



MISSSED TARGETS: A REVIEW OF DEPARTMENTAL RESULTS

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MISSSED TARGETS: A REVIEW OF THE DEPARTMENTAL RESULTS

On 1 July 2016, the *Policy on Results* was implemented by the Treasury Board of Canada. The intent of the *Policy on Results* was to set out “the fundamental requirements for Canadian federal departmental accountability for performance information and evaluation”¹ while also “highlighting the importance of results in management and expenditure decision making, as well as public reporting”². To adhere to higher government direction, the *Department of National Defence (DND) and the Canadian Armed Forces (CAF) 2018-19 Departmental Plan* was released by the Minister of National Defence (MND), the Honourable Harjit S. Sajjan³.

DND and the CAF had previously reported on plans and priorities that aligned with *Canada First Defence Strategy (CFDS)*, Canada’s defence strategy first published in 2008⁴. The previous plans and reports gave detailed spending summaries which closely tracked financial output but did not clearly identify expected results with representative performance indicators that could be linked to measuring realistic outcomes.

The *2018-19 Departmental Plan* identified six Core Responsibilities that would need to be achieved for DND and the CAF to meet the mandate commitments outlined in *Strong, Secure, Engaged (SSE): Canada’s Defence Policy*⁵. The six Core Responsibilities identified were Operations, Ready Forces, Defence Team, Future Force, Procurement of Capabilities, and Sustainable Bases, Information Technology Systems and Infrastructure.

Since the *2018-19 Departmental Plan* was released, annual reports on results and plan updates have been sequentially published. The subsequent results reports have established a small data set that can be used to further investigate program performance directly linked to operational outcomes. Over the four to five years of data collection, DND and the CAF have landed far from their overall target results, with the lowest quantity of achieved indicators across all Core Responsibilities stated in the most recent report. In FY 2021-22, DND and the CAF met their target on 41% of indicators which had seen a steady annual decrease from 54% in Fiscal Year (FY) 2018-19⁶. The Ready Forces Core Responsibility had a similar downward trend. In FY 2021-22, DND and the CAF met their target on 39% of the Ready Forces indicators. Although this was an increase from the previous FY of 25%, it remained at an overall decrease from 41% in FY 2018-19.

In an interview with Ashley Burke from CBC News, the Chief of Defence Staff (CDS) General Wayne Eyre indicated in response to the readiness of the CAF if Canada

¹ Treasury Board, ‘Policy on Results’.

² Treasury Board.

³ Minister of National Defence, ‘Department of National Defence and the Canadian Armed Forces 2018-19 Departmental Plan’.

⁴ Minister of National Defence, ‘Canada First Defence Strategy’.

⁵ Department of National Defence, ‘Strong Secure Engaged: Canada’s Defence Policy’.

⁶ Treasury Board Secretariat, ‘Infographic for National Defence’.

was ever to be drawn into a wider conflict, "that is one of the things that keeps me awake at night,"⁷ he continued to say that "as we re-constitute the Force for the future, the future is here now. So how do we ensure we're ready to fight tonight?"⁸. The current data reported in Ready Forces is not only negatively impacting the sleep of Canada's Top Soldier but can call into questions Canada's and the CAF's ability to uphold commitments to international partners and allies.

To better understand this downward trend, the Assistant Deputy Minister (Review Services) [ADM(RS)] in compliance with the 2016 Treasury Board *Policy on Results*, conducted evaluations on several programs under the Ready Forces Core Responsibility. In FY 2021-22, the Ready Land Forces, Ready Joint and Combined Forces and Ready Air and Space Forces programs were evaluated. ADM(RS) indicated that the "three Ready Forces evaluations were also supported by an Integrated Strategic Analysis (ISA) evaluation, which examined the overall effectiveness of the Ready Forces Program, including the CAF's ability to be ready for concurrent operational commitments"⁹.

This paper will further examine the development of the Ready Forces with emphasis on Ready Land Forces and the Canadian Army (CA). It will review past, present, and future land targets and will seek to add additional context to the findings made by ADM(RS) in their *Evaluation of Ready Land Forces* to explain why the actual results have historically fallen short of the internally set targets. Finally, this paper will look to provide recommendations in addition to those offered by ADM(RS) to assist with improvements to serviceability rates for land equipment to meet resourced training and readiness requirements reported in the expected future Departmental Results Reports.

