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CANADIAN FORCES COLLEGE / COLLÈGE DES FORCES CANADIENNES
CSC 28 / CCEM 28

EXERCISE/EXERCICE NEW HORIZONS

PILOT RETENTION POST-PTA: WHERE DO WE GO FROM HERE?

By /par Maj/maj Bruce Ploughman

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Introduction

As one of the peace dividends of the end of the Cold War, Western nations sought to reduce their manning levels to reflect the benefit of maintaining lower states of readiness. Canada was by no means immune to these reductions, and in 1994 the Department of National Defence (DND) was mandated, in the White Paper of that year, to reduce its regular force manning from approximately 84,000 to a total strength of 60,000.¹ Few military occupations were spared cuts as the Canadian Forces (CF) struggled to meet the aforementioned personnel target, despite forecasts of high attrition looming on the horizon.² By limiting recruiting and targeting over-strength occupations for reduction, the goal of 60,000 was achieved in 1999. Efforts to maintain a steady state of 60,000, though, were quickly undermined by the previously forecasted attrition. By the end of March 2002, the Canadian Forces had over 3000 positions vacant, running at a trained effective strength of 52,300.³ Left unchecked, it is anticipated that the trained effective strength could drop as low as 48,000 by 2004, as experienced members retire or seek employment elsewhere (Figure 1).⁴ While some short term relief is provided by extending compulsory retirement age out to sixty for high attrition occupations,⁵ the absence of

¹ There exists some debate over the interpretation of the guidance provided in Chapter 7 of the 1994 White Paper. It states, "By 1999, the strength of the Regular Forces will be reduced to approximately 60,000." The department has chosen to interpret this as regular force strength of 60,000 vice a trained effective strength (TES) - those members who are trained and capable of performing their duties - of 60,000. When one subtracts those members on the Basic Training List (BTL) who have not yet completed their *ab initio* training, as well as personnel on sick leave, etc., the notional TES comes in around 54,000.

² Office of the Auditor General of Canada. *April 2002 Report*: online, Available: <http://www.oag-bvg.gc.ca/domino/reports.nsf/html/0205ce.html>, 17 April 2002. Paragraph 5.8 states "In 1996, departmental researchers warned management that low recruiting levels and an aging military population could leave National Defence short of skilled people to promote by 2003."

³ Office of the Auditor General of Canada, paragraph 5.7.

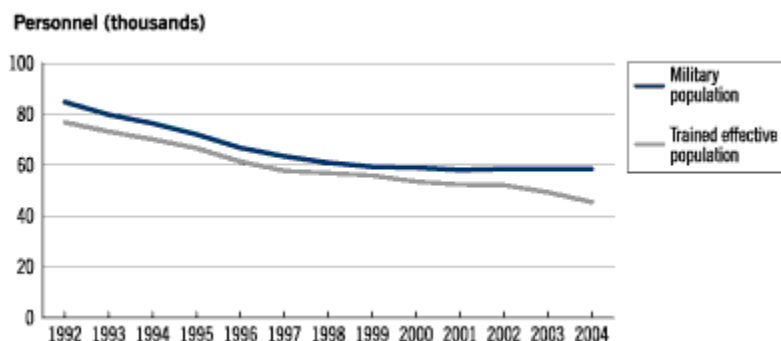
⁴ Office of the Auditor General of Canada, exhibit 5.1.

⁵ National Defence. *CF Compulsory Retirement Age*: online, Available: <http://barker.cfc.dnd.ca/Admin/Canforgen/2001/cfg01072.en.html>, 20 April 2002.

timely retention initiatives could result in it “tak[ing] the Canadian Forces as long as thirty years to achieve a stable population profile.”⁶

Figure 1

The Canadian Forces' trained effective strength



Source: OAG⁷

The pilot occupation has been especially hard hit by this experience drain. At the end of March 2002, the pilot occupation was twelve percent, or 182 below preferred manning levels (PML) and showed no sign of recovery.⁸ This shortage unfortunately coincided with an exceptionally high pace of operations. Bleak as this sounds, it does not describe the whole picture. From 1988 to 2001, the average number of trained pilots leaving the Canadian Forces each year was 134. The average pilot production per year over the same timeframe was 95, leaving a net annual deficit of 39 pilots.⁹ As with the United Kingdom and the United States, the events of September 11 are not anticipated to provide any long-term respite from this attrition.¹⁰ Given that it can cost up to 27 million

⁶ Office of the Auditor General of Canada, paragraph 5.5.

⁷ Office of the Auditor General of Canada, exhibit 5.1.

⁸ National Defence. CAS DG Air Pers. “Air Force Personnel Challenges,” (25 February 2002) slide 3.

⁹ National Defence. CAS DG Air Pers. “Air Force Personnel Challenges,” slide 6. PML in 1988 was in excess of 2200. At a net annual attrition of 39, the CF should thus be short 546 pilots vice 182, or 25% below PML. But since 1988 these losses have been absorbed by decreases in PML down to the current figure of 1469.

¹⁰ United States. Air Force. “Talking Paper on Air Force Aviation Continuation Pay (ACP) Program,” 1. United Kingdom. Royal Air Force. “Script for CAS Introductory Video on AAR,” 1.

dollars to train a pilot to the highest achievable flying category, the loss to the Canadian Forces in monetary terms is even more daunting.¹¹ Put succinctly by the Chief of Air Staff, “the most critical area for the Air Force is the attrition of experienced pilots, degrading the Air Force’s ability to perform its operational mandates and regenerate qualified aircrew.”¹²

In 1998, an initiative was implemented to try and stem the flow of pilots from the Canadian Forces. Despite having paid pilots to leave only a few years earlier under the Force Reduction Plan (FRP), the Pilot Terminable Allowance (PTA) was introduced that, in essence, paid pilots to stay. Launched as a short-term stopgap measure, this initiative targeted areas of anticipated high attrition within the pilot years of service (YOS) demographic with a bonus of either \$50,000 or \$75,000 in return for a five-year service commitment. Those pilots on restricted release¹³ and those beyond twenty-three years of service were not eligible for the Pilot Terminable Allowance. Of the 878 pilots who were eligible, 567, or sixty-five percent, accepted. Of note, of a sample of 500 pilots who were not bound by a Pilot Terminable Allowance commitment, either through refusal or ineligibility, 299 have since released.¹⁴ As the end of the Pilot Terminable Allowance obligatory service approaches, it is estimated that thirty percent of those who took the bonus will release.¹⁵ Coupled with the average annual attrition of 134, approximately 300 pilots could thus take their release in 2003. Assuming no further reductions

¹¹ National Defence. CAS D Air CBM. Costs to Train CF Pilots – FY 00-01 (19 February 2002). Put succinctly by DG Air Pers, it is “expensive to replace experience and time consuming to produce.”

