

Research for the Canadian Forces Recruiting Project
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The Canadian Forces (CF) is facing the challenge of attracting a sufficient quantity of applicants to meet existing enrollment targets. A strong economy, changing demographics and fierce recruiting competition from external agencies have resulted in specific occupations becoming critically understaffed. The current recruiting situation is expected to not only continue in the coming years but to further deteriorate. In response to the shortage of applicants, the CF initiated the CF Recruiting Project. This paper focuses on the research conducted in support of the CF Recruiting Project with an emphasis on one study that was conducted on the Canadian Forces Aptitude Test (CFAT).

Recruiting Problem

The CF has been unable to reach its enlistment targets in recent years which has led to a critical shortage in many occupations. The majority of these occupations are in the technical field. If the current recruiting situation continues, the CF is forecast to see a steady decline in its trained effective strength (see Figure 1). This decline can be attributed to the fact that the attrition rate in the CF is currently much greater than the production rate. As Figure 2 illustrates, if solutions are not implemented, this situation will worsen in the future.

Insert Figure 1 & 2 here

CF's Response

In response to the recruiting challenge, the CF initiated the CF Recruiting Project to serve as a widespread review of human resources recruiting and selection processes. The review focused on three principle areas:

- a) incentives to join the CF (e.g. signing bonuses);
- b) recruiting processes (e.g. bottlenecks in recruiting); and
- c) the CF's capacity to train an expanded intake of recruits.

Research for Recruiting Project

Research support for the CF Recruiting Project was provided by the Director of Human Resources Research and Evaluation (DHRRE), Personnel Production section. DHRRE is responsible for human resources research and evaluation as well as coordination of all personnel research conducted on CF personnel, their families and other Department of National Defence personnel. The Personnel

Production section is responsible for developing and validating selection tests and appraisal systems within the CF. The CF Recruiting Project became the central focus for the section over the past six months.

The research conducted in support of the CF Recruiting Project has consisted of gathering literature and information on the effectiveness of signing bonuses and conducting a review of all selection criteria currently in use. There have been more in-depth analyses conducted, such as evaluating specific criteria that will impact on the amount of qualified individuals applying for employment with the CF. This criteria consists of the Military Potential score, a score from 1 to 9 measuring potential to succeed in the military, and the Canadian Forces Aptitude Test (CFAT), a cognitive ability test. This paper will focus on adjusting the CFAT cut-off scores.

The Challenge

The research question was, “Can selection criteria be adjusted to increase the quantity of applicants without jeopardizing the quality of recruits”. Researchers were faced with a variety of challenges in answering this question. For example, due to downsizing in the CF, the sample sizes of data on recruits were small. There was also a limited availability of required data to perform analyses. Due to the short time frame of the CF Recruiting Project, it was not feasible to collect new data. Therefore, a historical data set was used. Analyses were conducted on the CFAT using this existing data set.

CFAT

The CFAT is a cognitive ability test used to screen CF applicants [officers and non-commissioned members (NCMs)] and to classify NCMs into military occupations (MOCs) since 1997. The test is composed of three scales: Verbal, Spatial and Problem Solving. Raw scores on the CFAT are converted to percentiles based on norms created by official language (English and French) and rank (Officer and NCM). The cut-off score for officers (who must have obtained a University degree) is the 25th percentile on the total CFAT score (in comparison to the officer applicant population).

The CFAT is used for screening and classification of NCMs into different MOCs. There are different percentile cut-off scores for the CFAT based on job family. MOCs for NCMs are clustered into five job families: Administrative, Mechanical, General Military, Operator and Technical.

Adjusting CFAT Cut-off Scores

Cutoffs for the different job families were originally established to balance NCM applicants with likelihood of success in Qualification Level 3 (QL3) training. QL3 training is the first phase of training that is specific to MOC. The effects of adjusting the CFAT cut-off scores on the size of the recruit pool were examined using data on recruits from 1998 to November 2000. Results were grouped by NCM job family. A potential increase in traditional failure rates associated with adjusting the cutoff scores was also examined using a review of previous research (Woycheshin 1999a, 1999b).