DISCUSSION

Ready Forces

Ready Forces was first introduced with the *2018-19 Departmental Plan*. This Core Responsibility's description has not changed throughout the annual plan updates and remains as indicated in the *2023-24 Departmental Plan* as "field combat ready forces able to succeed in an unpredictable and complex security environment in the conduct of concurrent operations associated with all mandated missions"¹⁰. In this context, concurrent operations are described in *SSE* as the ability for the CAF to simultaneously defend Canada, meet NORAD obligations, meet commitments to North Atlantic Treaty Organization (NATO) Allies under Article 5 of the North Atlantic Treaty, and to contribute to international peace and stability. The Ready Forces Core Responsibility description is not expected to change until there is an update to Canada's Defence Policy.

⁷ Ashley Burke, 'Military Readiness "one of the Things That Keeps Me Awake at Night," Says Canada's Top Soldier'.

⁸ Ashley Burke.

⁹ Assistant Deputy Minister (Review Services), 'Evaluation of Ready Land Forces DRAFT'.

¹⁰ Minister of National Defence, 'Department of National Defence and the Canadian Armed Forces 2023-24 Departmental Plan'.

The Ready Forces have evolved with the CAF culture change initiatives and the Government of Canada National Action Plan for Women Peace and Security objectives. The *2020-2021 Departmental Plan* introduced Gender-based analysis plus (GBA Plus), demonstrating DND and the CAF's continual commitment "to ensure that Gender Advisors and Gender Focal Points are trained to perform their roles while deployed"¹¹. The *2022-23 Departmental Plan* continued to grow the GBA Plus narrative with lessons learned and data collection "with a view to meet the Government of Canada National Action Plan for Women Peace and Security objectives"¹². Finally, the *2023-24 Departmental Plan* highlights the success of the CA by integrating gender perspectives and outlines the development of an Instructor Development Program "to reinforce cultural change and lead to an inclusive, diverse, respectful, safe, and team-based work environment"¹³. The plan indicated that pilot serials of this program were conducted during FY 2021-22 without the support of additional performance indicators or success criteria, yet the CA commits that continual efforts will be made in FY 2023-24 to train up to 600 personnel.

While the additional training efforts to assist with cultural change initiatives are difficult to argue against, the current lack of personnel across the CA, coupled with the lack of success criteria to validate the training, puts into question if this additional training aligns with the Core Responsibility or is just paying lip service to the new and very high profile Chief Professional Conduct and Culture (CPCC).

In the *2019-20 Departmental Plan*, the Key Corporate Risk(s) subsection was added and eventually renamed to Key Risks in the *2023-24 Departmental Plan*. In the three latest Departmental Plans, materiel maintenance is identified as a key risk, indicating that DND and the CAF "may have difficulty maintaining its materiel capabilities at the right level to support operations"¹⁴ and that it "can affect the department's ability to achieve the Departmental Results of the Ready Forces Core Responsibility"¹⁵.

Ready Forces is composed of two main departmental results, the first being Departmental Result 2.1 – Canadian Armed Forces are ready to conduct concurrent operations and the second being Departmental Result 2.2 – Military equipment is ready for training and operations.

¹¹ Minister of National Defence, 'Department of National Defence and the Canadian Armed Forces 2020-21 Departmental Plan'.

¹² Minister of National Defence, 'Department of National Defence and the Canadian Armed Forces 2022-23 Departmental Plan'.

¹³ Minister of National Defence, 'Department of National Defence and the Canadian Armed Forces 2023-24 Departmental Plan'.

¹⁴ Minister of National Defence.

¹⁵ Minister of National Defence.

Departmental Result 2.1 – Canadian Armed Forces are ready to conduct concurrent operations.

