WHY IS THE CANADIAN NAVAL TASK GROUP COMMANDER STILL AT SEA?

by Commander Rick Gerbrecht

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INTRODUCTION

A majority of Commanding Officers who served in NATO's Immediate Reaction Force — Standing Naval Force Atlantic (SNFL) — during the final days of 1999, believed that opposing navies would no longer confront each other in the classical Cold War open ocean scenario.[1] In a world of immense change, it is premature to conclude whether this two-year-old prediction for the future of naval strategy will stand the test of time. Nonetheless, 'blue water' navies are turning their interests away from the high seas and are proceeding with initiatives to generate or enhance 'brown water' capabilities. Germa-ny, the Netherlands and Australia have re-cently undertaken shipbuilding projects to ac-quire either an expeditionary or an over-the-beach capability to support both internation-al and domestic operations ashore.[2] Canada too is proceeding with plans to build a small fleet of Afloat Logistic Support Capability (ALSC) vessels by the year 2005.[3] These ships are envisioned to possess a combined strategic sealift and an administrative over-the-beach capability in support of land oper-ations as defined in the vessel's statement of capabilities.[4] The shipbuilding strategy being adopted by Canada underscores the trend by navies to acquire a capability to influence events over land.

Notwithstanding the goal of the future fleet structure, recent Canadian naval littoral experience has demonstrated that strict Rules of Engagement (ROE) and personal account-ability for Commanders in the controlled ap-plication of military force are becoming more dependent on a continuous and rapid exchange of information.[5] In the CF document *Leadmark: The Navy's Strategy for 2020*, it is ac-cepted as a reality that emerging technologies and evolving concepts of command and con-trol will allow the unique capabilities of the navy to join more effectively with the army and air force.[6] As Maritime Command[7] is moving to broaden its sea-to-land capabilities, it is fitting to examine if current command and control relationships are still relevant for future operations. The complexities of supporting operations over land are dictating to naval commanders to adopt a closer-than-ever working relationship with agencies ashore, regardless of ship design or capability. Indeed, the advances in information technology and lessons learned from recent coalition operations raise the question: How and

from where should command and control of Canadian warships be exercised? This paper will address this question and will illustrate, with examples from recent international and domestic operations, that the commander of the task group (CTG) must work face to face with his military and civilian counterparts.

Internationally, the small size of the three Canadian services results in relatively few situations where they all operate together and, consequently, the emphasis will be on interoperability with US forces.[8] Given the advances in information technology and the need to remain interoperable with a joint-capable USN, the Canadian task group commander can no longer carry out his responsibilities without an impact on other stakeholders. This claim is also true in view of the potential for the navy to carry out wider-ranging domestic operations. The very nature of naval operations in the 21st century will dictate that the commander of a Canadian Task Group must direct activities from a shore-based rather than from a sea-based headquarters.

THE EVOLUTION OF THE CTG

Historically, the CTG has deployed to sea supported by a small staff embarked in a designated flagship.[9] During the Cold War the real-world task of Maritime Command was that of Anti-Submarine Warfare (ASW).[10] Given the technology of the day, this operation normally required ships to work within line of sight of each other in order to provide mutual support in case of a submarine-launched torpedo attack. The ability to manoeuvre in company with other ships, organic helicopters and land-based fixed-wing aircraft was the operational standard of the Atlantic and Pacific task groups as they prepared to conduct close ASW on the open ocean. It was the responsibility of the CTG to coordinate, by day or night, the effort of the assets assigned under his tactical control. In essence the commander managed risk within the task group. Given that ship-to-shore communications were achieved via radio and therefore were subject to ground-wave attenuation, it was a technological limitation that required a senior officer to be at sea to make decisions, direct future action and, above all, manage risk in the absence of direction from shore-based authority. During this period the CTG carried out a clearly defined national responsibility in a clearly identifiable national task group.[11] With the end of the Cold War in 1989, there existed little reason to assess whether organ-izational change in command and control of the task group was necessary without first testing the waters of any future operation. It would be a short wait, however, before change indeed occurred.

In August of 1990, Canada dispatched a three-ship task group (maritime contribution referred to as Op FRICTION) to join other forces in the Persian Gulf to counter Iraqi aggression. This event would mark the first large post-Cold War military effort and introduced the new challenges to coordinating a large coalition naval force.[12] Aside from participation in an operation with non-traditional naval allies (eg, Argentina and India), the Persian Gulf War demonstrated the emerg-ing future of naval operations — that of joint and combined operations. By the time Canadian ships began their first patrols in the Gulf, it had been decided by the Canadian Government to complement them with a squadron of CF-18 Hornet fighters, which ar-rived in early October to fly protective Com-bat Air Patrols over water with a US Marine air wing.