The findings indicated the potential increase in number of recruits in each job family, based on adjusting CFAT cut off scores. All raw scores on the CFAT were converted to percentiles based on existing norms. As a result of a slight fluctuation

in norms, an increase of 10 percentiles did not represent exactly 10% of the population examined.

Mechanical, Operator and Technical families

The CFAT cutoff for the Mechanical, Operator and Technical families is the 50th percentile on the total CFAT score. Adjusting this cutoff to the 40th percentile would increase the number of eligible applicants by 13%. Adjusting the cutoff to the 30th percentile would result in an additional 8% increase.

Administrative family

The current cutoff for the Administrative family is the 50th percentile on the VSPS scale. The Verbal Skills (VS) subscale and the Problem Solving (PS) subscale are combined to form a composite score, the VSPS. Adjusting the cutoff from 50th to the 40th percentile will increase the number of applicants who are eligible by 13%. Adjusting the cutoff to the 30th percentile will increase the number of eligible applicants by another 8%.

General Military family

The cutoff for the General Military family is currently set at the 20th percentile for the Problem Solving subscale. Adjusting this cutoff to the 10th percentile will increase the eligible applicant pool by 8%.

Recommendations Based on Success and Failure Rates

Woycheshin's (1999a, 1999b) findings, suggest adjusting CFAT cut-off scores will not significantly affect failure rates on QL3 training. The risk of adjusting the CFAT cut-off scores for four of the job families (Mechanical, Operator, Technical, and Administrative) was, therefore considered low. Based on these adjustments, the eligible applicant base would increase with minimal increase in failure rates. Adjusting the CFAT cut-off scores will help to meet CF recruiting targets and, subsequently, increase the trained effective strength of the CF. It was, recommended that:

- a) the cut-off score on the Operator, Technical and Mechanical Families be adjusted from the 50th percentile to the 40th percentile on the total CFAT score;
- b) the cut-off score be adjusted from the 50th percentile to the 40th percentile on the VSPS composite scale for the Administrative family; and
- c) the cut-off score for the General Military family remain unchanged.

The cutoff score for the General Military family is currently set at a minimal level of the 20th percentile on the total CFAT score. It is, therefore, difficult to estimate the effect of adjusting the cutoff score for this occupation on success in QL3 training. As mentioned earlier, there would be minimal increase in the number of eligible applicants if this cutoff score were adjusted.

Limitations to Research

Due to the restrictive timelines of the CF Recruiting Project, it was not possible to collect data on current failure rates for either basic recruit training or

QL3 training. Recommendations on adjusting CFAT scores were therefore, based on the findings of previous studies.

Future Research

Future research assessing the effects of adjusting the CFAT cut-off scores on QL3 training is essential. In addition, the effects of other initiatives of the CF Recruiting Project (e.g. the impact of signing bonuses) will have to be carefully examined.

Although it is expected that adjusting the CFAT cut-off scores will not significantly affect the overall pass/fail rate in training, this adjustment could have other effects on CF trainees and the CF population in general. There may be a negative psychological effect on the CF population if they perceive that the CF's standards have been lowered. This issue must be closely monitored. Trainers could unknowingly become more stringent in their standards if they perceive the standards of the CF are being lowered. This could lead to an increase in attrition.

Conclusion

The objective of the CF Recruiting Project is to increase the CF's applicant pool and, ultimately, ensure that the CF is at its authorized strength. Based on the review conducted for the CF Recruiting Project, initiatives to address the CF's recruiting problem are now being put into place. As a result of these initiatives, it is forecast that the CF will significantly increase its recruit pool, and subsequently its trained effective strength (see Figure 3).

