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## THE CANADIAN FORCES SUPPLY SYSTEM AND REINVESTMENT OF POSITIONS TO CAF PRIORITIES

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## **THE CANADIAN FORCES SUPPLY SYSTEM AND REINVESTMENT OF POSITIONS TO CAF PRIORITIES**

### **AIM**

1. The aim of this paper is to show that the Canadian Armed Forces (CAF) can reallocate a considerable number of military and/or civilian positions currently assigned to manage assets to other priorities within the CAF. This can either be done by providing efficient and effective IT solutions and clear policy throughout the Ministry or if such a project is deemed cost prohibitive, many of these functions should simply be outsourced to enable a reallocation of personnel resources.

### **INTRODUCTION**

2. The Canadian Forces Supply System has failed to progress sufficiently over the last few decades. It is quite clear that our processes are inefficient and our lack of investment in modern technology and lack of policy and procedural clarity have resulted in personnel spending significant amounts of time performing transactions that should be for the most part automated and standardized. Although this analysis will focus on fourth line supply functions, the same process inefficiencies exist in third, second and first lines of support.

### **DISCUSSION**

3. The Canadian Forces Supply System (CFSS) currently employs the following functions in order to ensure asset visibility<sup>1</sup>:

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<sup>1</sup> KPMG. "Defence Renewal Change Management Services: Warehousing and Distribution Final Report". Volume 2 (DRAFT), 21 September 2015, 5.

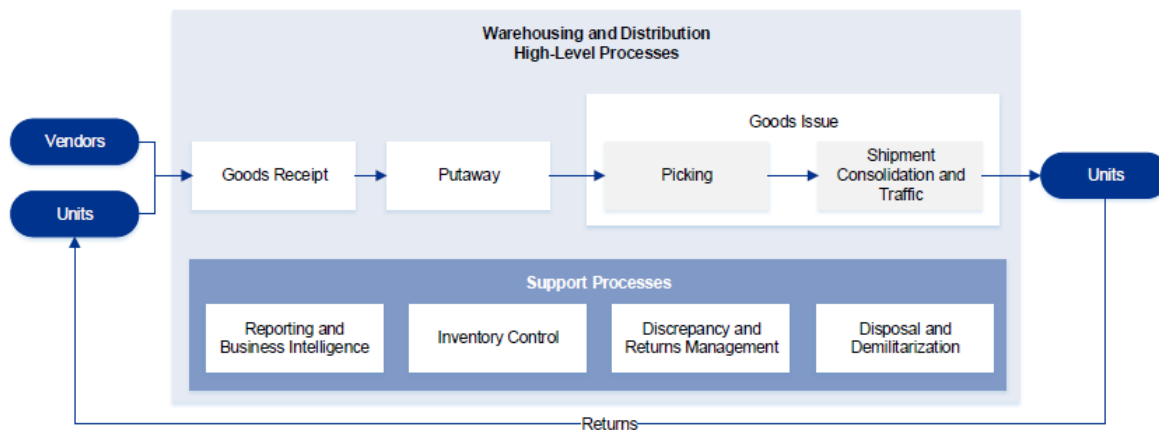


Figure 1 Warehousing and Distribution High Level Processes

The functions as described above reflect the functions at the depot level (fourth line) and do not reflect the entire supply systems down to the tactical level. It is important to note that many of the same processes must be repeated at the third, second and first line and the inefficiencies shown are duplicated at these levels.

## GOODS RECEIPT

4. If we consider the goods receipt process, several inefficiencies have been identified within fourth line functions. Examples include<sup>2</sup>:

- A. Four labels being applied to each item as we employ various systems to manage inventories (refer to description of other systems below);
- B. Receipt processes are not standardized within Canadian Materiel Support Group (CMSG) depots;
- C. Inspection processes currently cause a significant backlog in the reception process and as a result materiel is not available to support CAF operations;

<sup>2</sup> *Ibid.*, 8.

D. Current processes do not use readily available manufacturer's label for reception forcing personnel to create another with a unique stock number, and;

E. There is currently a lack of automated technology such as Portable Data Entry Terminals (PDET).

5. These recommendations to improve goods receipt would cost an estimated \$543,000 to implement at the fourth line level and result in a net savings of 78,398 hours annually.<sup>3</sup> **This is equivalent to 38 full-time positions (military or civilian)** based on a work week of 40 hours.

