Class patrol vessel for a week-long sea phase, where the academics are put into practice. The officer

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[43] National Defence, "DAOD 5023-1, Minimum Operational Standards Related to Universality of Service," policies, November 13, 2013, https://www.canada.ca/en/department-national-defence/corporate/policies-standards/defence-administrative-orders-directives/5000-series/5023/5023-1-minimum-operational-standards-related-to-universality-of-service.html.
[44] Ibid.
[45] "Naval Warfare Officer | Canadian Armed Forces."
[46] Royal Canadian Navy, "Royal Canadian Navy Qualification Standard and Plan - Naval Warfare Officer 00207."

will also spend time at a damage control training facility where they will learn the basics of ship-borne firefighting and flood control. They will also learn sea survival skills at the CFB Esquimalt pool.[47] If all academic and practical assessments are deemed satisfactory, the officer will advance to the next stage of training.

NWO III

Per the QSP, this training provides intermediate naval and maritime education through theoretical and practical components. It aims to impart and evaluate the knowledge and skills necessary for an NWO.[48] NWO Phase Three takes place over 83 working days, including 20 days at sea and 21 days in the NABS. During this course, an officer will begin to learn and exercise the fundamentals of being a mariner at sea. They will demonstrate an understanding of the Command, Charge, and Control relationships as laid out in CAF doctrine and adopt the basics of ethical leadership. They will also build upon the skills learned in NWO II, including personnel safety at sea in heavy weather and icing conditions. They will also increase their understanding of meteorology, navigation, and bridge resource management, including electronic charting systems, radar, bridge communication equipment, celestial navigation, and interpretation of tides and currents. They will additionally plan and execute coastal navigation and learn the fundamentals of anchoring, maritime law, stability, and a basic understanding of warfare. This phase culminates in three weeks at sea again in an Orca-class vessel, where the students can demonstrate a practical knowledge of the skills they have gained.[49] Once NWO III is complete, the Naval Warfare Officer will have completed the first year in the RCN.

CIVILIAN STANDARD: YEAR ONE

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[47] Royal Canadian Navy, "Royal Canadian Navy Qualification Standard and Plan - Naval Warfare Officer 00207."
[48] Ibid. Page 3-1
[49] Ibid.

In evaluating the civilian standard for navigation watch officers, three institutions were selected to ensure data breadth: the Canadian Coast Guard College in Sydney, Nova Scotia, the Nautical Institute of the NSCC in Port Hawkesbury, and the Marine Institute in St. John's, Newfoundland and Labrador. The following comparisons between civilian and NWO year one are evident: all three organizations train cadets on chartwork, navigation principles, and marine first aid. They also train in basic shipboard knowledge, which includes electrical systems and engineering, seamanship, and small boats. Like the RCN, they also focus on safety, survival, and the fundamentals of life at sea.[50] The glaring difference between NWO training and the civilian counterpart in year one is the lack of cargo management for NWOs. All three civilian institutes cover this in their first year of study. There is no consistency between the programmes regarding sea time in the first year. The Canadian Coast Guard follows an 11-month classroom, seven months sea time, eight months classroom, seven months at sea, and ten more months in college.[51] The Marine Institute's Nautical Science cadets finish their first year with eight weeks at sea,[52] and the cadets of NSCC's Marine Navigation Technical course must accumulate 360 days at sea before the end of their programme.[53]

YEAR TWO

NWO IV

The final "classroom phase" of NWO training is NWO Phase Four. This course is designed to be 96 days, with 18 spent in the NABS and 25 spent afloat in the Orca-Class vessels.

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[50] "Marine Navigation Technology | Programs | NSCC"; Canadian Coast Guard Government of Canada, "Marine Navigation Training," 2019, https://www.ccg-gcc.gc.ca/college/officer-training-formation-officier/nav-training-formation-nav-eng.html; "Fisheries and Marine Institute of Memorial University of Newfoundland."
[51] Canada, "Marine Navigation Training."
[52] "Fisheries and Marine Institute of Memorial University of Newfoundland."
[53] "Marine Navigation Technology | Programs | NSCC."

This course solidifies the training of the previous two and has the candidate acting as the OOW for most shipboard firefighting and damage control scenarios. They also need to demonstrate an understanding of drill, leadership, and management while completing assessments in navigation and seamanship evolutions. They must likewise prove an understanding of marine engineering systems and plan and execute pilotage navigation. Interestingly, at this phase, an officer is introduced to the roles of the OOW during warfare.[54] This is a key departure from their civilian counterparts, as there is understandably no need to learn about the various types of warfare and their associated manoeuvres aboard civilian vessels. Upon completing NWO Phase Four, an officer is promoted to the rank of Sub-Lieutenant and is assigned to their first major warship on either coast. They then move into their NWOPQ phase which is allotted two years for completion.

CIVILIAN STANDARD: YEAR TWO

Contrasting NWO Phase training to the civilian system, the Canadian Coast Guard programme begins its second year with a period of seven months at sea. The intent is for the cadets to be introduced to life at sea, learn the various positions on the ship, safely navigate, and participate in seamanship evolutions. Upon completion, they return to the college where they learn chartwork, electronic aids to navigation and safety, celestial navigation, safety, physics, radar, simulation, and stability.[55] Similar to the Canadian Coast Guard, the Marine Institute and NSCC both teach the same academic courses. Of note, their sea phases are inverted from the Coast Guard. The Marine Institute sends its cadets to sea upon completion of their year two academics for 15 months, and NSCC sends theirs from May until October of the academic

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[54] Royal Canadian Navy, "Royal Canadian Navy Qualification Standard and Plan - Naval Warfare Officer 00207."
[55] Canada, "Marine Navigation Training."

year.[56] Academically speaking, the civilian courses do tie in with the NWO IV standard, except for the warfare principles. There is also more emphasis placed on the at-sea portion of the training, with all courses having over a year of at-sea experience built into their programmes.

YEARS THREE AND FOUR

NAVAL WARFARE OFFICER PROFESSIONAL QUALIFICATION

The final phase of an NWO's initial training is the NWOPQ period. Separate from phase training, NWOPQ has its own QSP which states that this period of training is "similar to an internship in a civilian professional trade, the NWOPQ process is designed to build competencies through exposure, practice, and increase proficiency during time aboard ship."[57] The newly minted sub-lieutenants arrive aboard their ships with an ATR package. Over the following two years, the NWO will need to complete 172 ATRs and receive the corresponding signature from the member of the ship's company that is responsible for that particular teaching point. The ATRs are broken down into four categories: basic alongside and at sea and advanced alongside and at sea. Concurrently, they will also need to complete a Bridge Watchkeeping Endorsement package, which contains a further 39 signatures.[58] All of the ATRs build on the knowledge that was introduced in the previous NWO phases of training but now apply them to the officer's specific class of ship.

Subjectivity is introduced at this stage in the NWO training journey. The QSP for the NWOPQ phase acknowledges that it is impossible to standardize and assess training across both

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[56] "Fisheries and Marine Institute of Memorial University of Newfoundland"; "Marine Navigation Technology | Programs | NSCC."
[57] Royal Canadian Navy, "Royal Canadian Navy Qualification Standard and Plan: Naval Warfare Officer Professional Qualification," 2022.
[58] Navy, "Royal Canadian Navy Qualification Standard and Plan: Naval Warfare Officer Professional Qualification."

formations.[59] Therefore, the assessment as to whether an ATR has been completed satisfactorily lies with the assessing member of the ship's company. This could be anyone from the junior personnel on watch all the way to the commanding officer. True, to ensure standardization at the end of the training, the NWO is assessed by a professional board derived from senior officers on the coast and usually chaired by the deputy fleet commander no less.[60] Yet the key hurdle that must be overcome is the attainment of the BWK endorsement from the commanding officer, and even though there is a series of signatures that would help signify an officer's ability, there is no guarantee of achieving the commanding officer's trust.

CIVILIAN STANDARD: YEARS THREE AND FOUR

The final two years of the civilian construct have similarities to those in the RCN system, but instead of placing a candidate into a ship for two years, the civilian cadets return to classroom instruction at various points. The Coast Guard continues to build upon the previous coursework and incorporates a final sea phase in which the cadet then leads personnel at sea and is supervised by a qualified officer.[61] The same process is in place at NSCC.[62] The Marine Institute differs in that the entire third year of the program is spent in ships at sea, followed by a classroom period that builds upon the first two years of instruction, in similar courses, and then prepares the cadets to challenge their watchkeeping mate qualifications.[63]

It should be noted that there is no subjectivity in assessing the candidates in the civilian system. They return to the classroom for the final year of instruction; this allows training staff to

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[59] Navy, "Royal Canadian Navy Qualification Standard and Plan: Naval Warfare Officer Professional Qualification." Chapter 2-2
[60] Ibid. Chapter 2-3
[61] Canada, "Marine Navigation Training."
[62] "Marine Navigation Technology | Programs | NSCC."
[63] "Fisheries and Marine Institute of Memorial University of Newfoundland."

maintain standards and prepare the candidates for internationally recognized examinations. In doing so, candidates are eligible to apply to shipping companies upon completion of watchkeeping mate positions, without having had to complete a subjective process which relies upon the abilities and professionalism of a ship's company. Nor do they require a subjective approval from a commanding officer. Upon completion, they are qualified to an international standard and can be employed anywhere.