To coordinate the efforts of both the naval and air groups, a Joint Forces Headquarters was hastily conceived, where neith-

er the establishment nor the doctrine to support this type of coordinated warfare was in place.[13] The CTG in theatre was appointed the Joint Force Commander. His initial assessment was to set up the joint headquarters on board the replenishment ship — HMCS PROTECTEUR — and remain pierside in Manamah, Bahrain. To a seagoing officer this proposal made sense, as it modeled the larger American command relationship between United States Central Command located in Riyadh and Naval Component Central Command located on board the command ship USS BLUE RIDGE. The intent of the CTG to remain on board PROTECTEUR, however, was overturned by higher authority at National Defence Headquarters (NDHQ).[14] The Chiefs of the maritime and air staffs both believed that it was appropriate for the oper-ational decision-makers of the naval and air elements to be collocated and accessible to other coalition headquarters and decision-making chains. This approach was indeed progressive for its time but it made sense giv-en the joint makeup of Canada's contribution.

The requirement to form a joint headquarters was also necessary since, for the first time in recent memory, elements of the CF would be working outside a NATO hierarchy. The Canadian Government would need to authorize the military to proceed with tasks and operations that supported foreign policy. Headquarters Canadian Forces Middle East was therefore set up in Bahrain in early November. The CTG was located ashore to support joint operations and remained ashore for the remainder of the Persian Gulf campaign.[15]

With the end of the Gulf War, the na-vy turned its energy towards the process of modernizing the fleet with the introduction of the HALIFAX and IROQUOIS classes of ship. By 1993, the Canadian task group com-position included ships possessing enhanced self-defence measures and the capability to conduct extended surface-to-air and surface-to-surface engagements.[16] The navy advanced its weapon lethality from line-of-sight to one whereby a radar contact, identified as a law-ful target, could be engaged over the horizon. The application of military force became measured and quantified as a result of ever-evolving ROE and once again called for an experienced value judgement to be made in order to approve the release of weapons.[17] The intent of a 'belligerent' had to be qualified as either one which was trying to pro-voke a response or one which was indeed the beginning attack.

Although the fidelity of ship-to-shore communications improved significantly with satellite technology, the management of risk was again carried out by the CTG who was at sea with his force. By being at sea, the CTG also knew the strengths of each of his ships, and the ships knew their Commander's phi-losophy and expectations.[18] Being at sea provided the CTG visibility over his force and 'made sense' in order to control the application of force and manage risk.

Unlike the USN, the Canadian navy does not possess the requirement to maintain a task group 'on station'. In fact, Maritime Command maintains one task group at 10–30 days' notice to deploy, with a second task group to be available within 30–90 days' notice to deploy.[19] Historically, Canadian task groups have been assembled in response to preplanned requirements to fulfill either a national or NATO training commitment. As a result of this reality, a Canadian task group has not, since FRICTION, demonstrated its capability in a real-world event. It is interesting to note that during the last decade a CTG has directed a majority of ship actions from ashore rather than from at sea. These opera-

tions include:

- Ocean Surveillance (the 1996 Turbo War — single-ship operation on a ro-tational basis);
- Persistence (the 1998 crash of Swiss-air Flight 111 in national waters off Nova Scotia — initially a two-ship operation which was later extended to a single-ship operation on a rotation-al basis);
- Semaphore (the 1999 intercept oper-ation of four vessels carrying illegal migrants entering national waters off British Columbia — single-ship op-eration on a rotational basis);
- Deliverance (single replenishment ship in support of land operations off the coast of Somalia);
- Megaphone (the 2000 seizure of GTS KATIE carrying CF equipment and personnel in international waters — single-ship operation);
- Augmentation (the six-year opera-tion to integrate a HALIFAX-class ship into a USN Carrier Battle Group operating in the Northern Arabian Gulf in support of the enforcement of the US embargo against the state of Iraq — single-ship operation on a ro-tation-al basis); and
- Standing Naval Force Atlantic.[20]

As illustrated above, the recent expe-rience of the CTG has rested in his ability to direct individually displaced ships. Unlike standing NATO commitments during the Cold War, planning of naval operations can now be done only under the most general of concepts until the actual employment of a ship or ships is known. The management of risk, however, taking into consideration po-litical direction and foreign policy, has never been more important. This claim is particularly true in view of the advances in technol-ogy and implications of joint opera-tions.

