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Distance Learning Assessment of the Canadian Forces Junior Leadership Course and Militia Officer Staff Course for Commander 41 Canadian Brigade Group

by

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ABSTRACT

41 Canadian Brigade Group (41 CBG) is a diversely established Reserve formation of the Canadian Forces in terms of the occupations employed within units and the locations of these units. It is difficult, time consuming and costly to have personnel available for training, centrally, and for long periods of time. The objective of this study was to identify and provide recommendations to the Commander, 41 CBG concerning those training scenarios of the Canadian Forces Junior Leadership Course (CFJLC) and the Militia Officers Staff Course (MOSC) that are applicable to a distance learning format utilizing Computer Based Training. The first task was to determine what areas of the JLC and MOSC were applicable to distance learning and CBT. This was followed by the presentation of plausible options for the delivery of the training and finally, it was determined whether or not the solution would be feasible with respect to cost.

ACKNOWLEDGEMENT

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LIST OF ABBREVIATIONS

ADM(Per)	Assistant Deputy Minister (Personnel)
AJAG	Assistant Judge Advocate General
CAL	Computer Assisted Learning
CBG	Canadian Brigade Group
CBT	Computer Based Training
CF	Canadian Forces
CFAOs	Canadian Forces Administration Orders
CFITES	Canadian Forces Individual Training and Education System
CFITS	Canadian Forces Individual Training System
CFRETS	Canadian Forces Recruiting Education and Training System
CFSIT	Canadian Forces School of Instructional Techniques
CFSOs	Canadian Forces Supplementary Orders
CFSU(O)	Canadian Forces Support Unit (Ottawa)
CFTDC	Canadian Forces Training Development Centre
CFTMPC	Canadian Forces Training Materiel Production Centre
CMC	Computer Mediated Communication
CO	Commanding Officer
CTC	Combat Training Centre
DAT	Directorate of Army Training
DGRET	Director General Recruiting Education and Training
DIN	Defence Information Network
DND	Department of National Defence
EO	Enabling Objective
HQ	Headquarters
JLC	Junior Leadership Course
LFC	Land Forces Command
LFCJNCO	Land Forces Command Junior Non-Commissioned Officer
LFWA	Land Forces Western Area
MOSC	Militia Officer Staff Course
MTD	Militia Training Detachment
NATO	North Atlantic Treaty Organization
NCO	Non-Commissioned Officer
NDHQ	National Defence Headquarters
OPI	Office of Primary Interest
PC	Performance Check
PER	Personnel Evaluation Report
PIP	Programmed Instructional Package
PO	Performance Objective
QL	Qualification Level
QR&Os	Queen's Regulations and Orders
QS	Qualification Standard

RESO	Reserve Entry Scheme Officer
SME	Subject Matter Expert
TP	Training Plan
TRADOC	Training and Doctrine Command (US Army)
TS	Training Standard
WATC	Western Area Training Centre, Wainwright, Alberta
WBT	Web Based Training

Chapter 1
Introduction

Background

In June 1998, Commander, 41 Canadian Brigade Group (41 CBG) requested the services of Captain A. Anderson and the University of Calgary to examine to what extent the Canadian Forces Junior Leadership Course (JLC) and the Militia Officers Staff Course (MOSC) could be delivered through distance education and distributed training, primarily through a computer based training package. The overall aim of the project was to determine whether or not the two courses could be delivered in an alternate format, thereby allowing selected personnel to receive the necessary career training.

Purpose

The purpose of the project was to determine avenues of efficient, effective and cost saving distance learning scenarios for 41 Brigade Headquarters and its subordinate units.

As a result of the Defence Minister's study on the Reserves released on 30 October 1995, specifically recommendation 28 states that:

> The Commission recommends that training courses be made, insofar as possible, accessible to reservists by carving them into segments of two to three weeks. ...
>
> Moreover, it was suggested that not all courses necessarily have to be taken outside the unit. With the now pervasive presence of modern computer technology, it was suggested that many technical courses could be done via terminals. This solution impresses the Commission as reasonable and efficient, and we urge that it be implemented to the maximum extent possible.[1]

This study will contribute to the on-going discussion and exploration for answers to

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[1] Canada, Department of National Defence, ***Report by the Special Commission on the Restructuring of the Reserves***, 30 October 1995, Chap 10 p.6, found at http://www.dnd.ca/eng/min/reports/restructuring.

solving Reserve Force training. Recognizing the emergence of technology and its applications to distance learning the Assistant Deputy Minister (Personnel) issued policy direction in October 1994 pertaining to the use of technology in the training environment. In part the document states that "all courseware must be developed and implemented with the quality control processes of an approved training management system. ... [and] training technology ... is a set of alternative approaches to conventional instruction and should be treated as *just another option*. The bottom line is that the use of training technology must support the operational objectives that are the basis of the training requirement."[2] For the Canadian Forces the quality control process is imbedded within the Canadian Forces Individual Training and Education System (CFITES). This project will work within the confines of that system.

Situation

41 CBG is a diversely established Reserve formation of the Canadian Forces in terms of the occupations employed within units and the locations of these units. It is difficult, time consuming and costly to have personnel available for training centrally and for long periods of time.

The formation covers the geographic area of Alberta with units located at Edmonton, Red Deer, Calgary, Medicine Hat and Lethbridge. There are 17 units employing approximately 1500 personnel. The headquarters is located at Calgary under the command of a Colonel. The branches of the Canadian Forces represented in the brigade include.

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[2] Canada, Department of National Defence, Assistant Deputy Minister (Personnel), ***NDHQ Instruction ADM(Per) 09/94 Policy Framework for Training Technology***, (Ottawa: DGRET, 1994), and Canada, *Department of National Defence, DGRET 31841-100 (DGRET) CF Policy Framework for Training Technology*, (Ottawa: DGRET, 10 May 1994), Note this is a draft document of ADM (Per) 09/94 distributed for comment, p. 6.

artillery(field and air defence), armour, infantry, communications, engineer, logistics (supply, transport, finance and cook), security, intelligence, medical, dental, administration, electrical and mechanical engineer (vehicle technicians, weapons technicians etc.), administration and band.[3] The rank structure of the CF represented in the brigade includes all non-commissioned ranks (Private to Chief Warrant Officer) and officer ranks from Second Lieutenant to Colonel.

Objective

The objective of this project is to identify and provide recommendations to Commander 41 CBG concerning those training scenarios that are applicable to a distance learning format utilizing CBT.

In order to meet this objective it was necessary to review the literature outlining the Canadian Forces Individual Training and Education System, distance learning and the selection of media for the delivery of objectives. The evolution of information technology is at a staggering pace, new developments are announced almost weekly. With this in mind the terminology concerning technology is also changing at a rapid rate. For this essay the term distance learning will be used most frequently. The most recent training literature utilises this term. Preceding this terminology were the notions of distance education and distributed training.

Distance Learning is defined as "instruction delivered to the student through a medium that takes the instructor to the student. This normally occurs at a remote learning

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Canada. Department of National Defence. ***Reserve Units -Western Area***. 1 June 1997 pp. 2-3. found at http://www.lfc.ca/english/organis/reserve/cbg-lfwa.htm.

site, the work place, or even at home. The primary defining characteristic is the student does not have to go where the instructor is physically located."[4]

Distance education is identified as having three essential criteria:

1. Distance education implies that the majority of educational communication between (among) teacher and student(s) occurs noncontiguously.
2. Distance education must involve two-way communication between (among) teacher and student(s) for the purpose of facilitating and supporting the educational process.
3. Distance education uses technologies to mediate the necessary two-way communication.[5]

Distributed training is defined as:

> ... a methodology which packages instruction so that it may be made available to troops and units in geographically dispersed locations where and when it is needed. There are two main methods employed to deliver the training, namely electronic or mail delivery. The instruction delivered in either manner tends to be student-centered since much of the burden for learning is placed on the student. ... The goal of Distributed Training is to assist the Army in meeting its training requirements by bringing standardized, quality, cost-effective training to the soldier at a time and place most convenient to him and his unit through the systematic implementation of existing and emerging technologies.[6]

In summation these three definitions can be synthesized into one single definition for the purposes of this paper: distance learning involves the characteristics of learning occurring at a site other than a centralised school, involves two-way communication between instructor and student, utilises information technology to accomplish the learning

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[4] Howard F.S. ***Distance Learning Annotated Bibliography.*** (White Sands Missile Range: U.S. Department of the Army, TRADOC, 1997), p. 1.

[5] Syvertsen-Bitten E.A. ***Distributed Training in the Canadian Forces: A Decision Model.*** (MA Thesis: University of Calgary, 1994.) p. 28.

[6] Ibid. p.28.

objectives and is cost effective in the delivery of the learning material and objectives.

Furthermore, current Canadian Forces (Army) doctrine states that "[t]he conduct of training, like combat, should be de-centralised but oriented to common intent."[7] Therefore, this study will not only examine those aspects that are applicable to distance learning and CBT but also include those components of courses that can be decentralised.

Assumptions

It was assumed that during the course of this study, little, if any, changes would occur with respect to the content and length of training time of the courses under examination. Additionally, it was accepted that no changes would occur to the computer learning labs that were established at the local armoury/unit level during 1997.

Service and Support

It was anticipated that the following assistance would be required from 41 CBG HQ:

1. Assistance in the gathering of information;
2. Assistance in the acquisition of training standards;
3. Access to photocopier;
4. Access to military mail system; and
5. Access to Canadian Switch Network (telephone) lines.

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[7] Canada, Department of National Defence, ***Canada's Army***, (Ottawa: Director General Public Affairs, 1998), p. 88.

Limitations

It was essential to the success of this project that 41 CBG assist in the acquisition of material concerning target population information and training standards. Furthermore, it was necessary to have other CF units supply essential information. Response in an untimely manner would limit the effectiveness of this study.

Chapter 2
Review of Selected Literature and the CFITES

Introduction

The literature on distance learning also called distance education and distributed training is extensive. As stated in Chapter 1, training technology must "be developed and implemented with the quality control processes of an approved training management system. ... [and] training technology ... is a set of alternative approaches to conventional instruction and should be treated as *just another option*. The bottom line is that the use of training technology must support the operational objectives that are the basis of the training requirement." Therefore, it is necessary to review the concepts and processes involved with the CFITES and relate these to distance learning and CBT. Lieutenant Commander Syvertsen-Bitten citing a US Air Force document clearly indicates that "although the ISD [Instructional Systems Development] process can be successfully adapted to any instructional medium, there are peculiarities unique to CBT which make planning for it different from traditional training planning."[8] Therefore, it is necessary to review the CFITES and where applicable illustrate the necessary components required for the development of CBT. Reflective questions will then be extrapolated from this material for the development of an assessment/decision checklist contained in Chapter 3 and employed in the review of the training literature with respect to the JLC and the MOSC.

The CFITES is a management model adopted by the Canadian Forces (CF) in the late 1960s to optimize the effectiveness and efficiency of training personnel and resources.

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[8] Syvertsen-Bitten E.A. ***Distributed Training in the Canadian Forces: A Decision Model***. p. 34.

"The aim of the individual training system is to provide for the CF the right number of people, with the right qualifications, at the right time and at minimum costs. Implicit in this aim are the objectives of controlling the quality and quantity of, as well as the resources dedicated to individual training."[9] To accomplish this aim training is focussed towards a performance orientation. The concept dictates that the tasks associated with training must mirror those connected with operational performance and conditions. Furthermore, these tasks must be clearly identified and specified.

It must be emphasised that training may be only one option to a performance deficiency. Other considerations such as "reorganizing the management system, changing recruiting and selection procedures and restructuring the job may be more appropriate solutions."[10] Within the CFITES a 'systems approach' to problem solving has been a "proven methodology for analysing the need for training, determining the most appropriate training strategy, developing the training and implementing it under controlled circumstances, evaluating its effectiveness and feeding back the results to initiate improvement."[11]

The CF Occupation Structure is identified as:

> The organization of CF work activities into logical occupational groupings is called the Military Occupational Structure (MOS). The MOS provides the framework within which military personnel are recruited, trained, employed,

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[9] Canada, Department of National Defence, National Defence Headquarters, ***Manual of Individual Training Volume 1 Introduction and Description***, (Winnipeg: CFTMPC, 1991), p. 1-2-3.

[10] Ibid, p. 1-2-5.

[11] Ibid, p. 1-2-5.

> posted, promoted, and paid in the performance of numerous jobs. The framework is made up of the following components Military occupations, sub-occupations and occupational specialties.[12]

The system utilizes a systems approach to training (SAT). This system is composed of the following six phases:

a. Analysis;
b. Design;
c. Development;
d. Conduct;
e. Evaluation; and
f. Validation.

The system is characterised by a closed loop, meaning that each phase must be conducted and each impacts on the other. Each of the phases will be addressed in this paper and in relation to distance learning and the proposed scenario for converting course material to CBT. It has been determined that there is an enormous body of knowledge surrounding the notion of a SAT that spans more than thirty years. In an attempt to glean the appropriate information for this project certain restrictions were imposed by the author. To this effect literature surrounding the military, SAT, distance learning and computer based training was utilised to identify those aspects of the literature that must be considered to make an informed decision as to the applicability of distributing and decentralising the training in question.

During the 1970's several leading academics had influence over the military adaptation of an Instructional Systems Development (ISD) process in the military

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12 Canada. Department of National Defence. National Defence Headquarters. ***Manual of Individual Training Volume 3 Preparation of Occupational Specifications***. (Winnipeg: CFTMPC, 1991), p. 3-3.

environment. Of importance was the work of Robert Gagne. "The training community in the military services took giant steps during the decade of the 1970s to develop and implement a systems approach to training. Instructional Systems Development, heavily influenced by Robert Gagne ... involves the systematic evaluation, analysis, design, development, and implementation of training programs and training requirements can be clearly identified. Task Performance Specifications (TPS) are developed. These specifications consist of detailed descriptions of overall activities, the conditions ... of [the] duty position and the desired results and standards. TPSs ... lead to the development of terminal learning objectives which fully prescribe the conditions, behaviour and standards of performance for the training setting."[13] Although this information comes from an American article the notions of a SAT are similar in Canada. Furthermore, the adaption of a SAT was concurrently being utilised in other Western militaries and in the Australian military. To this end when discussing distance learning an Australian article indicates that the "aim of RAAF [Royal Australian Air Force] training is to provide RAAF personnel with the skills, attitudes and knowledge necessary for them to do their jobs effectively. The RAAF philosophy of training encompasses the following four components:

a. The systems approach to training,
b. Continual improvement,
c. Quality recruitment and selection, and
d. Individual responsibility."[14]

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[13] Anderson, C.L. and S.F. Kime. ***Some Major Contributions of the Military to the Field of Adult and Continuing Education in the United States***. (Washington: Servicemembers Opportunity Colleges, 1996). p.18. (ERIC Document Reproduction Services Number ED 404 454).

[14] Dolan J.R. ***Getting the Job Done: Distance Learning in the RAAF***. Paper presented to the 1996 Biennial Conference of the Australian Society for Educational Technology. (Melburne, Australia, July 7-10 1996). p.3. (ERIC Document Reproduction Services Number ED 396 723).