CONCLUSION

This chapter examined the training systems of the RCN and Canadian nautical institutions. Through the examination of both systems, it is clear that the RCN method of NWO training is already closely aligned with that of its civilian counterparts. Demonstrated through an analysis of each year of training, it is clear that NWO training, though abridged, does align with civilian standards. While there are discrepancies with some courses, with appropriate adjustment, there is latitude to bring NWO training in line with civilian standards. Specifically, removing the commanding officer's prerogative to grant the bridge watchkeeping certificate will better align with STCW. It will allow for a more streamlined transition of the NWO through the training system. Though no cargo management is taught to the NWO cadre in their initial training, the lack of ships that require this specialty makes it unnecessary. This research paper will seek to better examine the training methodology by examining the systems used by the RCN's key allies in subsequent chapters. The information will then be evaluated against the civilian standard discussed above, and a new vision for NWO production will be produced.

CHAPTER 4 – HOW DO OTHER NAVIES COMPARE?

INTRODUCTION

Given the weight of responsibility, ensuring RCN officer training is conducted to the highest standard is critical. Without detracting from a warship's unique attributes, the ship's safe navigation is the first step in delivering the unique capabilities that only a warship can bring to bear. The practices of Canada's closest allies should also be examined to determine further how the RCN can shift to a civilian model. To this end, the United Kingdom's RN, the USN, and the RAN will be discussed in this chapter. Each navy's historical context and curriculum will be examined to prove that the RN, the USN, and the RAN's officer training programs have unique approaches and emphases. This reflects their distinct operational requirements and strategic priorities by comparing and contrasting these programs and examining their alignment with civilian STCW standards. Further, insights will be gained into how each navy prepares its officers for their roles at sea and will determine if the RCN standards align with other navies.

HISTORICAL CONTEXT

Each navy has deep historical roots stretching back decades, if not centuries. Consider first the RN. During the age of sail, officers in the RN were once considered the Commanders of their ships, and history also shows the transition to being effective mariners. They often employed a Master of Sail who would handle the navigation and general seamanship of the vessel. Eventually, these masters of sail were commissioned as officers called Navigating Lieutenants, and then by 1890, they were no longer used as all officers were required to take the same training.[64] As ships became more sophisticated, employing an officer cadre trained and

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[64] "Master (Naval)," in *Wikipedia*, February 21, 2025, https://en.wikipedia.org/w/index.php?title=Master_(naval)&oldid=1276894081.

developed in the technologies that came with engines, radars, and sonar became necessary. As such, in moving away from traditional methods of fixing a ship's position with celestial bodies, the RN's modern warfare officers operate a host of technical systems that allow for safe watchkeeping. Through their current training model, officers are prepared for life at sea and the role of OOW.[65]

Being born during the tumultuous American Revolution, the USN and its training methods were originally those of its forebearer, the RN. Like the RN, USN officers would go to sea as junior midshipmen without any formalized training, learning their craft at sea under the supervision of their superior officer. However, with the establishment of the USNA in 1845, officers from that point received a standardized formal education.[66] With the advent of the steam engine, the modern SWO began to develop. Specializing in their field, they became experts in steam technology, which contributed to replacing the traditional, generic officer model.[67] Following the Second World War, SWOs required further training in advanced weaponry and, in some cases, nuclear propulsion. The best candidates came from the Naval Academy, where time was a luxury that allowed for proper training in navigation and seamanship, the critical skills that make a naval officer both a warrior and a mariner.[68]

An amalgamation of a series of smaller navies in 1901, the RAN traces its roots back to the RN and the Australian Station established in 1859.[69] Having been created in an era of modern steamships, there was a need for a naval college. The Royal Australian Naval College took in its

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[65] "Midshipman," in *Wikipedia*, January 30, 2025, https://en.wikipedia.org/w/index.php?title=Midshipman&oldid=1272777282.
[66] Robinson, "Initial Training of Surface Warfare Officers: A Historical Perspective from World War II to 2008."Page 4
[67] Ibid. Page 6
[68] Ibid. Page 23
[69] "History of the Royal Australian Navy," in *Wikipedia*, March 12, 2025, https://en.wikipedia.org/w/index.php?title=History_of_the_Royal_Australian_Navy&oldid=1280046949.

first class of boys in 1916 and has been the home of the RAN's officer training school in some form or location ever since.[70] Like the RN and USN, the RAN also had to deal with the advent of technology and its effect on the officer cadre. Today, the mariner aspect of Australia's warships is conducted by Surface (formerly Maritime) Warfare Officers. They are trained in "Air, Surface, Mine, Anti-Submarine, Amphibious, and Navigation warfare."[71] They are also accountable for ship safety and seamanship.[72]

CURRICULUM

With an understanding of how each of the three allied navies has evolved to the modern era, reviewing the contemporary training curricula for each is now possible. The various programmes will be examined here, and timelines and components will be offered. The following will be explored for each navy: For the RN, the concept of Militarization, Marinerization and Professional Training, for the USN, training in Divisional Officer Fundamentals and Navigation Course, and for the RAN, the NEOC and phase training.

To commence, the RN's officer training programme will be examined, following the enrollment of an officer through to the various stages of their phased training approach. The RN has adopted an approach similar to STCW standards, blending sea and shore-based training to accomplish this goal. This affords commanding officers the understanding that the most junior officers reporting on board upon completion of their training are already skilled mariners aligned with STCW competencies.[73] This has been done by adopting a Militarization, Marinerization and

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[70] "HMAS Creswell," in *Wikipedia*, November 7, 2024, https://en.wikipedia.org/w/index.php?title=HMAS_Creswell&oldid=1255865863.
[71] "ADF Careers – Role Details," accessed March 23, 2025, https://www.adfcareers.gov.au/jobs/job-details.
[72] Ibid.
[73] Mitch McGuffie, "A Rude Awakening," U.S. Naval Institute, January 1, 2009, https://www.usni.org/magazines/proceedings/2009/january/rude-awakening.

Professional Training model. The first step, Militarization, is the Initial Naval Training (Officers) Course. This programme takes a civilian from the street and sculpts them into a military member.[74] They learn the basics of marching and moving in formation, teamwork, and the basics of leading sailors in His Majesty's Navy.[75] The candidates then move into the Marinerization period. During this phase, they learn the ins and outs of working aboard a ship at sea. This includes the basics of seamanship and the general characteristics of life at sea.[76]

At 30 weeks of service, candidates complete a further four weeks of navigation and three weeks of warfare training before joining a ship for Specialist Fleet Time, serving as a 2OOW and gaining the requisite 600 hours of bridge time per STCW standards. They will return to shore-based training at HMS Collingwood for the final OOW assessment. Upon completion, they join their first ship as a qualified OOW.[77] The ship's Commanding officer will endorse a new officer after they have spent several weeks on board learning the engineering plant and other nuances of that particular class of ship.[78]

Next, the development of the USN's SWO cadre will be examined in contrast to the above training plan. In 2020, the USN set up their Mariner Skills Training Centers in San Diego, California, and Norfolk, Virginia.[79] Junior SWOs report to the Training Center for the first phase of their training, which is the six-month-long Basic Divisional Officer Course.[80] While this

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[74] Windwood, "RN / RAN Junior Officer Development."
[75] *Britannia Royal Naval College- Officer Phase 1 Training*, 2022, https://www.youtube.com/watch?v=P1Sb3KvLx-4.
[76] Windwood, "RN / RAN Junior Officer Development."
[77] Rob_M2, "Warfare Officer," Reddit Post, *R/RoyalNavy*, October 4, 2021, www.reddit.com/r/RoyalNavy/comments/q182qq/warfare_officer/.
[78] McGuffie, "A Rude Awakening."
[79] *SWO Training Pipeline - Mariner Skills Training Center*, 2020, https://www.youtube.com/watch?v=I6eaKqOumC0.
[80] "Surface Warfare Officer - Traditional," accessed March 25, 2025, https://www.usna.edu/SurfaceWarfare/WhoYouWantToBe/index.php.

course teaches them the fundamentals of being a divisional officer aboard warships and leading personnel at sea, it also focuses on 50 percent on mariner and seamanship skills.[81] Upon completion, the SWO is assigned to their first platform as a JOOD at the rank of ensign. Once aboard the ship, the SWO is a divisional officer overseeing and leading their department.[82] Underway, they first fill the role of JOOW. This position designates that the SWO is under supervision and is working towards attaining their OOD qualification. They then move up to the JOOD role, supporting the OOD during bridge watches. They spend up to two years assigned to that ship before returning to the Mariner Skills Training Centre for OOD Phase Two, another six-month-long course.[83]

For the most junior USN Officers attending the USNA, seamanship and navigation are a combined education stream that all midshipmen must take. Per the academic calendar, "every naval officer must be a capable mariner – a basically-trained officer must understand how to operate at sea safely."[84] In addition to damage control and basic deck fittings, the midshipmen are taught the basics of navigation, celestial navigation, capabilities and limitations of various pilotage instruments, and the International Rules for Preventing Collisions at Sea (also known as the Rules of the Road).[85]

While it is clear that the USN version of mariner training relies heavily on time at sea and deck-plate learning (i.e., learning on the job), the RAN offers a similar approach to the RN in that a more aligned STCW training plan is prudent. Identical to the USN, midshipmen in the

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[81] *SWO Training Pipeline - Basic Division Officers Course*.
[82] Chief of Naval Operations, "OPNAV Instruction 2130.32D," *Standard Organization and Regulations of the US Navy*, 2017. Page 2-3.
[83] "Surface Warfare Officer - Traditional."
[84] "2019_Officer_Professional_Core_Competencies_PCC_Manual.Pdf," accessed March 25, 2025, https://www.usna.edu/Training/_files/2019_Officer_Professional_Core_Competencies_PCC_Manual.pdf. Page 15
[85] Ibid. Page 17