THE CTG: EVOLVING TECHNOLO-GY AND JOINTNESS

The USN is proceeding with initia-tives to reduce the 'fog of war'[21], including the highly publicized yet widely misunder-stood concept of 'network-centric' war-fare.[22] Network-centric warfare is the con-cept of linking various platforms into a con-nected information grid. This grid permits the rapid exchange of information between participants, be they operating in a ship, a vehicle, an aircraft or a remote sensor. In essence, network-centric warfare is the mechanism for commanders to make deci-sions and act more quickly against any po-tential adversary. This project is not ear-marked for a futuristic navy, but rather is a reality of today.

The basic concept of network-centric warfare has already been demonstrated on board Canadian warships, during a recent SNFL flagship deployment, with the ability to exchange electronic mail.[23] A Coalition Wide Area Network (CWAN) is also in place in the Pacific Maritime Operations Centre (MOC) Esquimalt, as a result of the US 3rd Fleet's initiative to proceed with network-centric warfare during RIMPAC 2000.[24] Al-though statistics are not available to validate the Canadian experience, the following USN account represents a case in point and the po-tential of network-centric warfare. In early 1997, a single aircraft carrier in the western Pacific sent over 54,000 electronic mail mes-sages in a one-month period. This elec-tronic traffic represented about half of the total message traffic historically sent in the Western Pacific theatre during the same

time.[25] What was discernible in the Canadian experience was that such a capability enabled the speed of command decision-making to increase — questions concerning operations decreased because ambiguity decreased, staff synergy increased, and decision timelines shortened significantly.[26] Although this capability may support keeping the CTG at sea, this is only half the story of network-centric warfare. Importantly, there are two products of network-centric warfare that will force the CTG to operate ashore together with land and air counterparts — theatre ballistic missile defence, and cooperative engagement capabili-ty.

In a network-centric warfare environ-ment, individual units will contribute capabil-ities to one of three grids: information, sensor or engagement. The capability of the in-dividual platform will dictate the number of grids in which a particular unit may partici-pate. In a naval context, theatre ballistic missile defence will become the combined missile firing power of a force and will afford protection from attack as well as provide se-curity to the host nation without placing weapons on its soil.[27] This USN defence system is expected to be in place and operate with or without coalition participation. Commander Colin Plows, spokesman for the Chief of Ma-ritime Staff in Ottawa, announced on 23 March 2000 that Maritime Command is considering equipping its warships with a theatre ballistic missile defence capability.[28] A theatre missile defence system would provide Canadian warships with a capability to conduct engagements over both water and land. This announcement clearly indicates the na-vy's serious intention to become more capable in supporting operations ashore.

To complement theatre ballistic missile defence, cooperative engagement capability will become the protocol that will instantly share detection and targeting information between sea, air and land forces in a shared battlespace. This engagement grid will enable widely dispersed platforms and units to 'see' and react to events beyond their own sensors' horizon.[29] In fact, Admiral James Ellis Jr, USN, believes that operations in the littorals will require naval forces to be widely dispersed yet operate as a cohesive, integrated whole capable of coordinating actions to fulfil a variety of missions.[30] Network-centric warfare will assume increasing importance since most of the information and direction required to execute a mission will be found outside the integral sensor capacity of a single task group or unit. Although this technical objective remains theoretical at present, its operating potential supports the requirement for the CTG to be located where the operational decision-making process re-sides.

Prior to the advancement towards network-centric warfare and cooperative engage-ment capability, the CTG's assessment of risk has been limited in the scope of technology available and due to the fact that ships could and did operate in isolation. Lives nonetheless depended on the ability of the CTG to recognize the indicators of a threat and coor-dinate a collective reaction within the force. During the Cold War, the predictability of the Soviet maritime sequence of attack provided a form of indication and warning to prepare the defensive posture of a task group.[31] The nature of military operations in the littorals, where ships work in proximity of land, now exposes ships to a variety of potential weap-on threats and shorter warning times not normally encountered on the high seas. In addition to the changing threat, the complexities of national ROE, joint targeting lists and concepts of collateral damage and Effects Warfare all serve as examples of how interdependent a battlespace has become. The dependency on the air tasking order[32] during

ALLIED FORCE further supports this statement.

Shortly after the start of the air campaign over Kosovo, the air tasking order, received on classified electronic mail, was withdrawn from Allied distribution in reaction to US national concerns about the security of the information.[33] The loss of this document forced non-US warships to operate in theatre without prior knowledge of daily Allied air activity. The consequence of this lost information was that force reactions to air activity became dependent on the interpretation of a US on-site commander rather than the designated force air warfare commander. The NATO CTG lost accountability for the ability to anticipate and order TG self-defence measures.[34] In reality, the ability of the CTG to manage a critical component of overall risk was taken away. The loss of the air tasking order demonstrated with clarity that, within the realm of an information dominance oper-ation, the ability to manage risk could reside outside of a task group's command authority. In the network-centric warfare environment, commanders in the same battlespace need to be sensitive to the possibility that an action by one may bring unforeseen consequences to another. This potential for risk, superimposed on the NATO warships, could have been mit-igated had the CTG been ashore to personally dispel US concern. This lesson calling for greater personal command influence ashore is not isolated and has been observed previously.

