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CHALLENGES FOR THE RCAF**

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NEXT GENERATION PILOTS: HUMAN RESOURCE MANAGEMENT CHALLENGES FOR THE RCAF

AIM

1. The Fighter Force (FF) of the Royal Canadian Air Force (RCAF) must address human resource management (HRM) shortfalls and proactively address pilot experience depletion to remain combat effective. The rising cost to train fighter pilots to combat capable proficiency is far too high to let human resources be mismanaged or wasted. This paper will provide context to the HRM issues that the FF is currently facing and will extrapolate concerns for the future as the FF prepares to transition to a new aircraft, once procured. In conclusion it will offer recommendations for changes that require near term implementation to ensure that as the RCAF transitions to a new fighter aircraft, that fighter pilot experience, training, and manning levels are also adequately considered throughout the process.

INTRODUCTION

2. RCAF has a combat proven and capable FF, centred on experienced aircrew with technical expertise, as well as a robust and flexible airframe capable of fulfilling all mission sets currently expected by the Government of Canada (GoC) as outlined in the Canada First Defence Strategy.¹ Since 1999, three major combat deployments for the FF have validated the requirement to fulfill Canadian interests abroad using combat air power. NORAD requires an armed FF capable of Canadian sovereignty defence in all domestic conditions. In anticipation of the current government's defence review, it is widely expected that the role of the FF will not significantly change in the future, although perhaps more emphasis will be placed on sovereignty than on deployed operations. In any case, the existence of a FF for the future is not in question,

¹ Canada. Dept. of National Defence. *Canada First Defence Strategy* (Ottawa, Ont.: National Defence, 2008), 21.

although exactly what aircraft will be procured is yet to be determined. In the past several years, emphasis on the future capability of the FF has been placed on equipment (upgrade and life extension of the CF-18, and a replacement aircraft, under the project title *Next Generation Fighter* - NGF). Insufficient emphasis on future capabilities has been on human resources (HR) as in integral and critical component of the future FF.

DISCUSSION

Recent initiatives insufficient

3. The RCAF has made meagre attempts to retain or regain experienced pilots in the ranks over the past several years, which have had extremely limited effect. In 2012, the *State of Readiness of the Canadian Forces*, a report completed by the House of Commons Standing Committee on National Defence, acknowledged in a testimony by LGen Andre Deschamps (then Comd RCAF) that the pilot trade remains ‘stressed’ and “the current shortage of 250 pilots has existed for at least 10 years”.² Despite increased production rates of pilots (average of 105 per year) the shortage has remained,³ largely due to retirement/release of trained aircrew. Initiatives such as recruiting foreign trained military pilots under Skilled Aircrew Recruitment Program (SARP) have proved challenging and may have had a neutral or negative impact on retention.⁴ Media reports of lowered medical standards for pilots⁵ show that the RCAF acknowledges the

² Canada. Parliament. House of Commons. Standing Committee on National Defence and Veterans Affairs and James Bezan, *State of Readiness of the Canadian Forces* (Ottawa: The Committee, 2012), 51, 10.

³ Ibid.

⁴ Despite some savings in training, applicants still required operational training on aircraft which they had not flown before which did not result in cost savings originally envisioned. In the case of the FF, only a handful of foreign trained pilots have been successful under this program, and similar numbers have not passed operational training on the CF-18. The author has first hand experience at the operational training unit having had direct contact with three SARP candidates over a two-year period. One was successful, one required two attempts at the course, and one released after cease training. Bruce Campion-Smith, "Hiring Foreign Pilots Helps Bottom Line, Air Force Says," *Toronto Star*, sec. News/Canada, July 30, 2014, 2014.

⁵ Lee Berthiaume, "Canadian Air Force Bending on Medical Requirements to Deal with Experienced Pilot Shortage," *National Post*, sec. News/Canada/Politics, January 3, 2014, 2014.

challenges faced with retaining experienced pilots, although in the specific case of fighter pilot retention the lowering of medical standards is negligible. The RCAF has also recently offered eligible retired pilots re-enrolment options in an effort to bolster experience levels. Again in the case of the FF the result has been only a handful of re-enrolments with limited lasting benefit. RCAF limited efforts to keep experience levels at an acceptable level have proven ineffective.

4. Although the RCAF has managed with a pilot deficit for over a decade, this deficit will continue to increase. With an irrefutable growing worldwide pilot shortage,⁶ the RCAF faces even greater uncertainty for the health of pilot manning levels in the future. Ahead of procuring an NGF platform, the RCAF must immediately focus on developing an innovative approach to HRM in order to more efficiently train, employ, and retain pilots. Although the FF is directly affected, the RCAF must approach this problem holistically in order to prevent a pilot experience drain that has already begun.

