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DOING TOO MUCH WITH TOO LITTLE, ALL OF THE TIME: THE EFFECTS OF TEMPO ON CANADIAN INFANTRY BATTALIONS

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JCSP 44

Master of Defence Studies

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PCEMI 44

Maîtrise en études de la défense

Avertissement

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CANADIAN FORCES COLLEGE – COLLÈGE DES FORCES CANADIENNES
JCSP 44 – PCEMI 44
2017 – 2018

MASTER OF DEFENCE STUDIES – MAÎTRISE EN ÉTUDES DE LA DÉFENSE

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Word Count: 15,287

Compte de mots: 15,287

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ABSTRACT

The infantry corps has and will continue to play a critical role in the application of Canadian land combat power. In order to ensure that deployed forces achieve the high levels of competency required to survive and operate effectively it is critical that they be enabled by a robust and efficient force generation process. In this process, the infantry battalion is the core organization within which the majority of key force generation activities occur, most significant among these being collective training where teams and cohesion are developed. Therefore, phenomena which negatively impact collective training within battalions must be identified and addressed in order to maintain the effectiveness of Canada's land forces at home and abroad.

It is widely understood that tempo, the combined demands of operational deployments, administrative tasks, training, and other routine activities can become a significant factor in reducing effectiveness if levels become excessive. Potential impacts range from increased attrition through releases from the Canadian Armed Forces, to mental health issues, reduced equipment availability, and development of an unhealthy ethical climate. In addition to first-order impacts, many of these tempo related issues may have cumulative and even exponential higher-order effects. The study and management of tempo within battalions during force generation is therefore of significant importance in ensuring continued operational effectiveness. This paper identifies the significant corrosive effects of tempo, studies the drivers of this phenomenon within battalions, and proposes a range of mitigating initiatives. A conceptual model for tempo which addresses the relationship between tasks, resources, and tempo is proposed and used as a

mechanism for study. In support of this model the concept of the "task-day" is used to quantify the resources available and tasks assigned to battalions.

Analysis of personnel resources demonstrates that as a result of institutional pressures and other factors, battalions are under-resourced, in some cases drastically, in the critical elements required to conduct force generation activities. In particular, a disproportionate lack of mid-level non-commissioned officers is identified. The cumulative and exponential properties of tempo effects identified previously further reduce the effective availability of these limited assets.

Further analysis focuses on the tasks required of a battalion during force generation activities, broadly separating these into categories for comparison. The quantitative impact of these tasks is studied in relation to the resource constraints identified previously. Review of these metrics indicates that the conduct of and support to individual training, as opposed to collective training, represents the major task focus of battalions.

Overall comparison of the balance between tasks and resources indicates that battalions are significantly under-resourced and over-tasked with both general and specific impacts from the resulting excessive tempo. As a result of these factors, units are incapable of conducting coherent and effective collective training, resulting in a significantly reduced ability to force generate combat-ready elements.

Proposed mitigating measures focus on the key drivers for excessive tempo identified through the analysis conducted throughout the paper. Areas of potential improvement include measures to address the disproportionate impact of medical

limitations and individual training. Further recommendations centre on the requirement to better quantify, study, and systematically address the cases of excessive tempo.

So long as I retain an independent position, I shall see no officer under my command is debarred by attending to the futile driveling of mere quill-driving from attending to his first duty, which is and always has been to train the private men under his command that they may without question beat any force opposed to them in the field.

- Arthur Wellesley, Duke of Wellington, *Correspondence to the Secretary of State for War*

CHAPTER 1: INTRODUCTION

Canadian Army (CA) operational doctrine defines the role of land forces as ". . . generat[ing] and maintain[ing] combat capable, multi-purpose land forces to meet Canada's defence objectives."[1] Within this context there can be little argument against the central role of the infantry with its unique ability to hold ground, operate across the full diversity of land environments, and deliver scalable effects across the spectrum of conflict from peaceful engagement with populations to the precise application of lethal force. Though other branches and corps of the CA and elements of the Canadian Armed Forces (CAF) provide critical capabilities, it remains the infantry that forms the core of Canada's ability to project land power. Consequently, influences which reduce the effectiveness of this most critical asset must be of particular concern.

Though flexibility and the ability to transition between mission sets represents one of the great strengths of the infantry, its fundamental role remains to close with and destroy the enemy.[2] As a result, those influences that corrode combat capability represent the most significant threat to the continued effectiveness of Canadian infantry forces. This paper will therefore focus on identifying the centre of gravity for the generation and delivery of infantry combat capability and threats thereto. Specifically, the nine Regular

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[1] Canada. Dept. of National Defence, *Land Operations (English)* (Fort Frontenac, Kingston, Ont: Issued on the authority of the Chief of Land Staff by the Army Publishing Office, 2008), 1-3.

[2] Canada. Dept. of National Defence and Canada. Canadian Army Doctrine and Training Centre, *The Infantry Section and Platoon in Operations*, Vol. 3 (Kingston, Ont: Army Doctrine Centre, Canadian Army Doctrine and Training Centre Headquarters, 2016), 1-1.

Force infantry battalions will be shown to form this centre of gravity, and the effects of tempo on the ability to conduct meaningful collective training the greatest threat.

Within the CA, the fundamental infantry force generation entity is the battalion. It is within the battalion that infantry soldiers and officers, having completed basic training, receive additional specialist skills and, more importantly, develop the expertise and confidence in fundamental abilities required to achieve effectiveness within the complex contemporary operating environment. The ability of battalions to function as cohesive, efficient, and resilient organizations is therefore closely linked to the capability of individual soldiers. However, the true value of the battalions lies beyond the delivery of individual training.

Combat is, with few exceptions, a team activity and requires that groups of soldiers work together to achieve objectives. It is once again within the battalion that these groups are formed and, through the conduct of collective training, develop the integrated skills required to function as a cohesive whole. The most basic of these teams is the infantry rifle section consisting of eight soldiers and commanded by a Sergeant (Sgt) assisted by a Master Corporal (MCpl). 3 rifle sections are grouped to form a rifle platoon commanded by a Second-Lieutenant (2Lt), Lieutenant (Lt), or Captain (Capt) assisted by a Warrant Officer (WO). Three rifle platoons form a rifle company (Coy) commanded by a Major (Maj) assisted by a Master Warrant Officer (MWO). Finally, three rifle companies form the fighting strength of the battalion commanded by a Lieutenant Colonel (LCol) assisted by a Chief Warrant Officer (CWO). In addition, the

battalion contains Combat Support and Administration Companies that provide specialized capabilities and sustainment.

Within the infantry corps those battalions equipped with Light Armoured Vehicles (LAVs) are referred to as mechanized whereas those that rely on other forms of transport are referred to as light. Regardless of equipment, the general structure of all battalions is largely similar. A generic battalion structure is illustrated below:

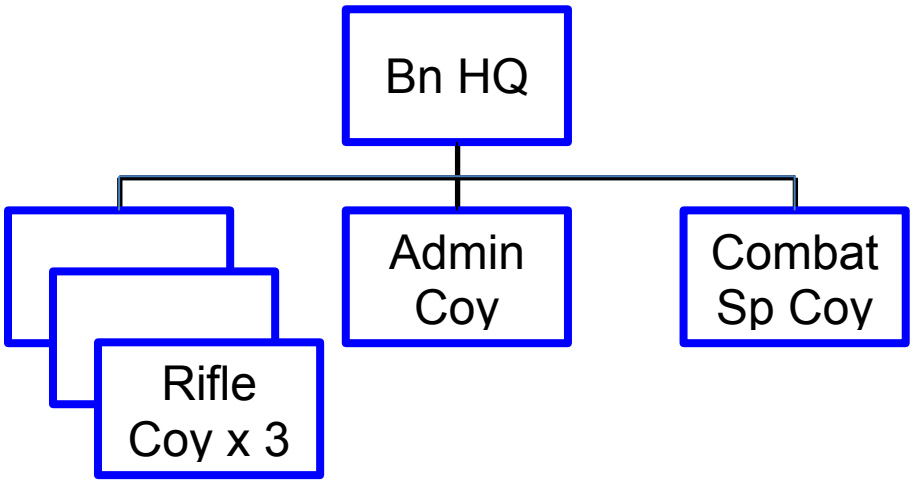

Figure 1.1 – Generic Infantry Battalion Structure

Beyond the battalion level, Canada's Regular Force infantry is grouped into three regiments each consisting of two mechanized (1st and 2nd) and one light (3rd) battlions:

- The Royal Canadian Regiment (RCR) with two battalions (1st and 3rd) based in Petawawa, Ontario and one battalion (2nd) in Gagetown, New Brunswick;
- Princess Patricia's Canadian Light Infantry (PPCLI) with two battalions (1st and 3rd) based in Edmonton, Alberta and one battalion (2nd) in Shilo, Manitoba; and
- The Royal 22nd Regiment (R22eR) with three battalions based in Valcartier, Quebec.

Though these regiments play an important role in career management they are otherwise largely ceremonial and do not represent tactical formations for operational employment. It is at the battalion level that effectively all infantry specific force generation activities are conducted.

In addition to its role as a force generation structure, the battalion serves as a fundamental building block for major force employment (FE) tasks. Battalions have formed the core of Canadian ground combat missions since the end of the Second World War. From Korea to Afghanistan, to current operations in Latvia, infantry battalions have been Canada's major land contribution to international operations. This fact underscores the criticality of effective collective training and the development of cohesive units.

Given their critical force generation and force employment roles battalions form the core of the Canadian infantry's ability to generate and deliver combat power and, by extension, the CA's ability to deploy land power. It is therefore crucial that the effectiveness of battalions be preserved if these abilities are to be maintained. Failure to do so will result in the CA being unable to meet its fundamental remit in support of the defence of Canada.

Though operational deployments are the critical output of battalions, significantly more time is allocated to force generation activities. In accordance with the CA managed readiness plan (MRP) a battalion may expect to deploy no more frequently than every three years.[3] In reality, deployments are often significantly less frequent. As a result, in spite of the primacy of operations, force generation is the more common employment of

[3] The MRP defines the cycle of training, high-readiness, and reconstitution followed by CA units and formations in order to provide a somewhat predictable deployment schedule.

battalions and issues which impact during this period may therefore have significant effects. Of the myriad challenges currently facing battalions in force generation, the most dangerous is that of tempo, a disproportionate ratio of tasks to resources that is rendering the effective functioning of these critical organizations untenable and which must be addressed.

CHAPTER 2 – TEMPO AND ITS EFFECTS

Types and Definitions of Tempo

The concept of tempo within military operations is not new and multiple categories with unique definitions have been developed. In the broadest terms tempo can be defined as a "rate of motion or activity."[4] From a more military perspective, the Government of Canada defines tempo as "The rhythm or rate of activity in operations."[5] The concepts of Operations Tempo, "The rhythm or rate of activity in operations, relative to the enemy, within tactical engagements and battles and between major operations.", and Personnel Tempo, "The frequency and duration of military duties away from home." are further specified.[6]

CA doctrine defines tempo as "The rate of military action relative to the enemy" and identifies the responsibilities of commanders to manage tempo in order to maintain a competitive advantage.[7] The implication of this concept is that if a commander fails or loses the ability to manage tempo, the effectiveness of their force will be reduced. As will be shown, there are numerous driving factors for this phenomenon within infantry battalions today.

Though the definitions above provide an insight into both the generic concept of tempo as well as some specific applications for the management of operations or personnel, none is particularly well suited to the study of a battalion during force

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[4] "Definition of Tempo," last modified Jan 25, accessed Feb 6, 2018

[5] "Government of Canada Definition of Tempo," last modified Oct 6, accessed Feb 6, 2018

[6] "Government of Canada Definition of Operational Tempo," last modified May 17, accessed Feb 6, 2018 ; "Government of Canada Definition of Personnel Tempo," last modified Mar 22, accessed Feb 6, 2018

[7] Canada. Dept. of National Defence, *Land Operations (English)*, 4-30.

generation activities. In order to provide a more easily quantified and visualized definition, a conceptual model for tempo based on the ratio of tasks to resources will be employed in this paper.

It is intuitively obvious that if the tasks assigned to an individual or organization are increased then the rate of activity or "tempo" will increase by some proportion. Similarly, should the availability of resources required to achieve the tasks assigned be reduced, a similar outcome can be expected. This relationship may be visualized through a mathematical formula as illustrated below:[8]

$$Tempo \propto \frac{Tasks}{Resources}$$

However, experience shows that the relationship between tempo, tasks, and resources is not linear. In practice, as the number of tasks is increased, or the availability of resources reduced, the overall level of activity required (tempo) tends to increase at an exponential rate. Consequently, the model may be refined as:

$$Tempo \propto \frac{Tasks^{A}}{\sqrt[B]{Resources}} \quad Where\ A\ and\ B\ are\ > 1$$

The concept of exponential tempo impacts is not new, and a similar trend was identified in a 1999 study which found that after a critical point tempo would begin to drastically decrease operational readiness as illustrated below.[9] In the case of this study

[8] The $\propto$ operator indicates "proportional to". This distinction is made to clarify that this model is not a mathematical proof but rather a conceptual illustration.

[9] Carl A. Castro and Amy B. Adler, "OPTEMPO: Effects on Soldier and Unit Readiness," *Parameters* 29, no. 3 (1999), 93.

the concept of Operations Tempo (OPTEMPO) was defined as a cumulative effect of deployments, garrison duties, and training exercises.

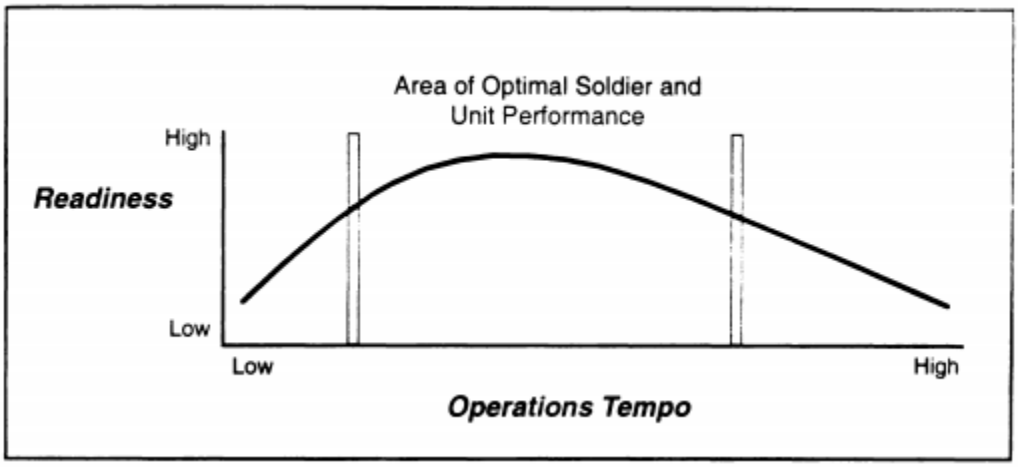

Figure 2.1 – Operations Tempo and its Relation to Readiness

Source: Castro and Adler, *OPTEMPO: Effects on Soldier and Unit Readiness*, 93.

As in the study described above, the aim of the model proposed in this paper is not to provide a mathematical proof but rather to illustrate that the effects of driving variables on tempo are non-linear and even modest changes can have significant impact. A generic visualization of this model is presented below.