In his book *Desert Storm at Sea — What the Navy Really Did*, Marvin Pokrant and a group of retired US senior naval officers suggest that the USN's lack of influence on the US Commander-in-Chief staff in gen-eral, and on its commander (General Schwarz-kopf) in particular, created unnecessary but serious rifts in trust.[35] Pokrant argues that this situation would have been greatly improved if the USN naval force commander, Vice Admiral Mauz, had located his headquarters in Riyadh instead of remaining afloat on the command ship in BLUE RIDGE.[36] Although Admiral Mauz had positioned liaison staff ashore, the 'fog of war' was intensified because the top naval commander was not integrated into the joint 'brain trust'.[37] Pokrant was able to confirm an incident in which the US ROE permitting the attack on Iraqi oil tankers was rescinded after General Schwarzkopf concluded a meet-ing with the US Chairman of the Joint Chiefs and the Secretary of Defense in Riyadh. The naval liaison commander in Riyadh was nei-ther invited to the meeting nor made aware of the decision taken that directly affected the navy. The directive not to engage Iraqi tank-ers was issued by message to the at-sea com-mander, but this order was received after the navy had engaged the Iraqi tanker AMURI-YAH.[38] As demonstrated in this incident, the 'fog of war' occurred since the naval com-mander was not located where critical opera-tional–strategic decisions were made. The incident also illustrated that the subordinate ashore was considered as an additional level of bureaucracy rather than as a peer decision-maker.[39] The AMURIYAH incident and the decision by the commander of US naval forces not to relocate to the joint headquarters in Riyadh, became the two critical reasons why General Schwarzkopf did not per-mit the USN to conduct a number of tasks it was trained for and capable of performing.[40]

In order to provide a meaningful contribution to joint operations while at the same time managing risk, the commander of Canadian naval forces must go ashore and work face to face with his counterparts. As demonstrated during DESERT STORM and ALLIED FORCE, this requirement will remain critical as the full potential of network-centric warfare is realized. The need for rapid

consultation will also be critical to satisfy a time-accelerated command decision process. The challenge in an information-dominated operation clearly calls for all commanders to be collocated. The need for the CTG to carry out face-to-face negotiations to satisfy the challenges of day-to-day operations can also be demonstrated.

THE CTG'S WORLD

At present, a seagoing staff numbering up to 20 officers and non-commissioned members supports the CTG in the planning and execution of tasks.[41] A major shortfall of all classes of Canadian warships is the ad hoc arrangement for staff accommodation and workspace. This inadequate arrangement was improved upon for the two destroyers that served in 1999–2000 as flagships to Commander Standing Naval Force Atlantic;[42] however, the emergence of Operations Other Than War is demanding an expansion of staff composition. These additional demands for staff equate to additional demands for shipboard accommodations.

Recent operations involving planning of support to amphibious landings, non-combatant extraction, naval control of shipping, mine clearance operations and submarine support (all facets of naval operations critical in the littorals) have demonstrated that the present Canadian flagship accommodation fit is severely lacking.[43] In fact, this expanding staff list does not take into account the recent experiences of the CTG of requiring a collection of legal, environmental, medical, technical, civilian–military liaison, Non-Government Organization liaison and Public Relations staff members to assist in the overall operational effort. At a time when TG staff requirements are increasing significantly to meet the challenges of expanding littoral operations, many navies are moving to reduce crewing and therefore accommodation of ships. The RN objective for their new Type 45 frigate is about 100 personnel and the goal of the future USN guided missile cruiser is a crew of 95 sailors.[44]

Canadian plans are under way to design a replacement ship for the ageing IROQUOIS-class command and control and area air defence ship.[45] In a network-centric warfare environment the requirement for an enhanced sensor and missile delivery platform is validated, while the need for a command and control flagship in a geographically dispersed information or engagement force is not. Regardless of the final solution, the demands to provide the Canadian CTG with a fully capable staff to meet the full spectrum of littoral operations could compromise the design of the warship and undermine the decision to optimize crew size to support operations at sea. The true requirement for the CTG to be interfaced with the players ashore in a littoral combat environment has been illustrated. There is also a similar requirement for the CTG to remain ashore in support of domestic operations.

