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A REVIEW OF RECENT US NAVY SEVENTH FLEET INCIDENTS AND ANALYSIS OF APLICABILITY TO THE ROYAL CANADIAN NAVY

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INTRODUCTION

During 2017, the US Navy's Seventh Fleet experienced four major incidents involving warships, two of which resulted in significant losses of life. Each of these events points toward a "systems failure" in which a confluence of many smaller, seemingly non-catastrophic failures combined in order to result in a major accident. Although there are many unique attributes when considering each of these events, there are several common themes that were identified through the subsequent collision reports, as well as the Comprehensive Review and Strategic Readiness Review that were conducted in their wake.

In order to provide the necessary perspective, the first portion of this paper is dedicated to providing an overview of each of the four major incidents. Each summary attempts to account for all relevant factors, and presents a simplified account based on a compilation of information from the individual collision reports as well as the later reviews. The second section is dedicated to an examination of the most significant root causes in terms of the culture and risk factors that enabled the occurrence of these events. In the final section, an analysis of the applicability of these root causes to the Royal Canadian Navy is provided. This analysis is conducted with respect to the current personnel levels within the RCN, which are significantly below nominal levels. By providing an understanding of the basic factors that contributed to these incidents, important lessons can be learned that can be used to implement risk control measures that could reduce the likelihood of similar tragedies occurring in the future.

SUMMARY OF RECENT SEVENTH FLEET INCIDENTS

Any meaningful analysis of the root causes and conditions that existed in Seventh Fleet during 2017 requires a foundational understanding of the individual incidents. The first of these events was the grounding of USS ANTIETAM. This was followed by the collision between USS LAKE CHAMPLAIN and a South Korean fishing vessel. Although these two incidents did result in damage to the affected ships, no deaths were caused. Regrettably, the other two incidents, the collision between USS FITZGERALD and a container ship and the collision between USS JOHN S. MCCAIN and a tanker, led to the combined loss of 17 US Sailors.

USS ANTIETAM Grounding – 31 January

The first incident in the Seventh Fleet during 2017 was the grounding of USS ANTIETAM which occurred on 31 January. ANTIETAM, normally homeported in Yokosuka, was preparing to conduct training in the local operating area. In preparation for this training, the ship was planning to onload stores while at anchor in Tokyo Bay. While approaching the anchorage point, the ship had to use a different course than originally intended as a result of maneuvering for shipping traffic. Additionally, during their approach, the bridge team failed to account for the high wind and current that had been recognized and discussed at the navigation briefing. Due in part to the failure to account for prevailing environmental conditions, the ship was significantly further from the intended anchorage point than planned when the CO ordered the anchor let go.[1] ANTIETAM continued to drift toward shoal water as deck personnel experienced difficulty removing an improperly inserted retaining pin. The problem was further

[1] United States, US Fleet Forces Command, *Comprehensive Review of Recent Surface Force Incidents*, 26 October 2017, 15.

complicated by the fact that less than half of the required amount of anchor chain was deployed, causing the ship to continue drifting toward shoal waters even after the anchor was let go. Despite the ship drifting toward shoal waters, the CO delayed maneuvering the ship until after the anchor was retrieved due to concerns that the SONAR dome would be damaged. As soon as power was applied, both propellers struck the bottom. There were no injuries as a result of the grounding, but there was significant damage done to the ship.[2]

USS LAKE CHAMPLAIN Collision – 9 May

The second major Seventh Fleet incident occurred on 9 May when USS LAKE CHAMPLAIN collided with the Republic of Korea fishing vessel NAM YANG 502.[3] This was the only of the four incidents in which the US Navy vessel involved was not conducting independent operations. LAKE CHAMPLAIN was conducting formation steaming in combination with ROKS YANGMANCHUN (a Korean destroyer) and the aircraft carrier USS CARL VINSON.[4] During the time of the collision, the CO was onboard CARL VINSON attending a meeting. Additionally, the XO was not on the bridge, and was not aware of any navigational problem until moments before the collision occurred.[5] The watchstanders on LAKE CHAMPLAIN did not maintain an accurate contact picture, despite having intermittent track on NAM YANG for over an hour before the collision.[6] When CARL VINSON executed a turn to the south, LAKE CHAMPLAIN maneuvered to maintain relative position, and in the process turned into the path of NAM YANG. Their attempts to contact NAM YANG via bridge to bridge