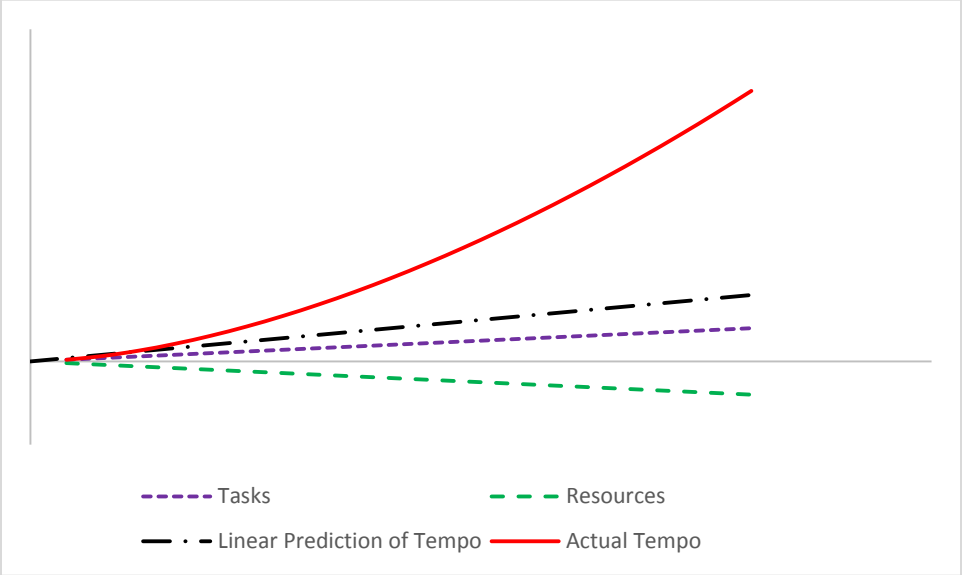

Figure 2.2 – Conceptual Battalion Tempo Model Visualization

The concept of "tasks" is somewhat nebulous and the number and diversity of activities undertaken by battalions in force generation so great as to be effectively unquantifiable. However, experience has shown that the majority of tasks fall into the following categories:[10]

- Conduct of Operational Individual Training;
- Conduct of Collective Training;
- Non-Operational Training;
- Currency Maintenance Training;
- Support to External Individual Training;
- Miscellaneous Non-Operational tasks
- Administration; and
- Operations.

[10] These categories are based on the author's experience having served within an infantry battalion for eight years in command and key staff positions.

For the sake of simplicity of the model, these activity categories are consolidated as tasks. Similarly, in order to manage the scope of study, this paper will constrain the examination of resources to personnel. The final conceptual model may therefore be expressed as:

$$Tempo \propto \frac{Tasks^{A}}{\sqrt[B]{Personnel\ Resources}} \quad Where\ A\ and\ B\ are\ > 1$$

With a concept of how to define tempo established, the next logical question becomes "so what?" what are the meaningful impacts of increased tempo and why should these be a cause of concern? The following section will discuss some of the corrosive aspects of excessive tempo.

Tempo Effects

Retention

Personnel represent the most valuable asset of a battalion, and the CAF as a whole. This concept is reflected in the opening sentence of current defence policy which states "People are at the core of everything the Canadian Armed Forces does to deliver on its mandate."[11] It is therefore imperative that factors that tend to reduce retention and increase attrition be addressed in order to protect this critical resource. Amongst the many drivers for attrition, the effects of tempo have been repeatedly identified as significant. In 2005, a study conducted by Defence Research and Development Canada (DRDC) reported on this phenomenon, stating that "[members] vehemently emphasised that they

[11] Government of Canada, *Strong Secure Engaged* (Ottawa: National Defence, 2017), 19.

were growing tired of constantly 'doing more with less'."[12] In close correlation to the model proposed above, the report also found that, in relation to factors driving personnel to leave the CAF, "The consensus amongst members was that there were too many tasks and demands being placed on the CAF and that there were not enough resources and personnel to carry them out."[13]

The impact of tempo on personnel retention is not a CAF specific concern. A similar study conducted for the United States Air Force (USAF), also in 2005, found that tempo while at home station was a significant influence to leave service for pilots. Specifically, this factor was listed as fifth and third most important by senior and junior pilots respectively. It was also noted that the influence of tempo had increased over previous years. In a larger 1997 study, US Army members reported that time away from family, a metric closely associated with tempo, was the first and third most influential reason for considering leaving the armed forces for officers and enlisted personnel respectively.[14]

Tempo effects on retention pose a particular threat due to the self-propagating nature of this phenomenon. As tempo issues drive personnel to leave the service the number of available resources dwindles, given a lack of associated decrease in tasks this has the inevitable effect of further increasing tempo and thereby re-aggravating attrition. This cumulative and multiplicative property of tempo and tempo drivers is a recurring

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[12] Jason Dunn et al., *PERSTEMPO Qualitative Data: CF Member Focus Group Findings* (Ottawa, Canada: Directorate of Operational Research, Operational Research Division, Dept. of National Defence,[2005]).

[13] Dunn et al., *PERSTEMPO Qualitative Data: CF Member Focus Group Findings*

[14] Cathie E. Alderks and U.S. Army Research Institute for the Behavioral and Social Sciences, *PERSTEMPO : Its Effects on Soldiers' Attitudes*, 1998), 5.

theme which will be noted throughout the paper, increases the threat posed, and supports the argument that tempo management should be the area of greatest concern.

Mental Health

Mental health is an area that has seen greatly increased attention across society as a whole and within the CAF in particular. Studies have shown that tempo is considered a significant driver for mental health concerns with respondents reporting that ". . . they and many of their colleagues were increasingly tired and stressed as a result of doing 'too much with too little, all of the time'."[15] The specific wording chosen once again reinforces the utility of the model proposed above. In fact, in the case of the report quoted, a similar model of cumulative tempo comprising deployed operations, non-operational time away from home, and routine workload was reviewed and adopted.

There is a proven link between psychiatric issues and reduced retention. An Australian study conducted in 1991 found that of members suffering from mental illness experienced a 19% increase in likelihood of separation within the first year of the onset of symptoms.[16] Consequently, the corrosive effects of tempo on retention extend beyond those who chose to leave of their own volition to include members who become unable to continue in service as a result of tempo-induced psychiatric illness.

Beyond the individual effects of mental health issues brought on by tempo, there is a greater institutional impact. As members are diagnosed with mental illness they are often issued with medical employment limitations (MELs) which limit the scope and duration of duties they may perform. As a result, though they often remain on strength

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[15] Dunn et al., *PERSTEMPO Qualitative Data: CF Member Focus Group Findings*

[16] Mark Creamer et al., "Psychiatric Disorder and Separation from Military Service: A 10-Year Retrospective Study," *American Journal of Psychiatry* 163, no. 4 (Apr, 2006), 733-734.

within battalions their effectiveness as a personnel resource is limited with attendant impacts on overall unit tempo described above. Thus, the impacts of tempo related mental health issues present further evidence of the exponential tendencies associated with this threat.

Training Standards

Given that training represents only one aspect of the spectrum of tasks assigned to battalions, it is intuitively obvious that as these increase, or resources decrease, the relative resources available, and associated quality, must be reduced by some proportion. Qualitative evidence would indicate that this is currently the case. In 2005 CAF members interviewed ". . . consistently expressed that training standards were eroding as a consequence of under-funding, lack of resources, PERSTEMPO, etc. . . . ."[17] Again, tempo is singled out as a significant driver.

Negative impressions of the effect of tempo on training standards are not a CAF specific phenomenon. In commenting on the performance of US Army units training at the Joint Multinational Readiness Centre (JMRC) an American report noted that "The consensus from the company-level perspective is that they are unable to conduct sufficient METL training due to overtasking, mandatory non-METL-related training and, in some cases, spending a very high percentage of the year on red cycle."[18] The acronym METL refers the mission essential task list, those critical tasks that should be trained to the highest standard. The deduction that lack of emphasis on these tasks has become an

[17] Dunn et al., *PERSTEMPO Qualitative Data: CF Member Focus Group Findings*

[18] Scott J. Metz, "Overtasking and its Effect on Platoon and Company Tactical Proficiency," *Armor* CXXVIII No. 2, no. Spring 2017 (Feb 17, 2017), 61.

outcome of over-tasking is entirely consistent with the concept of tempo as a detrimental factor in training delivery.

Quantitative measures of the impacts of tempo on training standards in the Canadian context are more difficult to find. Within the realm of individual training there has been a trend towards the delivery of ungraded courses assessed on a pass/fail basis with no overall score assigned. The assessment of collective training is conducted on an almost exclusively qualitative basis with any comments on the actual quality of the execution of the task assigned limited largely to internal after-action review (AAR) processes and personnel appraisal reports issued to the members participating. There is no overarching system of standards and records to provide insights into trends that may be present in the quality of collective training conducted.

The US Army has attempted to conduct a somewhat more detailed study into the issue of tempo and training standards with disturbing results. A survey of units in the force generation process found that "At none (0 of 16) of the locations inspected were companies in the [force generation] process able to complete all mandatory training and administrative tasks during force generation which impacts their ability to lead effectively and take care of Soldiers."[19] During other interviews it was revealed that in some cases training standards were abandoned entirely and qualifications fraudulently marked as having been completed in a process known as "pencil-whipping".[20]

As a result of the factors discussed above, it is difficult to state with certainty the precise effect of tempo on training standards. However, the preponderance of qualitative

[19] Leonard Wong and Stephen J. Gerras, *Lying to Ourselves: Dishonesty in the Army Profession* Strategic Studies Institute, U.S. Army War College, 2015), 5.

[20] Wong and Gerras, *Lying to Ourselves: Dishonesty in the Army Profession*

evidence, and personal experience, indicates that excessive tempo results in a situation where resources, and attendant standards, associated with even basic skills training are significantly reduced. As a result, overall operational effectiveness must suffer by extension.

Equipment Readiness

Beyond human effects, high tempo results in additional strain on critical equipment and studies of this phenomenon represent a useful corollary to personnel factors as well as identifying another resource area stressed by excessive tempo. As limited resources are tasked more frequently hours, kilometers, rounds fired, and other metrics relating to wear and tear increase rapidly. A 2007 study conducted by the US Office of the Under Secretary of Defense Comptroller found that high-tempo operational usage accelerated the rate of wear on some select systems by between 30 to 344%.[21] Despite the personnel-centric nature of infantry operations the availability of key vehicles, weapons, and other systems is critical to the successful execution of training during the force generation cycle.

In addition to direct effects on the performance of specific tasks, the availability of equipment is a key driver of tempo within a battalion. Initially, as equipment becomes less available, either as a result of either baseline scarcity or low serviceability, there is a general increase in tempo as the remaining systems are worked harder. However, as a secondary effect, those personnel assigned to the management of equipment see a significant increase in task load as the requirements for careful apportionment and de-

[21] Office of the Under Secretary of Defense Comptroller, *Impact of Military Operational Tempo on Military Equipment Useful Life and Associated Reconstitution and Maintenance Costs* (Washington, DC: United States Department of Defense,[2007]).

confliction become more stringent. In a complex and interrelated manner, high tempo results in lowered equipment availability and an increased demand on personnel resources to exercise a coordination function both of which further increase tempo. These additional tasks to key equipment managers exacerbate the tempo effects on retention and mental health with the associated outcomes discussed above.

Ethics

It has been noted above that in some reported cases training standards were ignored in order to accommodate the exceptionally high tempo imposed by numerous requirements. Beyond the obvious impacts on actual skill development, the creation of a culture where dishonesty is seen as an accepted method of managing tempo has significant ethical repercussions. In a widely distributed report entitled "Lying to Ourselves: Dishonesty in the Army Profession" US Army War College professors Leonard Wong and Stephen J. Gerras explore the particular impacts of excessive task load (high tempo) on organizational culture. A previous study had shown that mandatory annual training requirements in the US Army totalled to 297 days, far exceeding the 256 available training days.[22] In order to manage this discrepancy strategies such as having one soldier complete an online course repeatedly for an entire organization, printing certificates of completion without actually conducting training, or flat out lying in reports to higher headquarters were implemented.[23] The individual acts of dishonesty appear minor and are often justified on the grounds of maintaining a focus on soldier wellbeing or operations. However, the consequent creation of an organization responsible for the

[22] Leonard Wong, *Stifling Innovation: Developing Tomorrow's Leaders Today*,[2002]).
[23] Wong and Gerras, *Lying to Ourselves: Dishonesty in the Army Profession*

delivery of deadly force which is increasingly comfortable with a systematic lack of internal integrity is concerning at best.

There has been no complementary study of the CAF or CA but the author's personal experience indicates that the same pressures and coping mechanisms exist in a Canadian context. The following chapter of this paper will identify at a minimum some the drivers for excessive tempo, the ethical impacts of which appear difficult to avoid.

Cohesion

It is widely accepted that there is a correlation between cohesion and the effectiveness of an organization. In fact, research has shown that high levels of horizontal cohesion, that is, between members of a group, and vertical cohesion, that is, between superiors and subordinates, can have a significant mitigating impact on some of the job-stress related impacts of high tempo.[24] However there is a point at which the some of the factors that drive tempo, numerous disjointed tasks, in particular, will begin to break down the ability of a unit to develop the cohesive relationships required to mitigate the effects of these selfsame influences.

In some cases, this effect may take the form of a simple lack of time together wherein members of a team are frequently dispersed and lack the opportunity to bond. Under these circumstances there is likely to be a significant impact on he development of horizontal cohesion as the supportive relationships and affinities required will not be formed.

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[24] Kerry Sudom, Sanela Dursun and Steve Flemming, *PERSTEMPO in the Canadian Forces: The Role of Coping and Cohesion in the Relationship between Job Stress and Morale* (Ottawa: Department of National Defence,[2006]).

However, the more virulent effect may be on vertical cohesion which is predicated on soldiers' "perceptions of the fairness, competence, and compassion of their immediate supervisors."[25] In cases where the tempo effects on ethical behaviour and mission focus, as influenced by training standards and readiness, undermine the confidence of subordinates in the chain of command, there can be a significant decrease in unit cohesion.

Consequently, though the effects of high tempo may be effectively mitigated through the existence of a cohesive organization, these same effects often deny the opportunity for cohesive relationships to form. This phenomenon further indicates that the effects of tempo can be cumulative and extended periods will be most likely to generate the cohesion-reducing outcomes discussed. Further, given the positive impacts of cohesion on the mental health of soldiers, the multiplicative impacts of high tempo are once again in evidence.

Operational Effectiveness

The overall military significance of any phenomenon must eventually be determined by its impact on operational effectiveness. From the review provided above it is apparent that excessive tempo has the potential to notably reduce the ability of a unit to conduct critical force generation activities and thereby the desired output, that being operationally effective forces. Excessive tempo is a driver for skilled soldiers to leave the CAF, places undue stress on those who remain, causes a reduction in training standards, reduces equipment availability, and corrodes the ethical and cohesive culture required

[25] Sudom, Dursun and Flemming, *PERSTEMPO in the Canadian Forces: The Role of Coping and Cohesion in the Relationship between Job Stress and Morale*

within a professional military force. There can be little argument against the potential negative impacts of this factor, what remains to be quantified is the actual tempo within Canadian infantry battalions. The following chapter of this paper will provide an in-depth examination of the key drivers of tempo with a view to providing a more concrete picture of the current situation.

CHAPTER 3: TEMPO OF CANADIAN INFANTRY BATTALIONS

The Task-Day

Given the mathematical nature of the tempo model proposed, it is useful to seek a common metric for the key variables of tasks and resources as a basis for comparison. In a tempo study conducted by the Research and Development (RAND) Corporation for the USAF, the concept of a "mission-day" was introduced for much the same reason. The authors of the report defined a mission-day as ". . . basically a person-day of work . . . a day of availability for flying peacetime missions after accounting for activities to sustain wartime readiness and quality of life."[26] This metric was found to be useful specifically to ". . . detect and identify the workload and OPTEMPO stresses on the [Mobility Air Forces]."[27]

For the purposes of this paper a very similar metric, the "task-day" will be employed. In short, a task-day represents the duties performed by a soldier for one day. As a measure of tasks it is a requirement, and as a measure of resources a potential. For example, a task requiring three soldiers five days to complete represents 15 task-days. Similarly, the 106 infantry soldiers and officers currently allocated to a rifle company represent a potential 530 task-days over the course of a five-day work week.

It is useful to establish a baseline of potential task-days in a year as this concept will allow for further comparison throughout the remaining analysis. Commencing with a 365 day year and subtracting 104 weekends, 11 statutory holidays, and the 25 days of

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[26] Tim Bonds, Rand Corporation and Project Air Force, (U S), *Measuring the Tempo of the Mobility Air Forces*, Vol. TR-150 (Santa Monica, CA: RAND, 2005), 15.

[27] Bonds, Rand Corporation and Project Air Force, (U S), *Measuring the Tempo of the Mobility Air Forces*

annual leave allocated to most soldiers results in 224 work days in a year. Experience shows that as a result of additional leaves granted in relation to deployments, special leave for Christmas, and as an incentive for good performance, the actual number is generally significantly lower. In some cases, formation commanders have mandated that wherever possible commanding officers grant the maximum two days of Short Leave available each month resulting in a further 24-day reduction in days available. Consequently, it is reasonable to approximate that the average soldier is expected to work 200 days a year, thereby representing a potential 200 task-days. The remainder of this chapter will examine the key resources available and tasks assigned to battalions making use of the task-day concepts laid out above.