On 2 September 1998, SWISSAIR Flight 111 crashed in the littoral waters near Peggy's Cove, Nova Scotia. The emergency response organization that was activated included two warships (operating nearby on independent exercise) and other small watercraft. Regrettably, the violent nature of the crash resulted in the entire loss of life on board the airliner.[46] It became apparent during the initial hours of the crisis that the Search and Rescue effort would change to one of salvage and evidence gathering. This aviation disaster would nonetheless serve as a significant awakening for combined domestic operations. In the days that followed, the CF mounted PERSISTENCE, an operation that would support the coordination of several cross-border agencies.[47] The knowledge, training and available workforce of the CF permitted Transport Canada to emerge quick-

ly as the lead government agency.[48] The ven-ue that permitted this massive undertaking was Maritime Forces Atlantic Headquarters in Halifax. Specifically, inside this building was the organization of the joint military-Coast Guard Rescue Coordination Centre and the Maritime Operations Centre (MOC). Both locations were fitted with the communications, office space and personnel resources to more than adequately assist in the coordination of the massive salvage effort. Due to unique circumstances, the senior naval officer in charge of the initial stages of the oper-ation was the former CTG of the Atlantic fleet who was preparing to assume command of SNFL.[49] The capabilities of the CF and specifically those within Maritime Command permitted success within a tragedy to occur — the CTG possessed the oversight to provide the critical judgement, assessment and recommendations to the lead agency.[50] As in DESERT STORM, the complexities of PERSISTENCE demonstrated the need for the leadership of naval assets deployed to be ashore and available for consultation and decision-making with the varied group of stakeholders. Contingency operations, however, form only a part of the domestic obligations to which a CTG must be ready to respond.

Canada is a maritime nation with the world's longest coastline, bordering on three oceans encompassing some of the greatest natural resource potentials. Global competition for resources has already put pressure on the Canadian government to take measures to protect and regulate the ocean exploitation regime.[51] The vast and varied geography represents opportunity for the operation of both legitimate and illegitimate interests. There will, no doubt, be future challenges to Canadian authority and the rule of law in national ocean areas, particularly in remote areas. There is a Canadian government imperative to establish and maintain sovereignty over those maritime areas and routes which may be challenged, such as the ice-covered Northwest Passage.

David Ljunggren, a reporter for the international Environmental News Network, has reported the prediction that global warming rates could very well make the Northwest Passage navigable during the summer period within the next decade.[52] The distance between Europe and the Far East via the Panama cannel is approximately 12,600 nautical miles. Should the Northwest Passage become accessible, the Europe–Far East trade route would be reduced to 9,000 nautical miles. The potential for international maritime activity in this area cannot be ignored should the climate prediction prove true. Non-defence-related challenges to Canada's maritime security also include such issues as illegal fishing, drug importation, and illegal migration and pollution violations. At present, domestic law is enforced by a number of federal departments which have jurisdiction over each area of law. This environment in-evitably creates overlap and duplication of services and responsibilities. Notwithstand-ing the fact that the CF and its deployable as-sets will always support a lead agency in do-mestic operations, the inescapable truth re-mains that the expanding need for situational awareness in the so-called 'information grid', be it international or domestic, will not per-mit the CTG to remain at sea. In all of the examples of littoral operations cited in this paper, the subtle difference between success and the fog of war has depended on whether the CTG was or was not physically involved in the decision-making process.

Technology makes it possible today for the CTG to remain at sea and engage in a rapid exchange of information. The CTG at sea, however, represents a 'point solution' in an evolving open-architecture information

world. A mechanical breakdown, technical failure or battle damage in the flagship could jeopardize the ability of the CTG to direct action. These events could result directly in the loss of connectivity between the CTG and other significant players. This loss of information exchange could effectively cut out the CTG in a potentially critical decision-making cycle — a single decision that could be critical to either international or domestic success or the reputation of Canada. The criticality of this issue has already been acknowledged during MARCOT 98 in which the Atlantic CTG remained ashore to serve as the Maritime Component Commander (MCC).[53] In 2001, the Atlantic CTG (designate) will act as the Commander of the Joint Force during STRONG RESOLVE 01. Faced with the same dilemma of remaining at sea or proceeding ashore, the commander has indicated his willingness to locate ashore for the purpose of maintaining face-to-face interaction with other commanders.[54]

CONCLUSION

It has been the traditional position of Canada, absent a threat at home, that the contribution to international security will be accomplished via operations overseas. To be a credible contribution to a multinational force, it is imperative that Canada's naval forces be interoperable with those of our primary ally and be able to materially improve the force combat power. Recent initiatives demonstrate that Canada's naval forces are moving in the technical direction of acquiring the capability to operate in a network-centric warfare arena. The future trend in USN operations, howev-er, indicates that ships will operate with great-er independence within a geographically dis-persed area. The very nature of multination-al network-centric warfare may not support the employment of ships in an autonomous national task group. The identity and contri-bution of a single ship is, however, not lost — a Canadian warship flies a Canadian flag. The real loss of national identity may arise if a situation is permitted wherein a Canadian warship is directed to carry out an action without the proper Canadian oversight.