## **PUTAWAY**

6. Putaway involves moving materiel from one location to another (physically and within DRMIS). It also includes the determination of the destination location (i.e. based on usage rate, physical volume and/or HAZMAT status). According to KPMG, our current putaway strategy has the following weaknesses:<sup>4</sup>

A. Current putaway strategy is based solely on physical size, neglecting usages rates;

B. There is currently no replenishment strategy because DRMIS lacks the required Business Intelligence (BI) capability to determine optimal acquisition levels; and

C. Certain data fields (volume, HAZMAT category, storage requirement conditions, etc.) in DRMIS are lacking hindering the creation of an automated putaway strategy.

7. According to KPMG, measures to alleviate these issues within the fourth line would cost \$453,000 resulting in an efficiency gain of 17,856 hours.<sup>5</sup> **These efficiencies are equivalent to approximately 9 full-time positions.**

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<sup>3</sup> KPMG. "Defence Renewal Change Management Services: Warehousing and Distribution Final Report". Volume 2 (DRAFT), 21 September 2015, 14.

<sup>4</sup> *Ibid.*, 16.

<sup>5</sup> *Ibid.*, 20.

## GOODS ISSUE

8. The Goods Issue process incorporates activities two primary activities: picking materials from storage locations and shipment consolidation and traffic.<sup>6</sup> With respect to the picking process:<sup>7</sup>

- A. DRMIS is not used to plan this step in the process (technical difficulties);
- B. The current picking process involves using data this is a day old, but this causes issues if goods have been received in the last 24 hours (orders will be shipped incomplete).<sup>8</sup> Also, if orders are placed between the time of the data extraction and the creation of the order, they will also be shipped incomplete;
- C. During the conversion of the previous CFSS supply systems (prior to DRMIS) there was no cleansing of data performed. Hence orders placed as early as 2013 (and no longer required) are still being filled; and
- D. There are numerous other inherent weaknesses such as when an inventory is being performed in a location, it is automatically frozen in DRMIS, causing any required orders during this period to not be filled.

9. When we consider the shipment consolidation and traffic process, the current inefficiencies include the following:<sup>9</sup>

- A. There is not interface between DRMIS and the application that operates the automatic picking system, therefore all picking has to be entered manually;

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<sup>6</sup> *Ibid.*, 18.

<sup>7</sup> *Ibid.*, 22.

<sup>8</sup> *Ibid.*, 22.

<sup>9</sup> *Ibid.*, 23-25

- B. Because there is no weight and dimension information in DRMIS, personnel are required to manually weigh and measure items prior to shipment;
  - C. No transport information is included in DRMIS resulting in hand-writing the destination information on the packaging; and
  - D. Much of the information available in DRMIS is duplicated in NMDS to create shipping and transport documentation.
10. According to KPMG, the cost of reforms necessary to alleviate these problems within the fourth line goods issue process is evaluated at \$490,500.<sup>10</sup> The total efficiencies due to these changes are evaluated at 4,416 hours annually, **equivalent to 2 full-time positions.**

## SUPPORT PROCESSES

### REPORTING AND BUSINESS INTELLIGENCE

11. The Reporting and Business Intelligence (BI) includes IT capability to produces reports to analyze warehousing and distribution activities. The objective of Reporting and BI is to provide various levels of management with information that is critical to decision making.<sup>11</sup> Unfortunately, the following shortcomings have been reported within fourth line functions:<sup>12</sup>

- A. No metrics have been developed to ensure performance objectives are met;
- B. Information from DRMIS for the purposes of Reporting and BI are limited;
- C. Users are not provided with the necessary training to create custom queries;
- D. Queries and transactions are inherently slow to perform within DRMIS; and
- E. External applications are often used to produce custom Reports (Microsoft Access, etc.) but the transfer of data is time consuming and cumbersome.

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<sup>10</sup> *Ibid.*, 27.

<sup>11</sup> *Ibid.*, 44.

<sup>12</sup> *Ibid.*, 44-46.