Resources

The potential resources available to an infantry battalion in force generation are significant; ranging from personnel to weapons, vehicles, ammunition, rations, and the multitude of other supplies required to plan and execute assigned tasks. However, despite the seeming robustness of these organizations there are numerous factors which tend to significantly reduce the availability of these resources and the ability to employ them in a coordinated and effective manner. As identified above, this paper will focus on personnel, accounted for through the use of task-days.

Personnel Allocation

Personnel resources are allocated to a unit based on the positions listed on its authorized establishment. These resources are commonly referred to person-years (PYs) reflecting a similar concept of the potential employment of a member over time as the

task-day measure used in this paper. Positions describe the task, rank, and trade associated with the personnel to be posted into the unit. Thus, a unit's personnel resources can be quantified as the number of PYs allocated in accordance with the positions authorized. Given that the CAF and CA operate under a fixed personnel budget, the creation, movement, or deletion of positions is conducted as a zero-sum operation where any increase in one area must be offset by a reduction in another.

Though there are some minor discrepancies by unit, the current standard allocation of infantry specific positions within a battalion by rank and trade is presented in the chart below:

	Private	Corporal	Master Corporal	Sergeant	Warrant Officer	Master Warrant Officer	Chief Warrant Officer	Lieutenant	Captain	Major	Lieutenant-Colonel	Total
Mechanized Bn	240	63	60	49	22	7	1	12	14	7	1	476
Light Bn	235	45	56	45	21	7	1	11	14	7	1	443

Table 3.1 –Battalion Infantry Positions by Rank and Trade

Given the totals above and multiplying by 200 days available per soldier per year, yields a baseline personnel resource availability of 95,200 task-days for a mechanized battalion and 88,600 for a light battalion. With six mechanized and three light battalions constituting the infantry corps, an overall average battalion infantry strength of 465 personnel can be calculated. As a result, the average number of task-days available to any given battalion may be approximated at 92,867 per year.

The figures presented above represent the current structure of the infantry corps; however, they also reflect a relatively recent and significant reduction in strength. Given the increasingly complex nature of modern warfare there has been an understandable trend towards generating new and more specialist capabilities required to manage operations in the contemporary and future security environments. However, given the requirement to operate within a set limit on personnel resources, or "PY-neutral", the creation of the positions for these new capabilities has inevitably required the deletion of others. As a large corps, the infantry has been targeted as a source for a significant number of PYs, most recently under the under the auspices of the CA "Force 2013" re-structure conducted between 2012 and 2014. The results of this re-apportionment were such that each rifle section was reduced from ten positions to eight, as well as the reduction of the third battalion of each regiment by approximately an additional 33 positions.

Taken as a whole this reduction consisted of approximately 575 PYs. When compared to Figure 2.1 it can be noted that this total significantly exceeds the current infantry personnel resources of a mechanized battalion or approximately 12% of the infantry personnel that had been previously assigned to battalions.

Under-Manning

Exacerbating the effects of fundamental reductions is a routine under-manning of battalions. The following comparison of key infantry PYs posted to battalions compared

to establishment positions across the field force was generated from a report generated from Monitor/MASS on 2 Feb 18:[28]

- Master Corporals – 491/532;
- Sergeants – 403/429; and
- Warrant Officers – 189/195.

Though these numbers do not seem overly dramatic at first glance, they represent a deficiency of approximately 6% in mid-level non-commissioned officers (NCOs). The disproportionate value of these individuals, and their related targeting for additional tasks, will be a recurring theme throughout the remainder of this paper. These experienced members provide critical section and platoon level leadership, a wealth of experience, and act as the primary linkage between the officers and soldiers of the battalion. As a result, shortages in this area have a multiplicative impact on tempo. By way of example, the development of cohesion is heavily dependent on the influence of the NCO corps resulting in negative accelerated and exacerbated tempo effects in their absence.

There are a number of additional mid-level NCO specific tempo impacts related to the scope of the duties expected of these soldiers that further exacerbate tempo should they become unavailable. In effect, the versatility of these members renders them a particularly valuable resource, the absence of which represents a disproportionate drain on the effective personnel resources of a battalion. Consequences related to resource

[28] Monitor/MASS is a CAF software tool used to review and manage personnel resources. It draws data from the central personnel database to allow the generation of specific reports and analytics.

management, unit-level training delivery, training safety, and technical skills will be further elaborated.

Beyond their leadership responsibilities, mid-level NCOs perform a great deal of the resource management activities required of infantry members within a battalion. Though logistics specialists coordinate supply support at the unit level, it is Warrant Officers, Sergeants, and Master-Corporals who are responsible for the acceptance, inspection, distribution, and accountability management for equipment and maintenance at the company level and below. Consequently, in their absence the ability to efficiently access and manage resources may be notably decreased, even in such cases where the assets themselves exist in sufficient quantity. Given that inefficient resource management will have an attendant impact on resource availability the tempo impacts of under-manning at the mid-level NCO level are apparent.

The topic of training delivery will be discussed in more depth during the analysis of tasks to be conducted below. However, it is useful to note at this point that the same mid-level NCOs described above provide the training and administrative cadre required for battalions to conduct unit-delivered individual training outside of their less formal training responsibilities within their sections and platoons. For example, the training plan (TP) for a light armoured vehicle gunner course allocates two mid-level NCOs as the course programmer and senior instructor respectively, with an additional Master-Corporal or Sergeant required as an instructor for every four candidates.[29] These instructional duties are carried out in addition to the routine administrative and leadership tasks

[29] *Qualification Standard and Training Plan 25mm Turret Gunnery* Department of National Defence, 2016), D1-1/2.

expected of these members, and represent a key tempo driver within this rank level. As the numbers of available mid-level NCOs decreases while subordinate numbers remain at or above establishment levels, the effective tempo of these critical members, and by extension the battalion as a whole, rises exponentially.

The safe execution of live fire training requires that a sufficient number of range safety officers (RSOs) and assistant range safety officers (ARSOs) be available and it is, once again, from the ranks of mid-level NCOs that the majority of ARSO positions are sourced. With safety regulations requiring between one and two ARSOs for every section level organization participating in training, as well as additional specialized positions to monitor the activities of support weapons and vehicles, the mid-level NCO requirements for safety staff can rapidly outstrip the numbers conducting training.[30] As a result, the efficient and effective conduct of live-fire training requires a disproportionate number of these critical personnel, and their absence impacts both training delivery and the tempo imposed on those remaining to a significant extent.

Finally, mid-level NCOs represent a pool of technical knowledge that is critical to the functioning of a battalion. At this stage in their careers they will have completed all basic trade training, significant leadership training, and a variety of specialist courses that increases their employability within the battalion. For example, the conduct of gunnery courses requires the assignment of a chief instructor holding an advanced gunnery qualification.[31] Similarly, the conduct of chemical, biological, radiological, and nuclear (CBRN) defence training is contingent on the availability of a suitably qualified

[30] *Training Safety* (Ottawa: Department of National Defence, 2017).
[31] *Qualification Standard and Training Plan 25mm Turret Gunnery*

instructor. These positions are almost invariably filled by a Sergeant with the requisite qualifications. Though more senior NCOs benefit from broader experience, it is in the middle rank levels where the critical mass of key technical qualifications exists. As these qualifications are often low-density, with no more than one to five members of a battalion so qualified, the lack of availability of even one of these members can represent a critical resource gap requiring a significant effort to source a backfill from another organization. Inevitably, this process increases tempo both for the resource managers responsible for sourcing personnel assets, the already highly tasked individual who is eventually sourced, and the soldier's home unit which is forced to continue operations in their absence. The multiplicative qualities of tempo generation and effects are clearly demonstrated in this process.

Based on the above analysis it is my assessment that under-manning of battalions in the critical mid-level NCO ranks represents a reduction in overall personnel resources at least equal to the percentage of deficiency regardless of their percentage makeup of the battalion as a whole. As a result, the actual effective personnel resources of an average battalion may be assessed to be reduced by 6%, resulting in a reduction from 92,867 to 87,295 in the average task-days available to a battalion.

Medical Restrictions

The above analysis has demonstrated that both the *anticipated* and *actual* personnel resources within a battalion may be significantly lower than may be anticipated due to the impacts of establishment changes and actual manning. Further, the actual value of an individual as a personnel resource is not fixed given the impacts on employability

of rank and qualifications. Another significant factor degrading the availability of personnel resources is that of medical restrictions associated with illness, injury, or other conditions. A recent study indicated that across the CAF over 15% of members are either temporarily or permanently non-deployable, largely as a result of these limitations.[32]

The impact of medical restrictions on employability and/or deployability is not a Canadian specific concern with US armed forces having recently enacted an aggressive policy of releasing medically restricted personnel in an effort to curtail impacts on force readiness.[33] A 2011 study conducted at the US Army War College concluded that approximately 6% of the US Army's personnel strength was long-term or permanently non-deployable as a result of medical restrictions.[34] The study stated that: "Because these Soldiers are unable to deploy to operational assignments in theater, units require additional manpower to offset non-deployable soldiers to achieve combat effectiveness."[35] However, given the realities of the "PY-neutral" CAF personnel management system, the allocation of additional soldiers to battalions to provide this offset is unlikely at best.

Within battalions, the impact of medical restrictions is reaching critical levels. A review of parade states submitted on 15 December 2016 indicated that the average unit contained 36 infantry personnel with non-deployable temporary medical categories, 27 on light duties, and a further 41 on some form of permanent category.[36] As a result, the

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[32] David Pugilese, "Forces Plan Rule Changes as 15 Per Cent of Canada's Regular Military Unable to Deploy," *National Post* Apr 17, 2018.

[33] Dan Lamothe, "Pentagon Targets 'non-Deployable' Troops for Removal in New Effort," *Washington Post* Feb 15, 2018.

[34] Scott Arnold et al., *Non-Deployable Soldiers: Understanding the Army's Challenge*,[2011]).

[35] Arnold et al., *Non-Deployable Soldiers: Understanding the Army's Challenge*

[36] Figures generated from Monitor/MASS. Detailed results presented at Appendix 1.

average battalion operated day to day with somewhere between 21 to 23 percent of its infantry personnel on some form of medical restriction. Though some of these members have relatively minor issues, there are also those whose employability is severely curtailed as a result of their medical condition. Due to the privacy requirements associated with the medical system it is difficult to quantify the exact nature and impact of each situation, however, experience has demonstrated that these restrictions have a real and detrimental impact on the battalion's ability to effectively conduct routine training and other activities.

Quantifying the exact impact of medical restrictions on the personnel resources available to a battalion is difficult due to both the uncertainty of actual restrictions imposed, as well as the distribution of restrictions across ranks and qualifications. Another significant factor is the diversity of positions within the battalion the nature of which makes them more or less impacted by medical restrictions. For example, a soldier employed in a largely administrative role will, for the most part, be minimally impacted by medical restrictions which limit their ability to deploy to the field or conduct rigorous training. At the other extreme, a junior rifleman with few or no specialist qualifications can be rendered effectively unemployable as a result of significant medical restrictions. Without extremely detailed case-by-case information (which is beyond the scope of this study), as well as being subject to frequent change, an estimate of 10% reduction in the effective personnel resources of a battalion as a result of medical restrictions would be considered reasonably conservative. As a result, the average task-days available to a battalion are reduced yet again to approximately 78,566.

Summary of Resources

From the discussion above it is apparent that the personnel resources of a battalion have undergone a series of reductions as a result of institutional decisions as well as the realities of personnel management. The overall effects of the impacts reviewed are summarized in the table below:

Resources			
Category	**Task-Days Reduced**	**Task-Days Remaining**	**Percentage Reduction**
Pre-Force 2013 Baseline Task-Days		105,644	
Force 2013 Reduction	12,777	92,867	12.1%
Percentage Calculation Reset			
Post-Force 2013 Baseline Task-Days		92,867	
Reduction Due to Under-Manning	5,572	87,295	6.0%
Reduction Due to Medical Limitations	8,729	78,556	10.0%

Table 3.2 – Summary of Battalion Personnel Resource Reductions

The percentages presented in this table are reset following the Force 2013 reductions in order to provide a baseline for assessment founded on the "new normal". Given current trends in the apportionment of PYs across the CAF it appears unlikely that there will be meaningful increase in the near term.

The overall impact of the resource constraints discussed is that battalions are currently operating at an average of approximately 84% of their post-Force 2013 established personnel resources. If the pre-Force 2013 figures were used as a baseline this percentage falls to approximately 74%. There can be little argument then that battalions are operating at a significant deficit in terms of personnel.

Tasks

The preceding section has identified a number of the challenges faced by battalions due to reductions in personnel resources available. However, given the proposed model, these resources must be assessed in proportion to the tasks to be

accomplished in order to gain a sense of the actual tempo within a battalion. As identified previously, the following categories of tasks and their impacts will be discussed within this section:

- Conduct of Operational Individual Training;
- Conduct of Collective Training;
- Non-Operational Training;
- Currency Maintenance Training;
- Support to External Individual Training;
- Miscellaneous Non-Operational tasks
- Administration; and
- Operations.

Conduct of Operational Individual Training

Operational individual training consists of training conducted to grant qualifications required for operations. Examples of this type of training include:

- technical courses such as communications, driving, or weapons systems;
- leadership courses at the section, platoon, and company level; and
- specialist skills such as reconnaissance patrolling or parachuting.

In general, fundamental level technical and specialist courses are conducted within the battalion using integral personnel and equipment resources. These courses, commonly referred to as primary combat function (PCF) courses, provide the basic qualifications required to conduct most infantry tasks at the section and platoon level. More advanced technical and specialist training, as well as all leadership training, is

conducted centrally at major CA schools. These courses provide the advanced qualifications required for more complex operations, and the conduct of operations up to the battalion level. The vast majority of centralized training is conducted at three types of institutions:

- The Infantry School in Gagetown, New Brunswick which conducts leadership and some advanced specialist courses;
- The Canadian Army Advanced Warfare Centre (CAAWC) which conducts primarily parachute and air insertion related courses; and
- The three Canadian Division Training Centres (CDTCs) with 3 CDTC in Wainwright, Alberta serving primarily the PPCLI, 2 CDTC in Valcartier, Quebec serving the R22^{e}R, and 4 CDTC in Meaford, Ontario serving the RCR. These centres conduct basic specialist and leadership courses, most notably the Basic Infantry Qualification course required of all infantry soldiers.

The loading of members of battalions on courses as students represents the primary tempo driver associated with operational individual training. The increasing complexity of operations, combined with the incorporation of ever more and more complex technology has led to an associated increase in the requirement for operational individual training, especially of the technical and specialist varieties. To conduct a detailed analysis of all courses and qualifications conducted within battalions would be an arduous task outside the scope of this paper. A review of the Army Individual Training Information System (AITES) indicates that the infantry corps alone is responsible for the management of 38 qualifications. As members of a battalion may be required to hold

numerous qualifications managed outside the corps, such as logistics vehicle driver or armoured gunnery, the potential scope of a detailed study is enormous. However, a representative demonstration can be made to illustrate the scope of the task burden imposed by the conduct of operational individual training. By making use of Monitor/MASS, a summary of some key qualifications granted to infantry members posted to battalions in fiscal year 2016/2017 was conducted. The courses selected for review were:

- Light Armoured Vehicle III 25mm Turret Operator;
- Light Armoured Vehicle 6.0 25mm Turret Operator;
- Light Armoured Vehicle III 25mm Crew Commander;
- Light Armoured Vehicle 6.0 25mm Crew Commander;
- Light Armoured Vehicle III Driver;
- Light Armoured Vehicle 6.0 Driver;
- Advanced Reconnaissance Patrolman;
- Basic Reconnaissance Patrolman;
- Rifle Section Commander;
- Infantry Platoon Second-in-Command;
- Advanced Small Arms;
- Weapons Detachment Member; and
- Army Field Firing Range Safety Officer.

A detailed listing of results by battalion is included at Appendix 2; however, the table below provides a brief summary for interpretation.