Regardless of the size in naval force contribution, risk must still be managed. To this end, the manager of risk must have situational awareness of the entire theatre of operation or domestic area of responsibility. In the conduct of future network-centric warfare or operations with other government agencies, situational awareness may exist within but it will not be fully exercised from a single ship.

Recent operational experience has demonstrated that despite technical advances, the fog of war remains a worrisome constant. The goal of conducting future operations faster than any potential adversary will introduce new dimensions of risk. With the future acquisition of the ALSC, the fleet will possess ships designed to operate in the littorals. The move from blue-to brown-water operations will fundamentally alter the way Canada will employ all of her naval forces. The number of varied weapons systems and sensors oper-ating in a littoral area could be overwhelming. The management of risk will require a level of trust and understanding between stakeholders, be they military or civilian, that a course of action will not give rise to adverse consequences. It has been illustrated in both DESERT STORM and ALLIED FORCE, that only by personal contact can the potential for misunderstanding be avoided. The challenge will be the ability to coordinate dissimilar operating cultures into one. The service that possesses the greatest experience in bridging the gap between sea and land is the navy. It is fitting to propose, as the Canadian navy proceeds to operate closer to the shore, that the CTG be

located ashore to car-ry out his duties with his counterparts. This proposal will require the strength of all three services to commit to this organizational change.

Whether a crisis is domestic or international is not the issue. The capability for the navy to respond within the entire spectrum of operations must be in place and exercised before the first day of a crisis. The Atlantic and Pacific fleets have both operated with the CTG remaining ashore. The national Maritime Operations Centres have demonstrated their utility as the venue to permit the CTG to carry out his functions ashore or to act as the staging point for forward deployment to another shore site. This operating practice should continue in order to foster the critical process to gain human trust and maintain national oversight within the challenges of technology-driven combined, coalition and domestic operations of the future.

NOTES

[1]SNFL conducted an *MC 171/3* Seminar at the German Naval Operations Tactical Centre during the period 29–30 November 1999 in Bremerhaven. *MC 171/3* is the source document which defines the concept of operations governing the employment of the NATO force. In defining the changing roles of navies, the opinions of various Commanding Officers were sought. In general terms, most senior officers believed that open-ocean conflict was no longer a tactic to be employed in future naval operations. See *CSNFL Annual Report 1999–2000*.

[2]See *Jane's List of Fighting Ships* for countries: Federal Republic of Germany, the Netherlands and Australia.

[3]The ALSC project timeline indicates delivery of hull one by the fourth quarter of 2005. See ALSC Project Management Office brief dated 4 December 1999.

[4]Unlike other Canadian naval combatants in service, the ALSC will be capable of providing helicopters and organic watercraft to transport personnel and materiel ashore under a benign threat environment. See ALSC Statement of Requirement, page 27.

[5]The author served on the staff to Commander Standing Naval Force Atlantic during 1999–2000. The force was part of NATO's maritime effort in relation to operations in Kosovo in the summer of 1999. During the period of operations the author was seconded to Headquarters Allied Naval Forces South (NAVSOUTH) and was involved in the planning of operations for both SNFL and Mine Counter Measures Force North (MCMFORNORTH).

[6]Ottawa, Department of National Defence, *Leadmark: The Navy's Strategy for 2020* (Ottawa: Naval Board Executive Council, 2000), p 5.

[7]The proper name of Canada's navy is Maritime Command (MARCOM).

[8]Ottawa, Department of National Defence, *Leadmark: The Navy's Strategy for 2020* (Ottawa: Naval Board Executive Council, 2000), p 5.

[9]Halifax, Department of National Defence, *An Instrument of National Policy: The Canadian Task Group Concept of Employment* (Halifax: Canadian Forces Maritime Warfare Centre, 1998), p 6.

[10]The NATO strategy to interdict Soviet submarine forces behind the Greenland–Iceland–United Kingdom (GIUK) gap was assigned to Maritime Command. See *Cease Fire, End Fire Mission, Forever? The Ca-nadian Decision to Abandon Naval Fire Support,* p 47.