Departmental Result 2.1 is composed of two departmental results indicators, the first being % of operations that are capable of being conducted concurrently and the second being % of force elements that are ready for operations in accordance with established targets. There are ten diverse programs across DND and the CAF that contribute to these two indicators, which include Ready Health, Military Police and Support Forces, Ready Air and Space Forces, Ready Joint and Combined Forces, Strategic Command and Control, Ready Special Operations Forces, The Employer Support Programmes, Ready Cyber and Joint Communication Information Systems (CIS) Forces, Ready Land Forces, Ready Naval Forces, and Ready Intelligence Forces¹⁶.

The intent of the first indicator, % of operations that are capable of being conducted concurrently, is described as an assessment of the ability of the CAF to achieve the Government of Canada’s expectations for the conduct of concurrent operations in multiple areas in Canada and overseas. This indicator has a target of 100%, which it has met for the four years of data collection. Failure to meet the target of 100% in this indicator would signal “an inability to execute a sufficient number of concurrent operations would signal the need to revisit various aspects of readiness such as force structure, equipment and personnel availability”¹⁷.

The intent of the second indicator, % of force elements that are ready for operations in accordance with established targets, is described as an assessment of the capacity of the CAF to “be ready to conduct operations and informs DND and CAF activities to design, build, field, sustain and manage the operational capacity required to deliver the full range of operational tasks”¹⁸. This indicator has a target of 100%, which it has not met for the four years of data collection, with the most recent result at 71% also being the furthest from the target in the small data set. Failure to meet the target of 100% in this indicator should have signalled that there were insufficient numbers of ready force elements, which “could limit CAF capacity and flexibility to conduct one or more concurrent operations and would prompt the need to assess operational capacity gaps”¹⁹.

The decrease in results of the second indicator was partially explained in the *2023-24 Departmental Plan* due to the impact of “the COVID-19 pandemic and related impacts on the intake of personnel, individual and collective training, and increased demands on CAF resources for pandemic and domestic response operations”²⁰. Further review of each annual departmental plan included numerous additions to the planned list of training and exercise for the next FY, with the most recent *2023-24 Departmental Plan* outlining the conduct and participation in “training scenarios in domestic, continental,

¹⁶ Treasury Board Secretariat, ‘Infographic for National Defence’.

¹⁷ Treasury Board Secretariat.

¹⁸ Treasury Board Secretariat.

¹⁹ Treasury Board Secretariat.

²⁰ Minister of National Defence, ‘Department of National Defence and the Canadian Armed Forces 2023-24 Departmental Plan’.

and international contexts with other government departments and agencies, allies, and partner nations to enhance integration, interoperability, and joint readiness”²¹.

Although the most recent departmental plan addresses the *CDS/DM Directive for CAF Reconstitution*, it is challenging to trace how the directive is appreciated in the context of the perception of readiness and conduct of concurrent operations. In the short term, the additional readiness training and exercises could further negatively impact other indicators being measured in Ready Forces.

Departmental Result 2.2 – Military equipment is ready for training and operations.

In the *2018-19 Departmental Plan*, the availability and serviceability of the key equipment fleets of the CAF were monitored to improve the measurement of equipment availability and serviceability. These indicators were deemed crucial in expressing the amount of risk being absorbed by the CAF as the soldiers, sailors, and aviators conduct training and operations. As unavailability or serviceability issues can hinder the readiness of the CAF to conduct operations safely, DND made it essential to monitor these indicators.

Departmental Result 2.2 is composed of three departmental results indicators, the first being % of maritime key fleets that are serviceable to meet training and readiness requirements in support of concurrent operations, the second being % of key land fleets that are serviceable to meet training and readiness requirements in support of concurrent operations, and the third being % of aerospace key fleets that are serviceable to meet training and readiness requirements in support of concurrent operations. Seven diverse programs across DND and the CAF contribute to these three indicators: Ready Air and Space Forces, Ready Joint and Combined Forces, Ready Special Operations Forces, Ready Cyber and Joint CIS Forces, Ready Land Forces, Equipment Support, and Ready Naval Forces²². For this paper, further investigation of indicators in this departmental result will be focused on land key fleets.