¹² Office of the Auditor General of Canada, paragraph 5.29.

¹³ On the successful completion of *ab initio* pilot training to wings standard, graduates incur a seven-year period of restricted release, akin to the obligatory service one incurs on completion of many of military academic programmes. Except under exceptional circumstances, a pilot is not eligible for voluntary release for this seven-year period post-wings.

¹⁴ National Defence. CAS DG Air Pers. “Air Force Personnel Challenges,” slide 9.

¹⁵ National Defence. 1CAD A3 Combat Readiness. “A3 Combat Readiness MH SITREP 1st Quarter 2002,” slide 21.

in the preferred manning levels, this would result in the pilot occupation trained effective strength dropping to twenty-nine percent below preferred manning levels by March 2004.

At twenty-nine percent below preferred manning levels, the air force would be operationally hamstrung and may well be below the critical mass required for the timely regeneration of combat-capable pilots. Thus further initiatives are required to mitigate the exodus and retain these experienced aviators in whom the Canadian Forces has heavily invested both in time and money. While many factors¹⁶ have been identified that influence a member's decision to leave the military, the most critical of these are a high operational tempo and uncompetitive financial compensation.¹⁷ Therefore, in order for the Canadian Forces to retain pilots at this critical juncture, the operational tempo must be decreased and the financial compensation must be made more competitive.

Outline

This paper is organized into four sections. The first section discusses the origins of the attrition problem. Section two discusses why recruiting alone will not solve the attrition problem, thus supporting the requirement to retain. The third section argues the merits of reducing operational tempo in order to reduce attrition. Finally, section four supports the requirement for competitive compensation in order to retain pilots. Of note, while this paper focuses on the issue of attrition in the pilot occupation, much of the content is equally applicable to other high attrition military occupations.

¹⁶ National Defence. ADM HR Mil. "Human Resources in the CF," slide 16. "The nine reasons for leaving are: **increase family stability; avoid family separations**; back to school; more challenging work; capitalize on pension; **better paying job; time away from home**; unlikely to be promoted; and more responsible job." Three of these reasons can be directly attributed to operational tempo, while one is related to financial compensation (emphasis added).

¹⁷ Numerous documents from Canada as well as other NATO countries cite operational tempo and pay as key factors affecting retention.

How did the problem originate?

In order to better understand the nature of the pilot retention problem and how to resolve it, it is necessary to discuss the root causes of the current shortage. These causes can be categorized as low production, high attrition and poor human resource (HR) management.

Low Production

As mentioned earlier, one of the methods used to achieve the 1994 White Paper mandated personnel reductions was to limit recruiting. This resulted in the annual pilot production dropping from an average of 103 in the years immediately preceding the 1994 reduction initiative to an average of 67 in the years that followed.¹⁸ Subsequent to achieving the 1999 target of 60,000, the limitations on recruiting were eased somewhat, yet pilot production remained low. This was due to the difficulties experienced with the introduction of the NATO Flying Training in Canada (NFTC) programme, which brought annual production to an all-time low of 52 in the year 2000.¹⁹ It is anticipated that NFTC will be up to full capacity by June 2002, at which time approximately 442 recruits will be required to produce an estimated 90 line pilots annually.²⁰ If the preferred manning level remains stable, as long as attrition exceeds production, the deficit will continue to grow.

High Attrition

Low production, while contributing to the shortage, is not solely responsible for its magnitude. Abnormally high attrition has coincided with this low production, resulting in the rapid and somewhat unpredictable onset of the shortage. Driving this abnormally high attrition,

¹⁸ National Defence. CAS DG Air Pers. "Air Force Personnel Challenges," slide 6.

¹⁹ NFTC is the civilian-contracted flight-training programme for *ab initio* military pilots, which is conducted at 17 Wing in Moose Jaw, Saskatchewan.

²⁰ National Defence. CAS DG Air Pers. Generic Pilot Intake – Flow and Cost Chart.

the “major factors identified were the significant “pull” of airline hiring and the “push” of opstempo.”²¹

Airline hiring has been driven by two factors: the airline industry growth and, to a lesser extent, the compulsory retirement of pilots at age sixty. Despite the recent economic downturn and the events of September 11, the airline industry continues to grow, albeit at a more modest rate. In its February 2002 press release, the International Air Transport Association (IATA) stated:

The AAGR [average annual growth rate] for total scheduled *international* passengers is 3.5%, down from 4.7% in the original 2001 forecast...The outlook for growth in *domestic* passenger traffic shows an AAGR of 1.6%, down from the 2.8% in the original forecast.²²

Similar growth was noted in IATA’s March 2002 press release on airfreight. The current civilian pilot age demographic has resulted in an annual increase in retirements.²³ The net effect of these two variables is that the airline industry itself has a shortage of trained pilots, notwithstanding the short-term surpluses generated by the failure of airlines such as Canada 3000. This is echoed in the Chief of Air Staff Planning Guidance 2002, which states an “examination of current economic forecasts indicates strong growth in the commercial aviation sector, and continued high demand for pilots for the foreseeable future.”²⁴ When a comparison is done of pay (see Table 1 below) and operational tempo, it becomes clear how strong the pull is from the airline industry and why “85% of pilots leaving [the] CF go to flying positions.”²⁵

²¹ United States. Air Force. “Talking Paper on Air Force Aviation Continuation Pay (ACP) Program,” 1.

²² IATA. “Latest Passenger Forecast Shows Effect of September 11th and Points to the Recovery Ahead” (11 February 2002) online, Available: <http://www.iata.org/pr/pr02febc.htm>, 27 February 2002.

²³ Roger Kallcock et al. “Panel II: Meeting Future Manpower Needs,” *Defense Transportation Journal* December 1999: 20.

²⁴ National Defence. *CAS Planning Guidance 2002* (6 June 2001) ch 3, 13: online, Available: http://airforce.dwan.dnd.ca/main/Biblio/Library_e.htm, 24 January 2002.