1 RCR		2 RCR		3 RCR	
Quals	Task-Days	Quals	Task-Days	Quals	Task-Days
247	5,182	275	5,419	162	2,915

1 PPCLI		2 PPCLI		3 PPCLI	
Quals	Task-Days	Quals	Task-Days	Quals	Task-Days
253	5,173	84	2,297	108	2,219

1 R22ER		2 R22ER		3 R22ER	
Quals	Task-Days	Quals	Task-Days	Quals	Task-Days
303	6,131	247	5,249	101	2,124

Table 3.3 – Qualifications and Associated Task-Days by Battalion FY 16/17

An initial analysis across all battalions would indicate an average qualification generation total of 198 qualifications per battalion per year. However, it is apparent that the third battalions of each regiment respectively are significantly underrepresented in this total due to the large number of light armoured vehicle (LAV) courses included in the study. This disparity was accepted as experience indicates that, though light battalions require a broadly similar number of qualifications, these tend to be more varied but less densely represented within the battalion. The light battalions generally require larger numbers of parachutists (and associated specialties), complex terrain specialists, and operators for all-terrain and other specialized vehicles, for example. Quantifying this large number of diverse qualifications would rapidly become time consuming and entail a high level of complexity.[37] As a result, it can be broadly assumed that the average operational individual training requirements for any battalion are closer to the average calculated for the mechanized battalions, a figure of 235 per battalion per year.

[37] It is possible that with higher level access to CA qualification tracking systems this sort of analysis could be done with relative ease. However, this access is beyond that available to the author for the purposes of the study.

Further analysis indicates that the qualification total for 2 PPCLI is significantly lower than that of the other mechanized battalions. This disparity is explained by the deployment of a significant portion of the battalion on Operation *Unifier* in Ukraine during the period under study. As the aim of this paper is to study battalions during force generation, the 2 PPCLI value can be omitted from the analysis leading to an average qualification total of 265 per battalion per year. Conducting an identical reduction of battalions included in calculations for associated task-days yields an average of 5,431 task-days expended on students undergoing individual training per battalion per year.

5,431 task-days, though significant in its own right, represents an extremely conservative under-estimate of the actual task impact of operational IT. This delta can be explained by two major factors.

Firstly, a significant number of qualifications have not been included in the analysis conducted above to include basic driver courses, communications, sniper, anti-armour, heavy machine gun, etc. As a result, it is my assessment that an estimate of the actual personnel resources associated with loading students on operational IT would still be conservative by increasing the total calculated by 50%, yielding an estimated task-day total of 8,146. This assumption is supported by a review of the Monitor/MASS records of three randomly selected infantry Sergeants holding Section Commander appointments. It was found that these individuals held 25, 26, and 27 distinct qualifications respectively, indicative of the significant task bill of operational individual training.[38]

[38] Members were selected from each Regiment with proportional representation of light and mechanized battalions.

Secondly, the total identified above does not account for the requirement for battalions to provide all instructors for those qualifications conducted in-house. Provision of instructor and other support to externally conducted courses will be discussed in detail below. Once again, the calculation of a precise number would be an extremely complex exercise requiring detailed knowledge of the specific training calendar of each battalion. That said, a reasonable approximation can be made based on averages.

A review of the training plans for the courses studied, combined with personal experience, indicates that the average load for an operational individual training course is approximately 24 candidates, the average course length is approximately 20 days, and the average instructor to student ratio is on the order of 1:4. Each course will also be allocated an average of five administrative and/or support staff consisting of a course officer, course scheduler, drivers, storemen, etc. This approximation yields an additional requirement of 11 personnel per course. Given a qualification generation total of 398 candidates (265 increased by 50% as discussed above) and an average course load of 24 candidates, a total of approximately 16 courses per battalion per year may be easily calculated. Multiplying this number by 11 additional staff and an average course length of 20 days yields an additional task burden to the battalion of 3,520 task-days.

Based on this analysis, the average battalion my expect to expend approximately 11,666 task-days on the conduct of operational individual training. This total represents approximately 15% of the 78,566 effective task-days available to the unit.

Conduct of Collective Training

Collective training is arguably the most important task allocated to infantry battalions. It is the conduct of tactical training at the section, platoon, and company level which prepares soldiers and teams for operations. Moreover, it is largely during collective training that the cohesion and relationships required to maximize effectiveness are formed. It is therefore somewhat unusual to note that, especially in comparison to individual training, there is relatively little routinely actioned formal guidance or direction on the standards required in terms of quantity and quality. For example, the training plan for a driving qualification course will lay out in detail the tasks to be completed along with specific metrics for time and distance driven in order to grant a qualification. Collective training, on the other hand, is subject to significantly more subjective guidance with effectively all assessment being made on a qualitative basis by senior observers.[39]

As a result of the subjective nature of collective training standards it is difficult to quantify the actual tempo effects of this requirement. Units will set significantly different standards for both the quantity and quality of collective training completed leading to considerably divergent requirements for task-days allocated. The reasons for varying levels of time allocated to these requirements can vary from the unit's readiness posture as dictated by the managed readiness plan, to the availability of physical resources such as ammunition and training areas, to the culture of the particular unit at the time. However, a recurring theme is that collective training, with its lack of formalized

[39] This phenomenon is despite the fact that there is a body of doctrine that provides detailed guidance on the definition of collective battle task standards (BTS). This is a tool that is often ignored or under-utilized.

standards, represents one of the few areas where flexibility exists to absorb the impacts of additional tasks or resource scarcity. This is a concerning state of affairs given the vital nature of this type of training to the preparation of soldiers for effective performance on operations.

For the purposes of this paper no specific quantification of the task requirements for collective training will be made. Rather, an assessment will be conducted following analysis of other factors under study with a view to drawing conclusions about the actual ability of battalions to conduct this type of training effectively.

Non-Operational Training

Non-Operational training consists of training required to maintain compliance with financial and other policies, as well as mandated professional development. Examples of this sort of training include ethics, suicide prevention, and security awareness. In general, the individual requirements in terms of tasks associated with these training requirements are relatively minor, usually requiring less than a task-day for any one session. The more notable characteristic of these requirements in terms of tempo generation is the requirement for 100% compliance across the battalion, with timelines for completion often set without apparent regard for competing priorities or limited resources. A US Army Captain interviewed by the authors of "Lying to Ourselves" made similar observations when commenting on these types of requirements, stating: "None [by] themselves were extremely extensive - like a 15-minute online

course. The problem was getting your formation to do it with the availability of computers and then the ability to print and prove that you had taken it."[40]

An example of the tempo effects of this sort of requirement was the mandating of Gender Based Analysis Plus (GBA+) training for all members of the CAF starting in 2016. Though the actual online course required, at most, less than three hours to complete, the requirement for all members to complete the training on a restricted deadline, combined with a requirement for frequent progress reports to higher headquarters, imposed a significantly greater burden than might otherwise have been anticipated. What may have appeared in theory to be a simple task became significantly more complex when the need to allocate limited computers, track completion statistics, and coordinate this training with all other ongoing tasks was considered. Time was wasted as competing training was unable to be conducted while some portion of the training audience was away conducting the online course. Compounding this problem was the aforementioned requirement for mid-level NCOs to coordinate, supervise, and account for the completion of training for their subordinates, further increasing their tempo and limiting their ability to contribute to collective and individual training activities.

Given the somewhat *ad-hoc* nature of the delivery this type of training it is difficult to quantify the exact number of task-days to be associated with it. Based on the author's experience a conservative value of five task-days per soldier per year is assessed as reasonable. In general, these task days are split between centralized briefings, often held immediately prior to Christmas leave and individual completion of other training

[40] Wong and Gerras, *Lying to Ourselves: Dishonesty in the Army Profession*, 8.

throughout the year. As noted above, it is this second delivery methodology that tends to have a more disproportionate impact on effective tempo; however, for the sake of simplicity it can be safety argued that non-operational training imposes an average task burden of no less than 2,325 task-days per year (the effective impact is almost certainly greater).

Currency Maintenance Training

Currency maintenance training refers to those requirements for training mandated to retain qualifications over time. For example, all infantry soldiers posted to a battalion are required to successfully complete the personal weapons test level three (PWT 3) annually in order to maintain currency. Some specialist qualifications, such as parachuting, require additional training in order to maintain currency which impose additional task demands. Finally, physical fitness training and testing may also be considered under this category.

Given the variety and scope of currency maintenance activities there is no ideal method for quantifying the time expended without significantly more detailed knowledge of the day-to-day schedule within a given battalion. There is also significant variability as to the level of currency required based on a battalion's readiness status with those units entering the high readiness window facing a significantly greater task bill. However, an approximation can be made based on known requirements and professional experience.

Firstly, the task-day requirements associated with physical fitness training are almost surprisingly significant (though they should not be given the nature of the role of the infantry). A minimum of two hours per day is usually allocated to physical training

when soldiers are not deployed to the field or away on other training or tasks. Given an average workday of eight hours, this requirement alone could simplistically be assumed to consume up to 25% of the task-days available to a battalion. In practice the number is significantly lower as physical training is often supplanted by other priorities such as courses, field training, or other tasks. A more conservative and reasonable estimate would account for 15% of available task-days as expended on physical training related tasks. Even this more limited assessment represents and average of 11,785 task-days per battalion per year.

As noted above, the tasks associated with other currency maintenance training are yet more difficult to quantify and often highly variable between individuals and battalions based on a number of factors. However, the scope of this factor may be conceptualized by reviewing the key doctrinal publication which defines individual battle task standards (IBTS). This document details more than 40 items (with up to three sub-levels of proficiency) that may be considered critical for completion on a recurring basis. Examples span the spectrum from basic weapons marksmanship, to navigation, to cultural awareness.[41] In the author's experience it is not uncommon to observe 15-25 task-days per soldier per year allocated to the completion of currency maintenance training. By way of example, a review of the 2 PPCLI calendar published to Monitor/MASS indicates that an IBTS exercise, Exercise *Kapyong Readiness,* was scheduled from 9 April to 4 May 2018. This 20-day exercise likely represents the

[41] *Individual Battle Task Standards for Land Operations* (Ottawa: Department of National Defence, 2012).

opportunity to complete a significant portion of currency maintenance activities but there will surely be requirements for additional training.

A final comment on the impact of currency maintenance training is that these activities are often inherently inefficient to some extent, often due to resource constraints. With limited access to ranges, chemical weapons training facilities and instructors, and other key training resources, there are often times when a significant number of soldiers are under-employed. These members are either waiting for an opportunity to make use of a facility or are without leadership as mid-level NCOs are tasked in instructional capacities to conduct this training due to their specialist qualifications.

Consequently, though precisely identifying the tasks associated with currency maintenance training is likely impossible, an approximation can once again be made. Given a review of potential tasks, personal experience and a review of other battalion's calendars, and an understanding of the inefficiencies inherent in this process it is assessed that allocating a task bill of 15 task-days per soldier per year represents a conservative estimate. As a result, it can be approximated that non-fitness currency maintenance training consumes approximately 6,975 task-days per battalion per year.

Combining all of the currency maintenance training above yields an estimate of 18,760 task-days per battalion per year. This task bill represents approximately 24% of the effective task-days available to the battalion, a not-insignificant amount. However, given the importance of physical fitness and the complex nature of operations, leading to an elevated requirement for qualifications and associated currencies, it should come as no surprise.

Support to External Individual Training

Analysis above focussed on the impacts of the conduct of individual training with an emphasis on those driven by student loading and in-house courses. However, the impact of support to externally conducted individual training is also significant. As a result of establishment strengths and actual manning levels at the external training establishments identified above, namely the Infantry School, CAAWC, and the three DTCs, there is a significant task bill to the battalions to provide augmentation in the form of both instructional and support staff. A detailed review of the tasks assigned to infantry battalions from these establishments in fiscal year 2016/2017 was made using data drawn from the Canadian Forces Plans Tasks and Operations (CFTPO) software program.[42] A detailed report of results is included at Appendix 3 and the results are summarized in the table and charts below:

All Battalions												
Rank	Inf School			CAAWC			DTC			Total		
	Tasks	Task Days	Avg Task Days	Tasks	Task Days	Avg Task Days	Tasks	Task Days	Avg Task Days	Tasks	Task Days	Avg Task Days
Pte	13	795	61	0	0	0	18	668	37	**31**	**1463**	**47**
Pte(B)	63	3438	55	1	26	26	90	3397	38	**154**	**6861**	**45**
Cpl	67	4092	61	14	668	48	192	9180	48	**273**	**13940**	**51**
MCpl	33	1875	57	20	890	45	126	7588	60	**179**	**10353**	**58**
Sgt	28	1641	59	18	613	34	126	6718	53	**172**	**8972**	**52**
WO	18	1157	64	5	143	29	9	596	66	**32**	**1896**	**59**
MWO	0	0	0	0	0	0	1	136	136	**1**	**136**	**136**
2Lt	1	101	101	1	14	14	7	531	76	**9**	**646**	**72**
Lt	2	116	58	1	54	54	19	1210	64	**22**	**1380**	**63**
Capt	15	1154	77	0	0	0	17	930	55	**32**	**2084**	**65**
Total	**240**	**14369**	**60**	**60**	**2408**	**40**	**605**	**30954**	**51**	**905**	**47731**	**53**

Table 3.4 – Summary of External Individual Training Support Task-Days to Battalions

[42] CFTPO is the primary tool used by the CAF to assign and track tasks to individuals and equipment. It allows a detailed review of the location, duration, and personnel requirements associated with almost any task.

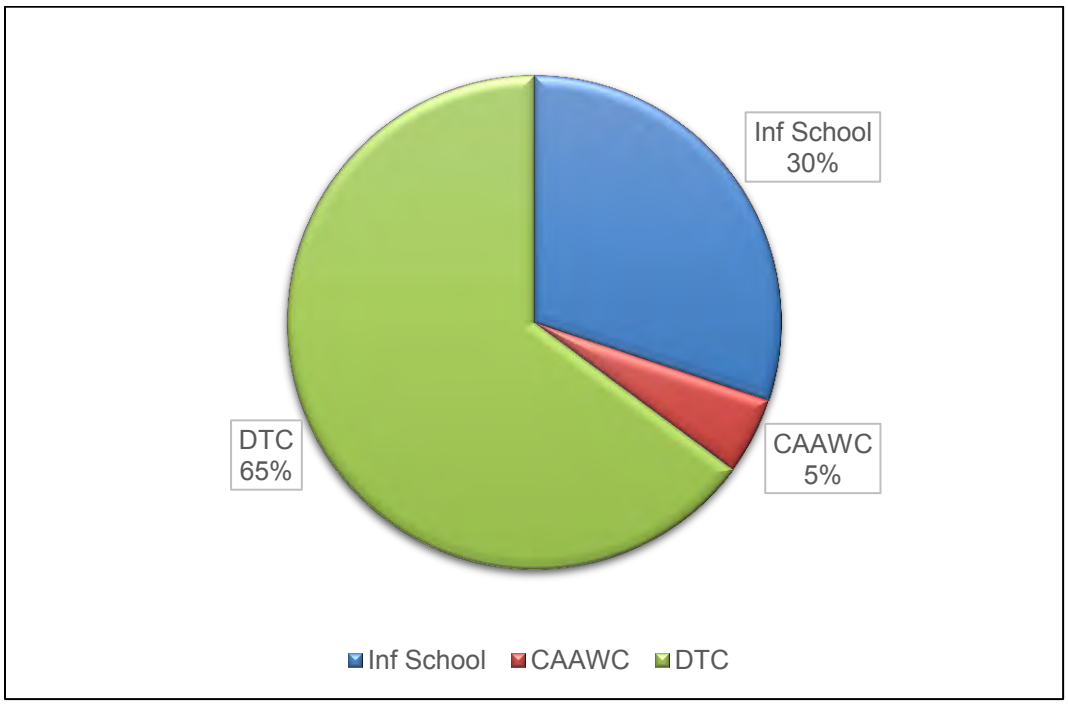

Figure 3.1 –External Individual Training Support Task-Days to Battalions by Source