RAN attend the Australian Defence Force Academy. Though primarily a joint college, they are instructed on some aspects of their elements. For SWOs in the RAN, they do receive instruction on navigation and seamanship.[86] All other personnel joining the RAN programme attend the New Entry Officers Course, or NEOC. This course is a 22-week-long training for officer recruits and is primarily designed to take a civilian and turn them into a naval officer.[87] NEOC is phased so that a candidate will begin training, developing teamwork and skills, move into standard first aid and sea survival, undergo a period of academics, and culminate in a sea phase. This sea phase provides the officer with a glimpse of life at sea, but it does not include the advanced training that a mariner would receive as a SWO.[88]

RAN SWOs spend a period at sea upon completion of their NEOC. This allows them to consolidate skills before returning to the training environment. A RAN SWO's professional training heavily leverages simulation to prepare the candidates for service as an OOW in a major RAN ship. Indeed, when candidates leave the training system, they will have already been granted their Bridge Warfare Qualification and can take the watch aboard an HMA Ship.[89] There are significant benefits to this method of training, especially in areas of warfare. The cost of running a simulation is a fraction of the cost required to put a fleet to sea for exercise. More importantly, as Windwood alludes, every officer can and does see every possible scenario that the RAN requires of its OOW.[90] To this end, it is clear that the RAN is adopting a similar

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[86] "Kick-Start Your ADF Career with a Fully Funded Degree," accessed March 26, 2025, https://www.adfcareers.gov.au/study-and-trades/get-a-degree/ADFA.
[87] Kristy Wilson, "New Entry Officers Course and Sailor Transfer Trainees," accessed March 26, 2025, https://doi.org/10.3316/ielapa.969921667022702.
[88] Ibid.
[89] Windwood, "RN / RAN Junior Officer Development." Page 39
[90] Ibid. Page 40.

approach to the RN by allowing officers to arrive in the fleet with their bridge watchkeeping qualification, which is much in line with STCW standards.

LEADERSHIP DEVELOPMENT AND COMMAND PREPARATION

Further examination of the path to command in each navy will reveal whether they also align with STCW Master Mariner preparation. Without a doubt, across the three navies considered, the development of a professional sea-going officer culminates in command at sea. Although careers often continue into the flag officer ranks and the institutional leadership, the years at sea leading up to command are the highlight of any naval officer career. Whether a member of the RCN, RN, USN, or RAN, for a brief 18-month to two-year timespan, command of a surface warship is likely one of the greatest honours and commitments an individual will have bestowed upon them. Therefore, the command development programs of the three allied navies will now be examined and contrasted with the requirements of the civilian master mariner.

There is a great deal of literature to support command development and leadership. For the RN, it is the book *Royal Navy Way of Leadership*. It lays out 12 leadership qualities that every leader in the RN must possess. This paper will focus only on those pertinent to the subject: command at sea as a mariner. First is the capacity for judgement and decision-making, which is critical in all aspects and is the officer's ability to make timely decisions. They must be able to observe a situation, assess risk, and decide.[91] This is critical for the mariner, who will be held to account by a higher authority should their ship come into danger. The second is professional knowledge. An officer in the RN is expected to have progressed to the appropriate rank for command, demonstrating high levels of skill and intelligence.

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[91] Andrew St. George, *Royal Navy Way of Leadership* (London: Preface Publishing, 2012). Page 56

An officer in the RN preparing for command will have passed all their critical examinations and excelled in the navy's meritocracy to the appropriate rank level for the class of ship they will command.[92] Indeed, as the sea-going arm of a nation's military, all navies are meritocracies. Therefore, it can be assumed that for each discussed here, those ascending to command authority are experts in their field. The foundations laid in the early phases of an officer's career, aligned with STCW standards, have created a culture of professionalism, especially in the mariner-centric aspects of the warfare officer trade. Finally, trust is gained from the reputation of the officer garnered over a career at sea. Without trust, an officer will not be able to command their sailors, nor the respect of their superiors. This is critical, and it is baked into the leadership ethos of the RN, thus clearly underscoring its importance in command development and selection.[93]

Once a warfare officer in the RN has completed their tour as an OOW, they will specialize. Unless that officer chooses to become a specialist in navigation, there is a possibility that they may never set foot on a warship bridge until they return as an XO. Therefore, to ensure no skill fade in mariner skills, the RN provides its XO and CO designates with courses to prepare them for the challenges they will face in their new positions.[94]

However, there is more to commanding a warship than being a proficient mariner. They must be ready to respond to emergencies, fight the ship in times of war, provide mentorship and guidance to their subordinates, and be responsive to their leaders and the will of the state. There is much more involved than just captaining or piloting a ship from point A to point B.

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[92] Ibid. Page 61
[93] Ibid. Page 62
[94] Ibid. Page 74

Similarly, the USN values the experience gained from a career at sea. Like the RN, officers selected for XO and CO tours will complete coursework before each tour.[95] This is conducted at the Naval Leadership and Ethics Center NLEC in Newport, Rhode Island. However, the focus of the training concerns leading personnel and the challenges imposed therein, not on the mariner skills required to 'drive' a ship at sea.[96] One piece of USN literature that supports this is the book *Command at Sea*. It refers to *Navy Regulations*, article 0728c, placing the onus on the CO to ensure that the XO is ready to take command. Further, it emphasizes that the CO should afford the XO every opportunity to improve their ship handling skills.[97] The second demand of the CO is to ensure that the XO is also prepared for battle. Once these two conditions have been met, the CO will signal to the higher commander that the XO has completed their training and is prepared to take their own command.[98]

Another critical aspect laid out in *Command at Sea* is safety. In the USN, though the CO bears the ultimate responsibility for their ship, the Navigator and OOD are responsible for the safety and proper 'manners' of handling the boat at sea.[99] That being said, the CO must ensure that the OOD is prepared, and the book confirms that every officer should read another Naval Institute publication, *Naval Shiphandlin*g, by Crenshaw.[100] However, what should be inferred from the direction contained within *Command at Sea*, like that of the *Royal Navy Way of Leadership,* is that a CO's mariner skills are developed in their most junior years and honed over

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[95] "Surface Warfare Officer - Traditional."
[96] "Naval Leadership and Ethics Center: Home - NETC," accessed March 26, 2025, https://www.netc.navy.mil/NLEC/.
[97] William P. Mack and Albert H. Konetzni, Jr., *Command at Sea*, 4th ed. (Annapolis, Maryland: Naval Institute Press, 1982). Page 98
[98] Ibid. Page 101
[99] Ibid. Page 235.
[100] Ibid. Page 252.

a career of experience. Therefore, they will have to rely on the training their junior officers received to keep the ship safe at night while the CO sleeps.

The RAN has adopted what is referred to as the Navy Mastery Paradigm. This programme seeks to ensure that every sailor and officer is a 'master' of their particular field. For SWOs set to become COs of ships, they have mastered three key components: maritime, technical, and social. In 2024, the RAN has declared that mastery will be obtained through education, exposure, and experience to ensure the pathway is as coherent as possible.[101] Tied to this paradigm is the restructuring of the MWO trade into the current SWO. It dictates that any shore command or fleet command at the Commander rank is considered a mastered position.[102] As this is a new system of training, the details of the training required to achieve mastery are scant as of 2025; it can be presumed that experience and skill play a crucial role in determining an officer's fitness for command at sea, much like in the RN and USN, but further research will be required on this subject.

COMPARISONS TO CIVILIAN STCW

According to STCW, the requirements to serve aboard a vessel over 200 gross tons are as follows: A watchkeeper must have "not less than 6 months bridge watchkeeping duties under the supervision of a qualified officer" and pass the approved examinations.[103] In doing so, they have proven capable in celestial and terrestrial navigation, radar navigation, fixing methods, Rules of the Road, meteorology, radio procedures, and sea survival.[104] A cursory look at all three of the

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[101] "Navy Mastery" (Royal Australian Navy, February 29, 2024), https://www.navy.gov.au/about-navy/strategic-planning/navy-mastery.
[102] B O'Neill, "ROYAL AUSTRALIAN NAVY: SURFACE WARFARE OFFICER," 2024.
[103] "International Convention on Standard of Training Certification and Watchkeeping for Seafarers, 1978," 1978, https://treaties.un.org/doc/Publication/UNTS/Volume%201361/volume-1361-I-23001-English.pdf.
[104] Ibid.

previously discussed navies demonstrates that their junior officers receive this training. Differences mainly derive from the time required to achieve the watchkeeping qualification. Concerning the use of simulation, the IMO adopted its use in the 1995 amendments. It was further amplified in the 2010 amendments to include the use of distance learning and e-learning in the training of mariners.[105]

Concerning the STCW provisions regarding warships, Article III (a) allows for warships to follow the convention as closely as possible. Nothing in the convention should prevent the operation of any nation's warships.[106] To this end, each navy is aligned with the STCW convention. However, there appears to be greater alignment with the RN and RAN. As detailed above, both navies ensure that their junior warfare officers have achieved a minimum standard of hours in either the simulator or bridge duties before being granted their watchkeeping qualifications. This adherence allows for standardization of training across their fleets and helps mitigate risk for COs when new officers report out of training. Comparatively, the USN's methodology relies heavily upon job training and follows a traditional journeyman approach to officer training. There is no doubt regarding the professionalism of the USN's junior officers, nor is there a question of their ability. This paper only highlights that those officers of equivalent training coming out of the RN and RAN systems are more aligned with civilian standards than their American counterparts.

Regarding Master Mariner preparations per STCW, a master must have a minimum of 18 months of experience at sea for certification as a Chief Mate and at least 36 months to be a master mariner. They must also pass the examinations as laid out in the Appendix to Regulation

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[105] Ibid.
[106] Ibid.

II. Most of these examinations align with what is required for a navigational watch. Still, they specify that more training is needed and that they have proven experience navigating pilotage waters, including rivers and constrained channels.[107] Per the other navies, focus is placed on experience and progression in rank.[108]

HOW DOES THE ROYAL CANADIAN NAVY STACK UP?