²⁵ National Defence. CAS DG Air Pers. “Air Force Personnel Challenges,” slide 8.

Table 1
Pay Comparison – Air Canada vs Canadian Forces

Aircraft	Rank	Years of Service			Rank	Maximum Incentive
		3	9	14		
DC-9	Captain	161,789	171,744	176,688	Lieutenant	56,712
A319/320	Captain	177,115	187,070	192,014	Captain	83,940
B-747-400	Captain	252,134	262,090	267,034	Major	89,592
					Lieutenant-Colonel	94,440
DC-9	First Officer	87,288	114,173	121,939		
A319/320	First Officer	94,560	123,250	131,318		
B-747-400	First Officer	129,931	167,659	177,230		

Source: CAS D Air CBM²⁶

While the Cold War peace dividend resulted in fewer regular force personnel in the latter half of the 1990's, it somewhat counter-intuitively resulted in more operations. As seen in Figure 2, “[b]etween 1996 and 2001, Canada sent twice as many military personnel on deployments of six months or longer as it did from 1990 to 1995.”²⁷ Many of these operations, such as Operation Apollo in Afghanistan, have been short-notice contingencies. This directly impacts workplace stability, as many personnel never know with any degree of certainty when they will have to drop everything and deploy with little warning. This lack of predictability and a sense of having to “do more with less” have resulted in personnel leaving the military in search of better work conditions and greater stability.²⁸ The pilot occupation has in no way been insulated from these operational tempo pressures, as is exemplified by the maritime helicopter community, which has been involved in seventeen different operations since 1988.²⁹ Indeed, the air forces of many of Canada’s allies cite operational tempo as a major factor affecting pilot retention.³⁰

²⁶ National Defence. CAS D Air CBM. "Pilot Retention Initiative Compensation Options," slide 4.

²⁷ Office of the Auditor General of Canada, paragraph 5.37.

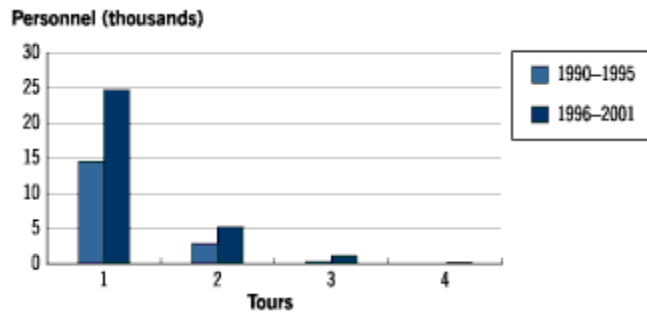
²⁸ Office of the Auditor General of Canada, paragraph 5.38.

²⁹ National Defence. CAS DAR. Maritime Helicopter Operations Since 1988 (undated).

³⁰ The USAF, USN, RAF and RAAF have all cited operational tempo as a retention issue.

Figure 2

Military personnel on deployment, 1990-1995 and 1996-2001



Source: OAG³¹

Human Resource Management

Overarching the previous two root causes of the pilot shortage is the issue of poor human resource management. In order to manage the production and attrition of trained personnel with any degree of accuracy, historical data on the health of an occupation, along with predictive modeling, is required.³² While this will not eliminate the delta between production and attrition, it can significantly reduce it. Given the lead-time required to change the output on the production side, along with a fixed maximum output by virtue of the NATO Flying Training in Canada contract and a finite absorption rate of *ab initio* pilots by the various communities, anything that can be done to reduce the amplitude of this delta will invariably improve the health of the occupation. Unfortunately, the management of the pilot occupation has been reactive vice predictive. At best, production has chased attrition and, at worst, the two are seemingly unrelated.³³ The cause of this poor human resource management is in the Auditor General's recent report, where she states:

Today's shortages are a result of actions taken when National Defence downsized in the mid-1990s. A reduced recruiting level, **cuts in human resource**

³¹ Office of the Auditor General of Canada, exhibit 5.2.

³² Office of the Auditor General of Canada, paragraph 5.2.

³³ National Defence. CAS DG Air Pers. "Air Force Personnel Challenges," slide 6.

management, a lack of information to monitor the health of occupations, and limitations in training capacity have contributed to the current problems. **Human resource managers did not have the data to guide recruiting and attrition decisions for each of the military occupations** (emphasis added).³⁴

Further, the absence of a rigorous analysis of why Canadian Forces personnel opt for voluntary release is currently confounding the development of “appropriate retention initiatives,”³⁵ potentially delaying their implementation until after the critical 2003 timeframe when the Pilot Terminable Allowance terminates.³⁶

Why recruiting alone won’t work – the need to retain experience

“Recruiting, however, is not sufficient to resolve the dire straits in which the CF finds itself. As the saying goes, the first step to getting out of a hole is to stop digging. Retention of trained men and women in the CF must become a real priority. A strategy that combines recruiting and retention is needed and needed now. The logic for such a strategy is clear: recruiting alone is incapable of meeting the targets set for it; recruiting focuses on quantitative deficiencies, while retention emphasizes qualitative aspects as well.”³⁷

Christopher Ankerson and Losel Tethong – The Canadian Institute of Strategic Studies

The initial response by the Canadian Forces to the current personnel shortage was to increase recruiting. As these untrained recruits are counted towards the regular force ceiling of 60,000, at first glance one might erroneously conclude that the personnel shortage has been resolved by recruiting alone. The graph at Figure 1 depicts a more

³⁴ Office of the Auditor General of Canada, paragraph 5.2.

³⁵ Office of the Auditor General of Canada, paragraph 5.68.

³⁶ To address this issue, the CF has undertaken the PERSTEMPO survey. On 19 April 2002, the air force released, as part of its Retention Action Plan, a separate questionnaire in an effort to “identify and prioritize factors which influence attitudes of personnel in the work environment and the decision to remain in the CF.” This survey is currently four months overdue, thus reducing the time available for the analysis of the results as well as the development and implementation of any retention initiatives based on this analysis, prior to the termination of PTA in 2003.

³⁷ Christopher Ankerson and Losel Tethong. “Retain or Perish: Why Recruiting Won’t Save the CF,” The Canadian Institute of Strategic Studies March 2001: 1.

accurate picture – that the number of personnel in the Canadian Forces who are trained and capable of performing their duties is in serious decline. These trained individuals are not only conducting operations, they are also the ones who must train the new recruits. As these experienced members depart the military, the ability to conduct operations, as well as the ability to regenerate the force, becomes progressively degraded.³⁸ At some as yet undefined point, the experience level in the Canadian Forces will drop below the critical mass required for it to regenerate itself in a timely fashion.