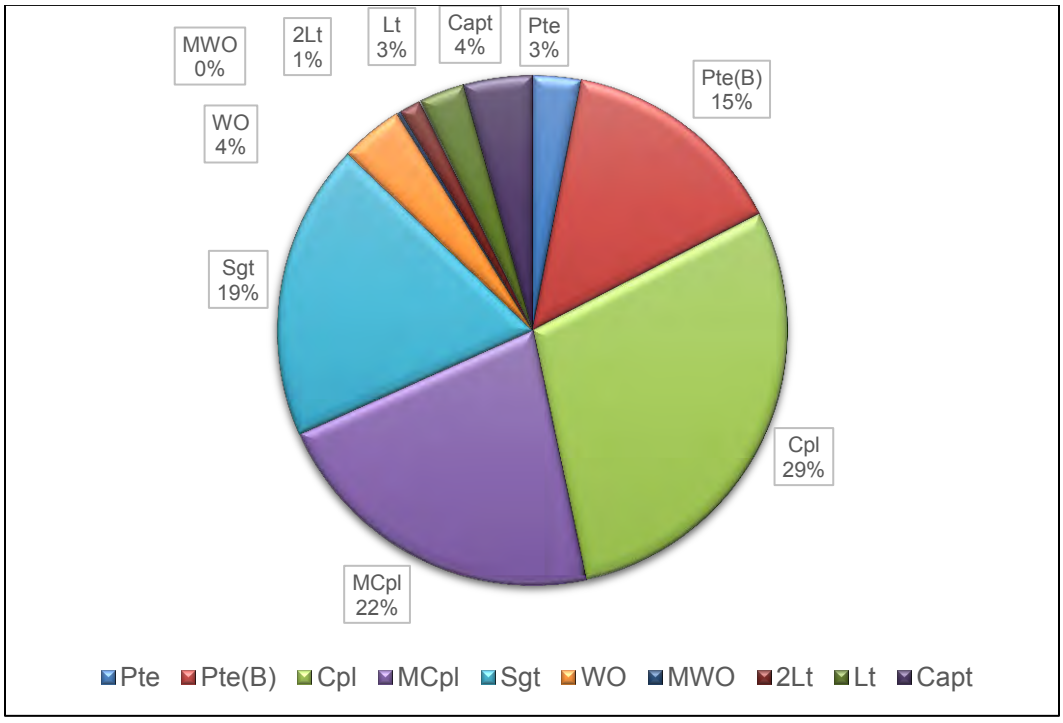

Figure 3.2 –External Individual Training Support Task-Days to Battalions by Rank

The initially apparently significant metric associated with this task source is the total task-day bill of 47,731 identified, however, there are both mitigating and exacerbating factors that must be considered in analyzing the effective impact of these tasks on battalions.

The most significant mitigating factor is that a significant number of these tasks have already been accounted for in the analysis of impact of conduct of operational individual training above. However, some proportion is not as the centralized training institutions under study also conduct training for non-infantry trades and there are, therefore, instances where battalion personnel may be drawn off to deliver training that does not result in qualifications within the battalion. For example, the infantry school is responsible for basic CA officer qualifications which generate officers for all army trades, not only the infantry.

A second mitigating factor can be identified in a more detailed analysis of the breakdown of these reportedly external tasks between the regiments. The table below summarizes a notable discrepancy:

PPCLI Task-Days By Source	
Source	**Task-Days**
Inf School	3,980
CAAWC	508
DTC	6,145
Total	10,633

RCR Task-Days By Source	
Source	**Task Days**
Inf School	2,290
CAAWC	648
DTC	9,538
Total	12,476

R22ER Task-Days By Source	
Source	**Task Days**
Inf School	8,099
CAAWC	1,252
DTC	15,271
Total	24,622

Table 3.5 – Regimental Distribution of Task-Days to External IT Support

It is apparent that the R22^{e}R appears to bear a disproportionate burden in terms of the number of tasks to support individual training. This phenomenon may be explained by a number of factors. With respect to the infantry school the rationale is likely geographic.

With all three battalions stationed in Quebec, the R22^{e}R represents the closest source of personnel, less 2 RCR, to support school activities. Allocating more tasks to these battalions increases the chances that soldiers tasked will be able to return home during weekends and other downtime and appears sensible from a quality of life perspective. The rationale for the higher task bill to support CAAWC is less clear and would require a more detailed analysis outside the scope of this paper. However, given the relatively small numbers of tasks involved it is not likely to be significant.

The most notable difference between the battalions lies in the number of tasks associated with training conducted at divisional training centres. In this area the R22^{e}R absorbs nearly the same number of tasks as the other two regiments combined. There are three likely reasons for this discrepancy, two tied to geography and one potentially more symptomatic of the impact of tempo due to tasks within battalions.

The geographic explanation is simple, with all three battalions co-located with the division training centre at Valcartier there is no significant impediment to providing instructional support in terms of impact on quality of life for soldiers. This dynamic is not the same for PPCLI or RCR soldiers who will be tasked away from home and family if employed at their respective division training centres. Therefore, the R22^{e}R battalions may be less resistant to accepting support tasks with the understanding that there will be reduced impact on their members.

Secondly, the availability of a bespoke training centre on the same base as the battalions provides the R22^{e}R the opportunity to leverage a purpose-built facility to conduct training, as opposed to competing for space with other activities within battalion

facilities as is the case for the PPCLI and RCR battalions. This is, once again, an entirely reasonable use of an available opportunity.

The final potential explanation for the disparity in tasks between the regiments lies in the way in which tasks are allocated across the CA. In general, tasks assigned and managed by higher authorities have higher priority than those generated by subordinate organizations. A review of the types of courses conducted within the respective division training centres reveals that, in addition to the courses conducted at 3 and 4 CDTC, 2 CDTC conducts a significant number of driver courses for logistics vehicles for R22eR candidates that are generally conducted in-house by the PPCLI and RCR battalions. Though significant rationale for this practice has been provided above, a further effect is that personnel tasked to these courses are now considered, for the purposes of CFTPO, to be employed on a higher priority task under the Canadian Army Doctrine and Training Command (CADTC) than if they were to be conducting an identical activity within unit facilities. As a result, though the actual tasks to the R22^{e}R may appear significantly disproportional, some element of this is an artifact of the prioritization and tracking of tasks within the CA. By couching a significant portion of what would in other regiments be considered conduct of routine operational training under the aegis of higher priority support to external individual training, the R22^{e}R are able to better message the impact of these tasks to higher headquarters.

As a consequence of these three factors, the disparity in tasks associated with support to external individual training between the regiments can be largely explained. This analysis, combined with the capturing of instructional and administrative support to

overall operational individual training above would tend to largely mitigate the initially surprisingly high number of task-days associated with this category. There are, however, three major factors that act to increase the effective tempo impacts.

The first of these factors is lack of battalion control in scheduling, the second is task duration, and the third is rank distribution. In all cases, these factors result in the relative impact of these tasks being higher than a more simplistic analysis of task-days would indicate.

Unlike internally conducted operational individual training, the scheduling of courses and associated support tasks at central institutions is largely beyond the control of the battalions. Though there are commonly understood to be two major central training seasons, these being summer and winter, specific dates and requirements can be significantly more difficult to predict. This lack of certainty has an aggravating effect on the impacts of these tasks as a last-minute tasking of key personnel will likely result in cancelled opportunities within the battalion or disproportionally more effort required to seek mitigation through backfill or changes to the battalion schedule.

Task duration is also a significant concern to battalions in terms of both operational planning and personnel management. The summary table above indicates that the average task to support external individual training represents approximately 51 task-days. However, as CFTPO does not account for weekends or other downtime, the actual figure is likely somewhat lower. Without conducting an exhaustive study of all tasks and associated start and end dates, an approximation can be made. As weekends represent approximately 29% of the week and external individual training is rarely scheduled to run

over major periods of leave, a more conservative average figure would be 36 task-days per task.

Consequently, from an operational viewpoint, the average support to external individual training task can be expected to consume approximately 18% of the 200 task-days generated by an individual per year. This reduction imposes a significant burden on the battalion, but more significantly at the section and platoon level where the loss of an individual is more noticeable.

From a personnel management standpoint the significant duration of this category of tasks is equally meaningful. With the exceptions noted above, the majority of centralized external individual training is conducted at a considerable distance from battalion home stations. As a result, the quality of life impacts on members employed away from home and family for significant periods of time can be extremely detrimental. In consideration of the mental health and cohesion related effects of tempo identified previously, this task category represents one of the more notable tempo effects drivers within battalions.

The final exacerbating quality of support to external individual training tasks is the rank distribution associated with this category. Analysis indicates that though Master-Corporals and Sergeants represent only 22% of the positions on a battalion establishment, they receive fully 41% of these tasks, and the consequences of attrition at the mid-level NCO ranks has already been discussed in detail above. These impacts are invariably exacerbated by the disproportionate targeting of these ranks to support external individual training. In practice, tasking to this category is significantly more detrimental than

employment during the conduct of in-house individual training as members in the battalion retain residual administrative and leadership responsibilities regardless of temporary employment.

The analysis above has identified that the task-day totals associated with support to external individual training may not be as dramatic as the initial numbers appear. There is an element of double accounting with those tasks captured under the conduct of operational individual training category, as well as mitigating factors tied to the geographic dispersal of battalions. However, there are also significant aggravating factors associated with these tasks, most notably related to scheduling, duration, location, and rank distribution. As a consequence, for illustrative purposes, this category of individual training related task will be approximated to represent a 20% increase in effective task-day impact over those identified above.[43] This assessment increases the overall task bill of individual training to approximately 14,000 task-days per battalion per year or 18% of the available pool of personnel resources.

Miscellaneous Non-Operational Tasks

The scope of miscellaneous tasks filled by battalions is likely beyond detailed analysis without resources far exceeding those available for this study. Units are called on to provide personnel for such diverse activities as:

- community relations events;
- participation in competitions;

[43] This is a highly subjective assessment; however, the author believes it to be a reasonable approximation of the disproportionate impacts of these tasks that tend to take critical personnel far from home on an unpredictable basis. Experience shows that these types of tasks have a significant impact on the effective functioning of a battalion.

- ceremonial duties such as parades and commemorations;
- support to other units' collective training (especially large centralized exercises);
- trials and evaluations; and
- participation in miscellaneous focus and working groups.

The above list is far from exhaustive, but gives some indication of the types of tasks captured under this category. Quantification of this area is further complicated by the fact that for many short-term tasks there is no formalized tracking mechanism. Notice is often received with little lead time, and the activities are not entered into CFTPO.

In cases where a more accountable process has been used there can be parallels found between this and other categories of tasks. Notably, due to their skillsets and experience mid-level NCOs continue to be disproportionally targeted. For example, a review of CFTPO reveals that during the 2016 iteration of the CA's major annual validation exercise, Exercise *Maple Resolve*, 34% of tasks to non-training battalions were to Master-Corporals and Sergeants. These 52 tasks represented 1,200 task-days' worth of personnel resources removed from their parent battalions, amplified by the disproportionate impacts of removing these key leaders as discussed at length.

Given the nebulous nature of this task category it is therefore necessary to once again make an approximation of the impact on battalion tempo. Based on experience it is assessed that 15% of available task-days associated with miscellaneous non-operational tasks is a conservative estimate of the impact of this category. Consequently, these tasks, which generate effectively no meaningful output for the unit, consume on average 11,783 task-days' worth of personnel resources per battalion per year.

Administration

Routine and contingency administration represents a significant portion of the task load of a battalion. From the maintenance of personnel records, to the management of careers, to execution of military justice, the number and diversity of administrative tasks is likely beyond accurate measure. A notable example may be found in the conduct of performance reviews through the Canadian Forces Personnel Appraisal System (CFPAS). Throughout each year all members are expected to receive at least three reviews split between Personnel Development Reports (PDRs) and Personnel Evaluation Reports (PERs). The time associated with drafting, revising, delivering, collating, and submitting (as required), this documentation for over 500 soldiers is considerable. Similarly, the standard checklist for pre-deployment verification of administration includes at least 53 items to be completed and verified.

Further complicating a precise measurement of the impacts of administration on tasks is the unequal distribution of responsibilities across the battalion. Where some positions may have minimal administrative duties, others perform these tasks almost exclusively. Consequently, an assessment based on experience will be made for illustrative purposes. Given the perennial requirement for administration, combined with the aggravating factor that these duties are largely carried out by the same cadre of junior leaders already highly stressed by other tasks, an approximation of 20% of available personnel resources is considered reasonable. These requirements therefore represent 15,977 task-days of personnel resources consumed.

Operations

Infantry battalions exist for the purpose of generating and deploying personnel on operations, and this factor should always retain primacy. Further, as the aim of this paper is to focus on the tempo of battalions during force generation limited discussion will be dedicated to the topic of operations. However, there is one area related to operational tasks that the author feels is of sufficient importance to raise, this being the divergence between force generation and force employment structures during contemporary operations.

The structure of the corps' current battalions has been informed by both operational experience and the requirements to apportion personnel across the CA and CAF based on emerging trends. Despite changes over time, this design has continued to be based on a hierarchical structure of elements from the individual, to the section, the platoon, company, and finally battalion. This concept remains extant during force generation, however, on recent operations there has been a significant departure in the concept for force employment. With an increased emphasis on partner-nation capacity building, headquarters augmentation, and other small missions, those members deploying are no longer proportionally representative of the battalions. Unsurprisingly, the majority of the deployment burden and opportunity has shifted onto the same leadership and management ranks identified above. For example, during the 2 PPCLI deployment on Operation *Unifier* discussed previously, 35 of the 109 infantry positions drawn from the

battalion were Master-Corporals and Sergeants.[44] This 32% representation on the task force easily outstrips the 22% representation of these ranks in the battalion as a whole.

Given that there are currently no battalion level deployments ongoing, there are invariably residual elements of the lead units for these smaller missions that remain in Canada. These units are expected to continue force generation activities for other contingency operations such as domestic disaster relief but do so under the additional targeted burden imposed by non-force generation structure based force employment.

Summary of Tasks

The analysis of tasks presented above has identified those areas that, in the author's experience, represent the major drivers for tempo within battalions. The table below provides a summary of the impacts of these categories:

Tasks			
Category	**Task-Days Required**	**Task Days Remaining**	**Percentage Reduction**
Conduct of Routine Operational IT	11,666	66,890	14.9%
Conduct of Routine Operational CT	Discussion in Chapter Summary		
Non-Operational Training	2,325	64,565	3.0%
Currency Maintenance Training	18,760	45,805	23.9%
Support to External IT	2,333	43,472	3.0%
Miscellaneous Non-Operational Tasks	11,783	31,688	15.0%
Administration	15,711	15,977	20.0%
Operations	Situation Dependant		

Table 3.6 – Summary of Tasks to Battalions by Category

The cumulative total of the impact of tasks assessed represents a conservative estimate of 62,579 task-days or approximately 80% of the personnel resources remaining after the initial reductions discussed under the heading of resources. It should be noted that this result is, if anything, conservative in nature as there are certainly discrete tasks that have not been captured and the author has deliberately chosen to make subjective

[44] Figures drawn from CFTPO.

judgements on the lower end of what might be considered reasonable. This result should also not be surprising given the result of the similar study that lead to the analysis conducted by Dr. Wong *et al.* in "Lying to Ourselves". An increase in tasks appears to be a common theme across many organizations and infantry battalions are no exception.

It must also be remembered that, although wherever feasible, facts and figures have been located and incorporated, there is a notable lack of accounting for some of the significant tempo drivers discussed. In instances where approximations have been required, these have been based on significant experience and serve to provide better understanding of the issues at hand. Though the specific values I have selected may be argued, the associated substantiation and supporting examples provide context and are meant to be indicative of the scale and complexity of the situation.

The overall conclusion that may be drawn from this section is that battalions continue to face a myriad of tasks despite the reductions in personnel resources discussed previously. Further, there is a recognizable trend for the disproportionate targeting of key ranks and qualifications, resulting in significantly higher tempo for these personnel. Finally, the frequent requirement to make use of professional judgement and approximations in the absence of hard figures is indicative of the difficulties in quantifying the actual task bill faced by battalions. This factor will be discussed further below but represents a significant hurdle to providing convincing metrics to decision makers as to the impact of task load.