As discussed in the previous chapter, the RCN does have a robust training plan that, as detailed above, respects the spirit of STCW.[109] Like the RN and RAN, the RCN also relies heavily on simulator time. However, unlike its Commonwealth partners, it does not leverage the use of major surface vessels in the initial training of its officers until completion of NWO IV.[110]

The RCN has put detailed focus into the command development of their senior Lieutenants (Navy) and junior Lieutenant-Commanders. Before 1 April 2025, the RCN had a robust Command Development Course (CDC) that all NWOs in the SSC stream had to complete to be deemed capable of assuming command of an HMC Ship. The RCN has since employed a two-stage approach as detailed in NAVGEN 001/25 concerning the command qualification. After 1 April 2025, the officers must complete Command Learning and Development and proceed to their ship as an Operations Room Officer. Then, once they have accrued a minimum of 500 days at sea, they can be considered and nominated for a two-week Command Readiness Evaluation chaired by a deputy fleet commander.[111] These adjustments more closely align the RCN with

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[107] Ibid.
[108] Though there may be specific scenarios that are laid out in the pre-command course curricula, there was no data available at the time of this chapter's writing to neither confirm nor refute this claim.
[109] In the drafting of this section, it is important to note that the author is an RCN Naval Warfare Officer, with over 17 years of experience in the trade's 'command stream'.
[110] This was discussed at length in the previous chapter.
[111] Commander, Royal Canadian Navy, Revisions to Surface Command Development and Qualification Process.

STCW standards for the command/master level. However, there is room to further align at the most junior officer ranks. This realignment will be discussed in the following chapter.

CONCLUSIONS

As discussed, the STCW standards are not necessarily the guiding factor for naval officer training in the RN, USN, and RAN. The fact that the convention itself allows for deviation for warships means that navies can take their training into their own hands to generate the best possible officers for their specific operational needs. Through the examination of each navy's historical context and training pipelines, those specific deviances from STCW have been examined. However, it is crucial to note that all three navies present an officer to their first ship as one with the skills and knowledge to execute a navigational watch on day one safely. Therefore, a precedent exists for the RCN to adopt a similar strategy. By understanding the history and methodologies of these allied forces, the RCN can pave the way for a new, robust training system that will empower its NWOs to take the watch on day one, and streamline the training pipeline, delivering a better product faster, and in line with civilian standards of qualification.

CHAPTER 5 – A NEW VISION FOR NAVAL WARFARE OFFICER TRAINING

INTRODUCTION

NWOs are the RCN's leaders. They are specialized general service officers serving key roles at sea and ashore. These officers' training must be of a calibre that prepares them for service at sea and mentorship of those they lead. The RCN needs these officers to provide both leadership and, more importantly, seamanship skills to captain HMC Ships at sea. These skills are honed and developed over a career of service based on the four NWO pillars of Manager, Mariner, Warrior, and Leader.[112]

However, the current RCN production of Naval Warfare Officers is not generating officers to TES fast enough to outpace attrition. At this rate, NWO numbers will begin to decline.[113] Therefore, a new training model should be developed that decreases an officer's time to achieve TES while aligning the training model to the civilian STCW. The proposed plan discussed in this chapter will allow for more effective and expedited delivery of officers at TES while permitting the Navy to better align with STCW standards of watchkeeper delivery.

The following arguments will be discussed to support or contest this thesis. This paper identifies the cons of the current model being heavily weighted towards sea days when the RCN's ships are routinely unable to go to sea. This dialogue will focus on the shutdown of the MCDV fleet, limited *Halifax*-Class sea days, and the shift to the *Harry DeWolf*-Class, which will become the workhorse of the RCN.[114] Next, the proposed models from the CASC-P report will be referenced. Both options look at reducing sea days for NWO trainees, but, there is a risk that

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[112] RAdm (Ret'd) Nigel Greenwood, "Leader, Mariner, Manager, Warrior," *Nautical Institute Seaways*, January 2013, https://greenwoodmaritime.com/wp-content/uploads/2015/PDF/naval_column_v2.pdf.
[113] Command Analystics Support Centre - Pacific, "CASC-P Analytics Research Report NWOPQMI."
[114] Robicheau, "CHARTING A COURSE FOR READINESS: THE CASE FOR AN EMERGENCY ROYAL CANADIAN NAVY WARSHIP PROCUREMENT."

lessened training time will reduce the quality of the officer. Finally, a new training method that provides a compressed timeline without impacting sea days and on-the-job training experience will be proposed, adding the requisite sea days into the programme and allowing for new pipelines of NWO career development in the surface command and staff streams.

CURRENT MODEL

Chapter Three of this Directed Research Project discusses the RCN's current NWO training model in detail. In summary, an officer is enrolled at a recruiting centre and, depending on the enrollment type, will proceed to Basic Military Officer Qualification and then NWO phase training II through IV. Upon completion of their training at the RCN's schoolhouse, HMCS Venture, the officers will be assigned to a coast and platform and begin their two-year journey towards Naval Warfare Officer Professional Qualification (NWOPQ) and their Bridge Watchkeeping (BWK) Certification. After successfully completing both, they will be deemed to have achieved TES and can proceed to their next phase of coursing and be promoted to Lieutenant (Navy). This timeline will usually take approximately four years for a direct entry officer, should training timelines align properly and there are no gaps in training or requirements to repeat a course or module.[115] This contrasts with the civilian training method, which produces a BWK-qualified mariner within a similar timeframe, but with a college diploma or university degree, depending on the institution.[116]

Over the past several years, there has been a concerted effort by those within the naval training system to have RCN qualifications count towards STCW through the Transport Safety

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[115] Royal Canadian Navy, "Royal Canadian Navy Qualification Standard and Plan - Naval Warfare Officer 00207," May 2022; Commander Naval Personnel and Training Group, "Royal Canadian Navy Qualification Standard and Plan - Naval Warfare Officer Professional Qualification," May 2022

[116] "Marine Navigation Technology | Programs | NSCC"; "Fisheries and Marine Institute of Memorial University of Newfoundland."

Board of Canada. This culminated in Safety Bulletin 24/2023, which recognized some training as equivalent to civilian standards. Importantly for this paper, regular force NWOs are automatically granted Master 150 gross tonnes, domestic, and watchkeeping mate equivalencies provided they have completed NWO phase training, NWOPQ, have a BWK, 360 days at sea, and two years of post-secondary education.[117] It is important to note that adopting Safety Bulletin 24/2023 officially signifies that Transport Canada acknowledges RCN training as nearly equivalent to STCW. Therefore, there is no reason not to align the NWO phase training and OOW qualification with a civilian-qualified watchkeeping mate.

Unfortunately, the qualifications do not smoothly transfer in the opposite direction should a civilian mariner want to join the RCN. According to DAOD 5031-1, there are mechanisms whereby the CAF's Canadian Forces Recruiting Group (CFRG) can initiate a Prior Learning Assessment Request (PLAR). This system allows the CAF to recognize training pertinent to a member's trade. In the case of a mariner, this process could be done to recognize their sea-faring qualifications against those on the NWO phase training. However, should the member be going through the process of enrolment, it falls to the CFRG to initiate the PLAR. If this is not completed before the member joins, then they will still need to proceed with NWO training. Further to this, if CFRG misses the opportunity, it then falls to the CAF member to initiate the process.[118] Should the process be successful and a mariner is granted their equivalencies, they will still need to complete BMOQ and proceed to a ship to progress to NWOPQ. They will start at the bottom of the pecking order and need to earn the commanding officer's trust to be granted

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[117] Canada, "Recognition of Royal Canadian Navy Competencies by Transport Canada - SSB No."
[118] National Defence, "DAOD 5031-1, Canadian Forces Military Equivalencies Program," policies, December 13, 2018, https://www.canada.ca/en/department-national-defence/corporate/policies-standards/defence-administrative-orders-directives/5000-series/5031/5031-1-canadian-forces-military-equivalencies-program.html.

their BWK. Therefore, it is assessed that this would not be a popular option for an already seasoned mariner who has held watches aboard large vessels from the beginning of their career. Despite the potential challenges associated with the PLAR process, it is essential to understand them, thus providing a constructive analysis of the NWO training pipeline overall.

Regarding the benefits of the current model, the system is a tried-and-true training plan that generates a familiar product. This is important as those officers responsible for the NWO career path in the fleet are familiar with the system, know what to expect, and, most importantly, have been through it themselves. This also offers the unique benefit that the schoolhouse can leverage the experience of retired naval officers, providing a wealth of military ship-handling knowledge.

However, the training plan is based on and requires a fleet model with more active ships. As the CASC-P report identified, the RCN needs more sea days than ships available to produce enough NWOs to outpace attrition.[119] Furthermore, the RCN has signalled the end of life for the MCDV fleet, which means that in the coming years, there will be less sea time available to train the RCN's NWO cadre. Finally, as identified above, this does not allow for a smooth transition for a civilian-trained mariner to join the RCN with recognition of their significant seafaring experience.