It cannot be over emphasised that performance orientation is the fundamental principle of the [CF] Individual Training and Education (IT&E) system. "IT&E is preparation for performance on the job. It focuses on essential skills, knowledge and attitudes required to meet operational requirements and departmental performance goals."[15]

Analysis Phase

The purpose of the Analysis phase of the CFITES is "to specify the required outcome of IT&E in terms of essential on-job performance."[16] The Analysis phase incorporates the following processes: review needs assessment findings, analyse tasks for training and specify performance objectives.

The Analysis Phase, describes what the person must do on the job and then defines this job into meaningful training requirements. The first document produced as a result of this phase is the specification, which identifies the mandatory minimum work responsibilities for each occupation of the Canadian Forces. The responsibility for the production of the specification resides with National Defence Headquarters while the follow-on document, the Qualification Standard and/or Training Standard (QS/TS), is produced by the operational command responsible for training. Specifically the specification outlines the duties and tasks, the nature of task involvement and the level of skill and knowledge required to perform the task.[17] Following the development of the

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[15] Canada, Department of National Defence, National Defence Headquarters. ***Manual of Individual Training and Education Volume 1 Canadian Forces Individual Training and Education System Introduction and Description***. (Ottawa: CFSU(O) Creative Services, 1997). And draft of this volume dated 3 September 1996, p. 2.

[16] Ibid. p. 5.

[17] Canada, Department of National Defence, National Defence Headquarters. ***Manual of Individual Training Volume 3 Preparation of Occupation Specifications***, p. 2-5.

specification a team of personnel from the occupation concerned as well as training professionals evaluate the document and translate it into meaningful training objectives, resulting in the production of a Qualification Standard. These objectives are classified as performance objectives and are comprised of a number of paragraphs that deal with the performance, conditions and standard that must be achieved by an individual undergoing training in order to receive the qualification. Each of these paragraphs deal with essential information that is crucial to the training process.

All performance objectives begin with a performance statement which clearly describes a discrete segment of the job. The requirement is described in a statement that uses only one action verb to minimize any interpretation or misinterpretation by instructors, students or potential employers. This is followed by a section that deals with the operational conditions in which the performance will be conducted. It will outline those resources that a student is given in the real world, the resources that are normally denied (for example, supervision for tasks requiring independent performance) and environmental conditions. An example is, "by day or by night regardless of season, weather and terrain." The standard statement deals with those characteristics that the student must perform in relation to defining "precisely the process and/or product expected of the performer in terms of quantity, accuracy, time and sequence."[18]

The essential ingredient to the performance objective is the orientation to replicate

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[18]Canada, Department of National Defence, Canadian Forces Recruiting, Education and Training System Headquarters, ***Guide to the Preparation of Qualification Standards***, (Winnipeg: CFTMPC, 1995), p.4-3.

the performance that is required on the job and bring personnel to a minimum standard by the end of the training period. Also included in the performance objective outline are paragraphs that deal with the supporting skill and knowledge that is required in order to accomplish the task. These final paragraphs are essential to the next phase of the process, design.

Needs Assessment

The application of the Quality Control System is triggered by needs assessment, "a process whereby a significant difference between current and desired performance is identified, and a means of reducing the difference is proposed."[19] Stimulation for the creation or conduct of a needs assessment may derive from revised operational or departmental requirements, Occupational Analysis reports, new or revised Occupational Specifications, revised doctrine, organizational analysis, equipment acquisition, training evaluation reports and training validation studies. An assessment "may also be prompted by an observed performance deficiency, or by the identification of an opportunity for enhanced performance."[20] It must be emphasised that training may be only one option to a performance deficiency. Other considerations such as "reorganizing the management system, changing recruiting and selection procedures and restructuring the job may be more appropriate solutions."[21]

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[19] Canada, Department of National Defence, National Defence Headquarters. ***Manual of Individual Training and Education Volume 1 Canadian Forces Individual Training and Education System Introduction and Description***, p. 5.

[20] Ibid. p. 5.

[21] Canada, Department of National Defence, National Defence Headquarters. ***Manual of Individual Training Volume 1 Canadian Forces Individual Training System Introduction and Description***, p. 1-2-5.

A needs assessment in the training environment should be well planned and incorporate several key issues:

1. Objectives. What results are desired from the needs assessment?
2. Target Audience. Whose needs will be assessed?
3. Sampling procedures. What methods will be used to select a representative group of people from the target audience for participation in the needs assessment?
4. Data collection methods. How will information about needs be gathered?
5. Specifications for instruments. What instruments should be used during needs assessment and how should they be used?
6. Methods of data analysis. How will the information collected be analysed?
7. Descriptions of how decisions will be made based on the data. How will needs be identified from the results of data collection and analysis?[22]

Important questions that should be addressed not only in the conduct of an assessment but also during the review of a report should include identification of:

1. What is happening now?
2. What should be happening?
3. How wide is the performance gap between "what is" and "what should be"?
4. How important is the performance gap?
5. How much of the performance gap is caused by deficiencies in knowledge, skills and attitudes?
6. What solutions are cost effective and feasible?
7. What intended side effects of taking corrective action can be predicted?[23]

Task Analysis

Task analysis " is the process of analysing and interpreting specifications in order to select and organize tasks for which training must be developed."[24] Qualification Standard Writing Boards prepare for the creation of the Qualification Standard (QS) by reviewing

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[22] Rothwell, W.J. and H.C. Kazanas. ***Mastering the Instructional Design Process***. (San Francisco: Jossey Bass, 1992), pp. 46-47.

[23] Ibid p. 48.

[24] Canada. Department of National Defence. National Defence Headquarters. ***Manual of Individual Training Volume 5 Analysis of Tasks for Training.*** Winnipeg: CFTMPC, 1992. p. 1-5.

and becoming familiar with the specification concerning the job under consideration. The tasks outlined in the specification are then listed into two groups, those requiring training and those that do not require training. Also justification for the train/ no train decisions are documented and are normally recorded in the minutes of the board. From this point a scalar[25] diagram is constructed using the tasks requiring training. From this diagram the performance objectives are identified and prepared.

Performance Objectives (PO)

A PO describes a task which shall be performed on the job, the conditions under which it shall be performed and the standards to be achieved. It also includes specific references to the publications specified at Annex A to the QS, and the specification task numbers and supporting skills and knowledge specification numbers which refer to tasks, task elements, procedural skills and supporting knowledge as identified in the specification.[26]

Performance Statement

The performance statement (Paragraph 1 of the PO) shall satisfy all the following characteristics:

a. The performance is expressed by one verb with only one meaning or interpretation:
b. That one verb describes an action that is observable and measurable; and
c. The action describes what actually happens on the job.[27]

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[25] Scalar is defined as a diagram "having magnitude but not direction."

[26] Canada. Department of National Defence. Canadian Forces Recruiting, Education and Training System Headquarters. ***Guide to the Preparation of Qualification Standards***, p. 2-1.

[27] Ibid. p. 2-2.

Conditions

The conditions (Paragraph 2 of the PO) shall satisfy the following characteristics:

a. The conditions under which the task is performed are accurately described;
b. The conditions are those which would be experienced in the actual job situation; and
c. The conditions include supervision, assistance, references, tools, etc. which would normally be provided on the job, as well as those that are specifically denied.[28]

Standard

The standard (Paragraph 3 of the PO) shall satisfy the following characteristics:

a. Based on the requirements of the job;
b. Free of ambiguity and subject to minimal interpretation/misinterpretation by potential users of the QS; and
c. Define precisely the process and/or product expected of the performer in terms of quantity, accuracy, time and sequence as applicable.[29]

Once all POs are written, ensure the following:

a. Have all tasks (from the specification) which require training been included in POs?
b. Do all POs match the intent of the tasks in the specification?
c. Does each PO describe what the graduate must do on the job (i.e., operational environment)?
d. Is each PO internally consistent between performance, conditions and standard?[30]

Design Phase

The design phase is controlled at the training establishment or school level in the management of training. At this point in the developmental process school staffs, working with personnel from the field, break the training standard down even further and begin to

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[28] Ibid. p. 2-2.

[29] Ibid. p. 2-3.

[30] Ibid. p. 2-5.

create Enabling Objectives (EO). Enabling Objectives are constructed much like Performance Objectives, however, they are focussed towards specific areas of knowledge, skill and attitude that is required to achieve the performance. "Enabling Objectives represent 'way points' in the learning process, ie, they specify points at which trainee progress is examined, at regular intervals. Enabling Objectives direct the learning towards achieving the Performance Objective."[31]

Instructional Analysis

Again the team constructing the Training Plan creates a scalar diagram. In this case the POs are outlined and the associated knowledge, skills and attitudes are included in order to outline the Enabling Objectives.

For each Enabling Objective the first three paragraphs are similar to those found in a Performance Objective, that is, performance, conditions and standard. It is at this point that the content begins to differ. Performance Objectives are reflective of the real world requirement or tasks, and Enabling Objectives although also focussed to achieve this goal, are oriented towards the instructional setting of the Training Establishment. The Enabling Objective is developed to include a complete breakdown of material to the teaching point level. Each instructor is expected in the school to develop their lessons based upon the teaching points and reflective of the operational scenario. With these mechanisms in place there is entrenched a common standard of instruction that is delivered to each student regardless of the instructor.

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[31] Department of National Defence (NDHQ Ottawa). ***Manual of Individual Training Volume 8 Preparation of Training Plans***. (Winnipeg: CFTMPC, 1992), p. 2-16.

The final development in the design phase is the creation of the evaluation instruments which will measure the candidates performance. Also finalized are the resources required to execute the training and the time frame upon which this training will occur. During the identification of resources such items as training aids are identified.

At this point it is relevant to describe some of the underlying psychological concepts associated with the creation of enabling objectives. As defined EOs are way points in the learning process and incorporate discrete segments of knowledge, skill and attitude. In psychological terms they deal with the Cognitive, Psychomotor and Affective domains of the human mind, respectively. Remember that the primary focus of the training system is performance oriented, therefore it focuses towards the requirements of the job.

The cognitive domain deals with those aspect that require thought processes in order to be executed, normally dealing with knowledge. Enabling Objectives can be as basic as recognizing certain facts at an introductory level of training to synthesis and evaluation of material at a more advanced level. This taxonomy of educational objectives for the cognitive domain was developed in 1956 by B.S. Bloom and other educational psychologists. Table 1 explains the hierarchical formation and description of each level of the cognitive taxonomy.

Table 1- Cognitive Domain

Objectives	Definition	Action Verbs
Knowledge	the remembering of previously learned material.	defines, describes, identifies.
Comparison	the ability to grasp the meaning of material.	explains, predicts, summarizes.
Application	the ability to use learned material in new and concrete situations.	compute, modify, relate.

Analysis	the ability to break down material into its component parts so that its organizational structure may be understood.	differentiate, discriminate, illustrate.
Synthesis	the ability to put parts together to form a new whole.	categorize, compose, plan.
Evaluation	the ability to judge the value of material for a given purpose.	appraise, conclude, interpret.

Similarly, taxonomies have been developed for the other two domains. The psychomotor dealing with skill sets is outlined at Table 2 and the affective domain dealing with attitude or behaviour is at Table 3.

Table 2- Psychomotor Domain

Objective	Definition	Action Verbs
Perception	the use of the sense organs to obtain cues that guide motor activity	Chooses, describes, detects, isolates, identifies, distinguishes.
Set	the readiness to take a particular type of action.	Begins, displays, proceeds, reacts, responds, moves
Guided response	the early stages in learning a complex skill.	Assembles, builds, calibrates, dismantles, fixes, manipulates.
Mechanism	performance acts where the learned responses have become habitual and the movements can be performed with some confidence and proficiency	Same list as for Guided Response
Complex Overt Response	the skilful performance of motor acts that involve complex movement patterns	Same list as for Guided Response
Adaptation	skills that are so well developed that the individual can modify movement patterns to fit special requirements or to meet a problem situation	Adapts, alters, reorganizes
Origination	the creating of new movement patterns to fit a particular situation or specific problem	Arranges, composes, constructs, creates

Table 3- Affective Domain

Objective	Definition	Action Verbs
Receiving	the willingness to attend to particular phenomena or stimuli	Asks, chooses, selects
Responding	active participation on the part of the student	Answers, conforms, discusses
Valuing	the worth or value a student attaches to a particular object, phenomenon or behaviour	Differentiates, initiates, justifies

Organization	bringing together different values, resolving conflicts between them and beginning the building of an internally consistent value system.	Adheres, defends, integrates
Characterization	the individual has a value system that has controlled his behaviour for a sufficiently long time for him to have developed a characteristic "life style"	Acts, displays, qualifies, questions

Tables 1 to 3[32]

By establishing the learning objectives based upon the appropriate level, students can be trained from a basic level to a more advanced standing. These objectives are also related to the performance required on the job therefore meeting the requirement of a performance oriented system of training.

Methods of Instruction

During the Design process the training plan board or team evaluates the enabling objectives and decides upon the method of instruction for each. Traditionally, instructional strategies have focussed on the following:

1. **Lecture**- The Lecture is a formal or semi-formal presentation in which the instructor presents a series of events, facts, principles, etc.
2. **Guided discussions**- Guided Discussion is a method in which course members are guided in steps to reach instructional objectives by drawing out their opinions, knowledge, experience, and capabilities, and by building on these to explore and develop new material.
3. **Tutorials**- Tutorial is a method of instruction in which an instructor works directly with an individual course member.
4. **Seminars-** The Seminar is a tutorial arrangement involving the instructor and group, rather that instructor and individual.
5. **Demonstrations-** Demonstration is a method of instruction where the instructor, by actually performing an operation or doing a job, shows the course member what to do, how to do it and through explanations brings out why, where and when it is done.

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[32] Canadian Forces Training Development Centre. *Advance Instructional Techniques Course Manual*. (Borden: CFTDC, 1997). Student Handout.

6. **Performance**- Performance is a method in which course members learns by doing, i.e. is required to perform under controlled conditions the operations, skill or movement being taught. Note: In practice, the Demonstration and Performance methods are used together when teaching skills. Hence the demonstration-performance method.
7. **Study assignments-** Study Assignment is a method in which the instructor assigns the study of books, periodicals, manuals or handouts, and/or the review of audio-visual materials; requires the completion of a project or research paper; or prescribes problems and exercises for the practice of a skill.
8. **Field trips-** The Field Trip is a planned learning experience in which course members observe "real life" operations which illustrate what was discussed or learned in the classroom.
9. **Games/ role-playing exercises-** Games/Role-Playing Exercises are methods of interaction in which trainees play out and practice realistic behaviours by playing them out under assumed roles and circumstances.
10. **Independent study-** Independent Study is a method of self-instruction using printed and/or audio-visual or computer-based media, often presented through computer-assisted learning (CAL) or programmed instructional packages (PIPs) to be completed prior to, during, or following a course. [33]

Distance Learning and Media Selection

At this point a number of factors can enter the discussion when related to distance learning and CBT. In fact existing and emerging technologies have reduced the need for centralised, controlled training. Each training plan writing board must now consider the applications of this technology to the instructional setting. In order to select the appropriate media, the types of media must be considered, in concert with the appropriate advantages, disadvantages and the desired application of the Enabling Objective. Current delivery systems are described in detail at Annex A to this document. For the purposes of this chapter however, the concepts of distance learning and CBT will be examined to weigh the merits of adopting the approach and technology to a particular training problem.