Second and third order effects

5. Training more pilots (both to wings standard followed by operational training) is not the solution to the experience shortage, but it is a starting point. Throughput of student pilots in Phase II and III (pre-wings standard) has been limited due to a variety of resource and budgetary constraints, resulting in a limited pool of candidates suited for Operational Training Units (OTUs) of all fleets. Despite this fact, under direction from Comd RCAF, the CF-18 OTU was directed to significantly increase pilot production and push 20 students through the CF-18 course (which averages 8 to 10 months duration) in a 12-month period, a surge of up to 8 students per

⁶ Elizabeth Souder, "Pilot Shortage Threatens to Slow U.S. Airline Growth," *Forbes*, sec. Logistics and Transportation, January 28, 2016, 2016.

year.⁷ The surge was hindered by maintenance constraints, weather delays, Yearly Flying Rate (YFR) reductions, and no increase in HR at the OTU (Instructors). Resource emphasis (technicians, YFR, serviceable aircraft, even training weapons) shifted to the OTU and drew it away from Tactical Fighter Squadrons (TFSS) resulting in an imbalance of experience in the fleet. The overdrive of the training system began to have significant negative effects throughout the FF.

6. Graduates of the OTU began overloading the TFSS who were unable to keep up with the training backlog to qualify new pilots to Combat Ready Upgrade (CRUG) and Element Lead Upgrade (ELUG) status. Experienced flight leads became a rare commodity, as they were required for upgrading new pilots, plus fulfilling operational duties. Additional PYs were not created at the units to have a place to post the new pilots, which meant that senior pilots would be posted out in order to be replaced by OTU graduates. TO&E at the squadrons was unchanged, meaning that postings for pilots were often shortened to 2 years as new pilots occupied line numbers. Senior experienced pilots, and even junior pilots with only 2 years of very limited experience, were being forced off the squadrons. This process will be further referred to as *experience depletion*. In some cases it had taken up to 7 years to be trained at an RCAF reported cost of \$2.6 million⁸ which does not account for years of further upgrades and experience in order to be able to see the investment in that individual provide a return to the organization. The cycle continues as the OTU fulfills its mandate of producing graduates, despite straining resources from TFSS and providing more new pilots than can be absorbed.

⁷ Ian DeCarlo, "It Ain'T Easy! Training a Canadian Fighter Pilot," *The Royal Canadian Air Force Journal* 3, no. 2 (Spring, 2014), 19-28, 28.

⁸ Campion-Smith, *Hiring Foreign Pilots Helps Bottom Line, Air Force Says*

7. With the start of OP IMPACT, the FF desperately needed to more closely manage personnel for the first time in many years. Operations could be affected by personnel shortages (which had a requirement for combat readiness, flight lead status, and deployment readiness). As OP IMPACT continued beyond 6 months, TFSs at both 3 and 4 Wings⁹ worked tirelessly to qualify the backlog of wingmen and new flight leads just in time to deploy. In some cases new wingmen had barely qualified as combat ready prior to deploying and were soon flying complex missions in theatre with barely 100 hours of flying experience in the CF-18 (most with an instructor in a two seat CF-18B). OP IMPACT did have the benefit of putting the force generation (FG) of the FF into overdrive, which has helped to overcome some experience gaps. This surge is not sustainable once the deployment ends as YFR and funding will likely return to previous levels.

8. If the FF continues over loading the TFSs with more non-combat ready wingmen than they can train, ultimately the divide between experienced flight leads and inexperienced wingmen will continue to widen. Inaction will likely result in one or more of the following outcomes:

- a. Erosion of combat effectiveness as experienced flight leads release, retire, or are posted to fulfill ground (staff) positions. This will leave an even smaller cadre of tactical instructor pilots (TIPs) qualified to upgrade junior pilots and fulfill operational commitments;

⁹ In 2006, the two TFSs at 4 Wing Cold Lake (441 and 416) were merged to form 409 TFS. In 2015, 409 TFS was split in half and 401 TFS was stood up. The same process occurred for 3 Wing Bagotville in 2005, and 425 TFS is undergoing a split to reform 433 TFS, bringing the total of TFSs to four, plus one training unit, 410 TF(Operational Training)S.

- b. Lower standards to qualify pilots to lead status in less time/missions resulting in a less experienced cadre of young flight leads, who in turn will continue to pass on inexperience to new wingmen arriving at TFSs; and
- c. Loss of junior pilots due to lack of fulfillment of career goals. For instance it takes 3-7 years of training prior to flying the CF-18, which after flying for only 2 years could be followed by posting to a staff position for 3 years. The draw for undergraduate pilots undergoing training in Moose Jaw will decline, as the level of commitment and the lack of flying they may face will turn away candidates who will opt for more lucrative flying opportunities in the RCAF.