CASC-P PROPOSED CHANGES

To address the difficulties identified above, the RCN commissioned the CASC-P report in 2023, which proposes a new way of training naval warfare officers. In 2023, the report identified that NWOs were not being produced fast enough to match attrition. As a result, the Naval Personnel Training Group (NPTG) commissioned CASC-P to study the contributing factors to

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[119] Command Analystics Support Centre - Pacific, "CASC-P Analytics Research Report NWOPQMI."

the dearth of TES officers and what could be done to increase production. As has been detailed, the report indicated that the number of sea days was the linchpin in the process and that RCN sea days would need to increase significantly to maintain the current model.[120] As previously discussed, this is not the case with the current fleet, and in reality, sea days will likely continue to be reduced in the coming years as the RCN transitions to the future fleet.[121]

To counteract this, the CASC-P report recommends three models. Model One maintains the status quo; the officer proceeds to HMCS *Venture*, completes NWO Phase training, is assigned to the fleet, completes NWOPQ and challenges the NWOPQ board. Model Two replaces the requirement to earn a BWK Qualification in a specific ship with a set number of hours that can be earned on qualifying vessels in either the RCN, allied navies, or commercial ships. NTG would then create a new course in the NWO stream that would rely on simulation hours to confirm training and skill, and upon completion, the officer would move to the fleet as an officer at TES. Finally, Model Three uses the same approach as Model Two, but further divides the NWO trade into two tiers, one that proceeds to sea command and the other that continues as shore-based staff. However, restructuring the NWO occupation as a whole will be required.[122] CASC-P assessed both Models Two and Three as increasing the production of TES NWOs faster than the current structure.

One issue with the proposed models from CASC-P is simulation over sea days. While, as discussed in the previous chapter, there is Commonwealth evidence to back up this model,[123]

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[120] Ibid. 6
[121] Robicheau, "CHARTING A COURSE FOR READINESS: THE CASE FOR AN EMERGENCY ROYAL CANADIAN NAVY WARSHIP PROCUREMENT."
[122] Command Analystics Support Centre - Pacific, "CASC-P Analytics Research Report NWOPQMI."
[123] Windwood, "RN / RAN Junior Officer Development." As discussed in the previous chapter, Windwood explains how the RAN uses simulator training to prepare their SWOs for service in their fleet.

purely relying on simulation to grant a BWK does not allow the officer to get a feel for how the ship will handle in actual conditions. Simulation is an excellent platform that can be used to provide experience in the ship handling aspects associated with warship manoeuvring. Still, it does not give the true experience of a heaving deck beneath the officer's feet, nor does it provide the lived experiences of the sailors who have spent careers at sea. The crew's experience is a critical training asset as a junior officer.

Regarding maritime operations, ensuring the competence of watchkeepers is paramount. A study by Solmaz et. al. highlighted that simulation assessments are highly effective for shipping companies in evaluating the proficiency and performance of their watchkeepers. They assessed that evaluation by exam alone does not provide sufficient data to prove the quality of the officer.[124] This is also true for the naval watchkeeper. The issue of relying solely on simulation and divesting the sea day requirement for a BWK down to 600 hours, per CASC-P,[125] potentially creates a situation where RCN officers are experiencing a training plan similar to the USN, where their SWOs receive only six months of training before being assigned to their first ship.[126] Some have recognized that this method has its pitfalls,[127] and only works because the ships of the USN are consistently at sea. The RCN does not have the platforms to conduct this scale training; if Models Two or Three are adopted, they may align closely to STCW standards. Still, the minimum amount of sea days, converted from hours to days, is approximately only 75

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[124] M. S. Solmaz et al., "Development of Evaluation Procedures for Watchkeeping Officers Using Bridge Simulator," *TransNav: The International Journal on Marine Navigation and Safety of Sea Transportation* 14, no. 3 (September 2020): 565–71, https://doi.org/10.12716/1001.14.03.07.
[125] Command Analystics Support Centre - Pacific, "CASC-P Analytics Research Report NWOPQMI."
[126] "Surface Warfare Officer - Traditional."
[127] "Surface Warfare Should Adopt Commercial Training Standards."

days at sea. This does not allow an officer to see every scenario a warship may encounter, which would not make them an effective BWK.

Further, the RCN is taking a civilian-styled approach regarding its qualification for surface ship command. Per NAVGEN 001/25, officers must be selected for and assessed in a simulator for their Command qualification.[128] Solmaz et al.'s research supports this new process. Simulation is used both as an evaluation tool and coupled with the formal examination.[129] The downside is that the RCN is reducing sea time for one period of training (BWK) and mandating a set number of sea days for those seeking their command qualification: 500.[130] Therefore, the RCN is already creating an issue for itself: Only those officers truly interested in command at sea will seek out the extra sea days in a fleet already seeing a reduction as it awaits its new surface combatants. Per Models Two and Three and Naval Personnel Instruction 13, an officer may finish their Operations Room Officer tour, the level required to challenge the command qualification, having only 245 days.[131] This demonstrates that the RCN and NPTG are highly focused on command development, with little attention paid to changing how we look at junior officer production.

A DIFFERENT PERSPECTIVE

To ensure a proper blending of sea days, experience, and the leverage of the simulators, a different method should be examined that adopts the training programmes of the nautical institutes and the Coast Guard College. As has been discussed, the RN trains its officers using at-sea experience between phase training, while the RAN uses simulation. Both generate a BWK

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[128] Commander, Royal Canadian Navy, Revisions to Surface Command Development and Qualification Process.
[129] Solmaz et al., "Development of Evaluation Procedures for Watchkeeping Officers Using Bridge Simulator."
[130] Commander, Royal Canadian Navy, Revisions to Surface Command Development and Qualification Process.
[131] "NPI 13_EQ Requirements," n.d. Per the reference, director level officers and OROs only require 80 days at sea each in order to have met the experience qualification required to proceed to the next level.

who goes to their fleets, ready to take the watch on their respective bridges.[132] What follows is a proposal that the RCN adopt the best practices of both Commonwealth cousins, which would best realign training with the standards presented by the Canadian nautical colleges that train civilian mariners.

The first step in streamlining NWO production and reducing timelines is the amalgamation of BMOQ and NWO II into one course. This would be for all naval-uniformed officers in the Canadian Armed Forces. BMQ and the Naval Environmental Training Programme (NETP) for non-commissioned members would also be combined. The soldier-first policy, or universality of service, of the CAF is a holdover from the Afghanistan War and was meant to give every member of the CAF the skills they would need if they had to fight on land.[133] This is no longer the case for the sailors of the RCN. Like the USN, RN, and RAN, sailors and officers should receive a basic naval qualification that allows them to go to sea and sets them on the path to being the maritime fighting arm of the CAF. This training should take no more than 3 months and align with the first half of the civilian college's first academic year.[134]

For NWOs specifically, they would then proceed on a new, six-month, course designed to teach the fundamentals of navigation and seafaring. This would align with the second half of the first year.[135] Upon completion, the NWO would be assigned to their first training platform which should be the *Harry DeWolf*-Class ship. This ship has accommodation for 20 personnel in the Embarked Forces Mess and can also load accommodation sea containers to take on more

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[132] Windwood, "RN / RAN Junior Officer Development"; McGuffie, "A Rude Awakening."
[133] Defence, "DAOD 5023-1, Minimum Operational Standards Related to Universality of Service."
[134] "Fisheries and Marine Institute of Memorial University of Newfoundland."
[135] Ibid.

trainees.[136] The NWOs assigned to these ships would fill the role of Third OOW and commence their NWOPQ ATR packages. There would be no expectation that they would earn their BWK tickets and would be expected to be trainees.

Upon completion of their first sea phase, the NWO would return to the schoolhouse for the next phase of training. This course would focus more on the warfare aspect of the trade and would introduce more complex topics from the navigation curriculum, focusing on year three of the civilian coursing, as year two would be included in the NWOPQ package. The officer then goes to sea, this time in a frigate or supply ship, with sequencing timed such that they join the ship for a readiness training programme. This would allow them to gain experience with Sea Training, where they would serve the role of 2OOW and complete the second half of their NWOPQ ATRs.

Once time at sea is completed, they would return to the schoolhouse for one last period of intense assessment in the simulators endorsed by Transport Canada and align with the requirements of STCW, plus those skills required for warfare. Upon completion, the officer is granted their BWK, is moved to TES, and joins their first ship as a qualified OOW. Promotion to Lieutenant (Navy) would then be based on time in rank and not require a specific qualification to advance. This realignment of training would reduce the time to TES from three to four years to two and a half. This will allow the RCN to adopt a civilian training standard while simultaneously expediting the path to TES without sacrificing the quality of training.

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[136] "Harry DeWolf Class Fact Sheet," March 21, 2023, https://www.canada.ca/en/navy/corporate/fleet-units/surface/harry-dewolf-class/fact-sheet.html.

CONCLUSIONS

The plan outlined above is meant to enhance the efficiency and speed of producing officers at their TES while ensuring the Navy's alignment with STCW standards for watchkeeper delivery. The following points were examined in coming to this conclusion: first, the current model is too reliant on sea days, does not allow for recruitment from civilian institutes, and is too slow in developing the TES officer. Second, the proposed changes from CASC-P take the onus away from the RCN for sea days and seek to combine experience in allied platforms with appropriate simulator experience. This works in theory, but practically applied in an era where Canada can increasingly rely upon its allies is not a recipe for success; the RCN must develop a home-grown solution. Finally, a proposed concept was put forth that takes the best of both systems and applies them to the civilian rubric, creating a more streamlined and efficient training pipeline. While the proposed plan offers a potentially promising approach to enhancing the efficiency and speed of developing NWOs, further research is essential if the RCN is to understand its long-term impacts and feasibility. Specifically, additional studies should focus on the effectiveness of simulation-based training versus traditional sea days from the RCN perspective, the integration of civilian mariners into the RCN, and the potential effects this could have on NWO career paths resulting from the realignment. Comprehensive analysis and continuous evaluation will ensure that the Navy can adapt to evolving challenges and maintain a high officer training and readiness standard. This paper will examine the psycho-social benefits of alignment to STCW and the crucial step of removing Commanding Officer bias in producing NWOs.