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[2] US Fleet Forces Command, *Comprehensive Review. . .*, 15.
[3] *Ibid.*, 14.
[4] United States, Department of the Navy, Office of the Chief of Naval Operations, *Report on the Collision between USS LAKE CHAMPLAIN (CG 57) and Fishing Vessel NAM YANG 502*, 29 November 2017, 3.
[5] *Ibid.*, 4.
[6] US Fleet Forces Command, *Comprehensive Review. . .*, 14.

radio were unsuccessful due to problems with NAM YANG's radio.[7] As the collision was eminent, the Officer of the Deck (OOD) on LAKE CHAMPLAIN gave orders to increase speed, then attempted to turn, first away from and then toward the other ship.[8] The fishing vessel struck LAKE CHAMPLAIN amidships on the port side, resulting in a 3-foot by 5-foot dent and scraped paint along a large portion of the hull. Again, there were no serious injuries as a result of this collision.[9]

USS FITZGERALD Collision – 17 June

Neither of the first two incidents of 2017 resulted in any major injuries or deaths; unfortunately, the other two major incidents did both cause significant loss of life. The collision between USS FITZGERALD and the motor vessel (M/V) ACX CRYSTAL on 17 June resulted in the deaths of seven Sailors. FITZGERALD was transiting from a training area in waters near its home port of Yokosuka to the Western Pacific in order to commence routine operations.[10] The navigation plan involved a transit through a busy shipping area known as Sagami Wan.[11] In accordance with standard Navy procedures, FITZGERALD was operating in a "darkened ship" configuration, with only minimal navigational lights illuminated. Additionally, the watertight integrity of the vessel was at a high state of readiness (in a condition called "modified ZEBRA") which was instrumental in minimizing the extent of damage following the collision.[12]

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[7] US Fleet Forces Command, *Comprehensive Review. . .*, 14-15.
[8] Office of the Chief of Naval Operations, *Report on the Collision between USS LAKE CHAMPLAIN. . .*, 5.
[9] *Ibid.*, 6.
[10] US Fleet Forces Command, *Comprehensive Review. . .*, 31.
[11] *Ibid.*, 31.
[12] United States, Department of the Navy, Office of the Chief of Naval Operations, *Report on the Collision between USS FITZGERALD (DDG 62) and Motor Vessel ACX CRYSTAL*, 23 October 2017, 6.

Despite navigating in a busy shipping area, FITZGERALD was not transmitting via Automatic Identification System (AIS).[13] Standard US Navy practice at the time was to operate AIS in a receive-only mode, allowing other ships to be viewed while limiting counter detection and collection of information about Navy warships. While this practice may hold applicability in some operational situations, doing so in the vicinity of a high traffic area during routine transit created an unnecessary risk. Additionally, commercial vessels utilize AIS as one of their primary means of avoiding collision and developing awareness of other vessels in the area.[14]

At approximately 0100 on 17 June, while travelling southward at 20 knots, FITZGERALD encountered three merchant ships steaming eastbound within the Mikomoto Shima Vessel Traffic Separation Scheme.[15] Although all three commercial vessels were transmitting via AIS, the watchstanders onboard FITZGERALD failed to recognize the number of vessels or adequately determine that a risk of collision existed. Most significantly, they did not calculate the closest point of approach (CPA) of the other vessels in order to determine whether the crossing maneuver they had planned yielded sufficient room to be conducted safely.[16] This practice would have also led the OOD to determine whether or not notification of the CO was required.

US Navy procedures, as well as individual ships' standing orders, delineate specific circumstances during which the CO must be either notified or physically present on the bridge. By setting a threshold for a minimum CPA that requires notification, a greater margin of safety is introduced. This works in two different, but complementary, ways. First, it incentivizes maintaining CPA outside of these conservative and safety-biased limits. By doing so, the OOD

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[13] US Fleet Forces Command, *Comprehensive Review. . .*, 37.
[14] *Ibid.*, 37.
[15] Office of the Chief of Naval Operations, *Report on Collision between USS FITZGERALD. . .*, 6.
[16] US Fleet Forces Command, *Comprehensive Review. . .*, 13.

can operate independently, but with a greater margin of safety as a result of the larger distances introduced. In situations where a close CPA cannot be avoided, it forces the involvement of the CO; an individual who by design has significantly more ship handling experience. Unfortunately, in order for this process to be effective, the watch standers must execute it properly. During the FITZGERALD collision, the CO was never informed of the developing situation, thereby removing his ability to provide this informed judgement and oversight.[17]