The second indicator, % of key land fleets that are serviceable to meet training and readiness requirements in support of concurrent operations, demonstrates the extent to which the CA’s “vehicles are in a mechanical state to be used (serviceable) for operations and training”²³. The intent of this indicator is to provide situational awareness to enable “decisions regarding level, duration and intensity of operations and training activities”²⁴ and to inform “the assessment of requirements for increased support to serviceability (operator and technical maintenance), and oversight of spare parts management”²⁵.

²¹ Minister of National Defence.

²² Treasury Board Secretariat, ‘Infographic for National Defence’.

²³ Treasury Board Secretariat.

²⁴ Treasury Board Secretariat.

²⁵ Treasury Board Secretariat.

This indicator has a target of 80%, as a target of 100% is not realistic due to maintenance cycles and further notes that “a healthy fleet should reflect a low proportion of the fleet that is unserviceable in order to ensure that the appropriate level of training and readiness can be provided”²⁶. Although not noted, the limited quantity of vehicles in the CA coupled with a target of 70% would not have been sufficient for units and brigades to conduct combined training aims effectively. The target has been re-benchmarked from 80% to 70%, and in the most recent departmental plan, the *2023-24 Departmental Plan*, it is set to 80%.

This indicator has not been met for the four years of data collection, with the most recent result at 66%. Failure to meet the target of 80% in this indicator demonstrates a direct lack of serviceable vehicles, which could adversely impact training and operations, as well as a potential loss of knowledge and skills.

This indicator has increased over the last reporting period as most maintenance organizations conveyed that maintenance technician productivity had resumed to comparable productivity outputs to pre-pandemic levels. This indicator still needs to recover from significant delays and backlogs of maintenance hours due to extended periods of local preventative health measures limiting personnel quantity in workshops and a shortage of skilled staff.²⁷

Evaluation of Ready Land Forces

In FY 2021-22, ADM(RS) conducted an evaluation of the Ready Land Forces program. The *Evaluation of Ready Land Forces* “examined the performance of Program Inventory Program 2.3 Ready Land Forces over a five-year period, from FY 2017-18 to FY 2021-2022”²⁸, focusing on “the land equipment aspect of readiness”²⁹. ADM(RS) assessed key areas, including “the availability, serviceability, and sustainment of equipment, and the ability to meet the equipment-related readiness requirements”³⁰ that were set by the *CDS Directive for CAF Force Posture and Readiness (FP&R)*. ADM(RS) identified seven findings and three recommendations.

Finding 1: There is a lack of reliable data to accurately inform Ready Land Forces equipment readiness levels. ADM(RS) observed that “FP&R data that specifically speak to land equipment readiness are not available”³¹ and went further to identify that the “CAF cannot fulfill historical information requirements due to data unavailability, thereby limiting visibility on key readiness issues to informed decision making”³². Challenges to the in-place reporting system were highlighted to include the

²⁶ Treasury Board Secretariat.

²⁷ Treasury Board Secretariat.

²⁸ Assistant Deputy Minister (Review Services), ‘Evaluation of Ready Land Forces DRAFT’.

²⁹ Assistant Deputy Minister (Review Services).

³⁰ Assistant Deputy Minister (Review Services).

³¹ Assistant Deputy Minister (Review Services).

³² Assistant Deputy Minister (Review Services).

“classification of readiness reporting data”³³, which permeated the entire readiness data collection and reporting process. Deficiencies such as a “comprehensive equipment parts tracking system is needed to ensure access to up-to-date equipment information”³⁴ were identified.

Finding 1 was linked to a significant impact on CA readiness due to the “identified challenges with readiness reporting impact the availability and reliability of equipment readiness data”³⁵. This translates to senior CA leaders who “are unable to obtain an accurate picture of equipment readiness levels, impacting their ability to make informed decisions about overall force posture and readiness”³⁶.

Finding 2: The Canadian Army lacks the equipment needed to achieve training and readiness levels. ADM(RS) observed that the “CA does not have enough serviceable key land fleet to meet training and readiness levels”³⁷ and noted that there were dependencies on costly rental equipment to fill the gaps. Observations that the “CA tends to deploy based on what equipment is available and ready, versus standard formations or capabilities”³⁸ and that “the current state of land equipment availability and serviceability is creating concerns about the CA's ability to prepare for and meet the land equipment requirements of the future”³⁹.