CHAPTER 6 – SOCIOLOGICAL BENEFITS

INTRODUCTION

The RCN has not been immune to the rise of attention paid to toxic leadership.[137] This is defined as a "combination of self-centred attitudes, motivations and behaviours that have adverse effects on subordinates, the organization and mission performance."[138] If commanding officers continue to be responsible for providing a bridge watchkeeping certification, these attitudes will continue to manifest within the NWO cadre. One need only look to the now-defunct BWK manual for the RCN to see that the attitude required of an OOW once promoted the very tenants of toxic leadership. Specifically, the paragraph on taking charge stipulates that the OOW must "demand" and "direct" the watch to support them.[139] As NWOs jockey for face time with the commanding officer, they are highly susceptible to creating toxic environments on the bridge of a warship as they seek to prove themselves worthy of the coveted Bridge Watchkeeping certificate.

This chapter aims to demonstrate that aligning NWO training to civilian standards can mitigate toxicity and improve fairness and professionalism amongst the NWO cadre. This thesis is supported by the demonstration that reducing subjectivity eliminates competition, alignment to civilian construct may mitigate toxic leadership by removing the need to impress a potentially toxic commanding officer, and how already arriving aboard ship with a BWK could eliminate the

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[137] "Fighting Spirit: The Profession of Arms in Canada," *Canadian Defence Academy - Professional Concepts and Leader Development*, 2024.
[138] Major Mitchell Parker, "Toxic Leadership and Its Impact on Mission Accomplishment," *McConnel Air Force Base*, 2018, https://www.mcconnell.af.mil/News/Commentaries/Display/Article/1632660/toxic-leadership-and-its-impact-on-mission-accomplishment/https%3A%2F%2Fwww.mcconnell.af.mil%2FNews%2FCommentaries%2FDisplay%2FArticle%2F1632660%2Ftoxic-leadership-and-its-impact-on-mission-accomplishment%2F.
[139] Commanding Officer NOTC Venture, "CFCD 131: Bridgewatckeeping Manual for the Royal Canadian Navy," 2017.

need to constantly be viewed as working by their superiors and crew and thus improve the mental health and wellbeing of the officers, and by extension, sailors on board His Majesty's Canadian Ships. All of this can be done using civilian mariner standards concerning the training and qualification of bridge officers.

REDUCING SUBJECTIVITY THROUGH STANDARDIZATION

There is no dearth of literature concerning how subjective performance evaluations alienate workers and, in some cases, can lead to decreased performance and job dissatisfaction.[140] The fact that BWK qualifications are granted solely under the purview of the ship's commanding officer is the ultimate example of the SPE. Like any SPE, this can lead to favouritism and biases towards specific individuals.[141] For instance, it has been shown that when an SPE is used and there is a direct correlation between pay and promotion, there is a greater chance of employee discontent.[142] In the RCN context, this has the potential to hold for NWOs as upwards of four to eight trainees will be vying for attention and advancement to the OOW position.

As discussed in the chapter on NWO training progression, this milestone is the bottleneck and hurdle that every NWO trainee must surpass to advance to NWOPQ, OFP, and, in most cases, promotion to Lieutenant (Navy). Adopting a model that grants a BWK upon completion of training at the RCN schoolhouses will remove the SPE quality behind granting the BWK. This will allow commanding and supervisory officers to assess trainees' progress objectively as they

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[140] Iryna Alves and Sofia M. Lourenço, "Subjective Performance Evaluation and Managerial Work Outcomes," *Accounting and Business Research* 53, no. 2 (February 23, 2023): 127–57, https://doi.org/10.1080/00014788.2021.1959292; Daiji Kawaguchi, Hideo Owan, and Takahashi Kazuteru, "Biases in Subjective Performance Evaluation," *RIETI Discussion Paper Series*, March 2016, https://www.rieti.go.jp/jp/publications/dp/16e059.pdf?utm_source=chatgpt.com.
[141] Alves and Lourenço, "Subjective Performance Evaluation and Managerial Work Outcomes."
[142] Kawaguchi, Owan, and Kazuteru, "Biases in Subjective Performance Evaluation."

complete NWOPQ packages against a written and approved rubric. The process already exists in the NWO QSP.[143] The document would only need to be amended to remove the attainment of the BWK portion from the ATRs.[144] To summarize, the trainee officer would arrive aboard a warship having already completed the requirements for their navigation BWK. Thus, no onus would exist to compete for face time with the captain and the officer would then focus on the warfare aspect of the profession through the NWOPQ ATRs.

Studies have shown that employees, and in this case officers, who are dissatisfied with their work, will demonstrate their malcontent by voting with their feet.[145] As of October 2023, the NWO trade had 282 positions under strength and was trending downward.[146] The trade cannot afford to lose officers to something as easily fixed as employee satisfaction. Removing subjectivity will not affect the trade's professionalism and will enhance the evaluation process while maintaining transparency in the assessment standard. NWOPQ would remain a pass-fail and continue to be assessed by a professional board for examination. This would allow commanding officers to focus on mentorship and development.

MITIGATING TOXIC LEADERSHIP

In recent years, the CAF and RCN have made a concerted effort to eliminate toxic leadership from their ranks. However, the process has not been perfect. Documents such as *Trusted to Serve* and *Fighting Spirit* have provided guidelines, but culture cannot be eliminated through publications alone. Toxic leaders may have good intentions, but they cannot understand

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[143] Commander Naval Personnel and Group, "Royal Canadian Navy Qualification Standard and Plan - Naval Warfare Officer Professional Qualification."
[144] The ATRs and training progression were discussed in a previous chapter.
[145] Alves and Lourenço, "Subjective Performance Evaluation and Managerial Work Outcomes."
[146] Command Analystics Support Centre - Pacific, "CASC-P Analytics Research Report NWOPQMI."

that they are harmful.[147] Their self-centred attitudes, personal motivations, and drive for mission excellence can adversely affect their subordinates.[148] The way that current NWO training is organized allows some toxicity traits to persist. Examples such as narcissism, compulsive personalities, and paranoia can continue as a direct result of the way qualifications are handed out.

Narcissism is "a pattern of grandiosity, need for admiration, and lack of empathy."[149] Clearly, in the context of seeking one individual's subjective approval and trust, those members who thrive in that environment and desire that kind of approval are well suited to the current NWO training and delivery method. Even the tenets of being a good officer of the watch call for young officers to shine and make it obvious who the officer of the watch is.[150] It makes it clear that a narcissist is already prepositioned to excel in that environment and also dovetails into the next trait, compulsive leadership.

Compulsive leaders demonstrate a "pattern of preoccupation with orderliness, perfectionism, and control."[151] The BWK manual for the RCN calls on young officers to exercise 'alertness' to identify something developing that may become problematic. They also need to "Know [Their] Ship [, and that] there are many things about your particular ship which [they] simply must know. There is no excuse for not doing this work and doing it thoroughly…. [And they must] set the standard and [not] accept less than that."[152] When paranoia, or the "distrust

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[147] George E. Reed, *Tarnished : Toxic Leadership in the U. S. Military* (Lincoln: Potomac Books, Incorporated, 2015), http://ebookcentral.proquest.com/lib/cfvlibrary-ebooks/detail.action?docID=3571066.
[148] Master Sgt Robert Mb Flak, "Breaking the Cycle," *NCO Journal*, January 8, 2024, https://www.armyupress.army.mil/Journals/NCO-Journal/Archives/2024/January/Breaking-the-Cycle/.
[149] Sara G. Weaver and George B. Yancey, "The Impact of Dark Leadership on Organizational Commitment and Turnover," *Leadership Review* 10 (2010): 104–24.
[150] Venture, "CFCD 131: Bridgewatckeeping Manual for the Royal Canadian Navy."
[151] Weaver and Yancey, "The Impact of Dark Leadership on Organizational Commitment and Turnover."
[152] Venture, "CFCD 131: Bridgewatckeeping Manual for the Royal Canadian Navy."

and suspiciousness such that other's motives are interpreted as malevolent,"[153] it is easy to conclude that toxic leaders and those who will develop to be like them easily thrive in the current NWO training system.

One study regarding the effects of toxic leadership within the USN demonstrated that when asked how toxic leadership made them feel, participants indicated that they routinely felt angry or sad, with cases of anxiety being prevalent. Some went so far as to suggest they wanted to leave the Navy and routinely carried their resignation letters around.[154] Further, when asked how it influenced their behaviour at work, participants responded that they attempted to shield their subordinates from it, and they would bear the brunt of the toxicity themselves. Others responded that they no longer cared about their job, with anxiety continuing to persist through to their next posting. Rarely was it seen as a learning opportunity, and they seldom felt stronger because of it.[155] While this is an example from the USN and not specific to the RCN, toxic leadership undermines morale, unit cohesion, and operational effectiveness. Therefore, a shift in the training mindset can easily remove many of the root causes of toxicity within the NWO community.

As detailed above, the perception of competition between officers generates a culture where narcissism and cutthroatiness can grow. If the RCN were to move to a model where an officer arrives onboard an HMC Ship having already received their BWK, the competition or perception of competition would have been removed from that cadre of officers. This would essentially extinguish the flame of toxic leadership before it has a chance to spread and work to

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[153] Weaver and Yancey, "The Impact of Dark Leadership on Organizational Commitment and Turnover."
[154] Mamaril, "A Phenomenological Analysis of the Effects of Leader Toxicity: Examining the Lived Experiences of U.S. Naval Officers Exposed to Toxic Leadership."
[155] Ibid.

build more cohesion amongst the officer corps as they will all be equal students working towards an equal goal, namely NWOPQ ATR completion, without the necessity to earn a commanding officer's trust and approval. Since a standardized system would have granted the BWK, the trust from the captain, who should also be working not to be a toxic leader, should be implicit.