Insert Figure 3 here

Research will be required to follow up and closely monitor the effects of recruiting initiatives put into place as part of the CF Recruiting Project. The Personnel Production section is currently in the process of putting together baseline measures that will be compared with the recruit population after recruiting initiatives have been put into place.

References

Woycheshin, D. E. (1999a). Validation of the Canadian Forces Aptitude Test Against QL3 Performance. Technical Note 99-11. Ottawa, ON: Director Human Resources Research and Evaluation.

Woycheshin, D. E. (1999b). Validation of the Canadian Forces Aptitude Test with CFSEME QL3 Results. Technical Note 99-12. Ottawa, ON: Director Human Resources Research and Evaluation.

Figure 1. Decline in CF trained effective strength forecast to 2003.

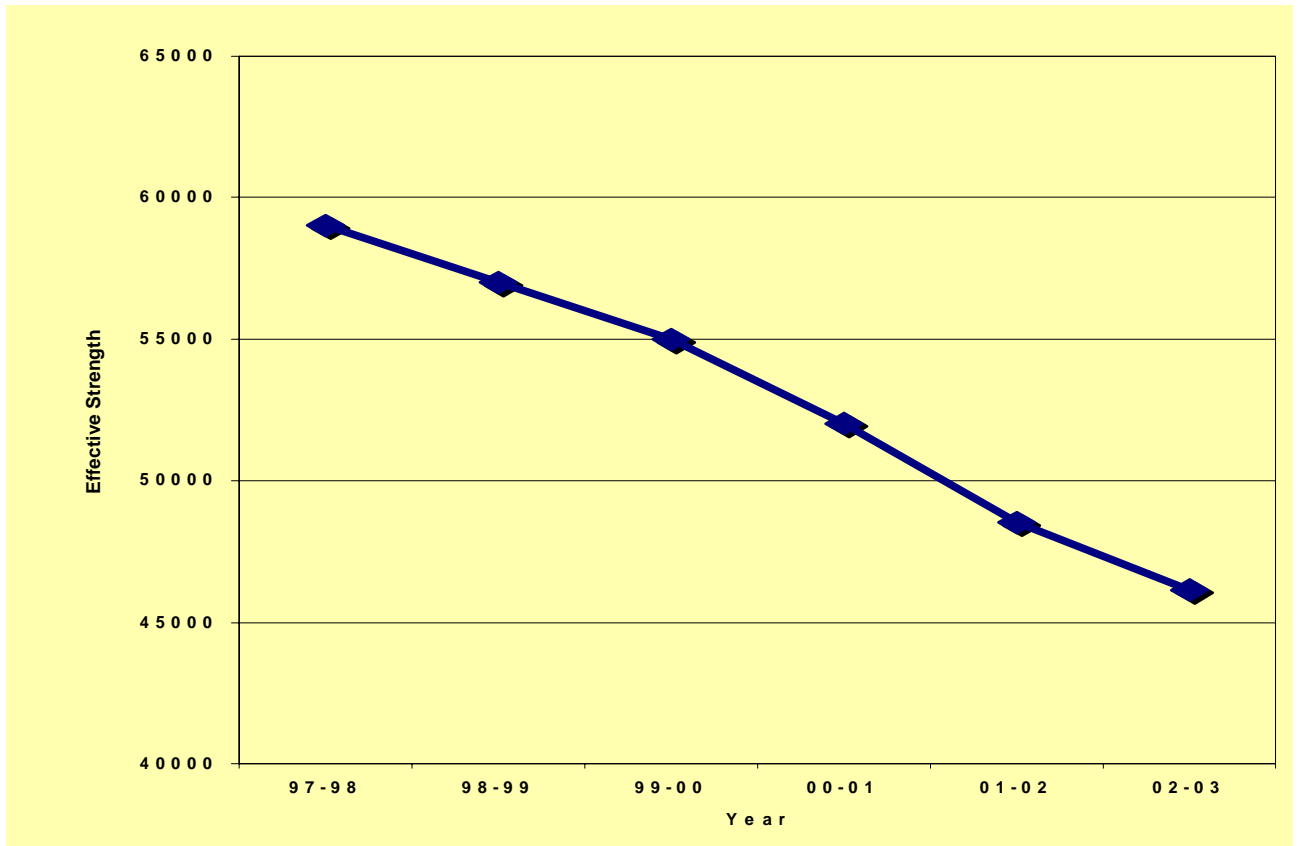


Figure 2. CF Attrition and intake forecast to 2002.