Between the time the CO departed the bridge (approximately 2300) and the collision (0130), there were 13 vessels with CPAs within three nautical miles; a distance that was inside the limit that required notification of the CO.[18] None of these vessels were reported to the CO, including when FITZGERALD crossed the bow of another vessel at a distance of approximately 650 yards.[19] Clearly, there was a culture of disregarding the established procedures onboard FITZGERALD. Additionally, poor coordination between watchstanders and confusion about the number and location of the commercial vessels contributed to the collision.[20]

According to the International Rules for Collision Avoidance, or "Rules of the Road," FITZGERALD was in a crossing situation as the "give way" vessel. As a result, they were required to take action to remain clear of ACX CRYSTAL and the other two commercial vessels.[21] Additionally, the give way vessel should, under most circumstances, cross astern of the other vessel.[22] In this case, the OOD did not maneuver, and planned to cross ahead of CRYSTAL at a distance of 1500 yards.[23] This CPA was based on confusion between the location of the various commercial vessels, in part due to the failure to adequately incorporate the AIS signals

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[17] Office of the Chief of Naval Operations, *Report on Collision between USS FITZGERALD*. . ., 7.
[18] *Ibid.*, 24-26.
[19] *Ibid.*, 24-26.
[20] *Ibid.*, 26.
[21] *Ibid.*, 6.
[22] Office of the Chief of Naval Operations, *Report on Collision between USS FITZGERALD*. . ., 6.
[23] US Fleet Forces Command, *Comprehensive Review*. . ., 32.

the three ships were transmitting.[24] The OOD took no action to avoid collision until approximately one minute before impact.[25]

Once the OOD finally realized that a collision was imminent, the actions they took were inadequate. The OOD initially ordered a change of course to starboard, but before the turn began increased speed and put the rudder hard to port.[26] In addition to maneuvering improperly, the OOD also failed to sound the danger signal or attempt to contact CRYSTAL via bridge to bridge radio.[27] Although CRYSTAL began a turn to starboard, it was not enough to prevent the collision between the two ships.[28] The bow of CRYSTAL struck FITZGERALD just forward of amidships on the starboard side, creating significant damage both above and below the waterline.[29] The collision caused the deaths of seven US Sailors who were trapped in a berthing compartment below the waterline, as well as significant injuries to three personnel who had to be evacuated and hospitalized, including the CO.[30]

USS JOHN S. MCCAIN Collision – 21 August

The final, and most disastrous, incident to occur in the US Seventh Fleet during 2017 followed closely on the heels of the FITZGERALD collision. On 21 August, with the recent mishap certainly on their minds, USS JOHN S. MCCAIN, another destroyer homported in Yokosuka, collided with the M/V ALNIC MC.[31] Although the circumstances were much

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[24] Office of the Chief of Naval Operations, *Report on Collision between USS FITZGERALD. . .*, 7.
[25] *Ibid.*, 6.
[26] US Fleet Forces Command, *Comprehensive Review. . .*, 32.
[27] Office of the Chief of Naval Operations, *Report on Collision between USS FITZGERALD. . .*, 7.
[28] US Fleet Forces Command, *Comprehensive Review. . .*, 32.
[29] Office of the Chief of Naval Operations, *Report on Collision between USS FITZGERALD. . .*, 8-10.
[30] *Ibid.*, 16-18.
[31] United States, Department of the Navy, Office of the Chief of Naval Operations, *Report on the Collision between USS JOHN S MCCAIN (DDG 56) and Motor Vessel ALNIC MC*, 23 October 2017, 43.

different, there were again basic failures of seamanship that were instrumental in this disaster. The ship was preparing to enter the Singapore Strait en route to a port visit in Changi Naval Base, Singapore.[32] Their navigation plan was scheduled to put the ship in the vicinity of shoal waters and inside the Traffic Separation Scheme (TSS) at 0520 that morning. However, the CO made the decision to delay setting the Sea and Anchor Detail (a watchteam composed of highly skilled personnel) until 0600 in an effort to improve crew rest.[33] This decision was made despite recommendations made by both the Executive Officer and Navigator to set the detail earlier.[34]

In order to compensate for the added risk of delaying the stationing of the Sea and Anchor Detail, the CO planned to personally take station on the bridge.[35] The problem of failing to set the Sea and Anchor Detail was further compounded by the especially inexperienced watchteam that was used. The Junior Officer of the Deck, Boatswains Mate of the Watch, and the Lee Helmsman were all normally assigned to USS ANTIETAM and had been temporarily assigned to JOHN S. MCCAIN to obtain underway experience. During the investigation, it was noted that these watchstanders had not received sufficient training and requalification upon reporting onboard JOHN S. MCCAIN, and they received no training in equipment differences between the bridges of the two ships.[36] This lack of familiarity was a further contributing factor in the manner in which the collision developed.