Chapter Summary

This chapter has sought to provide quantitative data on the resource constraints and task challenges faced by battalions. The overall assessment completed is summarized in the table below:

Resources			
Category	**Task-Days Reduced**	**Task-Days Remaining**	**Percentage Reduction**
Pre-Force 2013 Baseline Task-Days		105,644	
Force 2013 Reduction	12,777	92,867	12.1%
Percentage Calculation Reset			
Post-Force 2013 Baseline Task-Days		92,867	
Reduction Due to Under-Manning	5,572	87,295	6.0%
Reduction Due to Medical Limitations	8,729	78,556	10.0%
Percentage Calculation Reset			
Tasks			
Category	**Task-Days Required**	**Task Days Remaining**	**Percentage Reduction**
Conduct of Routine Operational IT	11,666	66,890	14.9%
Conduct of Routine Operational CT	Discussion in Chapter Summary		
Non-Operational Training	2,325	64,565	3.0%
Currency Maintenance Training	18,760	45,805	23.9%
Support to External IT	2,333	43,472	3.0%
Miscellaneous Non-Operational Tasks	11,783	31,688	15.0%
Administration	15,711	15,977	20.0%
Operations	Situation Dependant		

Table 3.7 – Summary of Battalion Personnel Resources and Tasks

In order to provide an accurate representation of the effective percentage reductions in task-days remaining following Force 2013 impacts and the assessed impacts of under-manning and medical restrictions there are two resets noted in the table. These have been included to provide a more meaningful representation of the realities faced by battalions and avoid comparison to outdated or unrealistic figures when making qualitative assessments of percentage impacts of tasks.

The most significant result of the analysis conducted is that, following the completion of the largely non-discretionary tasks, battalions are left with approximately 20% of their available task-days to conduct collective training and any other tasks. Though this figure may actually appear reasonable, it must be remembered that

conservative estimates were made, and the actual value may be significantly lower. Furthermore, the fragmenting effect of tasks on the structure of the battalion must be considered.

The fragmenting effect of tasks refers to the fact that tasks are not neatly grouped into discrete portions of the calendar year. As a result, the time remaining to conduct collective training is not available in a cohesive block, but rather fragmented into small periods throughout the year where there may be sufficient personnel untasked to form the critical mass required for reasonably sized sections, platoons, and companies. Even in these cases it is unlikely that the entire organization will be available, and only a fraction will participate. Often, it is necessary to construct *ad-hoc* structures composed of those personnel available in order to build doctrinally sized structures. This phenomenon has readily understandable impacts on the value of collective training in terms of cohesion building and overall training value as many participants realize that the team they are training with will be immediately dissolved on completion.

Referring back to the model of tempo proposed in this paper, it can be seen that the level of resources as a baseline is below that predicted by battalion establishments as the result of under-manning and medical restrictions. Other factors such as long-term maternity/paternity leave or the impacts of non-doctrinal structures in battalions tend to reduce these resources yet further.[45] Meanwhile, the task bill is rapidly reaching the saturation point of the task-days assessed as available. In fact, task demands have already passed a reasonable limit for the resources available. As a result, battalions are entering

[45] Most battalions operate canteens, targetry construction shops, and other organizations which consume personnel resources but are not recognized within the formal establishment of the unit.

an area of exponential tempo growth where each additional task or resource constraint has a disproportionate detrimental effect on the ability of the unit to function effectively.

As noted above, the most apparent area for slippage to mitigate this phenomenon has been the conduct of meaningful collective training, especially at the section and platoon level. Two major drivers for this effect are the impacts of NCO scarcity and mandated centralized collective training at the battalion level and above.

The targeting of mid-level NCOs for tasks has been discussed at length in this paper. As a result, despite best intentions these individuals are simply not available to provide the leadership and technical expertise required for lower level collective training. This phenomenon can be seen in battalions where Privates and Corporals are often available for training but due to a lack of leadership availability they are either under-employed with menial tasks, or left to their own devices. Contrary to what might be considered reasonable, it is the author's experience that the average soldier participates in meaningful collective training at the platoon or even section level at far less than a monthly basis. As noted, it is only on the relatively rare occasion when sufficient personnel resources can be scraped together, usually within the context of a higher-level exercise, that collective training is able to occur. In the current context, the possibility of a Sergeant or Master-Corporal taking a meaningful fraction of their section out for training on their own initiative is a remote one.

The second driver for poor quality and quantity of lower level collective training is the drive to achieve gateways required to progress to mandated higher level exercises. When limited time is allocated to complete training at the team, section, platoon, and

even company level in order to meet mandated requirements to commence battalion and brigade level training, a “check in the box” mentality towards quality is an almost inevitable result. Once the transition to higher-level collective training is made, the value at the section and platoon level tends to decrease as the focus shifts and these elements become more training aids than training audience.

In short, the analysis presented in this chapter has identified that the conditions for excessive tempo within battalions exist as a result of significant reductions in personnel resources combined with a high number of non-discretionary tasks. The most significant impact has been identified as the degradation of collective training standards in terms of quality and quantity at the company level and below. Despite the fact that this level of training is absolutely critical to the generation of an effective operational force, units appear to have little other room to manoeuvre. The following chapter will seek to provide some recommendations on how the tempo drivers identified above may be reduced to allow battalions to better execute their most meaningful function, the training of soldiers and teams for operations.

CHAPTER 4: RECOMMENDATIONS

Recommendations provided will be grouped, in accordance with the model proposed, into measures to mitigate personnel resource constraints and the impact of tasks followed by some general concepts. The goal of these recommendations is to, at a minimum, provide areas for further study as many would require major policy changes. It will also be noted where these recommendations align with current CAF or allied initiatives in related areas.

Personnel Resources

Based on the data gathered, the most significant impacts on personnel resources identified were found to be related to establishment reductions, under-manning, and medical restrictions. Given that a significant injection of regular force PYs into the corps is unlikely, no recommendations will be made in this area. Similarly, though it may be simplistically recommended that battalions be manned to 100% at all times, this is unrealistic given the real requirements to support schools, recruiting centres and so on. Consequently, the most likely area for improvement is in the management of medical restrictions.

It is inevitable that as a result of the nature of infantry training and operations there will be personnel who become injured on a temporary or permanent basis. What is required is a mechanism to minimize the impact of long-term medical restrictions on the effectiveness of battalions. Though a simplistic solution would be to immediately remove all personnel with significant restrictions from battalion positions, this would not recognize the value they may still be able to provide based on experience and

qualifications regardless of deployability status. As noted, the US military has adopted this approach with new initiative to hasten the removal of non-deployable soldiers.[46] Given the size of the CAF, CA, and infantry corps, this relatively draconian methodology is less suitable. Instead, a solution should be sought that retains talent without compromising operational output. Under the title "The Journey" the CAF is currently investigating and implementing a range of updated and modernized personnel policies. These policies allow for more rapid and seamless transition from full to part time service, as well as accepting deployability limitations due to medical or personal reasons.

A possible avenue for application of these policies may be for the creation of positions within battalions specifically suited for members with useful qualifications but under long-term deployment and/or other limitations. These members, having transitioned to "part-time" or "restricted duty", might still be well suited to conduct local instructional or administrative tasks, while allowing personnel posted into operational positions to focus on collective training.

The critical aspect of management of medical restrictions is that terminally non-deployable personnel must no longer be accounted for against the reported operational strength of the battalions as is currently the case. To do so under-reports the impacts of these limitations and invites the allocation of additional tasks.

Tasks

A review of the task analysis conducted above indicates that approximately 45% of the task-days accounted for are associated with the generation and maintenance of

[46] "Pentagon's New Deploy-Or-Out Policy could Separate Up to 286K," last modified Feb 15, accessed Apr 24, 2018

individual skills.[47] Consequently, this area provides an obvious target for investigation for the reduction of tasks. There are two immediately apparent approaches to addressing this issue. Firstly, reduce the quantity and duration of individual training courses, thereby reducing the task-days associated for both students, instructors, and support staff. Secondly, reduce the requirement for battalions to generate the instructional and support staff for individual training.

Reducing the quantity and duration of individual training would provide an immediate and pronounced relief of the task burden imposed on battalions. A first recommendation is to review and limit the quantity and urgency associated with non-operational training. The US Secretary of Defence has directed the establishment of a Close Combat Lethality Task Force (CCLTF) which includes specific study of this area. In an address to the Association of the US Army (AUSA) the Undersecretary for Personnel and Readiness highlighted this issue, pointing out that, as a reservist, he spends 4.5 of his 14-day annual training in this area. The US service chiefs have indicated an intention to significantly reduce this type of training. The CAF, CA, and infantry corps would be well served to do the same.

Secondly, operational IT should be routinely reviewed, and periods of instruction that provide little to no meaningful value removed. From an anecdotal standpoint, it is the author's experience that expending 40 minutes explaining to gunnery students the wavelengths of electromagnetic radiation sensed by the thermal sight is effectively a

[47] This figure represents the sum of individual training conduct and support, currency maintenance, and non-operational training.

waste of time. There are doubtless similar areas where extraneous instructional periods can be cut or re-apportioned to meaningful training.

Thirdly, the venue for the delivery of the various natures of individual training should be re-examined and optimized. For example, there may be value in transitioning technical and specialist training to centralized institutions and leadership training to battalions. This re-structure would allow bespoke teams of experts to focus on the critical technical skills currently delivered by *ad-hoc* course staffs within battalions. Further, transitioning leadership training, with its attendant requirements for collective exercises, to battalions would provide substantiation for significantly increased low-level collective training making use of the actual soldiers to be led by successful candidates.

Regardless of the apportionment of individual training across establishments, the centralized institutions should be established and manned to a level where they no longer require significant augmentation from battalions. Given the "PY-neutral" nature of personnel management this initiative may require measures as drastic as collapsing battalions to generate available personnel. This would likely be an unpopular step, however, the possibility of having the remaining battalions fully and consistently manned with a re-invigorated focus on collective training should not be ignored.

Finally, and as noted above, the establishment of bespoke individual training delivery cells within battalions, but outside operational establishment, bears investigation. By removing the majority of the instructional burden from the deployable the mid-level NCO population, the value of collective training at the company level and below would be significantly increased.

The other major area for potential reductions in tasks is in administration. While a detailed study of administrative procedures is beyond the scope of this paper some obvious areas for investigation includ further delegation of administrative authorities, increased use of electronic and automated administrative systems, and increasing the responsibility of members for their own administration. This topic represents a valuable area of study for a more detailed follow-on operational analysis of battalion tempo.

The final area to be addressed is an assessment of task-based tempo drivers related to the disconnect between force generation and force employment concepts, specifically the disproportionate targeting of certain ranks for operations. Though operational design is not a remit of the infantry corps, but rather a largely political exercise, better messaging of the impacts of the current construct may inform future decisions. In short, the infantry must do a better job in advocating for the deployment of organic structures, ideally at no lower than company level, in order to provide shared opportunities and task burden across all ranks.

General

The most significant general recommendation, and the overarching aim of this paper, is that he infantry corps must do a better job defining, tracking, and reporting on tempo and readiness. In the author's experience, battalions have always been "busy" and this trend is increasing. However, there seems to be little in the way of metrics or other reporting processes used to identify these issues to higher headquarters despite the corrosive effects on battalion and operational effectiveness. The chairman of the CCLTF Advisory Board, Major General Bob Scales (Retd.) has identified that the US Army faces

similar challenges stating "Clearly at the small unit level, the readiness reporting system fails us."[48] A first step in the right direction in this area would be to identify meaningful metrics for collective training, establish baseline requirements, and mandate reporting. Some recommendations for such metrics include:

- Average percentage of battalion available for collective training;
- Number of mid-level NCOs available within the battalion to conduct training with their sections and platoons;
- Number of discrete training events conducted with organic sections, platoons, and companies; and
- Time allocated for training development and delivery at the section, platoon, and company level.

Beyond the reporting of meaningful collective training metrics, steps should also be taken to better message the actual tempo of battalions by more accurately tracking tasks. As the R22^{e}R has demonstrated, use of CFTPO as a method for maintaining visibility of the actual bill of individual training conduct and support is an effective tool in this regard.

The final recommendation to come from the analysis conducted is that there is a requirement for more thorough analysis conducted with access to more complete information and expertise than the limited aims of this paper. Where the author has been required to make assessments and approximations, a dedicated operational research team would likely be able to draw on more finite data and provide a more rigorous statistical study of the phenomena identified above. It is therefore recommended that the Centre for

[48] "Stop Wasting Infantry's Time: Mattis Task Force," last modified Apr 13, accessed Apr 24, 2018

Operational Research and Analysis (CORA) be requested to conduct a detailed study of the tempo drivers and effects resident in Canadian infantry battalions.

CHAPTER 5: SUMMARY AND CONCLUSION

The aim of this paper has been to argue and prove that Canada's infantry battalions face a critical tempo problem as a result of steadily decreasing personnel resources, combined with an increasing task bill. It has been further posited that the impacts of these factors are exponential, and that a disproportionate increase in tempo is now being felt across the infantry corps. The likely impacts of excessive tempo, as predicted by a variety of international studies, as well as professional experience, have identified and established an initial rationale for the management of this phenomenon. Finally, it has been argued that the most telling victim of this tempo has been the quantity and quality of collective training at company level and below.

While there is no doubt that tempo is a concern across the CA and the CAF as a whole, given the identified criticality of the infantry in the generation of operational effect on land, impacts on this corps should be of particular concern. Furthermore, given the nature of infantry combat, it is the attrition of core collective skills that represent the most dangerous threat currently faced. With the identified linkages between tempo and this loss of capability, it is clear that this issue requires urgent assessment, prioritization, and reduction.

Some may argue that, despite the issues identified in this paper, the Canadian infantry has and continues to perform admirably on operations domestically and while deployed and that the issues identified may be exaggerated. What must be kept in mind is that the nature of operations has and continues to change, and current performance may not be a reasonable predictor of the future. Since the completion of the Afghanistan

combat mission in 2014, the infantry has absorbed a significant cut in personnel resources, while introducing several additional systems including the Light Armoured Vehicle 6.0, and the TOW anti-armour missile with an attendant increase in associated individual training tasks. Simultaneously, the increase in demands for the individual deployment of critical personnel has had an equally significant impact on the effective tempo of battalions. Critically, there has been no post-Afghanistan operation where the collective combat skills of the infantry have been tested under fire. Former US Secretary of Defence Donald Rumsfeld put it succinctly, stating "You go to war with the Army you have, not the Army you might want or wish to have."[49] Any resumption of combat operations would be a poor time to realize that the cumulative effect of out-paced tempo has critically compromised the effectiveness of Canada's core land combat capability: the infantry.

While infantry battalions will and should be busy, and tempo may arguably be a healthy stressor to stimulate better performance, what should not be accepted is an excessive and sustained disparity of tasks and resources as currently exists. Canadian soldiers deserve to train cohesively, with high standards, and sufficient frequency to prepare them for the realities of combat. To do otherwise represents an unacceptable failure to care for those who will go into harms way on behalf of this nation.

[49] "War Readiness again Hot Issue," last modified Dec 08, accessed Apr 25, 2018

APPENDIX 1: MEDICAL RESTRICTIONS DETAILS

The table below summarizes the parade states submitted by all battalions via Monitor/MASS on 15 December 2016.

Unit	Trade	Personnel Posted	Light Duties	Temporary Medical Category	Permanent Medical Category
1 PPCLI	Infantry Soldier	399	36	46	37
1 PPCLI	Infantry Officer	26	0	1	0
1 PPCLI	**Total**	**425**	**36**	**47**	**37**
1 R22ER	Infantry Soldier	362	13	30	47
1 R22ER	Infantry Officer	21	1	2	2
1 R22ER	**Total**	**383**	**14**	**32**	**49**
1 RCR	Infantry Soldier	341	24	27	44
1 RCR	Infantry Officer	22	0	1	0
1 RCR	**Total**	**363**	**24**	**28**	**44**
2 PPCLI	Infantry Soldier	330	22	34	34
2 PPCLI	Infantry Officer	23	0	0	2
2 PPCLI	**Total**	**353**	**22**	**34**	**36**
2 R22ER	Infantry Soldier	432	39	56	62
2 R22ER	Infantry Officer	29	0	3	2
2 R22ER	**Total**	**461**	**39**	**59**	**64**
2 RCR	Infantry Soldier	379	24	34	15
2 RCR	Infantry Officer	23	0	0	2
2 RCR	**Total**	**402**	**24**	**34**	**17**
3 PPCLI	Infantry Soldier	325	20	34	42
3 PPCLI	Infantry Officer	23	0	0	1
3 PPCLI	**Total**	**348**	**20**	**34**	**43**
3 R22ER	Infantry Soldier	316	27	30	51
3 R22ER	Infantry Officer	24	1	1	0
3 R22ER	**Total**	**340**	**28**	**31**	**51**
3 RCR	Infantry Soldier	329	33	22	26
3 RCR	Infantry Officer	24	0	1	2
3 RCR	**Total**	**353**	**33**	**23**	**28**

Table A1.1 – Medical Restrictions Details by Battalion

APPENDIX 2: SELECT ANNUAL QUALIFICATION GENERATION DETAILS

The tables below summarize the qualifications and associated task-days generated and consumed for the courses selected for study during fiscal year 2016/2017.