Future outlook for the Fighter Force

9. Much of the sequential and slow implosion of the FF is occurring at a critical time when the HR component of the FF must be carefully fostered to deal with three critical phases each with specific challenges, relative to the eventual replacement of the CF-18:

- a. Near term – present to start of transition (2016-2020). As the CF-18 fleet ages, systems increase in complexity with modernization. Reduced experience with increased aircraft malfunctions and complex missions where lack of experience can cause significant concern, loss of aircraft or pilots is unfortunately increasingly likely in this period.¹⁰

¹⁰ Since 2003, 4 CF-18s have crashed, 2 due to mechanical failure, 2 due to pilot inexperience. This trend is likely to continue with average experience decreasing and airframe age increasing, compounded by mission complexity and challenges of operating in extreme conditions (i.e. Arctic operations for NORAD and hot weather operations such as OP IMPACT or OP MOBILE). This theory is backed by Defence expert and professor at RMC, Christian Leuprecht who states “No matter how good of shape you keep the plane in, it’s like an aging car, the older it gets, the more repairs it’s going to need, the more costly it is to keep around, and also the more limited you’re going to be in your capabilities”. Statistics show an increase of incidents and accidents as age of the CF-18 increases, also which could be attributed to decreasing levels of experience. Emma Loop, "Canadian Pilots were

- b. Medium term – transition period (2020-2025). The implementation of NGF will take several years, during which time the RCAF will require operation of the CF-18 for NORAD and expeditionary ops as required by GoC. Transition will require additional aircrew that would be focused on reaching IOC;¹¹
- c. Long term – end of transition, FOC new aircraft (2025 and beyond). This steady state will take significant time to reach and will essentially begin once a new fighter fleet can assume all duties required by the RCAF and GoC. It may continue to develop from that point to fulfill further mandates but it will be aligned with retirement of the last CF-18.

10. As the third stage of the future outlook is likely to occur in the 2020 to 2025¹² range, and assuming a 5 to 10 year flying period for a new pilot to reach useful level of *experience*, the target pilots who will be the initial cadre are at the OTU, about to start, or just recently graduated. This group of pilots is critical to the future of the FF and the combat capability of the RCAF. Emphasis must be placed on their retention, development, training, and preparation for future capabilities and challenges of domestic and deployed FF operations, as they will be the next generation of fighter pilots.

Analysis of the critical factors

Injured Or their Fighter Jets were Damaged Hundreds of Times Recently," *Buzzfeed*, sec. News, September 11, 2015, 2015.

¹¹ The increased demand for pilots during this phase was the justification given by Comd RCAF for the training surge at the OTU, but this has failed to achieve the balance or depth of experience intended for several reasons, specifically experience depletion.

¹² The forecast retirement of the CF-18 is 2025 although this may ultimately be extended beyond (as it has already been extended several times beyond the original retirement at time of purchase of 2003). Government of Canada, *Summary Report - Evaluation of Options for the Replacement of the CF-18 Fighter Fleet* (Ottawa: Government of Canada, [2014]).

11. Solving the HRM issues for the transition to NGF goes far beyond ensuring that pilot production outpaces attrition. Increased production has overloaded the line squadrons in the near term, which will cause second order effects for years. Normal progression for a pilot upon posting to a TFS should be a Pilot Tactical Leadership Level (PTLL) upgrade on average of one per year.¹³ This time period however does not account for almost double the amount of pilots attempting to upgrade within the same resource constraints.

12. The critical shortage is not numbers of qualified OTU graduates, but rather on experienced pilots of all PTLLs capable of deploying on operations or fulfilling NORAD duties in any capacity. Experienced leads are dwindling in numbers as they are replaced with greater numbers of inexperienced/unqualified wingmen. As the experience depletion gap widens, a momentum develops over time that will become increasingly difficult to reverse.

13. Further complicating the issue is the shortage of trained and experienced pilots in the civilian aviation industry. The demand for experienced pilots is increasing with a growing industry, compounded by older pilots reaching retirement age. Demographics suggest that the ‘baby boom’ generation is rapidly reaching a retirement bubble, and the airline industry will face massive pilot shortages in the next five years.¹⁴ The RCAF has been an attractive resume for transitioning pilots, and at a time when airlines will begin hiring in droves, the RCAF must be aware of the inherent gap in experience that this could begin to reveal.

¹³ Pilots arrive as a wingman - PTLL1A (then Combat Ready - PTLL 2, normally within 6 months historically but in the interim able to perform some functions such as NORAD duty and training exercises). After approximately one year, wingmen begin the ELUG program to reach PTLL3, the expected level all pilots should reach within two years. PTLL3 is a critical milestone as it qualifies suitable candidates for advanced specialty courses and is the first level that pilots can monitor upgrade missions on wingmen, or can be assigned to instructional units such as the CF-18 OTU or Phase IV (Fighter Lead in Training) on the CT-155 Hawk at 419 TF(T)S, essentially *returning on the investment*. Canada. Dept. of National Defence and Canada. Ministère de la défense nationale, *B-GA-050-000/RQ-G01, Fighter Pilot Training Directive V2.4* (Ottawa: DND Canada, 2014), 79, 1-1, 1-2.