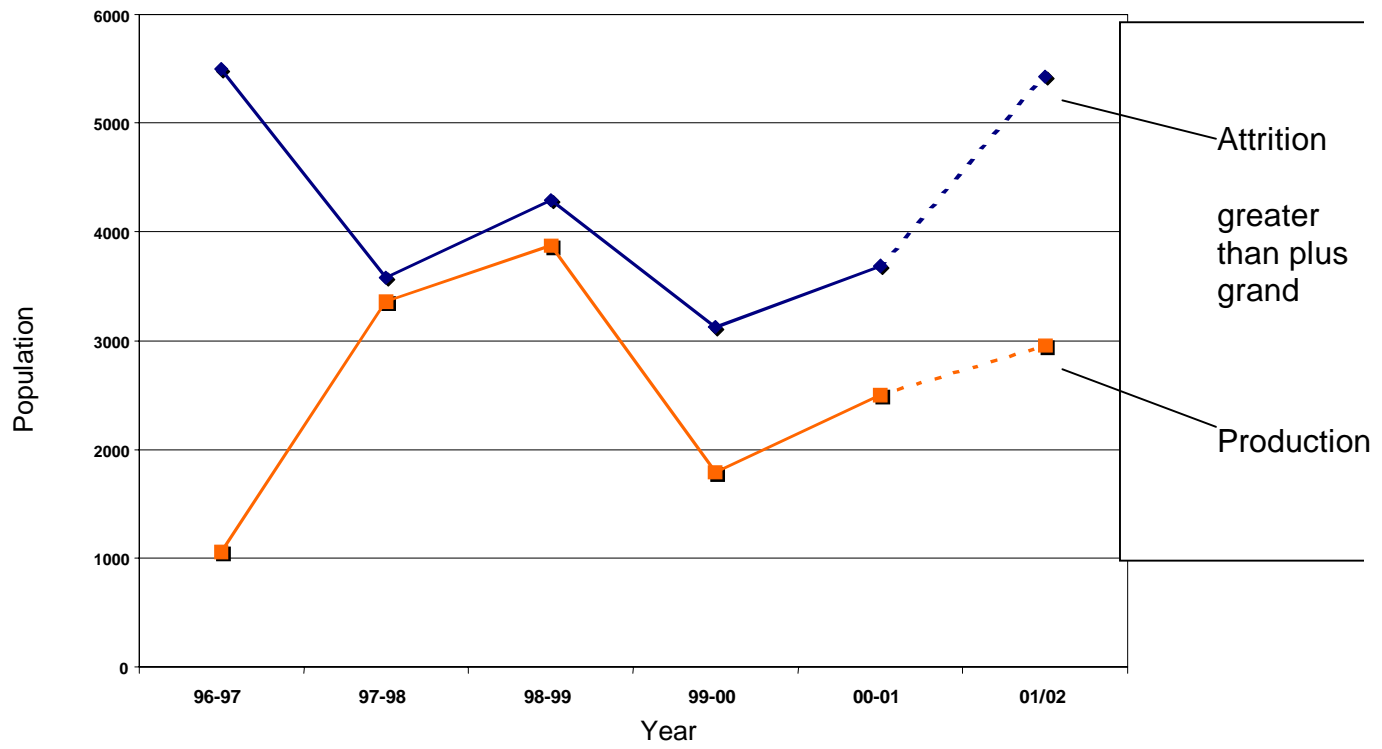


Figure 3. CF stabilization – The objective.