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[33] Canada, *Department of National Defence, National Defence Headquarters*, ***Manual of Individual Training Volume 8 Preparation of Training Plans***, p. 2D-8.

Discussions thus far have centred upon the CFITES and the development of the controlling training documentation. The focus has been on the performance orientation of the learning material. This concept must also be of primary consideration when dealing with distance learning and CBT. There must be involved a degree of reality as it relates to the operational performance of the individual.

DND policy has indicated that "the use of training technology must be treated as just another option." This statement is very limited in scope and does not factor in the necessary considerations associated with alternate delivery methods such as distance learning and CBT.

Several variables must be considered when dealing with the selection of this delivery of training and the selection of media. These include the geographic dispersal of the target population, and the training statistics, do they support the requirement for distance learning and employment of CBT? How the students and instructional staff will communicate? Will it be through various telecommunications technologies or are the students solely on their own? What level of interactivity will be produced in the CBT material? This will have an impact upon performance and the nature of the course content and design of the computer software. This factor will also lead into the notion of motivation and how the students will respond to the technology and content. This could be a contributing factor towards the success or failure of the approach to delivery. Will the objectives be accomplished and does the environment of the computer delivery method mirror the requirements of the operational environment. How will the students receive feedback and in what form? Finally, it must be examined as to whether or not there will be

a degradation in the standard as a result of distance learning strategies being employed? Each of these questions will be examined in turn and the appropriate questions built into the assessment criteria for the selection of distance learning and CBT being identified as an option.

Martin and Briggs identify that "the choices of delivery systems and media may rest primarily upon (a) analysis of resources and constraints, (b) analysis of lesson designs, (c) popularity, or (d) intuitive choices. [And] there has been a tendency to select both delivery systems and media without much analysis of the objectives and learner characteristics. Instead, schools may tend to adopt what other schools or colleges are using or recommending. We thus encounter fads or bandwagon effects."[34]

The first question dealing with the geographical distribution and training requirements is eluded to in many of the articles selected for this review. In fact these considerations are primary in the option for selecting distance learning options involving CBT. Several references identify this criteria as a major focus for the decision to implement distance learning. Among these are one US article that indicates that the "[d]ispersion of RC [Reserve Component] units presents difficulties for training. ... Travel reduces the effective training time available."[35] Furthermore, "[p]rofessional education traditionally has been costly and hard for students to get away from jobs to attend. In times of reduced training budgets for both the military and industry, it is more important than ever to find

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[34]Martin B.L. and L.J. Briggs. ***The Affective and Cognitive Domains: Integration for Instruction and Research***. (Englewood Cliffs: Educational Technology Publications, 1986), p. 400.

[35]Keene S.D. ***Effectiveness of Distance Education Approach to U.S. Army Reserve Component Training***, p. 97.

new methods for professional education."[36] Finally, "[g]eographical dispersion, limited resources and civilian jobs and family demands make travel to distant locations for training and education difficult."[37] Therefore, the reality of geography is a key criteria to the promotion and adoption of a distance learning methodology.

The degree to which training production numbers impact on training is another factor that must be assessed. Questions pertaining to the actual number of personnel being trained and the number that actually require the training must be considered in any examination of distance learning. In reality the training statistics for 41 CBG indicate that while 94 persons were nominated for JLC training in the 1998-99 fiscal year only 45 actually attended the course. This represents 48 percent of the population that actually requires the training. With respect to the MOSC, 25 persons were nominated for training while only 19 were course loaded. This represents a figure of 76 percent of personnel receiving the training.[38] It would therefore make sense to conclude that in cases involving limited access to training, distance education should be considered an option.

Normally these considerations are covered during the preparation of a Target Population Report during the design phase of the CFITES. Also included in that report would be general biographical information concerning the target population as well as the ability to obtain or gain access to the media that are required to access the training. However, it can not be understated that the areas of geographic dispersion and training

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[36] Howard F.S. ***Distance Learning Annotated Bibliography***. p. 9.

[37] Phelps R.H.et al. ***Effectiveness and Costs of Distance Education Using Computer-Mediated Communication***. p. 1.

[38] Information received from 41 CBG HQ, G3 Training NCO, 20 Jan 1999.

through-put are two of the most important considerations when dealing with distance learning and CBT.

Interactivity and Feedback

Again several books and articles stress the importance of interactivity and feedback when dealing with distance education. Bates, quoted in Syvertsen-Bitten, identifies two different contexts for interaction:

"... the first is an individual, isolated activity, and that is the interaction between the learner and the learning material, be it text, television or computer program; the second is a social activity, and that is the interaction between two or more people about the learning material. It is important to note the difference: both kinds of interactional context are necessary for learning, and both need careful examination."[39] Garrison reveals that:

"... While the packaging of information for learning is important in many methods of distance education, it does not adequately reflect the essential nature of the educational transaction nor is it the characteristic of all forms of distance education. Communication is the interface between learning and teaching. Two-way communication between the teacher and student represents the most basic element of the educational transaction. It is a means by which we negotiate meaning and validate knowledge. ... Education is a socially recognised activity that is realised through interaction- not independence."[40]

Therefore any selection of media and in particular CBT must possess the ability to

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[39]Bates, A.W. ***Interactivity as a Criterion for Media Selection in Distance Education***. Paper presented to the Asian Association of Open Universities, 1990 Annual Conference, Universitats Terbuka, 25-26 September 1990, p. 5. Cited in Syvertsen-Bitten. ***Distributed Training in the Canadian Forces: A Decision Model***, p. 38.

[40]Garrison, D.R. ***Understanding Distance Education: A Framework for the Future***. (New York: Routledge, 1989), p. 122.

establish two-way communication and allow the student to interact with the material. Several authors have distinguished between varying degrees of interactivity concerning CBT and WBT. Powley outlines four levels of interactivity as follows:

Table 4 - Levels of Interactivity	
Level	**Description**
One- Text based lessons.	Simple text and graphics. Linear design, computer driven. Self tests may be available. No student management or testing routines exist. Bookmarking capabilities may be available.
Two- Animated lessons.	More complex graphics and animation used. Audio may be used. Between computer centred and student centred design. Simple on-line testing offered. Simple student management to include test results, lessons completed.
Three- Interactive lessons	Same as Two plus: May contain complex video presentations. Student centred design and navigation. Uses hyperlink approach to navigation to allow students to free explore. Opportunities to "try me" built in. Rich feedback, practice and review is offered. Testing is more complex and uses matching items, short answer, and on-line exercises. Full student management system available.
Four- Simulation	Same as Two and Three plus: Highly interactive. Considerable use of on-line demonstrations. Models work environment. Includes interactive games and/or simulations. Minimum text and maximum multi-media content. Enrichment materials offered to enhance learning experience.

Table 4[41]

Similarly, Hall identifies three complimentary levels to that of Powley. The first involves text and graphics which is characterised by simple "paper-based course materials placed on the [computer] so that students can access them in electronic format." Second is interactive training programs which "at its best is a simulation of the work situation. ... This goes beyond simple text and graphics presentation and brings the learner into the

[41] Powley R. ***Computer-Based Training and Web-Based Training Development Workshop Student Guide***. (Victoria: Innovative Training Solutions Inc., September 1998), p. 1-3.

program to engage with the content and practice the skills." Finally, interactive multimedia training programs "allow the user to manipulate graphic objects in real-time, sometimes taking on the quality of a game-playing exercise. The simulations are realistic and the situations often difficult. Appropriate use of audio and/or video" is included at this level.[42]

The selection of the appropriate level of interactivity is essential to the success of interesting students in the course content and creating an atmosphere conducive to learning.

Motivation

Coupled with interactivity designers must consider how to motivate students. As many of the course candidates will be studying at a distance and not have the face-to-face interaction of a traditional course it is important to motivate them to learn.

The role of the instructor concerning CBT is changing. A more open and responsive environment must be established to promote completion of the training package. This leads directly to the notion of motivation and leadership in the training forum. Leadership from a military standpoint is an essential ingredient to the very foundation of the organization. The principles of instruction, outlined in the conduct phase, go a long way to describe how instructors should aid in their lesson preparation and presentations. These principles will undoubtedly be required within any multimedia package. Additionally, students must be motivated to finish the training. CBT is becoming increasingly connected to the notions of distance learning. With this in mind the actual role of the instructor changes dramatically as does the leadership approaches that must be employed when dealing with students. Collaborative learning cultures and student-centred learning are causing the instructor to

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[42]Hall, B. ***Web-Based Training Cookbook***. (Toronto: John Wiley and Sons, 1997), pp. 4-9.

begin to fill a new role. "Contrary to what many believe, productivity in schools is not analogous to productivity in factories. There is no assembly-line equivalent of a student who is creating and ultimately controlling his or her own learning."[43] "Working to motivate students would seem necessarily to require that their ideas and interests be taken seriously and that they be treated with respect - that they have significant influence over what they study, how they study and when they study."[44] The emergence of CBT has empowered the student to choose their own course of action and therefore it is necessary for instructors to adapt to a changing training environment. In order to stimulate students several models and suggestions from a variety of sources have been postulated. First Keller's Motivational Design Model promotes the following principles for instructional development:

1. Variation and Curiosity;
2. Relevance;
3. Challenge Level;
4. Positive Outcomes;
5. Positive Impression;
6. Readable Style; and
7. Early Interest.[45]

Similarly, Linda Wolcott suggests that student centred design should incorporate:

1. Course objectives in terms of what students as opposed to the teacher will do;
2. Provide students with choices in activities and assignments;
3. Be realistic;
4. Increase the use of active instructional techniques such as case studies, debates etc.;
5. Assist students in learning to learn;
6. Provide for practical application of skill and knowledge;

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[43] Levin B. ***Putting Students at the Centre. Phi Delta Kappan***. June 1994.

[44] Ibid. p.760

[45] Cornell R. and B.L. Martin. ***The Role of Motivation in Web-Based Instruction***. p. 97.

7. Encourage collaborative learning through student-to-student interaction; and
8. Aim objectives at the higher-order thinking skills, encouraging students to apply, analyze, synthesize and solve problems.[46]

Combined with the CF principles of instruction the foundation for which multimedia should be developed can go further in motivating and stimulating the desire to learn in students. When faced with this scenario the design and development process and the instructor must adapt to the change in order to achieve the desired course outcomes. Traditional instruction has been characterized by the following features:

In an instructor or teacher led environment

1. Teacher talk exceeds student talk;
2. Instruction occurs frequently with the whole class; small group or individual instruction occurs less often;
3. Use of class time is largely determined by the teacher;
4. Teachers look upon the textbook to guide curricular and instructional decision making; and
5. Classroom furniture is arranged into rows of desks or chairs facing a chalkboard.[47]

In a student centred environment

1. Student talk is equal or greater than teacher talk;
2. Most instruction occurs in small groups;
3. Students help to choose the content to be organized and learned;
4. Teachers permit students to determine partially or completely the rules of behaviour, classroom rewards and punishment;
5. Varied instructional materials are used independently or in small groups determined by the group or the individual; and
6. Furniture is arranged so that students can work in groups or individually.[48]

The CF must endeavour to move away from a centrally controlled and often

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[46] Wolcott L. L. ***Audio Tools for Distance Education***. p. 154.

[47] Relan A. and B.B. Gillani. ***Web-Based Instruction and the Traditional Classroom: Similarities and Differences***. p. 42.

[48] Ibid. p. 42.

authoritative style of classroom leadership and develop an environment that includes a collaborative learning culture where instructors begin to act more like tutors or coaches in appropriate training scenarios. Admittedly this cannot always be the case with the subject of military training as the nature of the profession is at times authoritative and demanding, with good reason--lives are on the line as well as potential national security objectives. However, in a CBT environment especially when distance learning is employed it is essential that the instructor act as a guide, mentor and/or facilitator to the program of instruction.

Time to develop and produce course-ware also presents itself as a problem at this juncture. This particular issue puts many persons initially involved with development of CBT/WBT in an uneasy position. Experience has proven that senior management also begins to question the actual investment of financial and human resources when confronted with the time issue. Specifically, CBT development can take anywhere from 200 to 500 hours of development time for one hour of instruction time depending upon the level of interactivity that is desired. This to many is excessive. However, the end result, when done properly, may be a reduction in actual training time. "There is very strong evidence that computer-based training requires less time for training compared to instructor-led training. The amount of reduction ranges from 20-80 percent, with 40-60 percent being the most common. Time reduction for multimedia training is usually attributed to a tighter instructional design, the option for participants to bypass content not needed, and the opportunity for participants to focus on those sections of the course not yet mastered." Furthermore, there is very strong evidence that computer-based training reduces the total

cost of training when compared to instructor-led training.... A positive return on investment requires a training population large enough for the savings in delivery to offset the cost of development."[49]

Standards Control

There is fear that there would be a degradation of the standard if distance learning technologies were to be employed. An internal defence department document discussing Reserve Force training and distance learning reveals that "standards control is seen as a problem for these alternate delivery methods."[50] This in fact should not be viewed as a problem. The standard should be maintained by the central training authority, in the case of 41 CBG, WATC. By utilising CBT from the central location the standard would be maintained. Furthermore, CBT has been determined in several studies to be "just as effective, if not more so than traditional instruction."[51] Also, an examination of an American Reserve Component logistics course utilising distance education discovered that "when compared with students taught conventionally, students who received the distance learning instruction evinced superior knowledge of the subject matter at the end of instruction."[52] This may be partly due to the fact that in a Computer Mediated Communication (CMC) environment, "tests or assignments based upon recall [are] less practical... testing for lower order cognitive skills becomes more difficult. As a result, it

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[49] Hall, B. ***Web-Based Training Cookbook***, pp. 108-109.

[50] Canada, Department of National Defence, Land Staff Reserve Advisor. ***Land Reserve NCO Training Review***. File number 4500-1 (Res Adv 4), 20 Aug 98, p. 12/13.

[51] Howard F.S. ***Distance Learning Annotated Bibliography***, p. 6.

[52] Keene S.D. ***Effectiveness of Distance Education Approach to U.S. Army Reserve Component Training***, p.102.

becomes more important to structure the course assignments to require the higher order cognitive skills of structuring, insight, application and evaluation, which subsume the lower order skills."[53] Finally, in an environment utilising a CBT format analytical as well as writing skills will be further developed as part of the course, even when these are not meant to be formally examined items. Therefore, the advent of a CBT delivery mechanism may further develop students in preparation for their operational roles, while meeting or exceeding the required standard in comparison to traditional face-to-face instruction.