In a study conducted by the RAND Corporation, it was determined that for an operational squadron to be sustainable with a fixed yearly flying rate (YFR), a minimum of sixty percent of pilots must be experienced i.e. at the highest flying category.³⁹ If the experience level drops and hence more inexperienced pilots are on the squadron, more of the squadron's yearly flying rate must be used to train the inexperienced pilots, thus leaving less available for conducting operations (Figure 3).⁴⁰ If the yearly flying rate for conducting operations cannot be sacrificed for training (the expected outcome given the current operations tempo), it will consequently take longer for the inexperienced pilots to upgrade. This ultimately **reduces** the number of *ab initio* pilots a squadron can absorb per unit of time – further exacerbating regeneration efforts. The yearly flying rate must, therefore, be increased to offset the loss of experience at the operational squadrons in order to prevent absorption rates from being impacted. As cited in the RAND study:

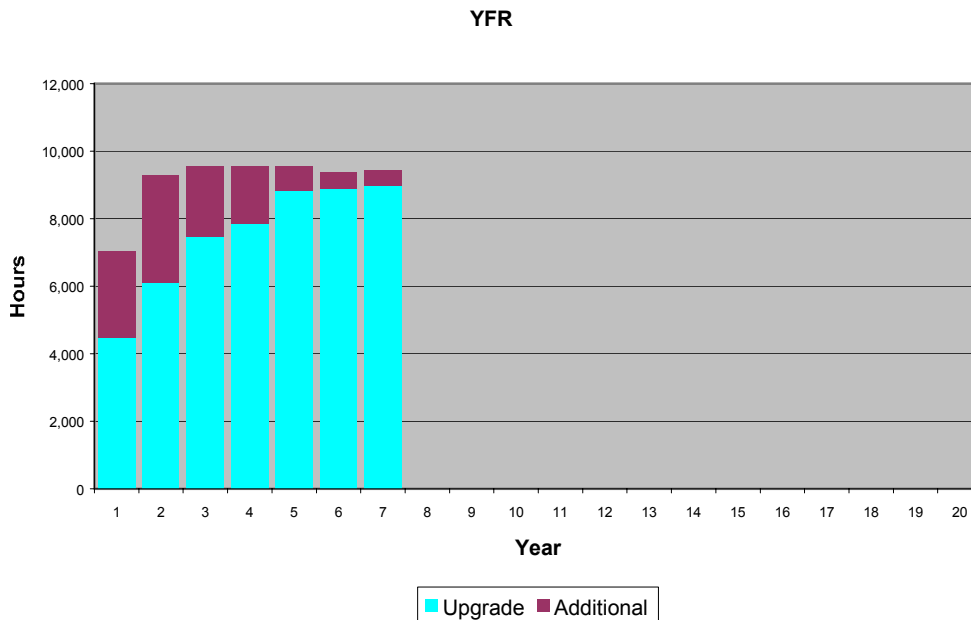
³⁸ National Defence. CAS DG Air Pers. "Air Force Personnel Challenges," slide 13.

³⁹ William W. Taylor. The Air Force Pilot Shortage: A Crisis for Operational Units? Santa Monica: RAND, 2000: xii.

⁴⁰ National Defence. CORA. CH124 PARSIM Model Data.

Our analytical model of the training required in operational units indicates that...squadrons may need up to 25 percent more flying hours to provide continuation and upgrade training as they lose experienced pilots and gain inexperienced ones.⁴¹

Figure 3



Source: 1 CAD CORA⁴²

By way of example, the maritime helicopter community is currently experiencing what the RAND Corporation forecast. The two operational squadrons have fewer than thirty-three percent experienced pilots, well below the RAND requirement of sixty percent.⁴³ The yearly flying rate has been fixed at 9800 hours. As modeled in Figure 3 above, as experience levels continue to drop, the yearly flying rate required for upgrade increases. Given the high operational tempo of the maritime helicopter community, this has translated into a reduced

⁴¹ Taylor, William W. The Air Force Pilot Shortage: A Crisis for Operational Units? Santa Monica: RAND, 2000: xi.

⁴² National Defence. CORA. CH124 PARSIM Model Data, YFR sheet.

⁴³ National Defence. 1CAD A3 Combat Readiness. "A3 Combat Readiness MH SITREP 1st Quarter 2002," slide 25.

absorption rate. So while the operational training unit (OTU) can produce up to fourteen *ab initio* pilots per year, the operational squadrons can only absorb a total of ten.⁴⁴

The Centre for Operational Research and Analysis (CORA) at 1 Canadian Air Division (1CAD), based on the analysis conducted by the RAND Corporation, developed a high-level computer model to provide additional analysis of pilot production, attrition and experience loss.⁴⁵ Further to the RAND study, CORA was able to demonstrate that if production (i.e. recruiting) was increased without increasing the average hours per month flown per pilot, the community experience level will eventually collapse and will be unable to be regenerated.⁴⁶ They were also able to show that an increase in production, in the absence of a decrease in attrition, would not result in the regeneration of the pilot occupation and could actually deteriorate it further.⁴⁷ They summarized their research with the following:

The UGPT [undergraduate pilot training] should strive towards graduating 90-92 pilots to wings qualification then the OTUs will be able to operate at full capacity based on current configuration, which if attrition recedes back to lower rates (around 80-85 annually) will result in slow, steady re-generation.⁴⁸

Therefore, recruiting alone will not solve the pilot shortage problem. There is a requirement to reduce attrition and thus retain experienced pilots.

⁴⁴ National Defence. 1CAD A3 Combat Readiness. "A3 Combat Readiness MH SITREP 1st Quarter 2002," slide 23.

⁴⁵ National Defence. CORA. "Pilot Production/Absorption/Retention/Simulation (PARSim) Model," 6 March 2002: slide 3.

⁴⁶ National Defence. CORA. "Pilot Production/Absorption/Retention/Simulation (PARSim) Model," slide 44.

⁴⁷ National Defence. CORA. "Pilot Production/Absorption/Retention/Simulation (PARSim) Model," slide 53.