¹⁴ Souder, *Pilot Shortage Threatens to Slow U.S. Airline Growth*

14. The FF requires a balance of experience levels among pilots, proportionally dispersed among TFSs. The balance must grow slowly to prevent overstressing the units. FG must be the center of gravity for the FF but this must be synchronized at all levels, including the FG of the whole RCAF pilot production machine. Advanced specialty courses such as Fighter Weapons Instructor Course (FWIC)¹⁵ and Tactical Electronic Warfare Instructor Course (TEWIC) are vital to the overall capability of the FF as they produce weapons systems experts, standards officers, and tactical leaders of the FF. In addition these courses provide graduates with recognized international credentials and skills that enhance the combat credibility of the RCAF.

RECOMMENDATIONS

15. RCAF should immediately conduct a comprehensive review of current HRM practices and determine second and third order affects that have not been considered. A review should include contracted civilian experts or DND resources such as DRDC to provide an in-depth overview of the pilot shortage situation, what initiatives have worked to mitigate/improve it, and what must be done in the near and long term to prevent experience depletion and capability erosion. This initiative must have support from highest leadership levels within the CAF in order to have meaning and traction. As a secondary benefit, other military skills or occupations (particularly those with a high cost to train such as SARTECHs, JTACs, ACSOs, and SOF) could benefit from similar lessons that the FF (and RCAF in general) has experienced.

¹⁵ FWIC graduates are granted the title of PTL 5 (Mass Attack Lead) and Tactical Standards Officer. (Typically there are 1 or 2 pilots per TFS with this qualification.) A 4 to 5 month gruelling graduate level course, it is designed to produce tactical leaders to lead complex coalition missions, provide advanced instruction, maintain FF standards, and provide expert analysis and advise to commanders. At an approximate cost of \$3 million for one graduate of this course, it is a critical example of how any training investment must be carefully managed to prevent it from being wasted. Typically FWIC runs biennially, normally with 4 candidates per course. Many graduates are not in flying positions, or currently in the FF.

16. Following an HRM review several approaches should be considered as potential initiatives to gain momentum in favour of reducing the fighter pilot experience shortage:
- a. Increase pilot PYs at TFSs in order to allow minimum of 3-year postings for first tour pilots, ensuring that pilots are upgraded to lead status within two years.¹⁶ Closely manage fighter pilot careers to ensure that the maximum return on investment (at all experience levels) is realized. Avoid posting newly qualified flight leads to external positions until acceptable returns on their experience have been realized.
 - b. Consider greater use of Class A and/or Class B reservist fighter pilot positions to capitalize on experienced pilots who may want to leave the regular force. This practice is ongoing but has potential to become a much more beneficial augmentation to experience levels. Consideration of making a greater portion of the OTU a Reserve cadre could allow Regular Force pilots longer tours at TFSs and would see a maximum return on experience.
 - c. Reassess pay and benefits for all pilots, and consider signing bonuses as used in the USAF.¹⁷ Other considerations may include specialist pay, consistent aircrew allowance not affected by posting to non-flying positions, or other incentive programs. Addressing quality of life and solving the issues that cause early release/retirement must however be the foremost consideration.

¹⁶ Understanding the CAF demand for PYs is high with emerging capabilities, a more flexible approach to shifting empty PYs within L1 or L2 organizations could allow for more efficient personnel management.

¹⁷ The USAF has introduced a \$225,000 signing bonus for 9-year contract extension of qualified pilots and combat systems officers. The USAF faces a shortage of 200 fighter pilots that could increase to 700 (from the 3000 needed) by 2021. W. J. Hennigan, "Air Force Aims to Land More Top Guns Amid Pilot Shortage," *LA Times*, sec. Business, July 22, 2013, 2013.

- d. Periodically review effectiveness of training and retention initiatives, ensuring that a viable and meaningful measurement is established. This must be based on categorized experience rather than on quantity of pilots.

CONCLUSION

17. The FF faces an imminent HRM crisis that must be addressed to prepare for future effectiveness with NGF. In an effort to bolster pilot manning levels, the FF has failed to anticipate second and third order effects of over burdening the system with inexperienced pilots without making organizational changes to complement the surge. The RCAF and FF must make immediate changes to its approach toward HRM if it is to effectively transition to a new aircraft. The cost and time to train fighter pilots to viable experience levels is far too great to ignore this problem before it renders the FF combat ineffective due to poor HRM foresight.

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