12. Various solutions are proposed by KPMG and include the definition of clear performance objectives (including performance metrics), provision of adequate training and full use of current DRMIS capabilities.<sup>13</sup> The costs of these changes are estimated to be \$127,500 and will potentially save \$506,250 annually, reduce space requirements due to reduced inventory and reduce labour requirements by 2,588 hours (**equivalent to 1 position**).

#### DISCREPENCY AND RETURNS MANAGEMENT

13. This process includes activities related to materials that are not included in the usual goods receipt process previously described. It is a complex process as there are many stakeholders involved, many of whom are external to DND including vendors and others who do not use the same IT systems.<sup>14</sup> Recommended changes to this function include the following<sup>15</sup>:

- A. Using the DRMIS functionalities for the discrepancy process;
- B. Avoiding sending e-mails including forms to Item Managers within Adm(MAT) when dealing with cooperative logistics arrangements;
- C. There is no DRMIS automated reporting to deal with returns to vendors, everything is done manually; and
- D. The repair process for items being repaired “out of country” is overly complex.

14. The proposed solutions include the integration of the discrepancy process including “out of country” repairs, returns to vendors and other transactions that require the implication of the Item Manager.<sup>16</sup> Further training and delineation of the various roles and responsibilities between fourth, third, second and first line units would also assist in the efficient resolution of

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<sup>13</sup> *Ibid.*, 46.

<sup>14</sup> A-LM-007-100/AG-001, Supply Administration Manual, 23 November 2015. 591.

<sup>15</sup> KPMG. “Defence Renewal Change Management Services: Warehousing and Distribution Final Report”. Volume 2 (DRAFT), 21 September 2015, 29-30.

<sup>16</sup> *Ibid.*, 30.



discrepancy issues.<sup>17</sup> It is estimated that these changes would cost \$318,000 to implement and result in efficiencies of 9,148 hours annually (**equivalent to 4 full-time positions**).

## INVENTORY CONTROL

15. The inventory control process includes activities such as inventory management including: stocktaking, adjustments and control over items with unique features (i.e. expiration dates, HAZMAT, etc.).<sup>18</sup> Areas to improve include the following:<sup>19</sup>

- A. DRMIS is unable to monitor inventory within a single warehouse. This is performed by manually downloaded information to a database such as Microsoft Access which results in an inventory report that is dated 24 hours;
- B. Lack of training and lack of access to DRMIS query tools, once again causing personnel to manually download data to other systems to perform the required analysis; and
- C. Targeting high value/high risk assets to be inventoried instead of basing inventories on commodity types.

16. The proposed improvements could see annual savings of \$506,250 versus an initial outlay of \$258,000.<sup>20</sup> In this case, labour savings are estimated at 3,522 hours annually (**equivalent of 2 full-time positions**).

## DISPOSAL AND DEMILITARISATION

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<sup>17</sup> *Ibid.*, 31.

<sup>18</sup> A-LM-007-100/AG-001, Supply Administration Manual, 23 November 2015. 485.

<sup>19</sup> KPMG. ‘Defence Renewal Change Management Services: Warehousing and Distribution Final Report’. Volume 2 (DRAFT), 21 September 2015, 34-38.

<sup>20</sup> *Ibid.*, 38.

17. Disposal and Demilitarization activities include all activities that follow instructions received from ADM(Mat) to dispose of materiel.<sup>21</sup> Unfortunately, this process is performed primarily outside of DRMIS and even the authorization for Disposal is sent by e-mail and by paper.<sup>22</sup> It is clear that this process should be incorporated into DRMIS and that personnel be trained into how this information would be communicated within the system. Introducing these changes would cost an estimated \$123,000 and create efficiencies of 2,475 hours annually<sup>23</sup> **(equivalent to 1 full-time position).**

## **INTEGRATION OF SYSTEMS**

18. The primary CFSS asset management software is the Defence Resource Management Information System (DRMIS) although there are also three other systems used as DRMIS does not currently incorporate all required capabilities. Below is a description of each system including capabilities and certain limitations:

- A. Defence Resource Management Information System (DRMIS): Is the primary asset management system. It includes most aspects of asset management including asset visibility, maintenance and financial management. From an asset visibility perspective, this system is used almost exclusively by supply personnel;
- B. National Movements and Distribution System (NMDS): This system is currently used to track the movement of goods which is currently not offered in the current version of DRMIS. This system is employed almost exclusively by movement personnel;

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<sup>21</sup> A-LM-007-100/AG-001, Supply Administration Manual, 23 November 2015, 365.