⁴⁸ National Defence. CORA. "Pilot Production/Absorption/Retention/Simulation (PARSim) Model," slide 53.

Operational tempo

“The military’s operational tempo (OPTEMPO) is high. There have been 93 major deployments around the globe since 1990. All this is factoring into retention decisions that our individual soldiers, sailors, airmen and marines are making...On the retention side, our focus is OPTEMPO. We can better manage that, to provide more predictability and stability for our troops and their families.”⁴⁹

Brigadier General John Regni – USAF Director of Personnel Resources

As discussed earlier, the high operational tempo has had a two-fold impact on the current pilot shortage in the Canadian Forces. The first impact is that it is pushing people out the door, in search of better work conditions and greater stability. This was supported in a recent presentation given by the Assistant Deputy Minister Human Resources-Military, where three of the nine reasons members cite for leaving the Canadian Forces are related to operational tempo.⁵⁰ The recent Report of the Auditor General also pointed to operational tempo as the main cause of attrition.⁵¹ The second impact, given fixed levels of yearly flying rate, is that fewer flying hours are available for upgrading pilots, at a time when decreasing experience levels on squadrons requires more training hours. This, as mentioned previously, ultimately reduces the absorption rate of new recruits, thereby impeding the regeneration of the pilot occupation. In essence, operations are conducted at the expense of training, yet without trained pilots, operations cannot be sustained.

The operational tempo problem is neither uniquely Canadian nor is it a new phenomenon. The United States Air Force (USAF) discovered in as early as 1997 that many of their pilots were leaving due to the high operational tempo.⁵² The pilots themselves voiced this concern, as more than one submission to the *Air Force Times* stressed the need to “continue to work hard to

⁴⁹ Kallock et al, 20.

⁵⁰ National Defence. ADM HR Mil. “Human Resources in the CF,” 1 November 2001: slide 16.

⁵¹ Office of the Auditor General of Canada, paragraph 5.38.

fix the operations tempo.”⁵³ In an effort to address the issue, the United States Air Force restructured into Aerospace Expeditionary Forces in 2000, in order “to provide stability and predictability to overseas and training assignments that take service members away from home for extended periods.”⁵⁴ The Aerospace Expeditionary Force concept, which provided better structure to work up and deployment cycles, was seen as instrumental in “helping the USAF win its pilot retention battle.”⁵⁵ The United States Navy (USN) realized similar problems in about the same timeframe, and was able to enhance its retention efforts through “reductions in work schedules between deployments.”⁵⁶ The British Chief of Air Staff, in a recent presentation on the Aircrew Retention Review (ARR), cited both “time spent away from home” and “operational tempo” as key non-remuneration issues affecting pilot retention, but has yet to effect any changes to address these issues.⁵⁷

The Canadian Forces finds itself in somewhat the same situation as United Kingdom, in that it has recognized operational tempo as a problem, but has yet to effect any tangible change. Defence Plan 2001 clearly identifies operational tempo as one of the “significant issues and challenges to be faced by Defence.”⁵⁸ A recent brief to the Treasury Board Coordination Committee on air force personnel challenges cites “reducing operational tempo (where

⁵² “A more recent survey of USAF pilots that turned down the ACP and left the military indicated pilots were departing for the following reasons: operations tempo too high (30%)...” Quoted from “The View From the Cockpit,” Air Force Times 9 June 1997: 13.

⁵³ Dave Brackett. “How the Air Force can keep pilots,” Air Force Times 30 June 1997: 3.

⁵⁴ David A. Fulghum. “Air Force Reorganizing, Confronting Shortages,” Aviation Week and Space Technology 20 September 1999. More information on the AEF concept can be found at http://www.af.mil/eaf/aef_concept_paper.pdf.

⁵⁵ Paul Proctor. “Green Side up,” Aviation Week and Space Technology 21 February 2000: 1. The other key ingredient in USAF retention plan was a retention bonus, which will be discussed in the next section.

⁵⁶ Philpott, Tom and Gordon I. Peterson. “An unprecedented pace of operations,” Sea Power January 2001: 1. As with the USAF, the USN also used a retention bonus.

⁵⁷ United Kingdom. Ministry of Defence. “Aircrew Retention Review,” (undated) slide 9.

⁵⁸ National Defence. Defence Plan 2001: 2-2: online, Available: http://www.vcds.forces.ca/dgsp/dplan/intro_e.asp, 20 March 2002.

possible)” as a “non-monetary retention initiative.”⁵⁹ The Defence Plan also goes on to make the following assertion:

As a general planning principle, the rotation ratio for deployed forces is 3:1. This results in a force structure that is four times the size of the potentially deployed force. During a period of high operational tempo this would result in units undertaking six-month tours and then returning to Canada for eighteen months before be re-deployed.... Separate CDS (Chief of Defence Staff) guidance has been issued to ensure a minimum of 12 months in Canada between rotations for individual CF members.⁶⁰

With a decreasing trained effective strength and an increasing operational tempo, a “force structure that is four times the size of the potentially deployed force” is unachievable. The separate Chief of Defence Staff guidance referred to has been incorporated into the Deputy Chief of Defence Staff Deployed Operations Manual and reads as follows:

A member shall not normally be posted outside of Canada or isolated post to which dependents are not authorized to proceed at public expense, within one year after returning to Canada from another such unaccompanied tour...An exception to the above may be made by NDHQ (National Defence Headquarters) where volunteers or Service requirements exist.⁶¹

While both of these initiatives strive to provide some protection for Canadian Forces personnel against high operational tempos, they are useless if they are not enforced. Amending the force structure to meet the Defence Plan goal will not be achieved in the short term. The separate Chief of Defence Staff guidance is equally ineffective if waivers are continually being granted, as was the case for Operation Apollo.⁶² As a further example, for the maritime helicopter

⁵⁹ National Defence. CAS DG Air Pers. “Air Force Personnel Challenges,” slide 14.

⁶⁰ National Defence. Defence Plan 2001: 3-4: online, Available: http://www.vcds.forces.ca/dgsp/dplan/intro_e.asp, 20 March 2002.

⁶¹ National Defence. DCDS Direction for International Operations. 1 March 2000: 12-9: online, Available: http://dcds.mil.ca/cosj3/ndcc/sops/default_e.asp, 24 January 2002. The exceptions are granted in the form of waivers.