Course Name	1 PPCLI		2 PPCLI		3 PPCLI	
	Quals	Task-Days	Quals	Task-Days	Quals	Task-Days
LAV 3 25mm Turret Op	0	0	0	0	0	0
LAV 6 25mm Turret Op	106	2120	7	140	7	140
LAV 3 25mm CC	0	0	0	0	0	0
LAV 6 25mm CC	39	936	2	48	1	24
LAV 3 Driver	0	0	0	0	0	0
LAV 6 Driver	41	738	0	0	1	18
Advanced Recce Patrolman	1	60	2	120	2	120
Basic Recce Patrolman	3	105	24	840	14	490
Rifle Sect Comd	8	160	2	40	3	60
Advanced Small Arms	13	403	14	434	14	434
Weapons Det Member	25	325	24	312	52	676
AFFRSO	13	130	2	20	11	110
Infantry Platoon 2IC	4	196	7	343	3	147
Totals	**253**	**5173**	**84**	**2297**	**108**	**2219**

Table A2.1 – PPCLI Qualification Details

Course Name	1 RCR		2 RCR		3 RCR	
	Quals	Task-Days	Quals	Task-Days	Quals	Task-Days
LAV 3 25mm Turret Op	22	418	0	0	1	19
LAV 6 25mm Turret Op	71	1420	109	2180	3	60
LAV 3 25mm CC	0	0	0	0	0	0
LAV 6 25mm CC	17	408	25	600	3	72
LAV 3 Driver	12	216	0	0	0	0
LAV 6 Driver	56	1008	60	1080	0	0
Advanced Recce Patrolman	4	240	2	120	3	180
Basic Recce Patrolman	13	455	8	280	10	350
Rifle Sect Comd	8	160	2	40	7	140
Advanced Small Arms	9	279	10	310	13	403
Weapons Det Member	11	143	34	442	79	1027
AFFRSO	19	190	22	220	37	370
Infantry Platoon 2IC	5	245	3	147	6	294
Totals	**247**	**5182**	**275**	**5419**	**162**	**2915**

Table A2.2 – RCR Qualification Details

Course Name	1 R22ER		2 R22ER		3 R22ER	
	Quals	Task-Days	Quals	Task-Days	Quals	Task-Days
LAV 3 25mm Turret Op	45	855	1	19	1	19
LAV 6 25mm Turret Op	65	1300	75	1500	7	140
LAV 3 25mm CC	0	0	0	0	0	0
LAV 6 25mm CC	24	576	38	912	0	0
LAV 3 Driver	46	828	0	0	1	18
LAV 6 Driver	31	558	37	666	0	0
Advanced Recce Patrolman	4	240	3	180	2	120
Basic Recce Patrolman	12	420	12	420	9	315
Rifle Sect Comd	3	60	7	140	6	120
Advanced Small Arms	16	496	21	651	21	651
Weapons Det Member	24	312	25	325	28	364
AFFRSO	29	290	24	240	23	230
Infantry Platoon 2IC	4	196	4	196	3	147
Totals	**303**	**6131**	**247**	**5249**	**101**	**2124**

Table A2.3 – R22^{e}R Qualification Details

APPENDIX 3: SUPPORT TO EXTERNAL INDIVIDUAL TRAINING DETAILS

The following tables and charts summarize the data captured regarding tasks to battalions from individual training institutions during fiscal year 2016/2017.

1 PPCLI												
Rank	Inf School			CAAWC			DTC			Total		
	Tasks	Task Days	Avg Task Days	Tasks	Task Days	Avg Task Days	Tasks	Task Days	Avg Task Days	Tasks	Task Days	Avg Task Days
Pte	0	0	0	0	0	0	0	0	0	**0**	**0**	**0**
Pte(B)	7	446	64	0	0	0	4	392	98	**11**	**838**	**76**
Cpl	9	504	56	1	55	55	9	854	95	**19**	**1413**	**74**
MCpl	2	128	64	0	0	0	11	613	56	**13**	**741**	**57**
Sgt	0	0	0	0	0	0	3	277	92	**3**	**277**	**92**
WO	2	92	46	0	0	0	0	0	0	**2**	**92**	**46**
MWO	0	0	0	0	0	0	0	0	0	**0**	**0**	**0**
2Lt	0	0	0	0	0	0	1	100	100	**1**	**100**	**100**
Lt	0	0	0	0	0	0	2	82	41	**2**	**82**	**41**
Capt	3	234	78	0	0	0	2	151	76	**5**	**385**	**77**
Total	**23**	**1404**	**61**	**1**	**55**	**55**	**32**	**2469**	**77**	**56**	**3928**	**70**

2 PPCLI												
Rank	Inf School			CAAWC			DTC			Total		
	Tasks	Task Days	Avg Task Days	Tasks	Task Days	Avg Task Days	Tasks	Task Days	Avg Task Days	Tasks	Task Days	Avg Task Days
Pte	3	216	72	0	0	0	1	51	51	**4**	**267**	**67**
Pte(B)	12	636	53	0	0	0	1	53	53	**13**	**689**	**53**
Cpl	7	428	61	1	55	55	6	454	76	**14**	**937**	**67**
MCpl	4	188	47	0	0	0	12	838	70	**16**	**1026**	**64**
Sgt	2	140	70	0	0	0	3	159	53	**5**	**299**	**60**
WO	3	175	58	0	0	0	0	0	0	**3**	**175**	**58**
MWO	0	0	0	0	0	0	0	0	0	**0**	**0**	**0**
2Lt	0	0	0	0	0	0	0	0	0	**0**	**0**	**0**
Lt	0	0	0	0	0	0	1	69	69	**1**	**69**	**69**
Capt	0	0	0	0	0	0	4	148	37	**4**	**148**	**37**
Total	**31**	**1783**	**58**	**1**	**55**	**55**	**28**	**1772**	**63**	**60**	**3610**	**60**

3 PPCLI												
Rank	Inf School			CAAWC			DTC			Total		
	Tasks	Task Days	Avg Task Days	Tasks	Task Days	Avg Task Days	Tasks	Task Days	Avg Task Days	Tasks	Task Days	Avg Task Days
Pte	0	0	0	0	0	0	0	0	0	**0**	**0**	**0**
Pte(B)	4	318	80	0	0	0	1	77	77	**5**	**395**	**79**
Cpl	6	381	64	3	102	34	6	455	76	**15**	**938**	**63**
MCpl	0	0	0	4	144	36	9	709	79	**13**	**853**	**66**
Sgt	0	0	0	4	152	38	3	305	102	**7**	**457**	**65**
WO	1	94	94	0	0	0	0	0	0	**1**	**94**	**94**
MWO	0	0	0	0	0	0	0	0	0	**0**	**0**	**0**
2Lt	0	0	0	0	0	0	0	0	0	**0**	**0**	**0**
Lt	0	0	0	0	0	0	5	358	72	**5**	**358**	**72**
Capt	0	0	0	0	0	0	0	0	0	**0**	**0**	**0**
Total	**11**	**793**	**72**	**11**	**398**	**36**	**24**	**1904**	**79**	**46**	**3095**	**67**

PPCLI Complete												
Rank	Inf School			CAAWC			DTC			Total		
	Tasks	Task Days	Avg Task Days	Tasks	Task Days	Avg Task Days	Tasks	Task Days	Avg Task Days	Tasks	Task Days	Avg Task Days
Pte	3	216	72	0	0	0	1	51	51	**4**	**267**	**67**
Pte(B)	23	1400	61	0	0	0	6	522	87	**29**	**1922**	**66**
Cpl	22	1313	60	5	212	42	21	1763	84	**48**	**3288**	**69**
MCpl	6	316	53	4	144	36	32	2160	68	**42**	**2620**	**62**
Sgt	2	140	70	4	152	38	9	741	82	**15**	**1033**	**69**
WO	6	361	60	0	0	0	0	0	0	**6**	**361**	**60**
MWO	0	0	0	0	0	0	0	0	0	**0**	**0**	**0**
2Lt	0	0	0	0	0	0	1	100	100	**1**	**100**	**100**
Lt	0	0	0	0	0	0	8	509	64	**8**	**509**	**64**
Capt	3	234	78	0	0	0	6	299	50	**9**	**533**	**59**
Total	**65**	**3980**	**61**	**13**	**508**	**39**	**84**	**6145**	**73**	**162**	**10633**	**66**

Table A3.1 – PPCLI Support to External Individual Training

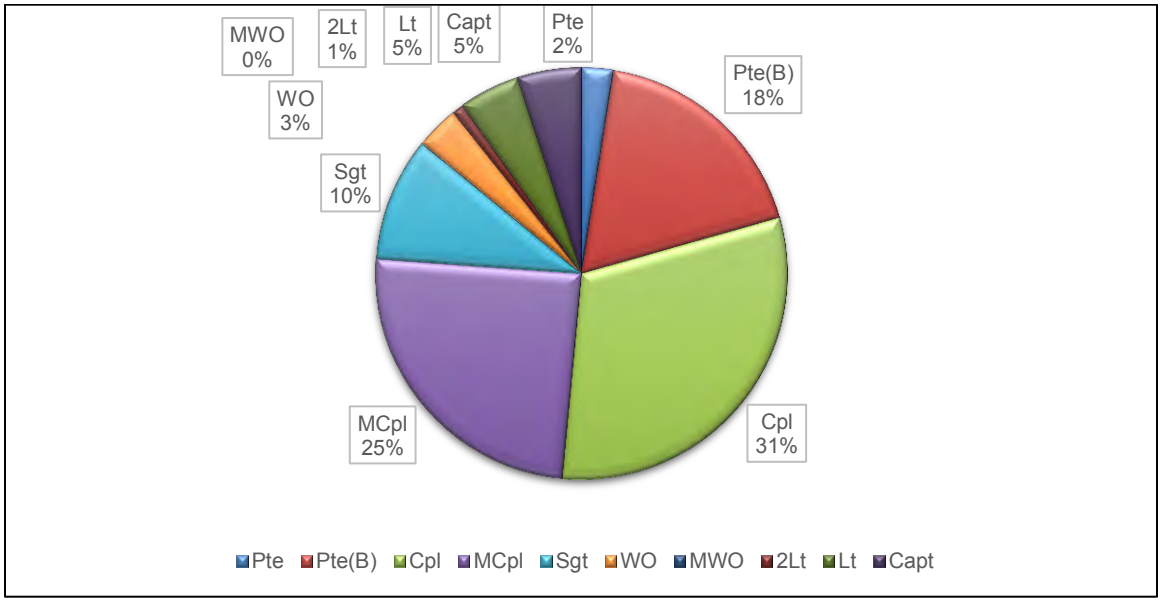

Figure A3.1 – PPCLI Support to External Individual Training by Rank

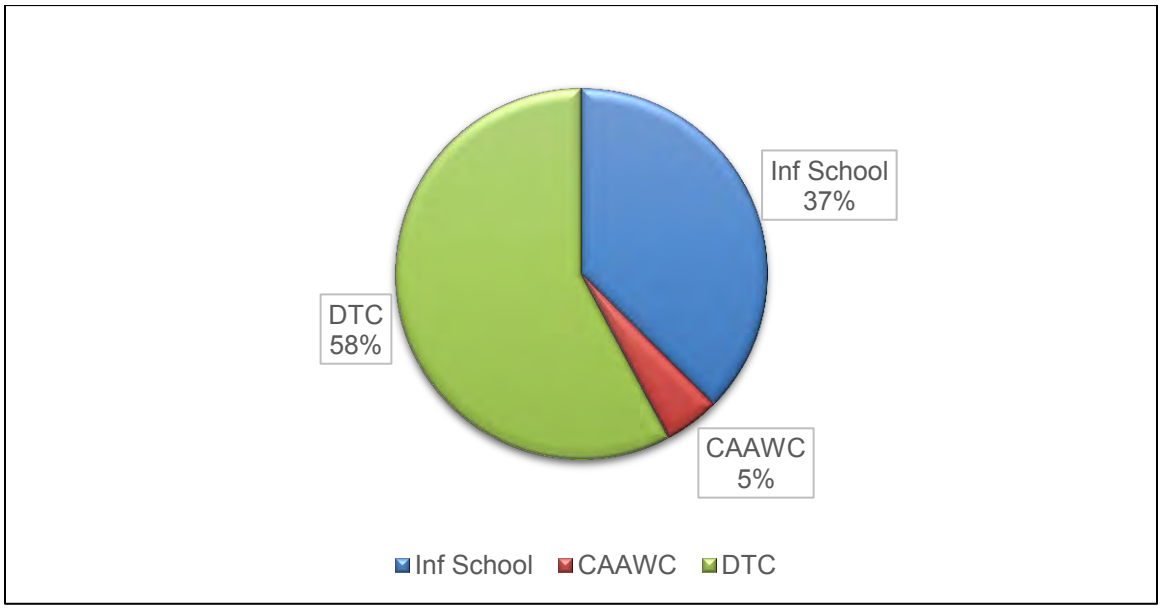

Figure A3.2 – PPCLI Support to External Individual Training by Source

1 RCR												
Rank	Inf School			CAAWC			DTC			Total		
	Tasks	Task Days	Avg Task Days	Tasks	Task Days	Avg Task Days	Tasks	Task Days	Avg Task Days	Tasks	Task Days	Avg Task Days
Pte	3	187	62	0	0	0	6	285	48	9	472	52
Pte(B)	2	93	47	0	0	0	16	878	55	18	971	54
Cpl	0	0	0	0	0	0	18	1037	58	18	1037	58
MCpl	1	47	47	0	0	0	15	923	62	16	970	61
Sgt	1	57	57	2	136	68	9	562	62	12	755	63
WO	1	39	39	0	0	0	0	0	0	1	39	39
MWO	0	0	0	0	0	0	0	0	0	0	0	0
2Lt	0	0	0	0	0	0	0	0	0	0	0	0
Lt	0	0	0	0	0	0	1	81	81	1	81	81
Capt	0	0	0	0	0	0	2	125	63	2	125	63
Total	8	423	53	2	136	68	67	3891	58	77	4450	58

2 RCR												
Rank	Inf School			CAAWC			DTC			Total		
	Tasks	Task Days	Avg Task Days	Tasks	Task Days	Avg Task Days	Tasks	Task Days	Avg Task Days	Tasks	Task Days	Avg Task Days
Pte	2	62	31	0	0	0	2	121	61	4	183	46
Pte(B)	4	115	29	0	0	0	10	351	35	14	466	33
Cpl	6	195	33	0	0	0	9	393	44	15	588	39
MCpl	2	94	47	1	68	68	6	381	64	9	543	60
Sgt	6	297	50	0	0	0	4	307	77	10	604	60
WO	7	552	79	0	0	0	0	0	0	7	552	79
MWO	0	0	0	0	0	0	0	0	0	0	0	0
2Lt	0	0	0	0	0	0	0	0	0	0	0	0
Lt	0	0	0	0	0	0	0	0	0	0	0	0
Capt	3	258	86	0	0	0	0	0	0	3	258	86
Total	30	1573	52	1	68	68	31	1553	50	62	3194	52