<sup>22</sup> KPMG. ‘‘Defence Renewal Change Management Services: Warehousing and Distribution Final Report’’. Volume 2 (DRAFT), 21 September 2015, 40.

<sup>23</sup> *Ibid.*, 43.

- C. Ammunition Inventory Management System (AIMS): This system is used to track the inventory holdings within DND. It is however used exclusively by ammunition technicians and also includes the ability to isolate lot numbers which is necessary for safety concerns related to ammunition. It is important to note that all transactions must be performed in DRMIS as well but DRMIS is currently unable to isolate lot numbers;
- D. Defence Customs and Brokerage System (DCBS): This system deals by movement personnel when dealing with materiel that must be imported and/or exported between Canada and other nations.

19. KPMG has assessed the Rough Order Magnitude (ROM) cost of integrating these four systems within the fourth line. If we consider the integration of NMDS functions into DRMIS, the expected cost of between \$776,000 and \$1,684,000, netting annual efficiencies of between 8,400 and 10,300 hours<sup>24</sup> (**equivalent of 4 to five positions**). The integration of DCBS into DRMIS is estimated to cost between \$776,000 and \$2,804,000, with predicted annual efficiencies of 4,500 to 6,400 hours annually (**equivalent to 2 to 3 positions**). The cost of integrating AIMS into DRMIS is estimated at \$896,000 to \$1,484,000, creating an estimated 1,600 to 3,500 hours in annual efficiencies<sup>25</sup> (**equivalent of 1 or 2 positions**).

#### **SUMMARY OF POTENTIAL EFFICIENCIES WITHIN FOURTH LINE SUPPORT**

20. Annex A provides a summary of costs and benefits of the changes proposed above within the fourth line warehousing support function. If we compare the costs with the net savings, it is quite clear that an investment of \$4,761,000 is well worth the expense to create equivalent

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<sup>24</sup> *Ibid.*, 52-53.

<sup>25</sup> *Ibid.*, 63.

efficiencies of 65 positions. To place this in perspective, the annual total compensation cost of supporting 65 positions is approximately \$7,416,500.<sup>26</sup>

21. It is important to note that the introduction of these changes also permits for annual operating savings of \$9M to \$17M annually (exclusive of the labour savings).<sup>27</sup> If there are limitations in the type of capabilities that a revised CFSS could provide, we should focus on the reception process as it will yield the highest efficiency (38 of 65 potential positions within the fourth line alone). It is important to note that the current desire of Strategic J4 at the Strategic Joint Staff (SJS) is to consider a capability that will integrate and achieve efficiencies within fourth, third, second and first lines of support.<sup>28</sup> This capability requirement is part of Defence Renewal (DR) Initiative 2.2 Warehousing and Distribution whose objective is to optimize warehousing and distributions functions within DND. This project is currently at the options analysis stage and is projected to cost several billion dollars to implement.<sup>29</sup>

## **FURTHER EFFICIENCIES THROUGH DISPOSAL**

22. Further efficiencies can be found when the review of inventory holdings currently being performed by Canadian Materiel Support Group (CMSG) in conjunction with ADM(Mat) is complete. For example, in a Chief of Review Services report in 2009, it was found that 56% of line items (unique stock codes) had been dormant for the past 4 years (not one of these items was

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<sup>26</sup>The Canadian Press. "Budget watchdog finds average public service job costs \$114K", The Canadian Broadcasting Company, 11 December 2012. <http://www.cbc.ca/news/politics/budget-watchdog-finds-average-public-service-job-costs-114k-1.1174021>

<sup>27</sup>KPMG. "Defence Renewal Change Management Services: Warehousing and Distribution Final Report". Volume 2 (DRAFT), 21 September 2015, 34-38.

<sup>28</sup>Major Jeff Donaldson. Strategic J4 Implementation Team, Strategic Joint Staff, e-mail dated 3 February 2016.

<sup>29</sup>*Ibid.*,

issued).<sup>30</sup> The disposal of these items by sale, donation or destruction would result in further reductions in labour costs (or reallocation of positions), operating costs and infrastructure requirements. It is acknowledged that for these items to be disposed of, funding will have to be allocated.