⁶² Office of the Auditor General of Canada, paragraph 5.41.

community to sustain its current level of operations, one course of action is to have one hundred percent of the pilots on waivers.⁶³

While the argument could be made that the United States has sufficient excess capacity within its military to effect the changes they have made without impacting their operational commitments, the same cannot be said about Canada. The Canadian Forces is arguably at critical mass, having been stripped of any surge capacity, thus any significant organizational change will have to come at the expense of operations. While Defence Plan 2001 puts the groundwork in place to structure the change, a failure to address the current operational tempo will render this change unachievable. The Canadian Forces in general, and the air force in particular, will be unable to halt the downward trend in trained effective strength as more experienced personnel leave and the ability to regenerate deteriorates further. In order to address the shortage of pilots, “[r]eal recovery, vice a long exercise in bleeding, will require an Air Force wide focus on regeneration and I believe that that implies a major reduction in commitments/operations.”⁶⁴

Competitive Compensation

One of the nine reasons members cite for leaving the military is to go to a “better paying job.”⁶⁵ Recognizing this, the Assistant Deputy Minister Human Resources-Military has included “competitive compensation and benefits” in his “Retention and Well-Being Strategy.”⁶⁶ This is also in keeping with the strategic direction for human resource management provided in Strategy 2020 – to “[p]osition Defence as the employer of choice for Canadians.”⁶⁷ Given that by 2026

⁶³ National Defence. 1CAD A3 Combat Readiness. “A3 Combat Readiness MH SITREP 1st Quarter 2002,” slide 28.

⁶⁴ National Defence. 1CAD A1 Training. “Status of the RW Communities – 32A Pilot,” 1 November 2000.

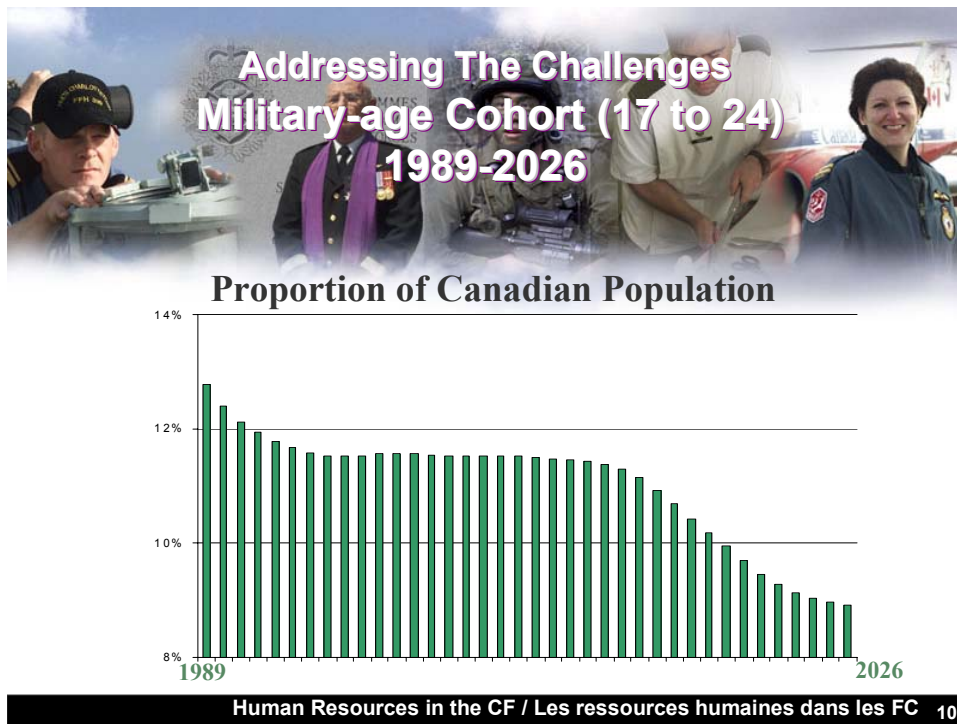
⁶⁵ National Defence. ADM HR Mil. “Human Resources in the CF,” 1 November 2001: slide 16.

⁶⁶ National Defence. ADM HR Mil. “Human Resources in the CF,” 1 November 2001: slide 17.

⁶⁷ Strategy 2020 Part II.

Canadians age seventeen to twenty-four (i.e. the typical recruiting age range) will make up less than ten percent of the Canadian population, competitive compensation will be crucial if the Canadian Forces hopes to attract the best and the brightest from this diminishing resource (Figure 4).⁶⁸ Even during the Canadian Forces' current recruiting drive, competitive compensation is an issue, as the cohort from which we are trying to recruit is less concerned about employee loyalty than it is with starting salary.⁶⁹

Figure 4



Source: ADM HR Mil⁷⁰

Unfortunately, little is being done at present to make Canadian Forces compensation more competitive (see Table 1), even though it has been shown that attrition is proportionally

⁶⁸ National Defence. ADM HR Mil. "Human Resources in the CF," 1 November 2001: slide 10.

⁶⁹ This was discussed during the ADM HR Mil presentation. This is a trend that is now universally attributed to "Generation X" and subsequent generations.

⁷⁰ National Defence. ADM HR Mil. "Human Resources in the CF," 1 November 2001: slide 10.

higher amongst occupations where a “measurable pay gap” exists.⁷¹ While the current salary baseline is sufficient to recruit and retain members when the economy is poor, it is barely sufficient to recruit and insufficient to retain in many occupations, including pilots, when the economy is good. To compensate for this discrepancy, the trend has been to offer recruiting and retention bonuses, vice raising the current salary baseline in those occupations to a level that is more competitive.⁷² The bonus option does offer more flexibility by virtue of its selectivity and its transient nature - only the high attrition occupations are targeted and the bonus can be removed when the attrition pressure has been relieved. But the attrition pressure will only be relieved by a downturn in the economy. As the goal of the Bank of Canada is to avoid economic downturns by aggressively lowering interest rates, and as the goal of the Federal Government is to achieve and maintain a high rate of sustainable economic growth, these bonuses run risk of being more semi-permanent than transient.⁷³ This is especially so for the pilot occupation, where competition with the private sector is expected to remain high for the foreseeable future, and where even if attrition were lowered to eighty pilots per year, it would still take over a decade to recover back to the preferred manning levels.⁷⁴

⁷¹ Lieutenant-Colonel Michael Moore. “Positioning Defence as an Employer of Choice: Staying Competitive with Flexible and Innovative Approaches to Military Compensation,” Canadian Forces College Review 2001: 124. As seen in Table 1, a noticeable pay gap exists between military and private sector pilots.