Again Martin and Briggs identify many of the same factors surrounding media selection and state that these "could include: (a) the capability of the proposed producers to provide the needed hardware and software; (b) the suitability of the various media for the planned learning environment; (c) the features of the economy and culture in which use is intended; (d) the capability of the media for teaching cognitive and affective objectives; (e) the capability of learners to use the media with enjoyment and mastery; (f) the capability of the media for enhancing success, self esteem, learning strategies, and satisfying study conditions; and (g) the capability for contributing to motivation."[54]

Development Phase

This phase of the CFITES concerns itself with the acquisition of "effective instructional materials which preserve the design intent. ... Development of technology/media-based instruction will normally require substantially more resources than

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[53] Davie, L.E. ***Empowering the Learner through Computer Mediated Communication***. p. 110.

[54] Martin B.L. and L.J. Briggs. ***The Affective and Cognitive Domains: Integration for Instruction and Research***. p. 402.

conventional classroom instruction."[55] Included in the development of the instructional material is the procurement/ production of the resources, conducting of trials and the recording of costs. A further aspect entails the development of instructional staff. In-service development of staff normally occurs at the Canadian Forces Training Development Centre, Borden. A brief history culminating with the courses that are offered will impart valuable information t) senior management considering the development of CBT.

The creation of instructors and instructional development personnel has been the role of CFTDC since its inception in 1966. CFTDC traces its origin to the establishment of the Royal Canadian Air Force School of Instructional Techniques that was organized in late 1950 at RCAF Station Trenton and moved to Clinton in 1962.

The Canadian Force School of Instructional Technique (CFSIT) was first created in September 1966 following the integration of the three separate environments of the Armed Forces. CFSIT incorporated sections of the training units of the Navy's Fleet School of both coasts, the Method of Instruction (MIT) wing from Camp Borden (Army) and the RCAF School of Instructional Techniques at Clinton combined to form the new school. Because each of the single service schools had developed similar courses, integration was easy. Courses at the new school were simply the amalgamation of the best theories and practices of each.[56] CFSIT moved to Borden in 1970.

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[55] Canada, *Department of National Defence*. ***Manual of Individual Training and Education Volume 1 Canadian Forces Individual Training and Education System Introduction and Description***. Ottawa: CFSU(O) Creative Services, 1997. And draft of this volume dated 3 September 1996. p. 6.

[56] Canada, Department of National Defence, Canadian Forces School of Instructional Technique. *Canadian Forces School of Instructional Technique*. (Borden: 1978). p. 1.

The role of the School of Instructional Technique was to train instructors and other school staffs for the Canadian Forces. The School was also tasked with developing and evaluating new training concepts and procedures and developing effective training standards.

"The staff were drawn from professional educational trainers, including a civilian educator and also from instructors from a wide variety of military trades and classifications, which ensures a balance that provides maximum benefit to those attending courses. The blend of knowledge, skills and experience from such a staff allows instructional personnel of all levels in the Canadian Forces Individual Training System the best practical training available, military or civilian."[57]

CFSIT was responsible for training classroom instructors, instructor supervisors and training system standards personnel for the Forces. The School also conducted courses in the preparation of programmed instruction material and the production and use of audio-visual aids.

The Canadian Forces Training Development Centre (CFTDC), evolved from CFSIT and was designated such on 1 April 1980. The role of CFTDC underwent a major change in 1980. Up to that point the conduct of specialty training was its sole function. Since then emphasis has also been put on research and development. CFTDC is now more directly involved in helping to solve training problems for the CF as well as providing training in the various aspects of the Canadian Forces Individual Training System (CFITS). To fulfil its dual role, CFTDC was divided into two companies. The Training Company conducts

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[57] Ibid. p. 2.

courses that prepare personnel to work in a training environment. This includes ten different courses that run from three days to six months in length and cover all aspects of training. The Training Development Company provides advice and guidance on training matters to CF Schools and Units across the country. The Training Development Company is tasked with:

(1) conducting training research,

(2) designing, developing and implementing course, and

(3) providing training consultative services to DND.[58]

In 1994 the amalgamation of the Canadian Forces Academy of Leadership and Languages, Canadian Forces School of Physical Education and Recreation and Canadian Forces Training Development Centre resulted in the creation of the Canadian Forces Leadership and Specialized Training Centre. It was announced in 1995 that the responsibility for leadership training would cease in May 1996. The leadership training responsibilities moved to the Canadian Forces Leadership and Recruit School at St. Jean, Quebec. The Physical Education and Recreation occupation of the Canadian Forces was disbanded in March 1997. CFTDC was re-established in September 1996.[59]

Today CFTDC is responsible for the following training:

a. Instructional techniques;
b. Instructor supervisor;
c. Inter-active courseware design;
d. Training manager;

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[58] Canada, Department of National Defence, Canadian Forces Training Development Centre, ***Canadian Forces Training Development Centre***, (Borden: 1985), p. 1.

[59] Canada, Department of National Defence, Canadian Forces Training Development Centre, *Annual Historical Report 1995*, File number 1328-3249(Adjt), 15 May 1996, p.4.

e. Training analysis, design and evaluation;
f. Training validation;
g. Advanced instructional methods;
h. Training Development Officer basic qualification course; and
i. Distance Learning Technologies for Managers.

Course descriptions are contained at Appendix B to this document. The civilian literature concerning instructor development indicates that instructors must develop the necessary facilitator skills to function in a CBT environment. "In a face-to-face class, the instructor may monopolize 60% to 80% of verbal interaction. In fact, some estimates suggest that a [CBT] instructor may contribute as little as 10% to 15% of the class dialogue. However, the instructor is active in other ways, such as encouraging student participation... [and] by designing assignments that provoke participation."[60] Similarly, Howard identifies that "[i]nstructors for DL would at least initially need training in interaction skills, summary techniques, oral communication skills, and DL equipment operation."[61] These requirements are already comprised in the courses offered by CFTDC, therefore, it is recommended that personnel requiring the training be course loaded at the earliest opportunity.

Conduct Phase

This phase concerns itself with the actual execution of the instruction. During instructor training, there are six principles of instruction taught to aspiring instructors. These are: Interest, Comprehension, Emphasis, Participation, Accomplishment and Confirmation. Each of these principles will be examined in further detail and should be

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[60] Davie, L.E. ***Empowering the Learner through Computer Mediated Communication***. p. 106.

[61] Howard F.S. ***Distance Learning Annotated Bibliography***. p.19.

maintained in any technology based training. The principle of Interest states that "people learn best when they are interested in the material or skills to be learned. Instruction must arouse, create and maintain course member interest. The instructor should employ imaginative means to provoke curiosity, while taking into account course member experience and interests."[62] To develop interest the instructor can and must employ the techniques of enthusiasm, variety, realism and participation in their lessons to maintain the learning process. The Comprehension principle dictates that personnel will learn when instruction starts and proceeds at a rate that the course member can absorb. To develop this the instructor is encouraged to develop lessons in a logical format that will take the learner from known to unknown material and from simple to more complex information or skills.

Emphasis is understood as the review and reinforcement of essential information and skills. This is accomplished by having material taught "in a step by step fashion, re-capping each area and stressing key points." [63] Participation, the fourth principle of instruction allows for the trainee to actively get involved in the learning process. "One example of this is found in the common observation that people learn by doing."[64] To illustrate this further instructors are encouraged to ask thought provoking questions and assign challenging work during knowledge oriented lessons. While for skill acquisition it is emphasised that students require early involvement on the task, furthermore, maximum

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[62]Canada, Department of National Defence, National Defence Headquarters, *Manual of Individual Training Volume 9 Instructional Technique*, (Winnipeg: CFTMPC, 1991), p. 2-4.

[63]Ibid. p. 2-5.

[64]Ibid. p. 2-6.

practice time must be allocated to ensure supervision and confirmation that the job is performed.

Members while on course must consistently feel a sense of accomplishment in order to be successful. To fulfil this principle instructors must endeavour to inform students of objectives for each lesson, explain lessons clearly, keep personnel informed of their progress, and compliment people on work that is well done.

The final principle is that of confirmation. "Learning is most complete and enduring when instruction provides for confirmation that learning has occurred and has been retained. Confirming that course member learning meets established standards ensures that job performance will be competent."[65] These principles when coupled with the concept of motivation will strengthen the distance learning course and hence will influence student activity and interaction.

Evaluation Phase

Evaluation for the CFITES takes on two connotations. First, the evaluation of the trainees is considered and second, an assessment of the training program is completed. This second aspect includes the assessment of "instructor methods and techniques, course member assessment procedures, course administration procedures and the assessment of facilities, equipment and resources. The basic goal of evaluation is to collect data on the effectiveness and efficiency of the training function and to use that data to improve the

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[65] Ibid. p. 2-10.

training."[66] A comprehensive checklist used for course evaluation purposes is contained at Appendix C to this document.

Validation Phase

The final phase of the Individual Training and Education System of the Canadian Forces deals with the need to assess whether training is meeting the operational requirement of user units. This phase is referred to as Validation and is defined as "the process of measuring how well training has prepared graduates to perform their roles in an operational unit. Validation must focus on the operational tasks performed on the job as identified in the occupational specifications."[67] Hence there is the establishment of a system of feedback into the analysis phase that stimulates and promotes improvement in both training and job performance based on "real world" employment. This phase of the CFITES is the responsibility of the Managing Authority for the training.

Summary

This chapter has outlined the phases of the Canadian Forces Individual Training and Education System and discussed relevant civilian literature with respect to the design phase, media selection, instructor development and motivation. Each phase will now be examined to determine what essential ingredients must be reviewed in order to establish a framework for the assessment of existing course material that will be suitable for conversion to a CBT format.

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[66]Canada. Department of National Defence. National Defence Headquarters. *Manual of Individual Training Volume 11 Evaluation of Training*. (Winnipeg: CFTMPC, 1991), p. 1-6.

[67]Canada. Department of National Defence. National Defence Headquarters. *Manual of Individual Training Volume 14 Validation of Training*. (Winnipeg: CFTMPC, 1994), p. 1-5.

Chapter 3
Methodology

Introduction

This chapter will contain the decision checklist that was employed during the evaluation of the JLC and MOSC. It will be emphasised that the performance oriented concept of training employed within CFITES will be maintained as a critical factor. Following this the maintenance of effective and efficient training will be a primary consideration. Each Performance Objective and Enabling Objective will be assessed against this checklist to determine whether it is appropriate to for a distance learning format utilising a Computer Based delivery system. The checklist is outlined at Table 5.

Applied Research

The methodology employed in conducting the evaluation can be characterised as Applied Research. Neuman lists the following characteristics of Applied Research:

1. Research is part of a job and is judged by sponsors who are outside the discipline [of education].
2. Research problems are "narrowly constrained" to the demands of employers or sponsors.
3. The rigor and standards of scholarship depend on the uses of results. Research can be quick and dirty or may match high scientific standards.
4. The primary concern is with the ability to generalise findings to areas of interest to sponsors.
5. The driving goal is to have practical payoffs or uses for results.
6. Success comes when results are used by sponsors in decision making.[68]

This thesis was constructed at the request of the sponsors and is driven by the fact that it will be utilised to determine future training goals and objectives in relation to training the Reserve Force personnel of 41 CBG. The first task was to determine what areas

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[68] Neuman W.L. ***Social Research Methods Qualitative and Quantitative Approaches***. (Toronto: Allyn and Bacon, 1997), p.23.

of the JLC and MOSC were applicable to distance learning and CBT. This was followed by the presentation of plausible options for the delivery of the training and finally, it was determined whether or not the solution would be feasible with respect to cost.

Plan

In formulating the plan a number of methodology guides were consulted coupled with discussions with colleagues as to the viability and approaches identified. The first step in the process was to determine what steps, if any, had been taken in the areas of distance learning, distributed training and distance education. This would involve contacting and collecting background information from a variety of entities including:

1. Members of 41 CBG;
2. Telephoning and liaising with:
    a. National Defence Headquarters/ Directorate of Recruiting Education and Training, Ottawa;
    b. Directorate of Army Training, Kingston, Ontario; and
    c. Western Area Training Centre, Wainwright, Alberta;

Following this phase, a search of pertinent literature would be conducted followed by assessment of the training material, culminating in recommended options and discussing the feasibility of each. All of this was to be conducted within the framework of the CFITES that has identified distance learning and CBT as "just another option."

It was quickly determined that this was not the case and that specific criteria were needed for the examination of the training packages. These criteria included the notions of communications, interactivity, feedback, student management, motivation, and media

selection. This material was considered in Chapter 2 and relevant questions extrapolated to establish the creative concept for the CBT package. Furthermore, relevant questions were delineated in the checklist built to assess the training packages.

Creative Concept CBT Product

In order to deliver the cognitive material outlined in each Option of Chapters 4 and 5 a number of variables must be considered when viewing the teaching material and tasks. First, it must be determined what level of interactivity is desired to accomplish the objectives. It must be remembered that the original intent was to identify those components of the training packages that are appropriate for distance learning employing a CBT product.

This would mean that the teaching points, explanations, definitions, examples and reference material would be provided through a hybrid CD-ROM. A hybrid CD product is defined as being designed so that "the media and program structure are delivered on a CD-ROM, and hotlinks to the Web are embedded along the way.... Hybrid CD systems can utilise information that changes often."[69] The objective of using this medium is to provide a structured learning environment that will impart the requisite knowledge required to complete training.

At present there appear to be numerous changes on the Defence Information Network (DIN) and the DND homepage. The advantages of using a hybrid CD include the fact that many references contained in the course are available on the DIN. In order to reduce development costs, by saving numerous hours of input, it would make sense to

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[69] Hall, B. ***Web-Based Training Cookbook***, pp. 162-163.

enable the CD material to interact with the DIN. Access to such references as the *Queen's Regulations and Orders* and the *Canadian Forces Administration Orders* would ensure that students would have the most up to date material as well as reduce development costs.

It is essential that the performance oriented nature of the CFITES be maintained. It is paramount that knowledge be coupled with performance in order to effectively produce confident junior leaders. Without practice, performance and evaluation, the course objective will not be met. Current technology does not allow for the complete simulation and interaction required to lead personnel and complete tasks in the field. Furthermore, the cost of developing such a simulator would be prohibitive in the current period of fiscal restraint.

Therefore, the material presented should be at a minimum of level 2 interactivity. This is defined as having the following characteristics:

1. More complex graphics and animation used;
2. Audio may be used;
3. Between computer centred and student centred design;
4. Simple on-line testing offered; and
5. Simple student management to include test results, lessons completed.[70]

"Interactivity at its best is a simulation of the work situation. At a minimum, it can include application exercises, drag-and-drop, column matching, testing [and] text entry. ... This goes beyond simple text and graphics presentation and brings the learner into the

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[70]Powley R. ***Computer-Based Training and Web-Based Training Development Workshop Student Guide***. p. 1-2.

program to engage with the content and practice the skills."[71] Students must furthermore, be stimulated by the presentation of material, therefore screen design must be carefully constructed allowing for appropriate use and amount of colour and graphics. Audio instructions for each module should be included to allow for the explicit statement of the requirement and any substantiation. Student navigation is also essential and appropriate tools are required to allow movement and exploration through the program. Examples and definitions should be accessible through hyperlinks as well as test and practice material.