Finding 2 was linked to a risk statement indicating that the “use of equipment for domestic operations could lead to decreased maintenance and increased wear and tear”⁴⁰. The risk statement states that the use “of equipment in situations they were not designed for resulting in overall reductions in equipment lifecycle”⁴¹.

Finding 2 was linked to a significant impact on CA readiness due to “challenges with the quantity of equipment to achieve training and readiness requirements”⁴². It was further noted that if “not addressed, the CA risks not being able to prepare for and meet the land equipment requirements of the future”⁴³.

Finding 3: The availability of personal equipment fluctuates and may pose limitations to individual readiness. ADM(RS) observed that there “may not be enough personal equipment to adequately outfit CA members at the Soldier System Level”⁴⁴.

³³ Assistant Deputy Minister (Review Services).

³⁴ Assistant Deputy Minister (Review Services).

³⁵ Assistant Deputy Minister (Review Services).

³⁶ Assistant Deputy Minister (Review Services).

³⁷ Assistant Deputy Minister (Review Services).

³⁸ Assistant Deputy Minister (Review Services).

³⁹ Assistant Deputy Minister (Review Services).

⁴⁰ Assistant Deputy Minister (Review Services).

⁴¹ Assistant Deputy Minister (Review Services).

⁴² Assistant Deputy Minister (Review Services).

⁴³ Assistant Deputy Minister (Review Services).

⁴⁴ Assistant Deputy Minister (Review Services).

Finding 3 was linked to a risk statement indicating that this “equipment shortage has the potential to get worse if recruiting efforts grow and more people are brought into the CAF” and can create additional “risk that supplies will be expended and not available for mandated missions”⁴⁵.

Finding 3 was linked to a significant impact on CA readiness as “CA personnel require proper personal equipment and adequate time to train and build proficiency with it. This is essential to soldier safety and optimal readiness.”⁴⁶

Finding 4: The Canadian Army faces limitations in its ability to transport and sustain equipment efficiently, which could hinder the ability to defend Canadian assets against adversaries. ADM(RS) noted that the “ability to transport equipment for training and operations is limited”⁴⁷ and financial “investments in the movement of land equipment can be costly”⁴⁸ leading to deficits “in land equipment may impact the CA's ability to meet the demands of the future threat landscape”⁴⁹. The annual high readiness exercise was noted as leading to periodic deficits in equipment availability when equipment is in transit. This cycle also disrupts scheduled preventive maintenance schedules leading to decreased serviceability.

Finding 4 was linked to a risk statement indicating that there “is a risk that procurement of new equipment will not keep up with the additional demands placed on equipment as a result of increased participation in domestic operations”⁵⁰.

Finding 4 was linked to significant impact on CA readiness as equipment “limitations and the extent of the financial and human resources required to transport and sustain land equipment impacts the CA’s ability to be agile and to sustain relations with allies”⁵¹.

Finding 5: The DND procurement process, combined with limited National Procurement (NP) funds have impacted the serviceability, quantity, and quality of land fleets. ADM(RS) observed that the “procurement process is not responsive enough to keep pace with land equipment readiness training and operational needs”⁵² and that the “CAF tends to procure to budget, not to need,”⁵³ the outcome of which is lack of available platforms. Additional notes were made on “In-Service Support (ISS) contracts are useful and effective to a degree.”⁵⁴ Still, the limited “NP funds can impact the

⁴⁵ Assistant Deputy Minister (Review Services).

⁴⁶ Assistant Deputy Minister (Review Services).

⁴⁷ Assistant Deputy Minister (Review Services).

⁴⁸ Assistant Deputy Minister (Review Services).

⁴⁹ Assistant Deputy Minister (Review Services).

⁵⁰ Assistant Deputy Minister (Review Services).

⁵¹ Assistant Deputy Minister (Review Services).

⁵² Assistant Deputy Minister (Review Services).

⁵³ Assistant Deputy Minister (Review Services).