As JOHN S. MCCAIN was in the process of entering the TSS, the ship was overtaking three commercial vessels that were already within the pattern. It was at this time that the CO noticed the Helmsman was experiencing difficulty in maintaining both ordered course and speed,

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[32] *Ibid.*, 45.
[33] *Ibid.*, 45.
[34] US Fleet Forces Command, *Comprehensive Review. . .*, 29.
[35] *Ibid.*, 29.
[36] US Fleet Forces Command, *Comprehensive Review. . .*, 11.

so he ordered control of the throttles shifted to the Lee Helm station.[37] This previously unplanned shift caused confusion, which was exacerbated by the lack of familiarity of the watchstanders and the lack of a procedure for performing the shift. As the Helmsman attempted the shift, he unintentionally shifted control of both the throttles and steering to the Lee Helm station.[38] Greater confusion ensued when the Helmsman inadvertently removed the throttles from "ganged" operation, which led to independent operation of the port and starboard shafts. This went unnoticed for several minutes. At the same time, multiple watch reliefs were taking place on the bridge, which undoubtedly only added to the chaos.[39]

The Helmsman misinterpreted the unplanned shift of steering control to a different controlling station as a loss of steering and announced the existence of this condition. At this time, the ALNIC was only 580 yards from JOHN S. MCCAIN.[40] This change in controlling station reset the rudder to an amidships position.[41] The Helmsman had previously been applying right rudder in order to counteract the prevailing currents, and as a result the ship began turning to port. Additionally, the CO ordered the ship slowed to 10 knots upon the announcement of a loss of steering. However, the Lee Helmsman failed to recognize that the throttles were not ganged, and only reduced the speed of the port shaft. The starboard shaft continued to turn at the ordered speed corresponding to 20 knots.[42] This caused the ship to turn to port at a greater rate.[43] The XO eventually noticed that the ship was not slowing at the expected rate, and the CO gave

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[37] Office of the Chief of Naval Operations, *Report on the Collision between USS JOHN S MCCAIN*. . ., 63-64.
[38] *Ibid.*, 46.
[39] US Fleet Forces Command, *Comprehensive Review*. . ., 30.
[40] Office of the Chief of Naval Operations, *Report on the Collision between USS JOHN S MCCAIN*. . ., 64.
[41] Office of the Chief of Naval Operations, *Report on the Collision between USS JOHN S MCCAIN*. . ., 64.
[42] US Fleet Forces Command, *Comprehensive Review*. . ., 12.
[43] Office of the Chief of Naval Operations, *Report on the Collision between USS JOHN S MCCAIN*. . ., 47.

the order to slow to 5 knots. This again caused an even greater rate of turn, and it was a number of minutes until the throttles were finally matched.[44]

During the two minutes leading up to the collision, control of steering was shifted five times.[45] Despite what the watchteam believed, a loss of steering never actually existed.[46] In the final minute before impact, throttles were finally matched and a right rudder was applied; however, these actions took place far to late to prevent the collision.[47] Even though the ship was operating in close proximity to several commercial vessels, the bridge watchteam failed to make any attempt to sound the danger signal or notify ALNIC via bridge to bridge radio. ALNIC struck JOHN S. MCCAIN on the aft port quarter, creating a 28-foot diameter hole.[48] There were a large number of serious injuries onboard JOHN S. MCCAIN, and 10 US Sailors lost their lives.[49]

US NAVY COMPREHENSIVE AND STRATEGIC REVIEWS

As a result of these four significant incidents, each of which occurred during the same year within the same Numbered Fleet, additional institutional reviews were conducted that went beyond the scope of each formal investigation. These were the "Comprehensive Review of Recent Surface Force Incidents" and the 2017 "Strategic Readiness Review," which encompassed a wide variety of factors to include culture and institutions across the US Navy. For example, the Strategic Review identified undue overlap between the responsibilities of