[11]*Ibid.*, p 47.

[12]Richard Gimblett and Jean Morin, *The Canadian Forces in the Persian Gulf — Operation Friction* (Toronto: Dundurn Press, 1997), p 59.

[13]Richard Gimblett, "Prototype War for the 21st Century?: The Persian Gulf Revisited," diss., U of Calgary, 2001, p 3.

[14]Gimblett and Morin, *The Canadian Forces in…* (Toronto: Dundurn Press, 1997), p 115.

[15]Although the CTG was located ashore, his deputy remained at sea and acted as CTG on behalf of the CJTF. See *The Canadian Forces in the Persian Gulf — Operation Friction.*

[16]The introduction of the USN Standard Missile (SM2) and Harpoon systems elevated the navy's capability to target and engage both air and surface contacts. See Jane's list of shipboard weapon systems.

[17]As Officer-in-Charge of the IROQUOIS-class team trainer, the author was responsible to train command teams in combat simulation. The training objectives included the team's employment of the Standard

Missile, employing ROE under control of the CTG.

[18]Commodore J.D. Fraser, "Why We Need Task Groups Today," *Maritime Affairs,* Spring/Summer 2000, p 40.

[19]Halifax, Department of National Defence, *An Instrument of National Policy: The Canadian Task Group Concept of Employment* (Halifax: Canadian Forces Maritime Warfare Centre, 1998), p 3.

[20]Of special note is the national responsibility to commit a ship to NATO's Immediate Reaction Force (IRF) — Standing Naval Force Atlantic (SNFL). For almost 40 years Canada has committed a destroyer or frigate on rotation to participate as a member of SNFL. On a rotational basis every six years, a Canadian serves as the commander to this force for a period of 12 months. During his tenure the Canadian commander is normally embarked in a Canadian flagship. SNFL represents the only occasion when a Canadian task group commander is employed at sea on a continuous basis. In 1993–94 and 1999–2000 a Canadian officer commanded SNFL while deployed in the Adriatic Sea in support of SHARP GUARD and ALLIED FORCE respectively. Both were real-world events and involved operations against potentially hostile forces. Both commanders performed with distinction, unfortunately in a NATO rather than in a national capacity.

[21]Strategist Carl Von Clausewitz initially termed those aspects of operations where events may go wrong and detract from success as 'friction in war'. In modern operations 'the fog of war' is used to describe events involving human error. See *On War* by Carl Von Clausewitz.

[22]NCW derives its power from the networking of a well-informed but geographically dispersed force. The enabling elements are a high-performance information grid, access to all appropriate information sources, weapons reach and manoeuvre with precision and speed of response, value-adding C^2 processes — to include high-speed automated assignment of resources and integrated sensor grids closely coupled to shooter. See Arthur Cebrowski and John Garstka, "Network Centric Warfare: Its Origin and Future," *United States Naval Institute Proceedings,* January 1998, p 28.

[23]In preparation for the 1999–2000 SNFL Flagship, HMC Ships ATHABASKAN and IROQUOIS were fitted with an SHF satellite communications suite. This capability permitted the exchange of electronic mail including the exchange of high-resolution graphics between the ship and superior national and NATO commanders. During ALLIED FORCE the flagship was in receipt of superior commander's daily briefs within minutes of their completion.

[24]RIMPAC is a recurring naval exercise conducted in the Hawaiian operating area. To facilitate communications and command and control among the seven nations participating in RIMPAC 2000 (US, Canada, Japan, South Korea, Chile, Australia and Great Britain) the USN built the CWAN. By relying on commercial off-the-shelf technology, all participants achieved connectivity. This system remains in use in the Pacific MOC for daily and future operations. See "RIMPAC Network to Outlast Exercise, Facilitate Future Coalition Operations."

[25]Cebrowski and Garstka, "Network Centric…", *United States Naval Institute Proceedings,* January 1998, p 28.

[26]The author served on staff to Commander Standing Naval Force Atlantic and worked extensively with electronic mail throughout the flagship tour. During ALLIED FORCE it was not uncommon for the flagship to be in receipt of the daily brief issued to Supreme Allied Command Atlantic (SACLANT) within one hour of its being physically executed in the Headquarters located at Norfolk, Virginia.

[27]Richard H. Shultz Jr. and Robert L. Pfaltzgraff, Jr., eds., *The Role of Naval Forces in 21st Century Operations* (Washington: Brassey's, 2000), p 144.

[28]Richard Foot, "Navy Eyes US Style Missile Defence," *National Post,* 23 March 2001, p A1.