⁷² Recruiting bonuses have recently been authorized for several high attrition occupations. The Pilot Terminable Allowance is the only recent example of a retention bonus.

⁷³ Peter Drake. “Canada’s Economic Performance: The Past Decade, the Near-Term Outlook and the Longer-Term Challenges,” 24 September 2001: 2.

⁷⁴ National Defence. CORA. “Pilot Production/Absorption/Retention/Simulation (PARSim) Model,” notes to slide 53.

So while the short-term goal is to address recruiting and retention shortfalls through the use of bonuses, the long-term goal must be to overhaul the compensation package in these critical occupations and make it more competitive.⁷⁵

Based on the experience of our allies, when a bonus is to be used to retain pilots, two things need to be taken into consideration. First, as was the case with the United States Air Force and the United States Navy, it was a bonus, coupled with reductions in operational tempo, that were instrumental in reducing pilot attrition.⁷⁶ Both of these organizations, along with the Royal Air Force and the Royal Australian Air Force, had attempted bonus programs before without addressing operational tempo, with limited success.⁷⁷ The second consideration is the amount of the bonus. While the United States Air Force claims its Aviation Continuation Pay program “is not designed to directly compete with commercial aviation pay,”⁷⁸ the \$25,000 per year bonus closes the gap significantly. Several studies have shown that if a gap in pay exceeds twenty percent, the pay will be seen to be non-competitive, and hence may not generate sufficient retention pressure.⁷⁹ Therefore, the bonus amount must be sufficient to narrow the gap to twenty

⁷⁵ By way of comparison, if pilots were given a twenty percent raise, which would make their pay somewhat more competitive, it would cost the CF approximately fourteen million dollars annually. That is equivalent to the cost incurred training seven pilots to wings standard or one maritime helicopter pilot to crew commander. The obvious business case is that you would only have to retain one maritime helicopter crew commander to pay for this raise. But complicating issues, such as salary de-coupling with the Federal Public Service, prevent a raise from being an expeditious solution to the pilot retention problem, thus favouring the bonus option.

⁷⁶ Numerous references credited increased retention to both reduced operational tempo and increased bonuses.

⁷⁷ The RAF has announced a more lucrative bonus program due to the limited success of its previous effort. The RAAF, based on its limited success, is revamping its bonus program and will be announced in the near future.

⁷⁸ United States. Air Force. “Talking Paper on Air Force Aviation Continuation Pay (ACP) Program,” 2. ACP talking paper

⁷⁹ Moore, 121.

percent or less. The challenge will be to benchmark a comparative public sector pilot pay in order to determine the exact magnitude of the current gap.

A word of caution must be raised on the use of bonuses. As was the case with the Pilot Terminable Allowance as well as previous schemes offered in the United States, only specific groups within the pilot demographic were eligible for a bonus. Even amongst those eligible, the bonus amount fluctuated depending on the discriminator used to determine eligibility. In the former, the number of years of service was the discriminator whereas in the latter, it was the type of aircraft flown.⁸⁰ In both cases, significant resentment was generated within the pilot occupation, in those who received little or nothing against those who received the maximum benefit. Significant resentment was also manifested in non-pilot aircrew, who flew in the same aircraft as the pilots, against the pilot occupation as a whole.⁸¹ Prior to implementing any retention bonus scheme, the air force specifically, and the Canadian Forces in general, must be sensitive to the potential impact on morale and unit cohesion and be prepared to somehow mitigate this impact. Bonuses, while they may serve the utilitarian purpose of reducing attrition, have the potential to “create resentment throughout the force. They also contribute to an attitude of self above service – exactly the opposite of an Air Force core value.”⁸²

Conclusion

The Canadian Forces is currently struggling with a lack of trained personnel. The air force, as a subset of the Canadian Forces, is dealing with unsustainable attrition in the pilot occupation. If this attrition is not abated, the ability for the air force to conduct operations and to regenerate will be severely impeded.

⁸⁰ See the earlier description of PTA.

⁸¹ The author, having been a recipient of the Pilot Terminable Allowance, experienced this resentment firsthand.

⁸² Brackett, 3.

The root causes of the current pilot shortage can be categorized as low production, high attrition and poor human resource management. The low production was caused by the limitations in recruiting that accompanied the 1994 White Paper mandated reduction to 60,000 regular force personnel, as well as by problems that were associated with the introduction of contracted pilot training. High attrition was caused by the “push” of the operational tempo along with the “pull” from the airline industry. The lack of human resource management tools in general, and the lack of predictive modeling specifically, contributed to the sustainment of a delta between production and attrition.

It was shown that an increase in recruiting alone would not solve the pilot shortage problem. Loss of experience on the operational squadrons results in more hours being required for training and upgrades. If more hours are not available, and the pace of operations remains high, then the ability of the operational squadrons to absorb new pilots is reduced, thus further impeding regeneration efforts. Retention of experienced pilots, therefore, must be part of the solution to address the current pilot shortage.

The current operational tempo is unsustainably high. The operational tempo is contributing to attrition by forcing personnel out the door in search of greater stability, as well as progressively impeding regeneration efforts. The current measures to abate the high operational tempo are having, at present, little effect. A clear reduction in operational tempo would serve to reduce attrition forces wide in general, and in the pilot occupation in particular.

There currently exists a significant gap between the salaries of military and civilian pilots, as well as a growing number of civilian vacancies, resulting in a “pull” from the airline industry. While the long-term goal of the Canadian Forces is to address the issue of competitive compensation, the preferred near-term solution, as demonstrated by our allies, is to use retention

bonuses. As exemplified by the United States, the bonuses must be large enough to close the salary gap and must be used in conjunction with reductions in operational tempo, in order to generate the desired retention pressure. Bonuses, by virtue of their exclusivity, can generate significant resentment, which will need to be alleviated in order to minimize the impact on unit morale and cohesion. Notwithstanding these concerns, competitive compensation, in the form of a retention bonus, and a reduction in operational tempo, will help the Canadian Forces retain pilots.