Self examinations must be incorporated in order that students can confirm, to themselves, that they have mastered the content. Written assignments must also be included. These would normally be the homework assignments contained in the course. Completed assignments must be transmitted to WATC for evaluation. Therefore, the program must have an e-mail capability. The instructional staff must ensure prompt and immediate feedback to support motivation and continued enthusiasm towards the course content.

It is recommended that material be accessible through both the internet and the intranet. This would enable students to access material from any location from which they are working. This notion however, creates a security concern that must be addressed. The primary purpose for allowing students to gain reference material through the internet, is to enable them to work on the material from any location. In the event that the CD-ROM is lost or stolen, any experienced hacker could potentially manipulate the material to gain access to more sensitive areas of the DND computer network. To combat this, each student

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[71] Hall, B. ***Web-Based Training Cookbook***, p. 5.

must enter the disc through a password that is established on the first day of the course. Furthermore, access to internet and intranet material must be restricted upon completion of the course. Therefore, the CDs produced must have imbedded in them, an encoded instruction that will cause the expiration of access to intranet material through the internet. In other words once a student has completed, for example at the end of 12 weeks, the training, access to the reference material must be denied, however, the student can retain the instructional material on the CD for future reference.

Student management must also be considered and imbedded evaluation instruments placed in the program. The program must collect data and reveal it to both the student and instructional staff for the purposes of course evaluation. Information required would be biographical data, length of time personnel took to complete lesson modules and the results of self mark examinations. Also part of this process should be the student course critique that would be electronically sent to WATC upon completion of the CBT modules.

41 CBG HQ G6 support must be integrated and coordinated with the course management aspects from WATC with respect to the creation of E-mail accounts and maintenance of the learning labs. This will require coordination between 41 CBG HQ G6, WATC, the MTDs and telecommunications representatives at the local armouries.

The following checklist was developed and employed for the examination of the current training documentation and the development of a distance learning and CBT product. The checklist is outlined in the framework of the CFITES. When viewing the table the following guide in the comments section was used in order to facilitate a smooth application of the checklist.

Table 5 - JLC/ MOSC Evaluation Checklist					
Item	**Question**	**Yes**	**No**	**Not Sure**	**Comments**
A1.					Yes: If yes is recorded for any step continue to the next question.
					No: Complete the item under consideration.
					Not Sure: This box is supplied to allow for notes pertaining to information that may be obtained from other locations/units.

Section A - Analysis Phase

Item	Question	Yes	No	Not Sure	Comments
A1.	Has the training standard identified those tasks that require training.				
A2.	The performance statement is expressed by one verb with only one meaning or interpretation?				
A3.	That one verb describes an action that is observable and measurable?				
A4	The action describes what actually happens on the job?				
A5.	The conditions under which the task is performed are accurately described?				
A6.	The conditions are those which would be experienced in the actual job situation?				
A7	The conditions include supervision, assistance, references, tools, etc. which would normally be provided on the job, as well as those that are specifically denied?				
A8	Are standard statements based on the requirements of the job?				
A9	Are standard statements free of ambiguity and subject to minimal interpretation/ misinterpretation by potential users of the QS?				
A10	Do standard statements define precisely the process and/or product expected of the performer in terms of quantity, accuracy, time and sequence as applicable?				
A11	Have all tasks (from the specification) which require training been included in POs?				
A12	Do all POs match the intent of the tasks in the specification?				
A13	Does each PO describe what the graduate must do on the job (i.e., operational environment)?				
A14	Is each PO internally consistent between performance, conditions and standard?				
A15	Are supporting Knowledge and Skill paragraphs completed in the QS?				

Section B- Design Phase

Item	Question	Yes	No	Not Sure	Comments
Learner Characteristics					
B1.	Has a target population analysis been completed?				
B2.	Does target population have access to technology for distance learning and CBT?				
Instructional Analysis					
B3.	Is the EO clearly defined?				
B4.	Are all the EO conditions, relevant to evaluating trainee performance, identified?				
B5.	Does the EO standard clearly detail criteria that can be used to effectively judge student performance?				
B6.	Is this a Cognitive Domain (knowledge) EO?				
B7.	Is this a Psychomotor Domain (skill) EO?				
B8.	Is this an Affective Domain (attitude/values) EO?				
B9.	At what level of Bloom's taxonomy is the EO established?				
B10.	Are the enabling objectives established at the appropriate level for conversion to CBT?				
Learning Assessment Plan/ Instruments ie- Tests					
B11.	Has a learning assessment plan been established?				
B12.	Is this plan performance oriented?				
B13.	What type of tests are used to measure knowledge? Are they appropriate?				
B14.	Are "hands-on" tests used for skill testing?				
B15.	How are attitudinal aspects (ie safety) measured? Is this appropriate?				
Identify Instructional Strategies (CBT)					
B16.	Is the material relatively stable with respect to time and content?				
B17.	Will learners receive immediate and constant feedback?				
B18.	Will learning be self paced?				

B19.	Are users trained on the operation of the technology?				
B20.	Will CBT provide flexibility with regard to time and place of learning?				
B21.	Does CBT for this material vastly improve accessibility, to the information?				
B22.	Will CBT enable learners to remain in their own environment?				
B23.	Will this format decrease learning time?				
B24.	Will this format reduce the need for Instructors and assistants substantially?				
B25.	Will this format motivate learners?				
B26.	Will this format enhance performance?				
B27.	Is CBT appropriate for the delivery of this training?				
Select Instructional and Training Strategies					
B28.	Can the optimum training strategy be identified?				

Section C- Development Phase

Item	Question	Yes	No	Not Sure	Comments
C1.	Can the material be developed for delivery via CBT?				
C2.	Can this be developed "in-house"?				
C3.	Is the selection supported by a Business Case and recorded in the unit Business Plan?				
C4.	Can a CBT format be fiscally supported from conception to implementation and maintenance?				
C5.	Is trainee through-put levels sufficient to meet program requirements?				
C6.	Will instructor/trainee ratios and continuous instruction result in undue instructor fatigue?				
C7.	Are new instructors phased in and supervised by experienced instructors or supervisors?				
C8.	Are instructors evaluated for instructional technique?				
C9.	Are instructor evaluation forms maintained for reference?				
C10.	Do instructors have the proper qualifications to instruct/ facilitate this course?				
C11.	Training facilities, (classrooms, computer labs) are identified and established?				
C12.	Required equipment including hardware and software is procured?				
C13.	Required safety equipment is procured?				
C14.	Pilot serials of course material are developed and scheduled?				
C15.	Evaluation instruments are produced to conduct evaluation of pilot serial?				
C16.	Student guidance and operating manuals are produced?				
C17.	Instructor manuals are produced?				
C18.	Required reference material is procured?				
C19.	Feasibility assessment has been conducted?				

Conduct, Evaluation and Validation

The Conduct phase of the CFITES and subsequent course should be evaluated during the Evaluation Phase. Once a number of serials have been graduated it is necessary and judicious for the training establishment to execute an evaluation to determine that the training conducted has been both effective and efficient. It is also paramount that training establishments considering the development or conversion of existing courses to a CBT format consult previous evaluation reports to determine whether training has been effective and efficient. This is particularly important when considering older courses. Evaluation reports may lead to the conclusion that performance can be enhanced by the adoption of distance learning technologies.

Similarly, Validation studies, prepared by the operational command, will be a source of essential information when considering the adoption of distance learning technologies. Proper preparation, research and planning must be conducted in order to establish proper training.

Summary

This chapter has outlined the necessary consideration for developing an assessment instrument for considering the JLC and MOSC training programs in relation to generating a CBT package. Finally, this is applied research for a specific sponsor, namely the Commander 41 CBG, to utilise in future decision making and training scenarios involving brigade personnel.

Chapter 4
JLC Training Plan Assessment

Introduction

This chapter is presented to discuss the findings of the evaluation of the JLC training plan and to identify those elements of the plan that are applicable for distance learning and CBT. As stated in Chapter 1 the aim of this project was to identify the areas of the course that could logically be distributed, and with that in mind to primarily identify those that could be delivered via a multi media format. It is understood that many options for the delivery of the training are possible however, the direction requested for this thesis was to identify those aspects of the course that would lend themselves to be delivered via a CD-ROM format.

For the purpose of assessment each PO and EO was scrutinized heavily utilising the checklist established at Chapter 3. An overview of the assessment and recommendations will be presented with respect to the POs. Enabling Objectives that possess unique importance will be singled out during the discussion.

Junior Leader Course Evaluation

A recent report to the Reserve Advisor to Chief of Land Staff indicated that historically, the development of the Canadian Forces JLC when coupled with the LFCJNCO has nearly doubled the length of training that was required prior to 1994.[72] Furthermore, the document traces concerns with respect to Junior NCO development in 11 areas:

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[72]Canada, Department of National Defence, Land Staff Reserve Advisor, ***Land Reserve NCO Training Review***, p. 3/13.

1. Attrition rates;
2. Course length;
3. Regular Force expectations of a Reserve Soldier;
4. Perception of Total Force;
5. Warrior Program;
6. Physical fitness evaluation and standards;
7. CFRETS QL 2 course;
8. Standards
9. Reserve Input in Designing Course Training Standards/Training Plans;
10. Course Changes/Cancellations; and
11. Anglophone/Francophone Courses.[73]

Of these eleven areas, five are directly linked to training development and design. Specifically, items 2, 8, 9, 10 and 11 have a direct impact on the formation and evaluation of distance learning and CBT material in this project.

Course length is a primary stimulus for the development of alternatives to the traditional training that has occurred at a central training facility. "The required training for Reservists has reached the point where it is not achievable for many Reservists. The wholesale adoption of Regular Force course content as part of Total Force has resulted in Reserve Force course length increasing to the point where the working soldier, ... cannot complete it in one summer."[74]

The organization of Standard Sections, those who oversee and monitor training, at area levels have had a diminishing effect due to being "heavily tasked," while suffering from "infrastructure personnel reductions."[75]

It has been noted that in the document prepared for the Reserve Advisor that the

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[73] Ibid. p.4/13-6/13.

[74] Ibid. p. 4/13.

[75] Ibid. p. 6/13.

input that Reservists have on TS/TP boards is minimal. A call for nominations to sit on a design board is made by the Combat Training Centre (CTC). However, Reserve units and personnel are failing to respond.

"Changes in course dates or course cancellations are not only disruptive but frustrating to candidates intent on attending a particular course. Candidates may have scheduled their vacation time around these anticipated course dates, or have booked time off with their employer for this particular period of time.... It is especially disconcerting to a candidate when a course is cancelled due to the minimum course load not having been met."[76]

Finally, the report denotes that there is a requirement for more Francophone courses. "The optimum goal is assurance of appropriate language instruction at any of the ATCs [Area Training Centres] across Canada."[77]

When combined with all other factors the report culminates with a conclusion that is primarily focussed on scheduling and "[t]he army must continue to examine and apply where possible alternate delivery methods for Reserve training. The methods could include distance learning, involving computer based training..."[78] As stated this evaluation of the control documentation will focus on this method of instructional delivery.

Junior Leadership Course

The "purpose of junior leader training is to broaden the trainees' knowledge of

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[76] Ibid. p. 6/13.

[77] Ibid. p. 10/13.

[78] Ibid. p. 12/13

general military subjects, to develop their leadership/management skills and to obtain practical experience in the application of individual leadership and supervisory duties to the minimum level required by junior supervisors."[79]

The training plan writing board was convened in 1996 and created the training plan with future distributed training options in mind. Furthermore, this initiative was accomplished with the Reserves being the primary consideration. Specifically, the course is divided into two blocks the first intended to be able to be distributed.

Each performance objective is consistent with respect to the performance statement, conditions and the standard. Each depicts a specific entity of work and the assessment criteria mirror the performance expected in the operational environment. The analysis phase of the CFITES was adhered to in developing the Training Standard with all applicable chapters being completed.

The Training Plan, as well, depicts a course carefully thought through and established. The enabling objectives clearly depict discrete areas of concentration that act as building blocks eventually culminating in the performance as indicated in the PO.

PO 401 Lead Subordinates

The aim of this objective is to develop personnel to lead subordinates by training them to enforcing discipline, give oral orders, plan and schedule the work of subordinates, establish and assign work priorities, delegate tasks to subordinates, liaise with other units/sections on work related matters, identify reasons for group and individual failure on

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[79] Canada, Department of National Defence, PPCLI Battle School, ***Course Training Plan- Canadian Forces Junior Leadership Course***, (Wainwright: PPCLI Battle School, 1996), p.1-1/2.

tasks/jobs, ensure the welfare of subordinates, manage material, provide input to operational plans, establish a work performance standard and evaluate options available for action.[80]

Overall the EOs outline, in logical format, the sequence in which the performance objective will be accomplished. Each performance, condition and standard statement identify the required level of proficiency expected of the trainee. Furthermore, the test details relate to these paragraphs and is suitable for the teaching points stated.

This particular PO constitutes 16 scheduled lessons in Block 1 and 45 periods in Block 2 training. The overall assessment of this PO and its subordinate EOs indicates that the content is considered feasible for distance learning and can in fact be delivered via CBT. For the most part the EOs are cognitive in nature. The established training plan indicates the theory that will be delivered in Block 1 and that assessment of the trainee will occur in three primary ways. First the candidate must pass a written exam composed of the knowledge material presented during the classroom portion of the course. Second the member will be evaluated when filling leadership roles while in garrison and finally the student will be assessed during the field portion when conducting small party tasks. The written test is scheduled to occur at the end of Block 1 training.

The following are the EOs contained in PO 401:

EO 401.01 Enforce dress and deportment
EO 401.02 Apply the principles of leadership
EO 401.03 Enforce discipline
EO 401.04 Motivate subordinates
EO 401.05 Demonstrate a basic knowledge of human behaviour

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[80]Ibid. p. 4-401-1/29 to 4-401-3/29.

EO 401.06 Represent subordinates
EO 401.07 Evaluate job performance
EO 401.08 Maintain personnel files and records
EO 401.09 Demonstrate an understanding of leadership and management
EO 401.10 Demonstrate an understanding of human needs of subordinates
EO 401.11 Apply leadership styles and approaches
EO 401.12 Give verbal orders
EO 401.13 Apply planning and organizing techniques
EO 401.14 Direct subordinates
EO 401.15 Supervise subordinates

Table 6 reveals the heavy emphasis on the classroom instruction that occurs with this PO. It must be noted that although the student receives the bulk of the training in the form of lectures and discussions the major emphasis in assessment of the leadership ability rests with the performance when conducting small party tasks. For this Performance Check (PC) only one day of practice is scheduled during block 2 for the preparation of candidates, however the assessment constitutes 95% of the PO 401 and 60% of the overall course grade.