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[44] *Ibid.*, 65.
[45] *Ibid.*, 66.
[46] US Fleet Forces Command, *Comprehensive Review. . .*, 12.
[47] Office of the Chief of Naval Operations, *Report on the Collision between USS JOHN S MCCAIN. . .*, 65-66.
[48] Office of the Chief of Naval Operations, *Report on the Collision between USS JOHN S MCCAIN. . .*, 48.
[49] *Ibid.*, 43.

administrative and operational chains of command. This led to a recommendation, which was recently fulfilled, to re-establish Second Fleet as a separate entity from US Fleet Forces Command.[50]

In both reviews, there were a large number of root causes and deficiencies identified. However, the intent in this paper is to focus on those that are most applicable to other organizations, especially the Royal Canadian Navy. It is certainly easy to look at the each of the cases presented and wish away their occurrence. Professional mariners from around the world, including within in the US Navy, may find it difficult to believe that these seemingly basic problems could have resulted in tragedies of such great proportion. However, the fact that these many small errors were able to combine and cause such large incidents is what makes them indicative of a greater systems failure. It is precisely these issues that the Comprehensive and Strategic Reviews were designed to address, and it is from these that the greatest lessons can be derived to serve other navies.

The first conclusion drawn by the Comprehensive Review was that in all four of these incidents the crews demonstrated poor seamanship and navigational practices. This ranged from a lack of situational awareness regarding the other vessels operating in the area to failing to utilize standard procedures. For example, none of the affected ships alerted nearby vessels using either the danger signal or bridge to bridge radio.[51] Additionally, the watchteams in each scenario failed to function properly as a team to provide sufficient backup to the OOD and the CO. Operating a ship at sea is a complicated evolution, and the US Navy relies on personnel

[50] US Navy Office of Information, "CNO Announces Establishment of U.S. 2nd Fleet," 4 May 2018, http://www.navy.mil/submit/display.asp?story_id=105453

[51] US Fleet Forces Command, *Comprehensive Review. . .*, 16.

functioning as a team to conduct operations safely.[52] There are standard procedures in place for these operations, but they are only effective if they are employed by the people onboard. The failure to adhere to these procedures, and the unwillingness of others to call out this practice, points to a failed culture.

Poor seamanship is not truly a root cause, but rather a symptom of greater underlying issues. The increasing operational tempo that exists in the Western Pacific, in combination with maintenance and modernization periods that have grown in both complexity and duration, has led to a long-term strain on US Naval Forces that are forward deployed to Japan.[53] The most significant outcome of this has been a reduction in the amount of time available for crew training and certification.[54] This general lack of training as a result of competing requirements is not unique to the Seventh Fleet, but simply more exaggerated due to the pace of operations. Within the Strategic Review, the theme of diminished mariner experience and expertise receives a great deal of attention. Since the end of the Cold War, the Navy has continuously been asked to do more with less. Reducing personnel is an attractive means to cut costs, particularly as personnel costs for an individual sailor have increased by 25% in the last 20 years.[55]

As new technologies are introduced, the argument is often made that fewer personnel are needed. Recent experience, however, has shown that the ability of technology to reduce personnel requirements is generally overstated. For example, in three of the last four ship classes that were accepted by the US Navy, additional personnel had to be added to the crew when

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[52] *Ibid.*, 16.
[53] *Ibid.*, 17.
[54] *Ibid.*, 17.
[55] United States, Department of the Navy, Office of the Chief of Naval Operations, *Strategic Readiness Review 2017*, 3 December 2017, 47.

moving from the design phase to actual fleet usage.[56] Crews being overworked also has negative follow-on effects with respect to retention, and therefore on retained institutional expertise.[57]

The effects of reducing personnel levels and prioritizing operations also has significant institutional effects. Inevitably, as primacy is given to operational units, or as personnel are temporarily transferred in order to meet manning requirements for operations, those billets that are deemed less vital are the first to become and remain vacant. While in Japan this had the effect of limited time available in port for training and certification, the larger Navy-wide effect has been a trend toward less schoolhouse-based instruction. Again, technology has been seen as a cost-saving alternative in the form of computer-based training in lieu of traditional instruction. In addition to the generally poorer quality of this instruction, this practice also robs the Navy of the focused expertise that instructors are able to develop during their time teaching others. By eliminating these positions, institutional expertise again suffered.[58]