Should the RCN align with civilian standards, a leadership course for mariners would need to be incorporated into the leadership development programs focused on the tenets of emotional intelligence. For example, in year three of the Nautical Sciences program at Memorial University's Marine Institute, candidates take a course titled 'Leadership and Teamwork.'[156] Over 24 hours of coursework, students are provided with "knowledge, skill and understanding of leadership and teamwork at the operational level on board a ship."[157] This includes personnel management, decision-making, management of fatigue and stress, and developing human potential.[158]

The Marine Institute also aligns its leadership program with the STCW in that human behaviour is factored into training personnel in leadership roles aboard passenger-carrying vessels.[159] Though the RCN does not carry passengers, the crew size of a warship would be equivalent to having passengers onboard and human behaviour would still be a factor. Incorporating this type of training into the NWO curriculum would infuse the concept into young leaders at the nascent stage of their careers. It would allow staff to identify toxic behaviours early, providing for early intervention at the beginning of a career. Thus, through the use of appropriately timed coursing, they build a supportive and respectful leadership climate.

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[156] "Fisheries and Marine Institute of Memorial University of Newfoundland."
[157] Ibid.
[158] Ibid.
[159] "1997 Amendments to the International Convention on Standard of Training, Certification and Watchkeeping for Sea Farers," 1998, https://publications.gc.ca/collections/collection_2016/amc-gac/E3-1998-50.pdf.

MENTAL HEALTH SUPPORT

Exercising command on behalf of the commanding officer is one of the most difficult challenges that the RCN asks of its young officers.[160] Sub-lieutenants are the juniorst of the at-sea officer cadre, and before they can be promoted, they must attain their BWK. This means that an officer, often in their early 20s, is asked to assume responsibility for a multi-million-dollar asset and 250 souls. The pressure of seeking out this essential qualification can be assessed to have adverse effects on an officer's mental health.[161] If the RCN were to adopt the STCW standard and include the BWK as the outcome of the initial training, there would be a lessened requirement to perform for their commanding officers and as a result, they will be able to focus on the job they have trained for.

CONCLUSION

As detailed above, there are many benefits to aligning with civilian training and certification standards. By arriving on board one of His Majesty's Canadian Ships with a watchkeeping certificate, toxicity will be minimized. By reducing pressure to perform, officers can better focus on their NWOPQ ATRs and become better warfighters. There is also a strong case to be made that eliminating the captain's subjectivity will reduce the factors that allow narcissistic and toxic leaders to thrive within the RCN's ranks. Improving the quality of life for the RCN's officers will have a trickle-down effect as their general demeanour will be more inclined to support their personnel. Future revamps of the NWO training model should ensure that civilian methods are included to allow positive change to grow.

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[160] Venture, "CFCD 131: Bridgewatckeeping Manual for the Royal Canadian Navy."
[161] Map, *Assessing Nautical Officers of the Watch Performance*.

CHAPTER 7 – OTHER BENEFITS: PAY, RECRUITING, AND CAREERS

INTRODUCTION

This chapter assesses the financial and career benefits for the NWO Trade if STCW standardization occurs. There is a lack of attention to initiatives to improve retention, and some of the potential benefits discussed below may improve the NWO metric. Should the RCN choose an option for NWO training that mirrors their civilian counterparts, significant improvements can be made to NWO pay scales, recruitment of skilled officers, and new career paths which separate the sea-going and shore-based officers. The current pay scale will be examined and contrasted with the evolution of the RCAF pilot scale and civilian mariners to support these. The on-ramps for skilled recruitment and the ROTP will be examined, along with a deep dive into a proposed path for naval officer development.

There is no substantial research concerning CAF retention as a whole. One rare effort is Amanda Huddleston's master's thesis from the University of Winnipeg. She asserts that CAF retention is a wicked problem, noting that of Rittel and Webber's ten characteristics of a wicked problem,[162] CAF retention fits into all of them.[163] This paper's purpose has never been to solve the CAF's retention issue. It merely addresses one trade and one aspect that could serve as a net benefit for the RCN, providing incentives for long-term service and retention of skilled personnel.

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[162] Amanda Huddleston, "Canadian Armed Forces Retention: A Wicked Problem?," n.d. 'Wicked' refers to problem complexity in definitional and solvability terms. Addressing one issue in a positive manner will have a causal negative affect on a different demographic.
[163] Ibid. Page 100.

UPDATED PAY SCALES

The RCAF recognized a need for change in the 2010s, culminating in an updated pay scale for pilots and their aviators. Using documents leaked to the *Ottawa Citizen* in 2011, David Pugliese wrote that the RCAF signalled to the Vice Chief of the Defence Staff that it could not train the 125 pilots annually needed to maintain their numbers.[164] The reasons cited were that pilots across the industry were affected by the mass retirement of the baby-boomer generation. There was dissatisfaction with how long it took for junior pilots to reach TES.[165] By 2019, the problem had not significantly improved. Writing in the CAF newspaper *The Maple Leaf* in June 2019, then Commander of the RCAF, Lieutenant-General Meinzinger, noted that the retention issue of pilots remained the "most acute" issue for the RCAF.[166] Again, it was cited that there were pilot shortages across the aerospace industry and that a new compensation and benefits package was being developed in consultation with Commander Military Personnel (CMP) to retain their skilled workforce.[167] This led to creating a new pilot pay scale that focuses heavily on the ranks that fly and incentivizes them to stay in their flying roles.[168]

This model could be expanded to the RCN, particularly for NWOs in the command stream. In November 2023, Transport Canada recognized that navy qualifications could be transferred to their civilian equivalents. For NWOs, this meant that their entry level into the civilian workforce would be "Master 150 Gross Tonnage, Domestic, Watchkeeping Mate or

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[164] David Pugliese, "RCAF Having Problems Finding Pilots: Documents," *Prince Albert Daily Herald*, September 12, 2011.
[165] Ibid.
[166] Royal Canadian Air Force National Defence, "The Race to Retain and Increase Experience Levels in the RCAF - News Article - Royal Canadian Air Force," not available, July 30, 2019, https://www.canada.ca/en/department-national-defence/maple-leaf/rcaf/2019/07/the-race-to-retain-and-increase-experience-levels-in-the-rcaf.html.
[167] National Defence, "The Race to Retain and Increase Experience Levels in the RCAF - News Article - Royal Canadian Air Force."
[168] Defence, "Regular Force Pay by Rank."

Watchkeeping Mate Near Coastal certificates of competency."[169] As has been previously stated, the officer needs only to have completed phase training, NWOPQ, hold a BWK, two years of post-secondary education, and have at least 360 days at sea in a commissioned warship transferred one-for-one.[170] This would mean that almost every NWO completing their operations room officer tour would be approaching the sea days required for the transfer.

As NWOs approach senior ranks and increased instability in geographic home base locations, a transfer to the civilian marine industry may be an attractive option. The RCN is primarily located in three distinct cities: Victoria, Ottawa, and Halifax. These communities are experiencing steady increases in housing costs, which, according to the Canadian Real Estate Association in March 2025, are averaging $891,000, $626,000, and $557,000, respectively.[171] Additionally, the CAF Housing Differential for NWOs at the senior Lieutenant (Navy) to Lieutenant-Commander ranks maxes out at $300 for Victoria, and they will receive no additional support for Ottawa and Halifax.[172] Contrasted with civilian mariner careers, most companies allow their employees to live wherever they choose, allowing for more inexpensive options, and fly them to meet their ships.[173]

Interestingly, comparing and contrasting civilian and CAF pay scales, CAF officers' rates of pay are higher than the average mariner's salary. However, the most significant differential occurs at the Chief Officer and Master positions, equivalent to XO and CO. There is also a difference in pay concerning the class of ship in which a mariner serves. For example, a third

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[169] Canada, "Recognition of Royal Canadian Navy Competencies by Transport Canada - SSB No."
[170] Ibid.
[171] "National Price Map," CREA, accessed April 16, 2025, https://www.crea.ca/housing-market-stats/canadian-housing-market-stats/national-price-map/.
[172] "Canadian Forces Housing Differential," March 21, 2023, https://www.canada.ca/en/department-national-defence/services/benefits-military/pay-pension-benefits/benefits/canadian-forces-housing-differential.html.
[173] "Seafarers Salary in 2025 - Data and Analysis. Maritime Salary Calculator."

officer in a bulk carrier will make approximately $4300 monthly, while a Liquid Natural Gas carrier will pay approximately $7300 monthly.[174] Sub-Lieutenants joining their first ship are paid $6607 monthly[175] and also receive sea duty allowance at $327.[176] As mentioned, Chief Officers and Masters are paid the best in the civilian industry, with Chief Officers earning $10,300 to $20,000 monthly, depending on the class of ship, and Masters earning $17,300 to $25,000.[177] These amounts do not factor in overtime and bonuses that military members are not permitted. Since Lieutenant-Commanders and Commanders max out at $11,889 and $13,078,[178] there is room to develop new pay scales in the senior NWO ranks that account for the additional risk and responsibility of command at sea. A pay adjustment may catalyze recruitment, retain the RCN's talent, and draw on a previously unexplored recruiting pool.

ENHANCED RECRUITING POOLS / ROTP OPTION

As discussed in Chapter 5, there is no smooth method for recruiting skilled mariners into the RCN. The PLAR process requires initiative by both the recruiter and the prospective member. It often takes months to complete. Indeed, the member may be well through the early phases of their training before any civilian qualifications are even recognized.[179] As alluded to by LGen Meinzinger in 2019 for the RCAF, civilian skillsets are not being enrolled in a way that acknowledges their experience.[180] The same can be said about the RCN.