3 RCR												
Rank	Inf School			CAAWC			DTC			Total		
	Tasks	Task Days	Avg Task Days	Tasks	Task Days	Avg Task Days	Tasks	Task Days	Avg Task Days	Tasks	Task Days	Avg Task Days
Pte	0	0	0	0	0	0	3	129	43	3	129	43
Pte(B)	0	0	0	1	26	26	19	1206	63	20	1232	62
Cpl	1	44	44	4	70	18	13	701	54	18	815	45
MCpl	0	0	0	4	132	33	14	978	70	18	1110	62
Sgt	2	168	84	4	108	27	9	637	71	15	913	61
WO	0	0	0	1	40	40	1	61	61	2	101	51
MWO	0	0	0	0	0	0	0	0	0	0	0	0
2Lt	0	0	0	1	14	14	1	71	71	2	85	43
Lt	1	27	27	1	54	54	3	164	55	5	245	49
Capt	1	55	55	0	0	0	3	147	49	4	202	51
Total	5	294	59	16	444	28	66	4094	62	87	4832	56

RCR Complete												
Rank	Inf School			CAAWC			DTC			Total		
	Tasks	Task Days	Avg Task Days	Tasks	Task Days	Avg Task Days	Tasks	Task Days	Avg Task Days	Tasks	Task Days	Avg Task Days
Pte	5	249	50	0	0	0	11	535	49	16	784	49
Pte(B)	6	208	35	1	26	26	45	2435	54	52	2669	51
Cpl	7	239	34	4	70	18	40	2131	53	51	2440	48
MCpl	3	141	47	5	200	40	35	2282	65	43	2623	61
Sgt	9	522	58	6	244	41	22	1506	68	37	2272	61
WO	8	591	74	1	40	40	1	61	61	10	692	69
MWO	0	0	0	0	0	0	0	0	0	0	0	0
2Lt	0	0	0	1	14	14	1	71	71	2	85	43
Lt	1	27	27	1	54	54	4	245	61	6	326	54
Capt	4	313	78	0	0	0	5	272	54	9	585	65
Total	43	2290	53	19	648	34	164	9538	58	226	12476	55

Table A3.2 – RCR Support to External Individual Training

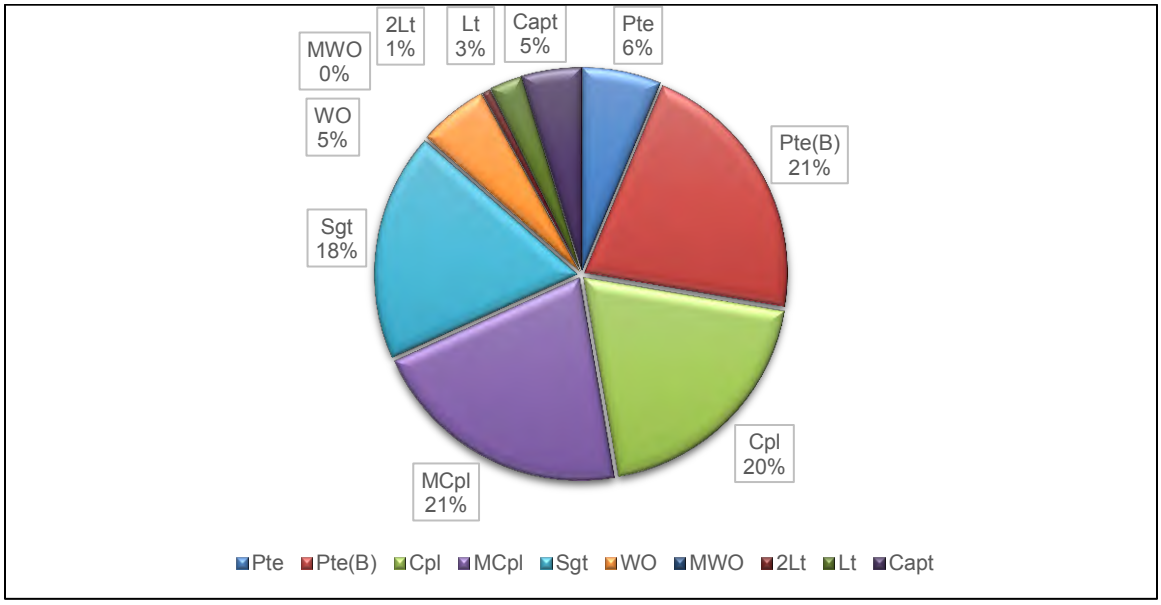

Figure A3.3 – RCR Support to External Individual Training by Rank

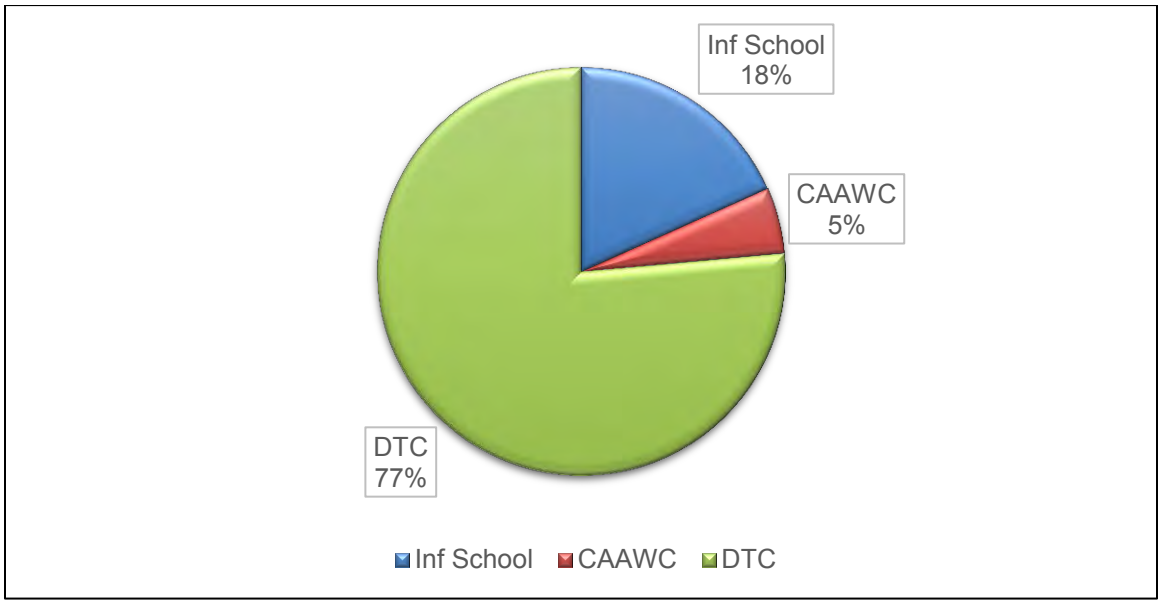

Figure A3.4 – RCR Support to External Individual Training by Source

1 R22ER												
Rank	Inf School			CAAWC			DTC			Total		
	Tasks	Task Days	Avg Task Days	Tasks	Task Days	Avg Task Days	Tasks	Task Days	Avg Task Days	Tasks	Task Days	Avg Task Days
Pte	0	0	0	0	0	0	3	4	1	**3**	**4**	**1**
Pte(B)	10	658	66	0	0	0	22	273	12	**32**	**931**	**29**
Cpl	9	651	72	0	0	0	66	2414	37	**75**	**3065**	**41**
MCpl	6	272	45	0	0	0	26	885	34	**32**	**1157**	**36**
Sgt	3	187	62	0	0	0	35	1636	47	**38**	**1823**	**48**
WO	2	74	37	0	0	0	3	165	55	**5**	**239**	**48**
MWO	0	0	0	0	0	0	1	136	136	**1**	**136**	**136**
2Lt	0	0	0	0	0	0	3	210	70	**3**	**210**	**70**
Lt	0	0	0	0	0	0	3	152	51	**3**	**152**	**51**
Capt	2	128	64	0	0	0	3	144	48	**5**	**272**	**54**
Total	**32**	**1970**	**62**	**0**	**0**	**0**	**165**	**6019**	**36**	**197**	**7989**	**41**

2 R22ER												
Rank	Inf School			CAAWC			DTC			Total		
	Tasks	Task Days	Avg Task Days	Tasks	Task Days	Avg Task Days	Tasks	Task Days	Avg Task Days	Tasks	Task Days	Avg Task Days
Pte	3	216	72	0	0	0	2	77	39	**5**	**293**	**59**
Pte(B)	4	208	52	0	0	0	10	122	12	**14**	**330**	**24**
Cpl	6	486	81	1	3	3	33	1635	50	**40**	**2124**	**53**
MCpl	2	129	65	3	327	109	11	958	87	**16**	**1414**	**88**
Sgt	7	280	40	2	50	25	24	1252	52	**33**	**1582**	**48**
WO	1	42	42	0	0	0	4	288	72	**5**	**330**	**66**
MWO	0	0	0	0	0	0	0	0	0	**0**	**0**	**0**
2Lt	0	0	0	0	0	0	1	110	110	**1**	**110**	**110**
Lt	0	0	0	0	0	0	2	209	105	**2**	**209**	**105**
Capt	2	151	76	0	0	0	1	67	67	**3**	**218**	**73**
Total	**25**	**1512**	**60**	**6**	**380**	**63**	**88**	**4718**	**54**	**119**	**6610**	**56**

3 R22ER												
Rank	Inf School			CAAWC			DTC			Total		
	Tasks	Task Days	Avg Task Days	Tasks	Task Days	Avg Task Days	Tasks	Task Days	Avg Task Days	Tasks	Task Days	Avg Task Days
Pte	2	114	57	0	0	0	1	1	1	**3**	**115**	**38**
Pte(B)	20	964	48	0	0	0	7	45	6	**27**	**1009**	**37**
Cpl	23	1403	61	4	383	96	32	1237	39	**59**	**3023**	**51**
MCpl	16	1017	64	8	219	27	22	1303	59	**46**	**2539**	**55**
Sgt	7	512	73	6	167	28	36	1583	44	**49**	**2262**	**46**
WO	1	89	89	4	103	26	1	82	82	**6**	**274**	**46**
MWO	0	0	0	0	0	0	0	0	0	**0**	**0**	**0**
2Lt	1	101	101	0	0	0	1	40	40	**2**	**141**	**71**
Lt	1	89	89	0	0	0	2	95	48	**3**	**184**	**61**
Capt	4	328	82	0	0	0	2	148	74	**6**	**476**	**79**
Total	**75**	**4617**	**62**	**22**	**872**	**40**	**104**	**4534**	**44**	**201**	**10023**	**50**

R22ER Complete												
Rank	Inf School			CAAWC			DTC			Total		
	Tasks	Task Days	Avg Task Days	Tasks	Task Days	Avg Task Days	Tasks	Task Days	Avg Task Days	Tasks	Task Days	Avg Task Days
Pte	5	330	66	0	0	0	6	82	14	**11**	**412**	**37**
Pte(B)	34	1830	54	0	0	0	39	440	11	**73**	**2270**	**31**
Cpl	38	2540	67	5	386	77	131	5286	40	**174**	**8212**	**47**
MCpl	24	1418	59	11	546	50	59	3146	53	**94**	**5110**	**54**
Sgt	17	979	58	8	217	27	95	4471	47	**120**	**5667**	**47**
WO	4	205	51	4	103	26	8	535	67	**16**	**843**	**53**
MWO	0	0	0	0	0	0	1	136	136	**1**	**136**	**136**
2Lt	1	101	101	0	0	0	5	360	72	**6**	**461**	**77**
Lt	1	89	89	0	0	0	7	456	65	**8**	**545**	**68**
Capt	8	607	76	0	0	0	6	359	60	**14**	**966**	**69**
Total	**132**	**8099**	**61**	**28**	**1252**	**45**	**357**	**15271**	**43**	**517**	**24622**	**48**

Table A3.3 – R22^{e}R Support to External Individual Training

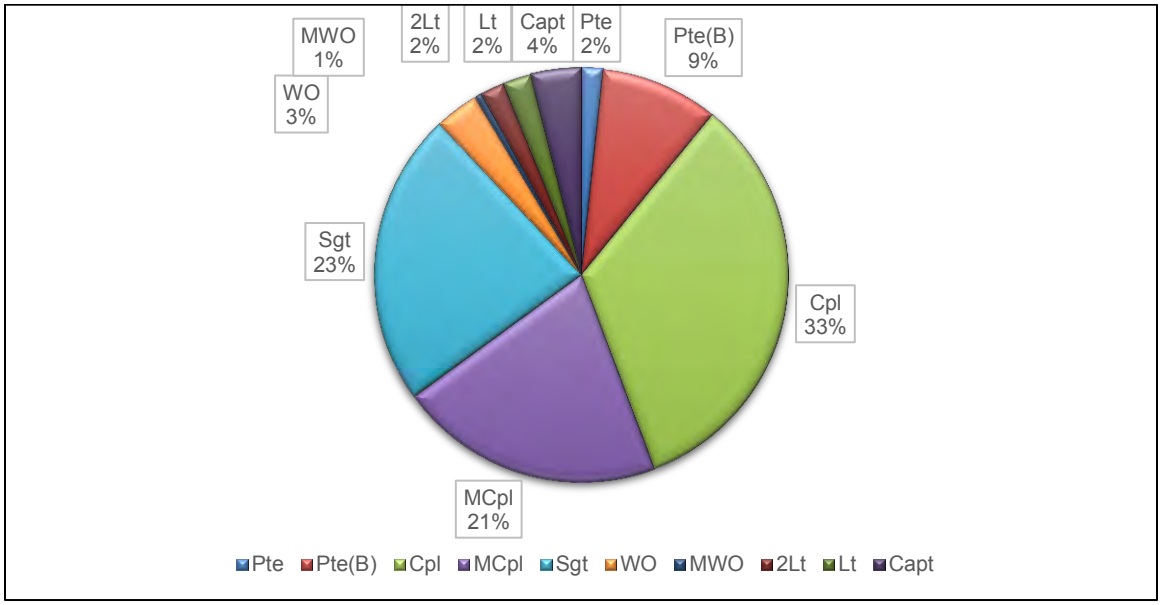

Figure A3.5 – R22^{e}R Support to External Individual Training by Rank

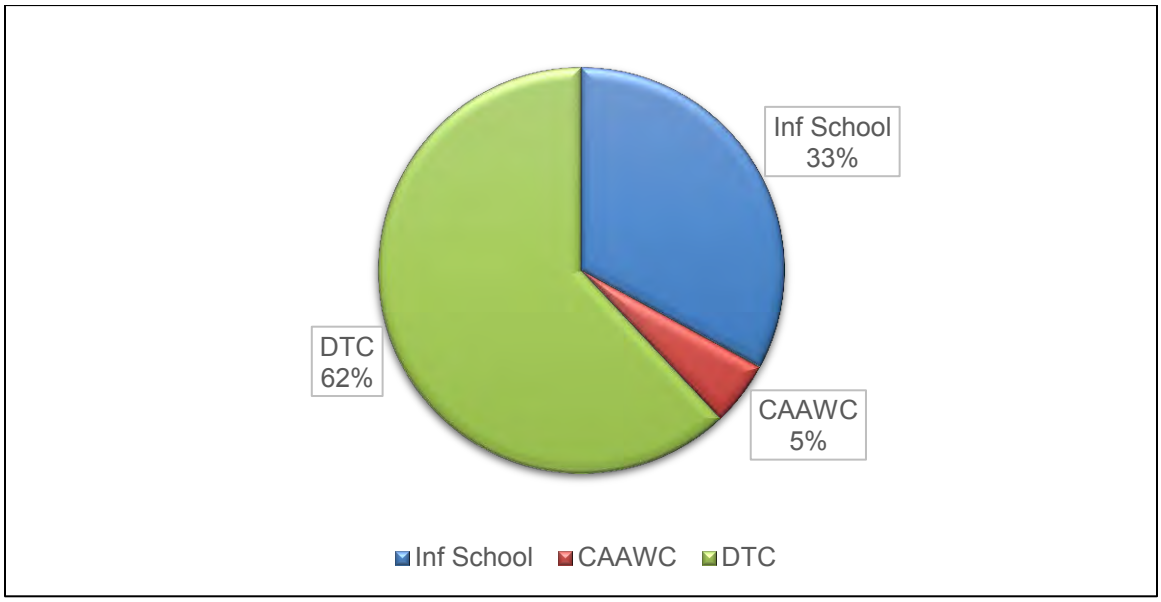

Figure A3.6 – R22^{e}R Support to External Individual Training by Source

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