[29]Shultz and Pfaltzgraff, *The Role…* (Washington: Brassey's, 2000), p 144.

[30]*Ibid.*, p 142.

[31]Although hostilities were never directed against NATO, the ability of Soviet warships and aircraft to locate a target required the pre-positioning of airborne radar aircraft to search, detect and jam the sensors of potential targets. NATO electronic devices are capable of intercepting the radar emissions of these jamming aircraft and therefore would eliminate the element of surprise on the part of the attacking forces.

[32]To coordinate theatre air missions, the air tasking order assigns tasks to individual aircraft, regardless of their point of origin (land or sea base). The air tasking order is the source document to confirm the identification of aircraft. Unless a mission is formally scheduled in the air tasking order the aircraft(s) will not be permitted to fly.

[33]The author served in Headquarters Naval Forces South during ALLIED FORCE. Although the

details of this claim remain classified, the USN did believe that the contents of the daily ATO were compromised.

[34]Rear Admiral David Morse, "Information — The Achilles Heel Of Cooperation," diss., U of New Brunswick, 2000, p 4.

[35]Marvin Pokrant, *Desert Storm at Sea: What the Navy Really Did* (Westport: Greenwood Press, 1999), p 208.

[36]*Ibid.*, p 208.

[37]*Ibid.*, p 297.

[38]The AMURIYAH incident is described in detail. See Pokrant, *Desert Storm*…, p 65.

[39]Although the liaison staff ashore was headed by a Rear-Admiral, eyewitness accounts indicate that the US CinC considered the naval staff to lack authority to direct ships at sea. See Pokrant, *Desert Storm.*.., p 284.

[40]General Schwarzkopf would have preferred that Vice-Admiral Mauz locate in Riyadh but did not pursue the issue beyond informal dialogue. See Pokrant, *Desert Storm.*.., Chapter 13, "Observations on Command and Control", for full details.

[41]Since the publication of the following cited document, the CTG staff has incorporated one NATO Grade-A fighter controller, two administration clerks and two additional communicators. The staff composition is enough to satisfy a one-in-two watch rotation. See Halifax, Department of National Defence, *An Instrument of National Policy: The Canadian Task Group Concept of Employment* (Halifax: Canadian Forces Maritime Warfare Centre, 1998), p 6.

[42]In preparation for the deployment additional workspaces were assigned for staff use, including one planning office complete with briefing area and one storage compartment. This initiative permitted the original planning office to be converted into the staff message-handling centre.

[43]During STRONG RESOLVE 98 the Submarine Element Coordinator and his team (a total of three officers) were required to carry out their functions away from the flagship due to a lack of accommodation space. The solution to embark members of the TG staff in other ships was a normal trend during the author's tenure as Task Group Combat Officer.

[44]See Chapter 5 "Personnel" to *1999–2000 SNFL National Report.*

[45]The Canadian Area Defence Replacement (CADRE) programme is designated to replace the IROQUOIS-class platform. The initiative remains conceptual; therefore, the design of the ship and capacity of the platform remain uncertain. See *CADRE Project Management Brief* dated November 1999.

[46]Although the SAR response was relatively quick, the debris area did not contain survivors. Crash analysis would later speculate that the orientation of the aircraft was such that the fuselage broke up and sank quickly upon impact, thereby precluding escape by passengers. See www.gov.ns.ca/cmns/ info111.

[47]Transport Canada, National Transportation Safety Board (US), RCMP, FBI, Emergency Preparedness Canada, Ground SAR units, municipal government, Red Cross Relief, and an extensive international media corps, just to name a few.

[48]The author was serving on staff to the senior officer who was in charge of the navy's salvage efforts.

[49]The officer in question was also appointed as acting Commander Maritime Forces Atlantic at the time of the air incident and therefore had tactical control of ships deployed in the area of responsibility.

[50]During the entire operation the various agencies within Formation Halifax provided far-reaching infrastructure, personnel and material support to the lead agency.

[51]The 1996 Turbot War (OCEAN SURVEILLANCE) serves as the most recent example of warships operating in support of Other Government Departments (OGDs). The purpose of the operation was to provide both naval presence and support to Fisher-ies and Ocean Department enforcement over the dis-puted claim by Spanish interests to fish freely in the Canadian Exclusive Economic Zone (Grand Banks).

[52]See <www.enn.com/enn-subscriber>, Wed Jun 14 2000.

[53]The Maritime Component Commander (MCC) serves as the highest-ranking naval officer in a joint force headquarters. The MCC provides advice to the Joint Force Commander who exercises tactical control of all forces assigned to an operation.

[54]Interview with Capt(N) D. Robertson, 29 Mar 2001.