⁵⁴ Assistant Deputy Minister (Review Services).

serviceability and sustainment of land equipment”⁵⁵ and is not likely to change as internal “NP fund forecasts anticipate that deficits will continue into FY 2026-27”⁵⁶.

Finding 5 was linked to a risk statement indicating that there “is a risk that procurement of new equipment will not keep up with the additional demands placed on equipment as a result of increased participation in domestic operations”⁵⁷.

Finding 5 was linked to significant impact on CA readiness as without “an efficient procurement process, the CA risks becoming technologically irrelevant”⁵⁸ and that continued “deficits of NP funds will exponentially impact the CA’s ability to maintain its current fleets and adapt to meet future equipment demands”⁵⁹.

Finding 6: Royal Canadian Electrical and Mechanical Engineer (RCEME) Technician labour hours are key to enabling equipment serviceability. ADM(RS) observed that a “deficit of RCEME Technician positions is contributing to the CA’s challenges in sustaining land equipment needed for training and operations”⁶⁰ and that it “takes a considerable amount of time and resources to hire and train RCEME specialists”⁶¹. It was noted that a “balance between direct labour hours and beneficial indirect labour hours is needed to maximize productivity”⁶² and challenges with new “technologically advanced equipment tends to require more direct labour hours to maintain, as well as additional infrastructure demands to repair and sustain the equipment”⁶³.

Finding 6 was linked to a risk statement indicating that concurrent “operational requirements require higher personnel and equipment operational tempo”⁶⁴ and that this “can reduce opportunity for personnel development and equipment maintenance and overall readiness”⁶⁵.

Finding 6 was linked to significant impact on CA readiness as “RCEME Technicians are critical to the maintenance and repair of land equipment”⁶⁶ and as such, prioritizing “efforts is needed to not only fill and maintain these essential occupations, but ensure sufficient direct labour hours, without which the CA may not have the ready fleets needed to respond to domestic and international operations”⁶⁷.

⁵⁵ Assistant Deputy Minister (Review Services).

⁵⁶ Assistant Deputy Minister (Review Services).

⁵⁷ Assistant Deputy Minister (Review Services).

⁵⁸ Assistant Deputy Minister (Review Services).

⁵⁹ Assistant Deputy Minister (Review Services).

⁶⁰ Assistant Deputy Minister (Review Services).

⁶¹ Assistant Deputy Minister (Review Services).

⁶² Assistant Deputy Minister (Review Services).

⁶³ Assistant Deputy Minister (Review Services).

⁶⁴ Assistant Deputy Minister (Review Services).

⁶⁵ Assistant Deputy Minister (Review Services).

⁶⁶ Assistant Deputy Minister (Review Services).

⁶⁷ Assistant Deputy Minister (Review Services).

Finding 7: Simulation Training is an under-utilized method of training across the Canadian Army. ADM(RS) observed that simulation “training cannot replace the benefits of live training; however, it allows for the mastery of basic skills”⁶⁸ and that simulation training “can help prepare the CA for future threats”⁶⁹.

Finding 7 was linked to significant impact on CA readiness as simulation training “can optimize CA personnel readiness through innovative scenarios, allowing for the efficient mastery and proficiency of equipment operation”⁷⁰.

ADM(RS) concludes that as an organization, the CA has been facing several equipment challenges that affect overall readiness. Despite meeting operational commitments both domestically and internationally, the lack of equipment creates the risk of missing training targets and readiness levels. Unfortunately, these challenges may not go away anytime soon and could hinder the CA’s ability to prepare for future threats.

Analysis and Recommendations

ADM(RS) identified three recommendations in their draft report, *Evaluations of Ready Land Forces*. Recommendation 1 was linked to Finding 1, highlighting the “lack of reliable data to accurately inform Ready Land Forces equipment readiness levels”⁷¹. The recommendation was “to allow for the monitoring of Ready Land Forces equipment readiness levels, existing reporting tools should be regularly updated with the required data”⁷² and that consideration “should also be given to tracking additional data that may further inform land equipment readiness”⁷³. Recommendation 2 was linked to Finding 6 which highlighted “RCEME Technician labour hours are key to enabling equipment serviceability”⁷⁴. The recommendation was to ensure “sufficient technician capacity to meet equipment serviceability targets”⁷⁵. Recommendation 3 was linked to Finding 7, highlighting that “Simulation Training is an under-utilized method of training across the Canadian Army”⁷⁶. The recommendation was that simulation training “should be further encouraged and integrated throughout the training continuum as a reliable method for developing soldier skills”⁷⁷.