At the officer level, there is another factor that has led to diminished professional expertise. Since the Goldwater-Nichols Act was passed, there has been an undue bias toward the acquisition of graduate and joint education. The Strategic Review points out that while the intention of the Act was to ensure *a portion* of all officers received this education, in practice it is seen by the officer corps as a requirement for promotion above Commander.[59] The time devoted toward this education detracts from time that would otherwise be spent developing and mastering skills that directly apply to the work of professional mariners. While it is necessary for a portion

[56] *Ibid.*, 47.
[57] *Ibid.*, 47.
[58] Office of the Chief of Naval Operations, *Strategic Readiness Review. . .*, 46.
[59] *Ibid.*, 40-41.

of the officer corps to pursue joint and graduate-level education, their current positions as career milestones have further weakened the institutional level of expertise within the US Navy.[60]

Lower levels of professional expertise are particularly dangerous when paired with a "mission-first" or "can-do" attitude, which is widely considered to exist within the Forward Deployed Naval Forces.[61] Overemphasis on the importance of task accomplishment quickly breeds a culture in which failing to meet obligations or schedules becomes unacceptable, and corners are inevitably cut in order to meet demands.[62] As deviation from expected norms becomes standard practice, accidents are inevitable. In order to prevent these accidents, those in positions of leadership must learn to be willing to make hard decisions and "say no" when demands are in excess of the supply their forces are able to meet. This may result in less short-term worldwide presence, but it will assist in restoring the readiness that is required to prevent similar accidents in the future.[63]

ROYAL CANADIAN NAVY FORCE LEVELS

Ultimately, the intention of this paper is to provide the reader both with a thorough understanding of the circumstances that led to and occurred during the recent Seventh Fleet incidents, and furthermore to assess whether there is a warning in these factors that can be applied to the RCN. In the opinion of the author, many of the same driving factors that led to these events are present within the RCN. The circumstances under which they have developed may be different, but action is required to reduce the likelihood of similar incidents.

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[60] *Ibid.*, 41-44.
[61] US Fleet Forces Command, *Comprehensive Review. . .*, 101.
[62] Office of the Chief of Naval Operations, *Strategic Readiness Review. . .*, 72.
[63] Office of the Chief of Naval Operations, *Strategic Readiness Review. . .*, 79.

Whereas one of the primary driving factors in reduced training time and readiness for the ships in Seventh Fleet was the increase in operational tempo, the RCN is at risk of experiencing the same symptoms as the result of a different cause. Manning levels in the RCN are extremely low, and this is particularly exaggerated in the case of a few particular trades. According to the Fiscal Year 2017/2018 Fourth Quarter Report, the Regular Force of the RCN has a total of 7,920 positions.[64] However, force-wide Total Effective Strength (TES) is only 6,761 personnel.[65] After accounting for overfilled positions, this represents an effective strength of 81 percent of total strength.[66] The three most impacted trades are Naval Communicator, Marine Technician, and Sonar Operator. These three trades account for approximately 450 vacant positions; nearly half of the total number of vacancies.[67] Within the officer community, Naval Warfare Officers are the most affected community.[68] An even greater affect is present when analyzing the medical readiness of specific trades. The most impacted trade is Sonar Operators, only 68 percent of which are presently medically fit for duty at sea.[69] Unless something is done to increase force levels, and to address problems with medical readiness, continuing to conduct operations at the same intensity will have the effective outcome of an increased operational tempo.

Clearly, in order to sustain the same pace of operations, the RCN must recruit new personnel to fill open positions. However, special attention is required in the manner in which this buildup occurs. One of the problems identified in the Strategic Review was the effect of unbalanced manning, specifically overfilling of positions at a specific rank. Within the context of

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[64] Canada, Department of National Defence, Royal Canadian Navy, *RCN Quarterly Report: FY 2017/2018 Q4,* 2018, 5.

[65] *Ibid.*, 6.

[66] *Ibid.*, 5-6.

[67] Royal Canadian Navy, *RCN Quarterly Report. . .*, 6.

[68] *Ibid.*, 6. NOTE: On a percentage basis, NAV ENG is at a lower manning level; however, this is exaggerated by the extremely small size of the community. TES/# Positions: NWO 870/940, NAV ENG 62/70. As a result, greater effort is required to correct the manning level of NWOs.

