Logistics and Support

It's been said that "an army marches on its stomach." Though variously attributed to both Frederick the Great and Napoleon, its meaning is less ambiguous: military forces must have adequate supplies and provisions to operate.[1] Military planners are cognizant of this necessity, framing it in military discourse as the "tooth-to-tail" or "teeth-to-tail" ratio, reflecting the ratio of the personnel engaging in combat (the teeth) to those providing the supporting logistics and supply services, such as ordnance, signals, logistics, food, water, fuel, spares, clothing, and medical services (the tail). Oftentimes, the tail of a military force is larger than its teeth and just as important – despite the public's tendency to accord it less recognition. Though the concept of the ratio has differing definitions and is hotly contested, history has shown that a force's lack of access to sufficient supplies is disastrous for both the mission and the personnel involved, and that a military force is much more than just the personnel holding or operating weaponry.[2]

Understanding the meaning of logistics is integral for this discussion. Strictly speaking, logistics is "the science of the movement, supplying and maintenance of military forces in the field." The *Random House Dictionary* defines it similarly, as "the branch of military science dealing with the procurement, maintenance and movement of equipment, supplies and personnel." Even for a smaller military like Canada's, this task is complex and challenging. It is no easy feat to maintain an understanding of what a military requires and ensure that a specific force receives what it needs when it is needed. Nor is it simple to maintain, manage, and move the military's resources, while simultaneously monitoring the financial element of those resources.

On the macro level, the CAF as a whole possesses a complex system of logistics and support. For instance, the military keeps multiple warehouses in which it stores supplies ranging from boots to spare equipment parts, and keeping track of these supplies and resources is an intensive process involving the accumulation and processing of significant amounts of information from each of the CAF's three services. For the RCN itself, the logistics and support system entails keeping track of which vessels are being deployed, the maintenance that different vessels require, the parts that are needed and when they are needed, the personnel that are required and available for specific vessels and at what times, budgetary concerns, as well as a host of other considerations. Ships being deployed require records of the various supplies they will need, in addition to the maintenance that is being conducted and that will be required, potentially involving the ordering of parts and scheduling of repairs upon its return to port.

This is a tremendous quantity of information, and the CAF has developed systems to manage it. Computer-based management programs have proven adept at handling and keeping track of these waves of information, once the data is gathered and entered.[3] The predominant management program utilized in the CAF and thus the RCN is the Defence Resource Management Information System (DRMIS). Introduced by the Department of National Defence (DND) in 2010, DRMIS was itself an amalgamation of the Financial Management Accounting System (FMAS) – a financial management system – and the Materiel Acquisition & Support Information System

(MASIS) – an equipment management system.[4] At the time of its creation, DRMIS was predominantly a financial and technical system. Since then, however, supply chain information and other business processes (such as those regarding real property management) have been integrated into the DRMIS system. This has effectively consolidated the processes within a singular program,[5] which is now the source of support and information for essentially all elements of the defence financial and resource process throughout the CAF chain. It enables all personnel with a role in the life of an asset to work in the system in almost real time. For instance, a component problem requiring a replacement part can be documented in the system, the person tasked with buying parts can view the need for an order and place an order accordingly, the technicians can produce a work order, and, when the part arrives and the maintenance is performed, the work can be documented in the system, thus finalizing the full paper trail for any auditors or budgeters.[6] The DRMIS system is even accessible to vessels in active deployments.[7] While at sea, information inputted into the system can update naval repair facilities about the ship's status and keep them apprised of any problems that require attention upon its return to its home port. By allowing repairs to be planned (including the negotiation of any required contracts with the private sector) and equipment and some supplies to be ordered in advance, prior to the vessel's return, the DRMIS system enables repairs to be scheduled more effectively. This, in turn, potentially saves the Navy time and money.

The creation of such a computer system to maintain information on all components of the RCN's maintenance, costs, and support has been exceptionally valuable. However, it does have some restrictions or setbacks. The system's security is a continuous concern, like with any computer-based program or system. The quality of the information it generates or provides is contingent on the information entered into it, and its efficacy is inevitably compromised if the information it contains is inaccurate or outdated. Though it tracks maintenance and support needs and can order the required material, it does not eliminate the need for the personnel and capability to actually perform the work, and it does not reduce the need for support or supply vessels to keep warships operational and well-stocked during their deployment. Moreover, while the system has certainly simplified elements of the logistics and support process, its requirement of multiple rounds of forms (due to concerns that the system could be abused) and lack of user-friendliness can make fulfilling simple requests excessively challenging and onerous.

This macro system is only a fragment of the overall image of the CAF's logistics and support system. Indeed, aboard each individual RCN vessel, there is a micro logistics, supply, and support system keeping the vessel and its personnel supplied. Each vessel has a Logistics Department, led by a logistics officer, which is tasked with a variety of responsibilities, including the acquisition, storage, and accounting for all test equipment, tools, spare parts, provisions, and clothing. This department varies in size depending upon the vessel's class, but it generally encompasses four sections, which are individually responsible for the galley (kitchen) operations, stores/supply, finance, and wardroom operations. Each of these four sections typically comprise between five and seven personnel, with each section head reporting to the logistics officer. The logistics officer also serves as the vessel's finance officer, bearing responsibility for, for instance, paying invoices and bills.