Table 6: Assessment of PO 401- Lead Subordinates

EO	Time	Instructional Method					Test Details		Sched
	# of 40 min pd	Lecture	Discussion	Video	Class Ex/ Home Assignment	Demo	PC1 theory	Throughout Crse (practical)	Block
401.01	1	x	x			x		x	1
401.02	2	x	x				x	x	1
401.03	3	x	x	x			x	x	1
401.04	1	x	x				x	x	1
401.05	1	x	x				x		2
401.06	2	x	x				x		1
401.07	1	x	x				x	x	2
401.08	2	x	x		x		x		2
401.09	4	x	x	x			x	x	1
401.10	1	x	x				x		2

	# of 40 min pd	Lecture	Discussion	Video	Class Ex/ Home Assignment	Demo	PC1 theory	Throughout Crse (practical)	Block
401.11	3	x	x		x		x	x	2
401.12	1	x	x				x	x	2
401.13	6	x	x		x		x	x	1
401.14	4	x	x		x		x	x	1
401.15	1	x	x				x	x	2

With the heavy emphasis on classroom instruction and the delivery of theory in Block 1 it is concluded that the 16 periods that constitute the delivery of theory be developed into a package for distance learning that utilizes a computer format. Furthermore, the nine periods scheduled on the first day of block 2 should be considered for removal to Block 1. Therefore all theory for this PO would be delivered at a distance and the written PC could be administered prior to the candidate arriving at the central training facility. Practical performance assessed throughout the course must be emphasised during any introduction delivered through a CBT format. As well, examples of this practical performance and how assessment will occur must be clearly distinguished to candidates. Every effort should be made for members to not only complete the theory portion of Block 1 but must prepare people to attend Block 2 by identifying why material is relevant with each EO presentation. Eleven of the fifteen EOs contained in this PO have associated practical performance assessment assigned throughout the course.

PO 402 Conduct Drill

The goal of this PO is to train the Junior Leader to conduct drill at the halt and on the march, with and without weapons. It also imparts knowledge with respect to ceremonial

drill and the execution of parade appointments. Assessment of this PO indicates that the requisite performance expected of the candidate will be in relation to confidence, bearing and determination as well as the actual execution of specific drill movements.

This PO is considered, from the onset as not applicable to CBT. However, the training can be delivered at a location other than a central training facility. For the purpose of training delivery it is recommended that the function of delivering this PO be delegated to the Militia Training Detachments (MTDs) located at Calgary and Edmonton.

There is one area applicable to CBT and that is EO 402.02 which is a knowledge only element and is not assessed either in a written examination or practically on the parade square. Due to the fact that it is only scheduled for two classroom periods during the present JLC it can easily be accommodated in any format including CBT, at the local armoury being conducted by the MTD or senior NCOs of the unit or at the central training facility.

PO 403 Instruct Personnel

The focus of this PO is to have the candidates prepare lesson plans and deliver both a skill and knowledge lesson. There are a number of possibilities for the delivery of this training. It must be noted that for the five days worth of training scheduled for this PO only one day is dedicated to the delivery of classroom instruction. The remainder are utilized for student presentation of skill and knowledge lessons and the assessment of those lessons.

The first recommendation that can be made refers directly to the possibility of distance learning. The knowledge material and the exercise of creating the lessons plans is applicable to being delivered through a CBT package. Further to this, decentralization of

the training to the MTDs remains an option as does the notion that it may be desirable to have instructors travel from the central training facility to the students. This may in the end, be more costly than any other option. However, due to the fact that classroom instruction is so vitally important to the CF a common standard must be maintained to ensure that all aspiring instructors meet the required level of proficiency.

Owing to the fact that reserve force personnel are not available for long periods of time and this training is scheduled for five days it becomes very difficult to have Regular Force instructors travel to accommodate what could be scheduled as two or three weekend trips to the unit sites. With this in mind and the desire to maintain a common standard of proficiency and achievement it is recommended that the practical portion of the material remain in block two of the current training schedule. The ten theory lessons associated with this EO are however applicable to delivery through CBT.

PO 404 Apply Policies, Principles, Regulations and Acts

The intent of this PO is to impart a knowledge of policies, principles, regulations and orders so that candidates can conduct research in these topic areas. Research is conducted in order that the student can conduct preliminary investigations, prepare charge reports, recommend recorded warning action for subordinates, recommend personnel for professional counselling, recognition or career/educational programmes, inform personnel of personnel assistance programmes, explain policy decisions to subordinates, and advise personnel of their individual rights. The ten EOs that are associated with this PO are:

EO 404.01 Locate and interpret regulations and orders contained in QR&Os, CFAOs and CFSOs;
EO 404.02 Apply regulations in QR&O vol 2 dealing with service offences;

EO 404.03 Apply QR&Os pertinent to arrest and custody;
EO 404.04 Prepare charge reports;
EO 404.05 Apply QR&Os pertaining to service tribunals;
EO 404.06 Administer personnel policies;
EO 404.07 Demonstrate a detailed knowledge of the CF Drug and Alcohol Policy;
EO 404.08 Demonstrate a detailed knowledge of the CF Personal Harassment and Mixed Gender Policies;
EO 404.09 Demonstrate a detailed knowledge of general safety principles and procedures; and
EO 404.10 Demonstrate a basic knowledge of the working relationship between CF members and DND employees.

This PO is composed of cognitive EOs that pertain to military policy, law and regulations. Verbs used in the performance statements indicate this to be the case. For example, locate and interpret information, apply regulations to given scenarios and finally demonstrate a detailed knowledge of the CF Drug and Alcohol Policy. This PO is selected in its entirety for distance learning and is applicable to a CBT format. Theory material can easily be presented, reference material can either be included on a CD-ROM or accessed at the nearest orderly room and home assignments can be completed and either e-mailed to the instructor or the student can use normal mail.

The examination of the material is an open book test. It is assumed that this examination is based upon military law and is focussed upon scenarios that the student must respond to by identifying the correct QR&O reference to determine whether or not the offence has occurred. This examination can be conducted at a distance using invigilating officers from the MTDs. This would not be dissimilar to the format of delivery utilized by the Officer Professional Development Program.

Table 7 illustrates the predominant focus of the training as centred on lecture/discussion and home assignments. All of these methods of instruction can be

facilitated through a computer mediated format.

Table 7: Assessment of PO 404- Apply policies, principles, regulations and acts.								
EO	Time	Instructional Method					Test Details	Sched
	# of 40 min pd	Lecture	Discussion	Video	Class Ex/ Home Assignment	Demo	PC404 Open Book Written Test	Block
404.01	2	x	x		x		x	1
404.02								1
404.03	2	x	x		x		x	1
404.04	2	x	x		x		x	1
404.05	2	x	x		x		x	1
404.06	1	x	x		x		x	1
404.07	2	x	x				x	1
404.08	3	x	x				x	1
404.09	2	x	x				not assessed	1
404.10	1	x	x				not assessed	1

PO 405 Communicate Orally and in Writing

The purpose of this PO is to develop the communications skills of the students with respect to both oral and written communications. There are in fact two expected tasks within this PO. The first performance is associated with written and second with oral communication skills.

The written communication involves the course candidates preparing military correspondence that encompasses messages, minutes on correspondence, periodic assessments, Personnel Evaluation Reports (PER) and memorandums. The oral communication techniques are involved with interviewing subordinates, counselling personnel, conducting PER interviews, and preparing and presenting briefings.

Associated with this PO are nine EOs that include:

EO 405.01 Prepare memorandum and minutes;
EO 405.02 Prepare a military message;
EO 405.03 Demonstrate a detailed knowledge of interviewing theory;
EO 405.04 Demonstrate a detailed knowledge of counselling theory;
EO 405.05 Conduct interviewing and counselling sessions;
EO 405.06 Demonstrate a detailed knowledge of the NCM PER system;
EO 405.07 Demonstrate a detailed knowledge of PER forms;
EO 405.08 Complete an NCM PER and conduct a PER interview; and
EO 405.09 Communicate orally.

Each of these EOs is cognitive in nature. The test details indicate that the material will be assessed in a knowledge oriented written performance check (PC). The method of instruction includes lecture, discussion and home assignments. Table 8 reveals the heavy emphasis on lecture, discussions and the assessment of students through the application of a written test. Home assignments are associated with EOs 405.01, .02, and .08. These can all be completed at a distance and transmitted to the instructor for evaluation.

EO 405.05 is the practical performance associated with EOs 405.03 and .04. Candidates are expected to attend a lecture, watch a video and then role play while conducting an interview or counselling session. Although this material and the associated performance is extremely important to the development of CF leaders, the teaching points are examined during the final written PC. The actual performance, while invaluable to the development of skill and experience, is not formally assessed. This EO, while not applicable to delivery through CBT, due to the face-to-face requirement of conducting an interview, is recommended to be conducted at a location other than a central training facility.

The total time allotted to this block of material concerning PERs constitutes eight

periods. This includes five lecture/discussion periods, and three periods of home assignment and interviews. The knowledge material for these EOs is applicable for delivery through a computer format. Furthermore, the entirety of these EOs can be delivered at a distance. As with the previous EOs concerning interviews and counselling, this material can be delivered at a location other than a central training establishment. Knowledge material could be delivered through a self-study CBT package culminating with weekend training to complete the practical requirements. Further to the interview EOs, the practical portion is not assessed. It is however, debriefed, therefore establishing an experience foundation upon which to develop future supervisory skills.

The standard for EO 405.09 dictates that members will:

a. give a 1 ½ minute impromptu presentation stating his/her name, rank, family, hometown, military background and expectations of this course; and

b. prepare and present a 5 minute briefing on his/her current job.[81]

The theoretical knowledge on how to plan and present an oral presentation or briefing is covered during two periods of lectures and discussion. The final 5 minute briefings are conducted during a two period time frame and the introductory speeches are covered in one period.

It is recommended that the lecture material be delivered through a pre-course study package that utilizes a CBT format. It is further recommended that, although not appropriate for CBT, the five minute briefings, be conducted at a decentralized location. This perhaps could be conducted by the local MTDs.

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[81] Ibid, p.4-405-1/20.

Table 8: Assessment of PO 405- Communicate Orally and in Writing								
EO	Time	Instructional Method					Test Details	Sched
	# of 40 min pd	Lecture	Discussion	Video	Class Ex/ Home Assignment	Demo	PC written exam	Block
405.01	3	x	x		x		x	1
405.02	3	x			x		x	1
405.03	1	x	x				x	1
405.04	2	x	x				x	1
405.05	4	x	x	x		x	x	1
405.06	2	x	x				x	1
405.07	1	x	x				x	1
405.08	5	x	x		x	x	x	1
405.09	5	x	x				not tested	1

Proposed Options for Distance Learning Delivery

At this point it is pertinent to discuss the relevant options available for the decentralization and application of distance learning through a computer mediated format. The following three options interpret the course as established into manageable blocks or modules. Each has characteristics focussing on the requirement for decentralization, employment of CBT and the requirement to remain ensconced at a central training establishment.

Option 1

This option involves the scenario as indicated in the current JLC training plan. The course is divided into two blocks. All training in Block 1 is identified as being eligible for distribution. This encompasses most of the knowledge material contained in PO 401 with the exception of EOs 401.05, .07, .08, .10 through .12 and 401.15. All of PO 402 is listed as being distributed with the exception of EO 402.03 Parade Appointments. The

knowledge components of PO 403 are selected for distribution with only the practical assessment of delivering a skill and knowledge lesson remaining in Block 2. All of POs 404 and 405 are designated as part of Block 1 training and are therefore nominated for distribution. This distribution of training would constitute 12 of 23 days worth of course material. In percentage terms this represents 52% of the course being allocated for distribution. Unfortunately, the training plan does not identify how Block 1 training would be delivered to the candidates. It is assumed that either a paper based programmed instructional package or CBT product was envisioned to deliver the knowledge material and the practical drill periods would be conducted and evaluated by either the units having personnel loaded on the course or the local Militia Training Detachments. The TP also fails to indicate how and by whom the written tests would be distributed and administered.

Option 2

Following careful consideration of the material in the training plan, Option 2 was determined to modularise the training in logical blocks differentiating between knowledge components, practical performance associated with garrison employment and field exercises associated with small party tasks.

The course would therefore be divided into three blocks. Block 1 would contain the knowledge material required by the course candidates and would be delivered through a CBT product. Assignments such as written communications, for example "write a memorandum," would be completed on the computer and electronically transmitted to the instructor at WATC for evaluation and feedback.

Block 2 training would encompass of instruction concerning PO 402, PO 403 and

the oral communication practical aspects of PO 405 including conducting interviews and counselling sessions, PER interviews and conducting briefings. In addition to this material the unit responsible for the conduct of training would be further responsible for the administration and invigilation of written examinations as they relate to POs 401, 404 and 405. It was envisioned that responsibility for course design, evaluation instruments and overall course monitoring would rest with WATC. The conduct of Block 2 training would be the responsibility of the MTDs located at Calgary and Edmonton. Recent discussions with the Commanding Officer of the Calgary MTD reveals that they are an "under utilised resource"[82] within the brigade and would be able to handle the workload.

Block 3 training would involve the practical assessment of the student in leadership roles associated with small party tasks. This concentration of material must remain with WATC due to the requirement for personnel to gain access to suitable training areas and the resources that are involved. The number of personnel participating in the decentralised program will also have an adverse affect upon the desired results and standard as the population may be to low to conduct the assigned tasks. Therefore the concentration of personnel and resources is vital to the completion of the course. This only can exist at WATC. Furthermore, the major portion of the assessment and the proportion of grades is associated with this evaluation. It is vitally important that all course members receive assessment against the same standard over time.

Finally, EO 402.03 Parade Appointments is associated with this block as the material culminates with the graduation parade for the course. This EO will foster a sense

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[82]Discussions with the CO of the MTD located at Calgary, April 1999.

of esprit de corps and accomplishment within the graduates as they complete all three blocks of training.

Table 9 illustrates the breakdown by block of the material and the present number and percentage of periods associated with each PO/EO.

Table 9: Option 2 - JLC Delivery				
Block 1 - Knowledge material delivered by CBT.				
PO/EO	**Description**	**# of periods (current JLC)**	**# of days (current JLC)**	**% of course**
401	all knowledge EOs	33	3.3	14.3
402.02	Ceremonial drill	2	0.2	0.9
403	knowledge lessons	11	1.1	4.8
404	entire content of this PO	19	1.9	8.3
405	written communication and knowledge material associated with interview theory and PERs	12	1.2	5.2
Total		**77**	**7.7**	**33.5 %**
Block 2 - Decentralised material to MTDs and administration of written exams.				
401	PC written exam	2	0.2	0.9
402.02	Drill practice sessions	10	1	4.3
402	Practical PC- Conduct Drill	8	0.8	3.5
403	Practical PC- Present Skill and Knowledge Lessons	33*	4.7	20.4
404	PC- Open book exam	2	0.2	0.9
405	PC- Written exam	2.5	0.25	1.1
405.05	Interview Skills	4	0.4	1.7
405.08	PER interviews	5	0.5	2.2
405.09	Oral Communications- Briefings	5	0.5	2.2
Total		**38.5 (40 min pds) + *33 (60 min pds)**	**8.6**	**37.2 %**
Block 3 - Western Area Training Centre				
401	PC - Small Party Tasks	38	3.8	16.5
402.03	Parade Appointments	8	0.8	3.5
Total		**46**	**4.6**	**20 %**

Admin Periods	Administration periods not allocated to any block of training. Used for in-clearance, issue of weapons and stores, COs address etc.	14	1.4	6.4

In a final assessment of Option 2 it is clearly evident that if the knowledge material were established in a home study package and the concentration of POs 402 and 403 were allocated to be delivered through distance learning, 70.7 percent of the course could be delivered at a location other than a central training establishment.