Although the recommendations by ADM(RS) appear to be underdeveloped or obvious, they are still in draft form. The priority for ADM(RS) to focus on the three recommendations that were chosen, align with observations made in the review of the departmental plans.

⁶⁸ Assistant Deputy Minister (Review Services).

⁶⁹ Assistant Deputy Minister (Review Services).

⁷⁰ Assistant Deputy Minister (Review Services).

⁷¹ ADM(RS), ‘Evaluation of Ready Land Forces (Draft)’.

⁷² ADM(RS).

⁷³ ADM(RS).

⁷⁴ ADM(RS).

⁷⁵ ADM(RS).

⁷⁶ ADM(RS).

⁷⁷ ADM(RS).

After identifying the Core Responsibility of Ready Forces, examining several results and indicators at the departmental level, and then focusing on the Ready Land Forces program, several common themes can be observed. First, the output data or indicators at the departmental level don't seem to enable or influence decisions for the following year. This could be due to data aggregation at each level of the organization or the data set being too small to confidently base decisions. The second is the traceability of the measurements presented in the indicated results at the department level are difficult to link into a coherent performance framework from the bottom up and again from the top down. Finally, business practices around maintenance and the concept of preventive maintenance need to be updated.

To provide value at the highest level, a performance framework restructure should be developed to identify problems earlier. The UNI 11097 (2003), which is an Italian standard classification system⁷⁸, defines a quality indicator as “the qualitative and/or quantitative information on an examined phenomenon (or a process or a result), which makes it possible to analyze its evolution and to check whether quality targets are met, driving actions and decisions”⁷⁹. In *Designing Performance Measurement Systems*, three components to adhere to in the development of indicators are indicators “should appropriately represent the process of interest, should be well-understood and accepted by process managers and employees, and should be traceable and verifiable”⁸⁰. By examining the indicators at the departmental level, the basics of indicator development theory were not respected. Aggregating data across seven to ten programs dilutes the output and does not represent the process of interest. Lack of adherence to entering and updating data demonstrates that the indicator is not well-understood nor accepted by process managers and employees and limits traceability and verification. By increasing the accuracy and fidelity of data, data-driven decisions can be made based on data trends. One trend that would add value to Ready Land Forces is shifting from preventive to conditions-based maintenance.

The CA has historically executed maintenance plans based on the preventive maintenance model. Preventive maintenance is defined in CA doctrine, *The Land Equipment Management System (LEMS)*, as “the systematic and/or prescribed maintenance intended to reduce the probability of failure”⁸¹. Preventive maintenance includes servicing and serviceability checks by both operator and technician, periodic equipment inspections and other LEMS inspections, time and/or condition based maintenance, and preservation/de-preservation⁸². When vehicles are past-due for scheduled preventive maintenance, the vehicle is considered non-serviceable until the preventive maintenance tasks or, if required, corrective maintenance or repair tasks are completed, and follow-up transactions are entered into the Defence Resource

⁷⁸ Wikipedia, ‘Ente Nazionale Italiano Di Unificazione’.

⁷⁹ Franceschini, Galetto, and Maisano, *Designing Performance Measurement Systems*.

⁸⁰ Franceschini, Galetto, and Maisano.

⁸¹ Commander Canadian Army, ‘B-GL-342-001/FP-000: The Land Equipment Management System’.

⁸² Commander Canadian Army.

Management Information System (DRMIS), DND's Enterprise Resource Planning (ERP) system of record.

Preventive maintenance tasks create significant downtime of vehicles that can be planned for but remain a substantial workload that consumes work bay space and technician hours at unit and brigade-level workshops. Managing unit fleets and setting unit maintenance priorities are the responsibilities of unit commanders with the guidance of maintenance staff. Many units have vehicles not identified on the Key Land Fleets list as part of the Departmental Plan measurement strategy and can prioritize other non-key fleets required to support individual or combined training.