The Logistics Department of a vessel is a crucial component of ensuring its smooth, effective, and efficient operation, providing the parts, food, materials, and finances needed for all personnel aboard. For instance, the senior cook aboard a vessel manages the acquisition, storage, and

preparation of all food that is served on the vessel,[8] including accounting for and ordering the supplies required for the rations, galley operations, and cafeteria service. Under the command of this senior cook, the vessel's stewards and cooks work in shifts to ensure round-the-clock food services, potentially preparing up to four complete meals each day to ensure that personnel receive adequate nutrition regardless of their watch rotation. These stewards, cooks, and Logistics Department personnel moreover provide onboard operations support in the damage control section bases, as Casualty Clearing Team members, and through their involvement in the Chemical, Biological and Radiological Monitoring and Decontamination Teams.

In addition to their day-to-day responsibilities, personnel of the Logistics Department are also tasked with fulfilling more occasional and specific support needs. For instance, the department organizes and undertakes any reception or official function a vessel holds in pursuit of naval diplomacy. It arranges the procurement and transport of any spare part that must be shipped to the vessel from Canada, including handling all paperwork required to ensure the part's progression through customs, and it also organizes commercial air transport for any crew member departing from or joining the vessel during its deployment. The department furthermore arranges and finances fuelling and garbage collection at foreign ports. The Logistics Department arranges several morale-boosting activities, too, such as coordinating Christmas dinners for deployed crews.

The CAF and RCN thus have a well-established system in place, from the macro level of the forces as a whole to the micro level of the individual vessel, to ensure that all logistic, supply, and support needs are adequately met. This system will continue to evolve as military support becomes increasingly privatized. Following the culmination of the Cold War, Western governments cut military spending in the hopes of attaining a "peace dividend." As a result, the private sector assumed some of the military's former support roles and functions, due to the belief that the private sector could perform those tasks more inexpensively and efficiently. From training to equipment maintenance, from security to meal preparation, private companies have assumed the responsibility for numerous military support programs. Despite controversy regarding whether this has indeed saved money or was a "good" idea, it is likely that the military's support "tail" will continue to become increasingly the responsibility of the private sector. For instance, as the military integrates progressively more advanced technological equipment – like autonomous and unmanned vessels – into its range of assets, the companies that produce that equipment will be responsible for their maintenance, their operation, and training personnel in their use. It is yet unclear what new complications and challenges may arise from this increasing incorporation and integration of private sector industries into military logistic, supply, and support systems.

Thus, while the combat components of modern military forces often receive the most public recognition, attention, and acclaim, their successful operations are contingent on the extensive "tail" of logistics, supply, and support that aid them. For the RCN specifically, the impending construction of the Joint Support Ships (JSSs) under the National Shipbuilding Strategy will facilitate naval logistics and supply, enhancing the Navy's ability to deliver critical food, water, fuel, and spare parts to vessels operating internationally. These JSSs will join the complex and primarily effective logistics, supply, and support system of the CAF and RCN.

References

[1] "An army marches on its stomach," Oxford Reference, https://www.oxfordreference.com/display/10.1093/oi/authority.20110803095425331.
[2] Major General Mrinal Suman, "Teeth to Tail Ratio: An Archaic Concept," *Indian Defence Review*, http://www.lancerpublishers.com/Maj%20Gen%20Mirnal%20Suman.pdf.
[3] In the future, it is possible that Artificial Intelligence will assume responsibility, at least in part, for managing and tracking this information.
[4] MASIS was established in the late 1990s to attempt to manage material more effectively and in a way that required fewer personnel, in response to the growing capability of computers and the reductions in the DND's personnel base. It became the primary program utilized by procurement personnel, maintenance crews, and engineers until the creation of DRMIS in 2010. See Department of National Defence Media Release, "In the News," *Frontline Defence*, 2012, https://defence.frontline.online/news/1235/drmis-resource-management-dnd.
[5] Public Service and Procurement Canada, "Defence Resource Management Information System: Integrated support services and SIGMA integrated support services – Request for proposal 2," last modified 2019, https://www.tpsgc-pwgsc.gc.ca/se-fm/2016/avril-april22-2016-eng.html.
[6] See Department of National Defence Media Release, "In the News."
[7] Canada was at the forefront of devising a system like DRMIS, in which even vessels actively deployed could partake. As a result, the system received international acclaim and attention, leading to Canada's involvement in the Defence Interest Group (DEIG), a 17-nation coalition that shares details about the implementation of Systems, Applications and Products (SAP) related to supporting defence operations.
[8] Since heavy machinery is not always able to deliver food and other supplies to the storerooms and kitchens of a vessel, transporting such goods onto the ship and storing them often entails crewmembers passing bags and boxes along in a line until all material is stored in its proper location.