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[174] Ibid.
[175] Defence, "Regular Force Pay by Rank."
[176] National Defence, "Compensation and Benefits Instructions," policies, October 29, 2013, https://www.canada.ca/en/department-national-defence/corporate/policies-standards/compensation-benefits-instructions.html.
[177] "Seafarers Salary in 2025 - Data and Analysis. Maritime Salary Calculator."
[178] Defence, "Regular Force Pay by Rank."
[179] Defence, "DAOD 5031-1, Canadian Forces Military Equivalencies Program."
[180] National Defence, "The Race to Retain and Increase Experience Levels in the RCAF - News Article - Royal Canadian Air Force."

Given the higher pay scales at the entry level, if the RCN were to align its NWO training with civilian standards, it would be open to recruiting personnel directly from industry or trade schools and position the RCN to compete with industry directly. To do this, the Navy would need to set up a programme to acknowledge these skills and provide abridged training so that these civilians can be converted to military members and taught the principles of maritime warfare. Given that they are already skilled, latitude exists to enroll them at the Lieutenant (Navy) rank, bringing increased pay over their civilian counterparts. To further align and entice civilian entry, the RCN should lobby CMP for a degree offering solution in the ROTP stream.

As previously discussed, the USNA does not offer a degree in navigation and seamanship. As the largest navy in the world, the academy is the benchmark in naval education, but it does not offer a Nautical Sciences Degree, as all midshipmen are expected to take Seamanship courses during their time at the academy.[181] Given that the RCN is exponentially smaller than the USN, there is no justifiable reason to establish a programme at the Royal Military Colleges. However, the civilian university ROTP offering should allow for this programme to exist. According to the CAF website, a prospective student would need to apply to ROTP after being accepted to university, and the military colleges must not offer the degree the candidate is pursuing.[182]

Per the CAF recruiting website, NWOs can have any degree. Therefore, it can be assumed that a degree from the Marine Institute in Nautical Sciences would count. However, the ROTP training programme for NWOs would need to be adapted so that at-sea work terms are acceptable methods of training. The RCN basic training discussed in Chapter Five would also

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[181] "USNA Core Curriculum *."
[182] "ROTP | Paid Education | Canadian Armed Forces," accessed April 16, 2025, https://forces.ca/en/paid-education/rotp.

need to be adopted so that these cadets receive the requisite sea days per the programme and do not lose time soldiering in the field at the recruit school. The CAF already recognizes college accreditation and provides paid education for NCM, including Weapons Engineering and Marine Technicians.[183] As most nautical institutes are colleges and not universities, there would need to be an allowance made for the NWO occupation. This would allow greater flexibility in recruitment, education choice, and breadth of training and experience.

POTENTIAL CAREER PATHS WITH REALIGNMENT

The topic of the NWO trade has been one of discussion throughout the JCSP 51 cohort year. Several students have addressed these concerns in their service papers and other academic projects, particularly when it comes to retention and recruitment. In his service paper making the case for a Naval Operations Officer trade, LCdr Michael Vanderveer identifies that the NWO trade is approximately at a 74 percent fill rate across all ranks. This dearth of personnel is further exacerbated by the fact that there is a pull from headquarters on each coast and the National Capital Region that forces NWOs into out-of-trade positions, and out of sea-going billets.[184] Should the RCN align NWO training to civilian standards, officers who are more suited for life ashore would also need to be identified. This would lead to the creation of a separate trade for officers currently identified in the staff stream, as they would have no need for a BWK.

Just as the RCAF identified in 2021 that some jobs in headquarters can be done by non-flying trades, which led to the creation of the Air Operations Officer,[185] the same is true of jobs

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[183] "Skilled Trades Paid Education Program.Pdf," accessed April 16, 2025, https://forces.ca/assets/brochures/paid-ed-NCM.pdf.
[184] LCdr Michael Vanderveer, "CREATION OF THE NAVAL OPERATIONS OFFICER TRADE FOR THE ROYAL CANADIAN RESERVES" (Service Paper, Toronto, Canadian Forces College, 2025).
[185] Royal Canadian Air Force National Defence, "The RCAF Now Has Its First Air Operations Officers - RCAF PERSpectives - Royal Canadian Air Force," not available, April 19, 2021, https://www.canada.ca/en/air-force/corporate/reports-publications/rcaf-perspectives/the-rcaf-now-has-its-first-air-operations-officers.html.

ashore for the RCN. By ensuring NWOs are specifically trained to STCW standards, they can be better used to support at-sea operations, and those jobs presently assigned to the NWO career shop that only require general service or non-specific training could go to a new trade derived from the staff stream officers.[186]

Officers who join the RCN interested in developing and emergent domains of warfare, such as space and cyber, would enter a different trade than the NWO. Since they would have completed RCN basic training, they would still serve aboard ship in roles traditionally filled by NWOs such as Information Warfare Officer, or Communications and Information Systems Officer, but without standing a watch on the bridge. As LCdr Vanderveer asserts, this would relieve the "bottlenecks in training" as a pool of personnel would come out of the NWO stream.[187]

For those who remain in the NWO trade, the following is recommended as the template following completion of NWO training, which, per STCW standard, grants the BWK upon completion. First, officers would return to sea as a BWK serving as an OOW with promotion to Lieutenant (Navy) based on time in rank, not NWOPQ. For their director tour, they would focus on an area of warfare such as Above Water, Underwater, and Navigation. Since the RCN has ordered that all those seeking surface command must have a minimum of 500 days at sea,[188] the Deck Officer position should revert to a second tour Lieutenant (Navy), ensuring that NWOs gain enough experience, especially if assigned to ships not sailing or in shore office. Submariners

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[186] LCdr Michael Vanderveer, "CREATION OF THE NAVAL OPERATIONS OFFICER TRADE FOR THE ROYAL CANADIAN RESERVES."
[187] Ibid.
[188] Commander, Royal Canadian Navy, Revisions to Surface Command Development and Qualification Process.

and Clearance Diving Officers would be recruited directly by CFRG and trained separately, similar to the RAN.[189]

While the CAF recruiting website says that the NWO trades-related civilian occupations are mate or master/captain of merchant vessels, coast guard ships, or passenger vessels[190] the transition between civilian and military careers is less than smooth. To gain civilian equivalencies, a retired NWO must contact Transport Canada to begin the process. The author of this paper, a Surface Command qualified Fleet Navigator, reached out to Transport Canada in September 2024, and as of the writing of this DRP, has not received a response. If the RCN were to align its NWO training to STCW standards properly, civilian tickets should be granted in tandem with their military equivalents. This would allow any retiring officer wishing for an at-sea career to seamlessly transfer to the civilian workforce.

CONCLUSION

As this chapter has discussed, there are additional benefits for officers of the NWO trade should the RCN formally seek to align NWO training with the STCW standard. This argument was addressed through an updated pay scale that benefits and rewards at-sea service and progression in the Command Stream. The potential recruitment pool and the impact on the NWO career path and other avenues for officer production, should the RCN proceed with a more STCW-centred approach to training, were also discussed. Should the RCN wish to pursue an initiative similar to what the RCAF did for their personnel in 2019, a study should be conducted on whether these benefits will slow attrition, improve morale, and produce a better-quality officer. Ultimately, alignment to STCW standards will create a more operationally focused

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[189] O'Neill, "ROYAL AUSTRALIAN NAVY: SURFACE WARFARE OFFICER."
[190] "Naval Warfare Officer | Canadian Armed Forces."

officer and a competent mariner with skills transferable to any sea-going officer position and allow those civilian mariners to bring the same skills into the Navy, enhancing retention and improving recruitment.

CHAPTER 8 – CONCLUDING THOUGHTS

This paper assessed whether the RCN could adopt a training model for the NWO occupation that would better align with STCW and civilian mariner qualifications. It was determined that not only was it possible to align with the civilian standard, but the RCN should also align with STCW to maximize the output of officers and expand recruiting pools to the civilian nautical training institutes. Throughout this Directed Research Project, the following topics were examined:

In Chapter Three, the methods of training employed by the RCN and the timelines associated with them were described. These courses were compared to their civilian equivalencies, which determined that there exists very little difference in timeline and that the material, from at least the navigation or mariner standpoint, was very similar. In Chapter Four, the USN, RN, and RAN training methodologies were examined. It was determined that, except for the USN, both the RN and RAN have aligned their training plans with STCW and eliminated both the subjectivity of their commanding officers and reliance on sea days for qualification. Chapter Five then examined the study already commissioned by the RCN, where it was identified that the current system is no longer sufficient to keep pace with attrition. The proposed models were examined and contrasted with what the RCN tries to achieve with its updated command qualification process. Chapter Five concluded with a recommendation for realignment borrowed from the RN, RAN, and the work already conducted by CASC-P. Finally, Chapters Six and Seven focused on the additional benefits to the personnel and organization that could be realized if the RCN changed its NWO pipeline. These chapters discussed the quality of life elements, such as improved mental health and eliminating competition and toxicity. Chapter Seven focused more on the material benefits. Examples included enhanced recruiting pools,

opportunities to strengthen NWO pay structures to compete with industry and incentivize at-sea experience, and assessing how the RCAF has already gone through a similar process with its pilot trade.

As discussed throughout this paper, there is a dire need for further research into the proposed realignment to STCW for the NWO occupation. It is recommended that, as an initial review of the different training methodologies, a cohort of NWO trainees be identified to be trained by either or both the RN and RAN, with the understanding and agreements in place that they are returned to Canada upon completion and assessed against their Canadian-trained peers. The data from this exchange would then need to be used to create a new NWO training pipeline that borrows the best examples from each allied navy. Once the new programme has been developed, the RCN must resist the urge to change or adapt the training until enough officers have passed through the system to present a large data pool. While there is a clear need for a solution for the NWO TES pipeline now, it must be recognized that change takes time, and only through a phased and deliberate process can the RCN ensure its NWOs are being trained to the highest calibre possible. Partnerships with civilian training establishments should be sought as an additional avenue to NWO production.

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