As identified by industrial maintenance leaders Advanced Technology Solutions, “the theory behind preventive maintenance is to take regular steps to prevent problems before they occur”⁸³ and that preventive maintenance “continues to be practiced because it is highly effective for many organizations”⁸⁴. Preventive maintenance provides a positive cost-benefit for private industry, where downtime equals dollars lost. Still, as the CA is not in the business of profits, other options should be examined.

Shifting away from preventive maintenance to other maintenance strategies is becoming a more realistic option. As technology increases, platforms, systems, and sub-systems will gather data on usage and operations. “Conditions-based maintenance identifies the vehicle status based on wire or wireless monitored data and predicts malfunction to carry out suitable maintenance actions like repair and replacement before it happens”⁸⁵. Conditions-based maintenance would prioritize repairs based on data rather than time, thus reducing maintenance technician hours dedicated to inspections checklists and has research supporting “better results to avoid catastrophic failure, detects the impending failure and reduces failure rates system/component”⁸⁶. Changing maintenance strategies across dozens of variants and hundreds of platforms is not a simple task but should be critically assessed for new fleets delivered as part of SSE.

CONCLUSION

Since the *Policy on Results* was implemented by the Treasury Board of Canada, Canadian federal departmental accountability for results and expenditure have become more transparent through public reporting. Although departments, such as DND, had been reporting on their plans, priorities, and results, centralizing all federal departments’ results and standardizing the look and feel of the information primarily through accessible web tools such as *GC InfoBase* has increased accessibility. The *GC InfoBase* is an “interactive tool, transforming complex federal data into simple visual stories for

⁸³ Advanced Technology Services, ‘Difference Between Preventive vs. Predictive Maintenance’.

⁸⁴ Advanced Technology Services.

⁸⁵ Kamlu and Laxmi, ‘Condition-Based Maintenance Strategy for Vehicles Using Hidden Markov Models’.

⁸⁶ Kamlu and Laxmi.

Canadians”⁸⁷. Canadians can review federal department responsibilities and comb through finances and result indicators.

The *2018-19 Departmental Plan* identified six Core Responsibilities that would need to be achieved for DND and the CAF to meet the mandate commitments outlined in *SSE*. Since the *2018-19 Departmental Plan* was released, annual result reports and plan updates have been sequentially published. The subsequent results reports have established a small data set that can be used to further investigate program performance directly linked to operational outcomes. Over the four to five years of data collection on the performance indicators in the defence plans, DND and the CAF have landed far from the overall target results. Further examining the Core Responsibility of Ready Forces and the presented indicators, it was difficult to see the value in the results due to the aggregation of data across diverse programs.

To better understand the need for more success in meeting targets, ADM(RS) evaluated several programs, specifically Ready Land Forces. Despite the ADM(RS) Evaluation of Land Forces only being available in draft form, findings from the Ready Land Forces program aligned with trends observed across the higher level Ready Forces Core Responsibility.

This paper further examined the development of the Ready Forces with an emphasis on Ready Land Forces and the CA. Past, present, and future land targets were reviewed. By providing additional context to the findings made by ADM(RS) in their *Evaluation of Ready Land Forces*, other information provided context for the historical shortfalls of the internally set targets. Finally, this paper provided recommendations in addition to those offered by ADM(RS), that if implemented, could assist with short and long-term improvements to serviceability rates for land equipment. Thus, enabling the DND, the CAF, and the CA, to meet resourced training and readiness requirements reported in the expected future Departmental Results Reports.

In conclusion, with a proper commitment to data architecture, a re-evaluation of a traceable performance framework using a bottom-up and top-down approach, and a critical assessment of the preventive maintenance concept, CAF readiness reporting should improve data accuracy and outcomes. With the readiness of the CAF no longer keeping the CDS awake at night, his focus can be shifted to other critical issues that are likely to continue to live rent-free in his head, such as the implementation of the Canadian Forces Housing Directive (CFHA).

⁸⁷ Treasury Board Secretariat, ‘GC InfoBase’.

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