## **THE TREND TOWARDS THE PRIVATE SECTOR**

23. In order to avoid the inefficiencies in our supply system, DND has been experimenting in the last few years with third party In Service Support (ISS) contracts on platforms such as the GRIFFON helicopter and this will also be the case for the Canadian Army's new Tactical Armoured Patrol Vehicle TAPV which will enter service in 2016. Within these contracts, inventory is managed and distributed directly by the vendor, eliminating the requirement for DND to hold and distribute inventories (with the potential exception of deployed operations). Other projects are currently being developed with the ISS approach.

## **ESTIMATE OF INEFFICIENCIES WITHIN THIRD, SECOND AND FIRST LINE**

24. Unfortunately, an accurate estimate of exactly how much efficiency can be gained pan CAF is not available. This analysis would have to be performed to provide a clearer understanding of issues and tasks within third, second and first lines supply functions. It is however safe to say that if we correlate the inefficiencies observed within the fourth line (observed primarily at two locations) with the same issues on all 38 base and deployed operation in the CAF, it would result in at least 200 positions that could be reallocated to other CAF priorities. This could occur once a new system is fully implemented and other projects such as

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<sup>30</sup> Chief of Review Services. *Audit of Inventory Management: Surpluses and Disposal*. National Defence, August 2009. [http://www.forces.gc.ca/assets/FORCES\\_Internet/docs/en/about-reports-pubs-audit-eval/131p0852.pdf](http://www.forces.gc.ca/assets/FORCES_Internet/docs/en/about-reports-pubs-audit-eval/131p0852.pdf)

inventory rationalization are complete. If these positions were reassigned to other capabilities, the resulting reduction in in the Supply Technician trade would almost eliminate the current shortage of 252 personnel<sup>31</sup>.

## CONCLUSION

25. The information thus far leads us to the conclusion that the CFSS is grossly inefficient. Through an analysis of fourth line warehousing and distribution functions, we can devise two primary options to remediate these deficiencies:

- A. As the Strategic J4 is currently doing, assess the options of implementing a pan CAF Automated Information Technology (AIT) solution which is likely to cost several billion dollars to implement; and
- B. Outsource fourth line and third line CFSS capabilities as it has the potential to yield significant savings.

In either case, once an option is selected, the resulting excess of positions should be reallocated to other CAF capability requirements.

## RECOMMENDATIONS

26. Given the difficulty the Strategic J4 may face in obtaining the necessary financing to improve the CFSS, the options presented may have to focus on the reception inefficiencies, limiting the scope and the effectiveness of a new system. The resulting capability proposals will have to be carefully compared to the resource requirements to simply outsource fourth and third line supply functions. In any case, the voluntary return of positions from the Supply Technician

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<sup>31</sup> Logistics Branch Integrator. *Annual Military Occupation Review*. Strategic Joint Staff, 11 January 2016.

trade (or civilian equivalent) should be undertaken as this would entice decision makers to allocate resources to this problem.

**Annex A: Summary of Potential Fourth Line Efficiencies**

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**Annex A: Summary of Potential Fourth Line Efficiencies**

			COST (CAN\$)	EFFICIENCIES (HOURS)	POSITION EQUIVALENTS
<b>PROCESSES</b>		GOODS RECEIPT	\$543,000	78,398	38
		PUTAWAY	\$453,000	17,856	9
	<b>GOODS ISSUE</b>	PICKING AND SHIPMENT, CONSOLIDATION AND TRAFFIC	\$490,500	4,416	2
		REPORTING AND BUSINESS INTELLIGENCE	\$127,500	2,588	1
	<b>SUPPORT PROCESSES</b>	INVENTORY CONTROL	\$258,000	3,522	2
		DISCREPRENCY AND RETURNS MANAGEMENT	\$318,000	9,148	4
		DISPOSAL AND DEMILITARIZATION	\$123,000	3,255	2
		INTEGRATION OF SYSTEMS (DRMIS, NMDS, AIMS AND DCBS) (LOW ESTIMATE)	\$2,448,000	14,500	7

**\$4,761,00****Totals****0****133,683****65**