[69] *Ibid.*, 24.

the US Navy, this has been particularly problematic concerning Junior Officers in the Surface Warfare Officer (SWO) community. The cause of this overfilling is largely due to the fact that the SWO community serves as the primary source for Restricted Line Officers. Additionally, candidates for other warfare communities who attrite from training programs are typically assigned to duty as a SWO in order to fulfill incurred commitments. This has led to more than the required number of Junior Officers being assigned to ships, which ultimately has a negative effect on the available training resources and the resulting level of expertise that junior SWOs are able to develop. Fewer training events and less time for practice watchstanding are available, and the effect this has if further exacerbated by emphasizing on the job training (OJT). Again, while the specific circumstances that led to this problem may not be present within the RCN, there are clear parallels that do exist which will require special attention for effective risk mitigation. The first problem that must be solved is how to attract sufficient new recruits. However, great care must be exercised in ensuring the programs and processes used to adequately train those new personnel are not overburdened by their influx. The experience of the US Navy would indicate that the highest levels of individual and institutional knowledge will be achieved with the use of properly managed force levels and traditional instruction that provides both students and instructors the opportunity to hone their skills.

Dealing with an influx of new recruits will present a significant, but necessary, problem for the RCN in the future. Something that is already occurring, though, is an unwillingness to "do less with less."[70] Despite the significant gaps between optimal and actual personnel levels, an analysis of sea days during Fiscal Year 2017/2018 indicates that there is a strong bias toward

[70] Canada, Department of National Defence, Chief Review Services, *Evaluation of Naval Forces,* December 2013, 18.

operations as opposed to readiness. For frigates, 92 percent of planned sea days were executed.[71] For Maritime Coastal Defence Vessels (MCDVs), 96 percent of planned days were executed.[72] However, what this does not clearly depict is the large mismatch between the number of sea days required for readiness sustainment versus the planned number of sea days. Frigates had a planned number of sea days that was 127 percent of the sustainment level, while for MCDVs the discrepancy was even more pronounced. Planned sea days for MCDVs were 213 percent of the sustainment level.[73]

There are also additional problems associated with MCDV deployments and manning. In particular, although MCDV manning appears much better than that on frigates, there is a reliance on backfills in order to reach effective manning levels. These backfills consist of attach postings that are 6-12 months in length instead of the nominal 2-year length.[74] As a result of their shorter length, these postings present individual sailors with less time to develop personal skills and expertise. This also means that the RCN as an institution becomes less knowledgeable.

A further problem exists with the employment of MCDVs in regards to the capabilities the vessels possess. In many cases, MCDVs are used to fill missions that were traditionally conducted by frigates. In many cases they are neither properly equipped nor capable of effectively conducting these missions. A perfect example is OP CARIBBE. The MCDVs lack the required speed, sensors, and equipment such as maritime helicopters that made frigates well-suited for these missions.[75] Using MCDVs to fill this role does not provide an efficient and meaningful contribution. It does, however, point toward the bias of operations at the expense of

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[71] Royal Canadian Navy, *RCN Quarterly Report. . .*, 31.
[72] *Ibid.*, 31.
[73] Royal Canadian Navy, *RCN Quarterly Report. . .*, 31.
[74] *Ibid.*, 23.
[75] Chief Review Services, *Evaluation of Naval Forces*, 14-15.

readiness. The use of these vessels for missions they are not properly suited and outfitted for diverts precious resources, and most importantly personnel, away from where they are truly needed. This improper allocation of resources leads to an overall reduction in force capability.[76]

CONCLUSION

The four major incidents that occurred within the US Seventh Fleet during 2017 resulted in a significant loss of life. Although at the simplest level they were the result of poor seamanship and failure to adhere to established procedures, this was ultimately indicative of larger cultural and institutional problems. These fundamental issues were common throughout all four of the incidents. The comprehensive and strategic reviews that were conducted by the US Navy were certainly the correct response and led to a greater understanding of not only the issues that directly contributed to the incidents, but also greater institutional problems.

Despite the large differences in force size and composition that exists between the US Navy and the Royal Canadian Navy, many of the same themes or overall principles identified as a result of these incidents and reviews may prove valuable toward preventing the occurrence of similar incidents in the future. The current personnel issues that the RCN is facing combined with an unwillingness to address the operational tempo, leaves the RCN in a vulnerable position. At some point, unless significant personnel increases are realized, the RCN must make the difficult but necessary choice to reduce the operations it is conducting. Failing to do so is following the same unfortunate and perilous course that was charted by the US Seventh Fleet. There is, however, still time to learn from these incidents and steer the RCN as a whole toward safer waters.

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[76] *Ibid.*, 15.

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