Bibliography

- Ankerson, Christopher and Losel Tethong. "Retain or Perish: Why Recruiting Won't Save the CF." The Canadian Institute of Strategic Studies March 2001.
- Alexander, Lesley. "Retaining Aviators is the Issue." U.S. Naval Institute Proceedings July 2000, vol. 126 Issue 7.
- Brackett, Dave. "How the Air Force can keep pilots." Air Force Times 30 June 1997, vol. 57 Issue 48.
- Drake, Peter. "Canada's Economic Performance: The Past Decade, the Near-Term Outlook and the Longer-Term Challenges." Presentation to the Canadian Forces Command and Staff Course 28, 24 September 2001.
- Fulghum, David A. "Air Force Reorganizing, Confronting Shortages." Aviation Week and Space Technology 20 September 1999.
- Grant, John. "The Canadian Economy: Still in the Sweet Spot." Presentation to the Canadian Forces Command and Staff Course 28, 24 September 2001.
- IATA. "Latest Passenger Forecast Shows Effect of September 11th and Points to the Recovery Ahead." Press release 11 February 2002: online, Available: <http://www.iata.org/pr/pr02febc.htm>, 27 February 2002.
- Kallock, Roger, et al. "Panel II: Meeting Future Manpower Needs." Defense Transportation Journal December 1999.
- Kelly, W.J., Major. "The Canadian Forces Pilot Shortage Problem: an Outsider's Perspective." Exercise New Horizons paper: online, Available: <http://wps.cfc.dnd.ca/irc/nh/nh9798/0049.html>, 26 February 2002.
- Kohn, Richard H. "The early retirement of Gen Ronald R. Fogleman, Chief of Staff, United States Air Force." Aerospace Power Journal Spring 2001.
- Lee, Peter N. "Retaining our fixed-wing pilots." Marine Corps Gazette May 2000.
- Moore, Michael, Lieutenant-Colonel. "Positioning Defence as an Employer of Choice: Staying Competitive with Flexible and Innovative Approaches to Military Compensation." Exercise New Horizons paper: Canadian Forces College Review 2001.
- National Defence. CAS Planning Guidance 2002. 6 June 2001: online, Available: http://airforce.dwan.dnd.ca/main/Biblio/Library_e.htm, 24 January 2002
- National Defence. CF Compulsory Retirement Age. CANFORGEN message 072/01: online, Available: <http://barker.cfc.dnd.ca/Admin/Canforngen/2001/cfg01072.en.html>, 20 April 2002.

National Defence. DCDS Direction for International Operations. 1 March 2000: online, Available: http://dcds.mil.ca/cosj3/ndcc/sops/default_e.asp, 24 January 2002

National Defence. Defence Plan 2001. Ottawa: online, Available: http://www.vcds.forces.ca/dgsp/dplan/intro_e.asp, 20 March 2002.

National Defence. Interim Guidance – PERSTEMPO. CANFORGEN message 035/01: online, Available: <http://bbs.cfc.dnd.ca/Admin/Canforgen/2001/cfg01035.en.html>, 5 February 2002.

National Defence. Shaping the Future of the Canadian Forces: A Strategy for 2020. Ottawa: July 2000.

National Defence. 1CAD A1 Training. “Status of the RW Communities – 32A Pilot.” E-mail, 1 November 2000.

National Defence. 1CAD A3 Combat Readiness. “A3 Combat Readiness MH SITREP 1st Quarter 2002.” Presentation, undated.

National Defence. ADM HR Mil. “Human Resources in the CF.” Presentation to the Canadian Forces Command and Staff Course 28, 1 November 2001.

National Defence. CAS D Air CBM. Costs to Train CF Pilots – FY 00-01. Spreadsheet, 19 February 2002.

National Defence. CAS D Air CBM. "Pilot Retention Initiative Compensation Options." Presentation, 7 March 2002.

National Defence. CAS D Air PMS. “Air Force Retention Working Group Homepage.” Specifications: online, Available: <http://131.139.119.150/afrwg/>, 22 March 2002.

National Defence. CAS D Air PMS. “Annual Military Occupation Review.” Presentation, 19 February 2002.

National Defence. CAS D Air PMS. Untitled presentation on PML vs TES and production vs attrition. Undated.

National Defence. CAS DAR. Maritime Helicopter Operations Since 1988. Table, undated.

National Defence. CAS DG Air Pers. “Air Force Personnel Challenges.” Presentation to Treasury Board Coordination Committee, 25 February 2002.

National Defence. CAS DG Air Pers. Generic Pilot Intake – Flow and Cost Chart. Chart, undated.

National Defence. CAS SPO. Air Force Retention Action Plan. Annex A to Pilot Case Study, 12 December 2001.

National Defence. CORA. CH124 PARSim Model Data. Spreadsheet, undated.

National Defence. CORA. "Pilot Production/Absorption/Retention/Simulation (PARSim) Model." Presentation, 6 March 2002.

Office of the Auditor General of Canada. April 2002 Report: online, Available: <http://www.oag-bvg.gc.ca/domino/reports.nsf/html/0205ce.html>, 17 April 2002.

Philpott, Tom and Gordon I. Peterson. "An unprecedented pace of operations." Sea Power January 2001.

Proctor, Paul. "Green Side up." Aviation Week and Space Technology 21 February 2000.

Simpson, Diana. "Pilot Retention." Bibliography, June 1998: online, Available: <http://www.au.af.mil/au/aul/bibs/pilo/pilots.htm>, 15 January 2002.

Taylor, William W. The Air Force Pilot Shortage: A Crisis for Operational Units? Santa Monica: RAND, 2000.

United Kingdom. Ministry of Defence. "Aircrew Retention Review." Presentation, undated.

United Kingdom. Royal Air Force. "Script for CAS Introductory Video on AAR." Undated.

United States. Air Force. "Talking Paper on Air Force Aviation Continuation Pay (ACP) Program." Undated.

United States. Congress. Air Force Pilot Retention Issue. Congressional record, 12 May 1998: online, Available: <http://www.house.gov/hunter/stm3-af.htm>, 7 February 2002.

United States. Congress. Statement of Vice Admiral D.T. Oliver. Congressional record, 4 March 1999: online, Available: <http://www.house.gov/hasc/testimony/106thcongress/99-03-04oliver.htm>, 15 January 2002.

United States. Navy. CNO. "Aviation Career Continuation Pay (ACCP)." Message, 19 October 2001.

Winder, Paul. "How to fix the pilot-retention problem." Air Force Times 15 September 1997, vol. 58 Issue 6.