Option 3

This option explores the possibility once again utilising three blocks of training however, Blocks 2 and 3 are modified to account for the number of candidates attending the course. It is observed that only a limited number of personnel could be available at any one time in either Edmonton or Calgary; therefore there may not be sufficient numbers to properly conduct POs 402 and 403. These POs would require a minimum number of people for the conduct of drill and teaching a lesson. Therefore, it is recommended in this option that the material remain in the Block 3 portion of the training. The cognitive material would still be decentralised using a CBT product while only minor portions of the course, the oral communication aspect of PO 405, along with the administration of written examinations would be devolved to the MTDs.

Table 10: Option 3 - JLC Delivery				
Block 1 - Knowledge material delivered by CBT.				
PO/EO	**Description**	**# of periods (current JLC)**	**# of days (current JLC)**	**% of course**
401	all knowledge EOs	33	3.3	14.3
404	entire content of this PO	19	1.9	8.3
405	written communication and knowledge material associated with interview theory and PERs	12	1.2	5.2
Total		**64**	**6.4**	**27.8 %**
Block 2 - Decentralised material to MTDs and administration of written exams.				
401	PC written exam	2	0.2	0.9
404	PC- Open book exam	2	0.2	0.9
405	PC- Written exam	2.5	0.25	1.1
405.05	Interview Skills	4	0.4	1.7
405.08	PER interviews	5	0.5	2.2
405.09	Oral Communications- Briefings	5	0.5	2.2
Total		**20.5**	**2.05**	**8.9 %**
Block 3 - Western Area Training Centre				
401	PC - Small Party Tasks	38	3.8	16.5
402.01	Drill practice sessions	10	1	4.3
402.02	Ceremonial drill	2	0.2	0.9
402.03	Parade Appointments	8	0.8	3.5
402	Practical PC- Conduct Drill	8	0.8	3.5
403	knowledge lessons (theory material)	11	1.1	4.8
403	Practical PC- Present Skill and Knowledge Lessons	33*	4.7	20.4
Total		**77 (40 min pd) + 33 (60 min pd)**	**12.4**	**53.9%**
Admin Periods	Administration periods not allocated to any block of training. Used for in-clearance, issue of weapons and stores, COs address etc.	14	1.4	6.4

It the end, option three would allow the inclusion of a CBT product to be utilised for delivery of the knowledge material at a distance, and essential classroom material, although not formally assessed would be delivered during Block 2. The invigilation of

written examinations would occur during Block 2 and would necessitate the scheduling of this block to be placed towards the end of Block 1 training. This would require candidates to conform to a rigorous schedule of home study in order to prepare for the Block 2 examinations. This material should all be scheduled prior to attending the Block 3 portion of the course.

JLC Feasibility Assessment

This section will outline the cost of current training and compare it to the delineated options contained in Chapters 4 concerning the JLC. The current cost of the JLC, based upon a maximum student capacity of 36 candidates is $211,161.00. This is fully outlined in Table 11. This constitutes a daily cost of $7281.41 and a daily cost per student equal to $202.26 with a course cost of $4,677.04 per student.[83]

Table 11- Cost of Current JLC		
Item	Cost 29 Training Days	Cost 23 Training Days
Instructor Pay	$37,876.00	$30,039.59
Temporary Duty and Travel Expenses (Instructors)	$2,448.00	$1,941.52
IMP Rations and Fresh Rations	$20,275.00	$16,080.17
Stationary	$3,600.00	$3,600.00
Laundry	$100.00	$100.00
Petroleum, Oil and Lubricants (POL)	$150.00	$150.00
Printing	$400.00	$400.00
Training Aids	$50.00	$50.00
Class C Stores	$50.00	$50.00
Reserve Student Pay	$146,213.00	$115,962.03
Total (Course)	**$211,161.00**	**$168,373.31**

[83] Interviews with Individual Training Officer, WATC, March to May 1999.

Total (per student/course)(based upon 36 students)	$5,865.58	$4,677.04

With the exception of Reserve student pay the course total is equal to $64,948.00. It is determined that the instructor pay costs are calculated based upon ten instructors, two of which are permanent staff. These permanent staff would be required to act as administrators of any implemented CBT product, therefore, the cost for instructional staff would equate to eight personnel for a total expenditure of $30,300.80. If 27.8% of the course were to be delivered through a CBT product, as outlined in Option 3, the reduction in corresponding costs would equal $14,740.61. When considered over the four scheduled courses during the fiscal year 1998/99 the amount totals $58,962.44. This figure is based upon a reduction in the instructor, temporary duty, and rations costs associated with the course. It is assumed that members would receive full pay for working on the program whether at a central training facility or at a distance. Furthermore, it is determined that the remaining course costs would persist virtually the same regardless of the method of delivery.

If the scenario developed at Option 2 of chapter 4 were to be realised the parallelling reductions associated with 33.5% of the course being delivered through CBT would amount to $17,762.98 for one course, while the sum increases to $71,051.92 when affiliated with the four serials that were conducted in 1998/99.

Receipt of the response to the request for quotation (enclosed at Appendix D), at Appendix E reveals that the CBT product associated with all options for the JLC would

cost approximately $47.000.00. This is extrapolated below at Table 12.[84]

Table 12- *i.com Productions* Quotation for CBT Product Development	
Item	Cost
Programming	$10,000.00
Project Management	$6,000.00
Graphic Design	$5,000.00
Audio	$3,000.00
Content Integration	$10,000.00
Video Encoding/Integration	$1,000.00
French Language Version	$12,000.00
Total	**$47,000.00**

It can be concluded from this information that it is feasible from a cost standpoint to develop and implement a CBT product for the delivery of the knowledge components of the Junior Leadership Course. It can also be postulated that based solely upon the training statistics compiled from 41 CBG HQ that the requirement exists to execute such an initiative that will bring the requisite training to the target audience. In effect 94 personnel were nominated to receive the training during the 1998/99 fiscal year and only 45 attended the course. With the advent of a CBT package coupled with attendance at a training facility for a shortened period of time would increase the trained personnel within the brigade. The training throughput is illustrated at Table 13[85].

[84] I.com Productions was selected for this project due to their past and present involvement in developing CBT for the CF, their knowledge of the CFITES and their location in Calgary.

[85] Information received from 41 CBG HQ, G3 Training NCO, 20 Jan 1999.

Table 13: JLC Training 1 April 1998 to 31 March 1999					
	Course 1 May- June 98	Course 2 May- June 98	Course 3 May- June 98	Course 4 June-July 98	Total
Nominated	21	31	32	10	94
Loaded	14	13	12	6	45
Passed	10	10	9	3	32
Returned To Unit	3	2	1	0	6
Cancelled	1	1	0	0	2
Voluntary Withdrawal	0	3	3	4	10
Not Selected	5	13	16	3	37
Placed on another course	2	2	3	0	7

The cost of developing the CBT product when compared to the initial cost savings in instructor, temporary duty and ration costs would more than pay for itself in the first year of implementation. Subsequent training years would actually realise a savings while increasing the potential number of trained personnel. The savings realised as a result of a CBT initiative can and should be utilised to ensure that the course administrators are trained to facilitate the program.

It can further be deduced that the decentralization of training to the MTDs will further enhance cost savings by decreasing further the temporary duty, ration, laundry and POL costs associated with the course.

Summary

Alternate forms for delivering the training must be considered in order to meet requirements for the training of Reserve JNCOs. It cannot be emphasised more strongly that the production of Junior Leaders is essential to the esprit de corps, discipline, teamwork and confidence of all members of the CF. With these concepts in mind only

segments of the current JLC can be recommended for distance education and CBT.

Primarily, the knowledge components of all of the EOs are applicable for delivery through CBT. However, course designers must be concerned with fragmenting the course to such a degree that teamwork and leadership skills do not have time to develop in a formal course atmosphere. Distance learning scenarios must also be examined closely to prevent the over fragmenting of the course to the extent that competent and confident junior leaders are not graduated from the program.

Chapter 5
Militia Officer Staff Course Assessment

Introduction

The purpose of the Militia Officer Staff Course (MOSC) is to prepare officers to perform the administrative and staff functions of a junior officer employed at a unit or headquarters. Training for this requirement is achieved through a combination of home study and attendance at a formal course. "The knowledge gained through home study will be applied during the syndicate discussions and assignments undertaken during formal course training."[86] In its present state the MOSC constitutes 18 training days. This was comprised of an eight day home study package and a ten day formal course.

The documents for this evaluation were provided by the Western Area Training Centre, Wainwright, and at the time of conducting this research the course was undergoing revisions. The documents provided are in draft format and were subject to change during the construction of this presentation. Furthermore, areas of deficiency would be identified in the control documentation that will undoubtedly be rectified in the final versions of the documents. For the purposes of this examination it was determined that the more concise and precise document was the Training Standard and that the Training Plan was still in a very rudimentary, draft format. Both documents when held together provided a clear picture of the course content that could be evaluated for distance learning and multi-media development.

For the purpose of assessment each PO and EO was scrutinized heavily utilising the

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[86]Canada, Department of National Defence, Western Area Trining Centre. ***Course Training Standard- Militia Officer Staff Course***. (Wainwright: WATC, 1997), p.3.

checklist established at Chapter 3. An overview of the assessment and recommendations will be presented with respect to the POs. Enabling Objectives that possess unique importance will be singled out during the discussion.

The overall assessment of the Training Standard and Training Plan indicates that there is further developmental work to be completed to make these comprehensive and performance oriented documents. To illustrate this fact one only has to compare the first POs as they appear in the Training Standard and Training Plan. PO 401 in the Training Standard is recorded as Conduct Unit Administration, while PO 401 in the Training Plan states that the performance will be Supervise Subordinates. There was some degree of concern at the outset of this evaluation that the control documentation was not aligned. Further examination revealed that the Performance Objectives of the Training Standard in fact align with the Enabling Objectives of the Training Plan. There is however, considerable concern that material found in the Training Plan, if not corrected immediately, may remain causing enormous misinterpretation and confusion as to what performance is expected and to what standard the candidates will be assessed. This evaluation will examine each PO from the perspective of that found in the Training Standard.

Overall each performance objective is consistent with respect to the performance statement, conditions and the standard. Each depicts a specific entity of work and the assessment criteria mirror the performance expected in the operational environment. The analysis phase of the CFITES was adhered to in developing the Training Standard with all applicable chapters being completed. The enabling objectives clearly depict discrete areas of concentration that act as building blocks eventually culminating in the performance as

indicated in the PO.

PO 401 Conduct Unit Administration.

The aim of this PO is to have personnel perform the functions of monitoring orderly room personnel and procedures, supervising Quartermaster procedures, managing unit maintenance and vehicle files, conducting a programme of security measures, drafting and submitting reports and returns, staffing responsibilities for non-military use of DND property and organizing a Receiving and Despatch section. The following Enabling Objectives are identified with this PO:

EO 401.01 Supervise orderly room personnel;
EO 401.02 Explain QM administration;
EO 401.03 Prepare material resource reports and returns;
EO 401.04 Monitor the procedures for the handling of dangerous goods, including the storage and transport of weapons and ammunition;
EO 401.05 Staff the accident reporting process;
EO 401.06 Submit safety and security reports;
EO 401.07 Prepare armoury management documentation; and
EO 401.08 Explain procedures for organizing a conference.

All of the EOs are cognitive in nature and have associated exercises attached that involve the candidate dealing with various administrative matters, as outlined in the performance statement of each EO. The instructional strategies for all of the EOs involve home study, lectures, individual exercises and syndicate discussions and exercises. Confirmation and testing takes the form of written examinations, exercises, both individual and syndicate, and confirmation through discussion. It is determined that this material can be delivered through the design of a multi media product.

PO 402 Communicate effectively orally and in writing

The intent of this PO is have the officers develop their written and oral communications skills by speaking clearly, coherently and confidently to a group, display an understanding of the essence of oral communications, conduct interviews and write several forms of military correspondence. The EOs associated with this objective include:

EO 402.01 Demonstrate effective speaking; and
EO 402.02 Use principles and conventions of military writing.

The time allotted for EO 402.01 includes one period home study, 2 periods of individual preparation time and 4 periods of syndicate presentation and discussion. Of the seven periods of instruction three are dedicated to distance learning, while four are conducted at a training facility.

It was observed that the appropriate study material is contained in the home study package. Syndicate time is dedicated to presentations and assessments. It is recommended that the study material be considered for conversion to CBT. The syndicate portion should be maintained in its present state, however it must be noted that presentations and assessment does not require attendance at a central training establishment. This aspect of the training could be delivered at a distance with either the instructors travelling from WATC to the students or by the local MTD. The cognitive material is at present delivered through a paper based home study package. This information should be considered for delivery by a technological format.

Testing involves a ten minute presentation by each student during syndicate periods. It is obvious that computer based technology cannot replace the face-to-face

performance orientation for the completion of this task.

EO 402.02 is cognitive in nature and the students are evaluated by creating various forms of military correspondence. Review of the training time for this EO presents a dilemma. At the onset of the breakdown this area is described as requiring 24 periods for completion. However the individual period numbers when added equals 25. Furthermore, the breakdown of the topic area "uses principles and conventions of military writing" states that four periods are required for completion but when individual periods are examined between the home study package and the formal course the total equals 6 periods. These breakdowns require review and possible revision as they will impact upon the instructional time and resources required to conduct the course whether it be delivered in its present format or CBT.

With respect to distance education and CBT this material can be delivered through a technological medium. The material contained in the home study package can be presented in this format. Assignments can be completed and E-mailed or sent by traditional postage to the instructor for evaluation and returned to the student.

PO 403 Plan and Coordinate Training

The essence of this PO is to training officers in their rolls as supervisors within the training milieu. The personnel are trained to supervise both individual and collective training by supervising instructors, maintaining trainee files, programming a course, drafting training directives, planning refresher training and supervising the use of non-DND resources. The EOs associated with this PO include:

EO 403.01 Supervise instructors;

EO 403.02 Maintain a student file and write a course report from the file;
EO 403.03 Write a unit training plan;
EO 403.04 Plan and organize collective training; and
EO 403.05 Plan and organize individual training.

It is difficult, due to the requirement to monitor actual periods of instruction, to recommend EO 403.01 for delivery through a CBT product. In fact it is recommended that this EO remain unchanged. The material delivered to the candidate in the home study package is cognitive in nature and lays the foundation upon which the student will monitor a period of instruction. The candidate must first develop an understanding of instructional techniques. This is confirmed ultimately through a ten minute period of instruction that will be monitored by another student. Although the assessment of a period of instruction is not recommended to be conducted through a CBT format, this portion of the course, with only eight periods of instruction, can be conducted at a location other than a central facility.

EO 403.02 details that the candidate gain a knowledge of the contents of the student file, the procedures for properly completing the course report, composition of narratives, and distribution, security and disposal procedures for the reports. This material is covered in the home study precis and culminates with an assignment evaluated by the DS during the formal course portion.

It is recommended that this EO be delivered through a format utilizing computer technology. Knowledge material currently delivered through the home study package should be converted. Furthermore the scenario including the mock student file can be distributed in an electronic format and course reports completed at a distance. Completed course reports can be E-mailed, assessed by the DS and returned to the student.

EO 403.03 is cognitive in nature culminating with syndicate exercises involving the creation of a unit training plan and budget. The knowledge for this EO is delivered through the home study package and a lecture during the formal course. The performance of candidates is evaluated through syndicate exercises conducted at the central training facility. This material can be delivered by alternate means and is therefore recommended for delivery through CBT.

EO 403.04, similar to the previous EO, has a high degree of syndicate evaluation. Knowledge material is delivered through the home study precis. Exercises and evaluation are conducted as syndicates. The time paragraph indicates ten periods of syndicate involvement during the phase 2 portion of the course. This dedication of time can be reduced by adopting a distance approach to the conduct of training. It is therefore recommended that this EO be considered for conversion to CBT.

EO 403.05 involves the officer planning and organizing individual training within the framework of the CFITES. The material is cognitive in nature and culminates in an exercise where the candidate must develop a weekend training plan. The instructional strategies used to deliver this material include, home study, lectures and syndicate exercises. This material is deemed appropriate to be delivered through a system using CBT. It must be noted at this juncture that the CF Manuals of Individual Training are undergoing revision. Newly developed documents are available through the DND home page. The advent of these changed documents will mandate a review and possible revision of the material contained in this EO.

PO 404 Apply military law

The intention of this PO is to prepare officers to:

1. Determine incidents that may lead to the laying of charges:
2. Conduct pre-trial procedures in accordance with reference material:
3. Conduct post trial procedures:
4. Act as an assisting officer and/or attending officer at a summary trial: and
5. Act as a delegated officer and dispose of a charge in a timely manner.[87]

The EOs associated with this PO include:

EO 404.01 Prepare a Charge Report: and
EO 404.02 Act as a delegated or assisting officer.

The teaching points for EO 404.01 involve the officer gaining a knowledge of specific Queen's Regulations and Orders (QR&Os) references. These are then applied to a scenario culminating with the student preparing a charge report. Again, as with previous EOs, the methods of instruction chosen for this topic include home study, individual exercises and syndicate discussion. The EO clearly outlines that the appropriate reference material is presented in the home study precis and "the successful completion of a Charge Report based up a scenario in the syndicate discussion, will demonstrate the trainee's capability in a realistic manner."[88]

The subject material and exercise are applicable for delivery by CBT. The knowledge and reference material can be delivered through a computer medium and the exercise of preparing a Charge Report completed "on-line."

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[87]Canada, Department of National Defence, Western Area Training Centre, ***Course Training Standard- Militia Officer Staff Course***, np, and Canada, Department of National Defence, Western Area Training Centre, ***Course Training Plan- Militia Officer Staff Course*** (Wainwright: WATC, 1997), p.4-38/82.

[88]Canada, Department of National Defence, Western Area Training Centre, ***Course Training Plan- Militia Officer Staff Course***, p.4-40/82.

EO 404.02 involves the course candidates studying the material concerning their execution in the roles of either a delegated officer or assisting officer in the military legal process. The instruction methods include the home study of reference material and the acting of delegated or assisting officer in a "mock" summary trial.

Although the reference material can be delivered through CBT, the actual performance in one of the described roles cannot. It is recommended that the conduct of this EO remain in its present state, knowledge material delivered through a distance learning scenario and the face-to-face instruction held during a formal course atmosphere. That is to say that trainees attend a formal course to participate in the role playing and assessment as delegated, or assisting officers.

This EO however, does not require attendance at a central training establishment. It can be delivered by instructors travelling to students or by the local MTDs. Decentralizing the training must remain an option for this EO as it only has seven periods of instruction. This constitutes less than one full day of instruction.

PO 405 and PO 407 Not Allocated

The current Training Standard indicates that these performance objectives are no longer applicable. It also indicates that the document was prepared in sequence with other documents of courses where one would find these POs. The preface and Chapter 1 of the TS do not outline any such scenario. Therefore it is recommended that these POs be removed and remainder of the objectives be numbered to reflect an uninterrupted sequence.

PO 406 Administer Personnel

The purpose of this PO is to permit candidates to prepare personnel reports and returns including annual historical reports, recruit advertising budgets and reports on injuries, staff grievances, staff security clearances and screening requests, enforce the Canadian Human Rights Act and staff requests pertaining to Freedom of Information, monitor unit establishments, conduct Summary Investigations and explain procedures for a Board of Inquiry.

The EOs associated with this PO are:

EO 406.01 Explain the purpose of the Annual Historical Report;
EO 406.02 Explain Total Force Recruiting and Advertising;
EO 406.03 Explain the CF Grievance System;
EO 406.04 Explain the CF security clearance programme;
EO 406.05 Explain the fundamentals of the Canadian Human Rights Act and the Freedom of Information Act;
EO 406.06 Explain the organization and manning of the Canadian Forces;
EO 406.07 Staff a Summary Investigation; and
EO 406.08 Explain procedures for a Board of Inquiry.

EOs 406.01 through .04 and .06 have been developed and appear in a similar format. The five are cognitive in nature and the teaching points reflect the essential material to "explain" each of the topics. The necessary subject content is contained in the home study precis and candidates are evaluated through a written test during the formal training portion of the course.

The material contained in these EOs is applicable to distance learning and CBT. Evaluation of the candidates can be conducted at a distance with either senior unit officers or member of the MTDs acting as invigilator.

Similar to the preceding five EOs, this objective (EO 406.05) is the same in terms of format, delivery of the material and evaluation of the candidates. There is however, one notable exception, this being the attendance at a lecture conducted by a Subject Matter Expert. This lecture occurs during phase 2 training.

Recommendations for this EO remain the same as those identified in the previous sections covering EOs 406.01 to 406.06. The lecture delivered during phase 2, if essential, can be conducted at a distance. The time allocation paragraph indicates that the lecture will coincide with EO 402.02. This is identified as delivered by AJAG staff. It is recommended that this can be delivered at a location other than a central training facility.

The final two EOs, EO 406.07 and .08, involves the candidate completing a Summary Investigation and explaining the procedures for a Board of Inquiry. The EOs are cognitive in nature and it is recommended that this EO be considered for CBT. The reference material and assignment can be delivered through this format and the completed report can be electronically sent to the instruction staff for evaluation. The feedback to the student and any further questions can be transmitted through electronic mail to the entire course therefore supporting and facilitating any group or syndicate work that needs to be preformed.

PO 408 Administer financial resources

The aim of this objective is to have trainees administer financial resources by preparing a training budget, monitoring audit procedures for public funds and non-public fund institutes, completing General Allowance Claims, and administering public and non-public funds, non-public property and institutes.

The EOs associated with this PO are:

EO 408.01 Explain basic bookkeeping practice;
EO 408.02 Administer unit funds and unit held non-public property;
EO 408.03 Administer institutes and institute held non-public property;
EO 408.04 Audit a non-public fund institute; and
EO 408.05 Prepare a CF 52 General Allowances claim to claim either public funds or a public grant.

EO 408.01 forms the foundation upon which the other EOs are established. It is cognitive in nature and is evaluated by the candidate completing a self marking questionnaire. The teaching points indicate a basic knowledge of financial matters in order that the trainee "be able to read a financial statement in order to make reasoned deductions."[89] It is recommended that the subject matter, any self mark questionnaires and any assignments be delivered through an instructional strategy incorporating CBT.

The dominant portion of time allocated to EO 408.02 rests with the home study package. One period is dedicated to lecture and discussion during the phase 2 portion of the course. "Individual preparation time during Phase 1 [home study] teaches concepts, LDE [Lecture, Discussion, Exercise] reinforces and confirms knowledge and the assignment develops proficiency." It is recommended that this material be delivered through electronic means. The knowledge material can be presented through this medium, the self marking questions can confirm knowledge and the assignment will undoubtedly develop proficiency. Completed assignments should be transmitted to instructional staff in an electronic format assessed and returned to the students with comments attached.

The standard statements for EOs 408.03 through .05 clearly identifies that the

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[89] Ibid. p. 4-60/82.

"trainee must list the day to day and long term control procedures for effective mess operation; conduct an internal audit and apply for a public grant," respectively, in relation to the stated EOs. The material is cognitive in nature and culminates with a performance oriented assignment. The time allocation indicates three periods of home study, two periods of phase 2 sub-syndicate work and one period of syndicate discussion. It is recommended that this material be developed and delivered through CBT. The knowledge material can be presented through this medium and the assignment completed, transmitted, evaluated and returned on-line.

PO 409 Administer career management policy.

This final PO prepares the students to maintain Unit Employment Record sheets, write a PER and conduct a performance interview, write a staff assessment of a subordinate, conduct a program of disciplinary measures to include counselling and probation, recorded warning, report of shortcomings and reproof, action requests for transfer between units, areas, commands and occupational transfers and finally provide advice on Militia career progression.

The EOs associated with this PO include:

EO 409.01 Make entries to each type of UER forms;
EO 409.02 Write a PER narrative;
EO 409.03 Perform intermediate counselling techniques;
EO 409.04 Conduct a programme of administrative measures;
EO 409.05 Action requests for individuals transfers between units, areas and commands and an occupational transfer; and
EO 409.06 Explain MITCP and RESO career progression.

EO 409.01 is assigned three periods for the coverage of this material. One period is

assigned to phase 1 and two periods to phase 2. Instructional methods include home study, an assignment and syndicate discussion. Phase 1 training involves gaining an appreciation of the CF administrative reference material. Phase 2 training indicates that the officer will "maintain a UER by completing appropriate UER forms."[90]

The substantiation paragraph details that the home study package provides the necessary information. The assignment reviews the details and the syndicate discussion confirms the knowledge. It is recommended that the knowledge material and the assignment be delivered through a CBT format.

As with many of the preceding EOs the structure of this material (EO 409.02) includes home study, practical assignment and syndicate discussion. The standard delineates that the trainee will complete a PER narrative based upon a scenario and write a letter of assessment on a subordinate. Each of these tasks and the associated reference material is conducive to be completed through a CBT format.

Although the material can be delivered and assessed through electronic means, the syndicate discussion associated with this material would remain an important asset to trainees. This subject matter is prone to frequent changes both in policy and format. It would therefore be advantageous to retain the syndicate discussions. These can be delivered through a CBT product employing a bulletin board.

EO 409.03 involves, what has become the norm, home study, lecture, and syndicate discussions. There is however one area of practical performance associated with the EO that cannot be executed through a CBT format. This requirement consists of a counselling

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[90] Ibid p.4-71/82.

interview conducted by the trainee. The substantiation paragraph of the EO describes the knowledge material as being contained in the home study precis. "The lecture reviews the material and the conduct of the interview will [develop] and confirm the trainee's ability."[91]

It is recommended that the knowledge material be delivered through a CBT format. The necessity and importance of maintaining the face-to-face interviews negates any recommendation for the exercise to be electronically controlled. Therefore the six periods of material associated with phase 2 training should be maintained. This material can be delivered at a location other than a central training facility.

EOs 409.04 through .06 are all structured employing a combination of home study, assignments and syndicate discussions. The material is cognitive in nature and as with previous EOs, the home study material and the assignment can be completed through CBT. Furthermore, syndicate discussions can be facilitated by using electronic mail and bulletin boards.

Proposed Options for Distance Learning Delivery

At this juncture it is relevant to discuss the options as they relate to the delivery of the course through a CBT platform. Two options are presented here, the first being the maintenance of the status quo and the second relating to the overall application of CBT to the maximum extent in relation to the course content.

Option 1

This option remains the status quo. At present the course is designed with distance learning concepts at the forefront. The initial home study package constitutes eight days of

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[91] Ibid. p. 4-73/82.

training while the formal course portion comprises ten days. In percentage terms this represents 44% of the course material as being distributed. Training statistics reveal that 72% of those personnel nominated for, and qualified to attend, the training received the required instruction. This is further amplified in Table 14[92]. It must be construed that this figure is significant and that the majority of brigade personnel that require the training are in receipt of the course.

Table 14: MOSC Training 1 April 1998 to 31 March 1999			
	Course 1 May '98	Course 2 Jan 99	Total
Nominated	16	9	25
Loaded	12	6	18
Passed	12	6	18
Return To Unit (RTU)	0	0	0
Cancelled	1	1	2
Voluntary Withdrawal (not qualified to attend)	3	2	5
Not Selected	0	0	0
Placed on another course	0	0	0

It must be concluded from this material that the current option is working for the delivery of the training for 41 CBG personnel. Although the personnel are geographically dispersed they are attending and completing the required course material. Moreover, the low number of course attendees may negate any expense associated with changing the course to a predominantly CBT package. However, only the analysis of the next option can bring forward whether or not there would be any advantages to developing the course into electronic format. Furthermore, these statistics represent 41 CBG, subsequent research

[92]Information received from 41 CBG HQ, G3 Training NCO, 20 Jan 1999.

must be conducted to determine if these statistics are representative of LFWA and the national picture.

Option 2

This option will explore the aspect of significantly delivering the training through CBT and decentralization. As a result of the course assessment there is only four days worth of actual training required in a traditional classroom environment. The bulk of the cognitive material and assignments are contained in the home study package. It is proposed that the entire curriculum with the exception of the four days of face-to-face instruction be delivered through a CBT package. This would require developmental work beyond the present home study package to include syndicate exercises and discussions being distributed through electronic mail and bulletin boards. A recent conversation with the course administrator at WATC revealed that "the home study package brings the student to a basic level of knowledge, while the formal course brings the candidates to a detailed level as a result of the syndicate exercises and discussions."[93] As discussed in chapter 2 higher orders of cognitive processing can be achieved through the use of CBT. This application of technology would in effect reduce or remove any duplication of training that already exists.

Therefore the end result would be a course in which 14 of the 18 days of training would be delivered through a CBT forum. This equates to 78% of the course being conveyed through electronic means. Furthermore, the four remaining days that require face-to-face interaction can be accomplished through decentralization of training to the MTDs. Scheduling of classes can then occur on weekends over an extended period of time. This

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[93] Telephone conversation Reserve Professional Development Coordinator, WATC, Mar 99.

will require that WATC put in place a rigorous standards and course evaluation function, in order that the standard is maintained. The end result would be a course available to all eligible personnel void of any restrictions related to time or geography. Conversely, the remaining four days of the course can still be delivered at a central training facility, however it will be in a reduced format due to the CBT.

Feasibility Assessment

The current cost of the MOSC, based upon a student load of 40 personnel equates to $129,950.00. This is explicated at Table 15[94].

Table 15 - Cost of Current MOSC	
Item	Cost
Home study package (Reserve student pay) 8 days x 40 Lieutenants at incentive 2 ($95/day)	$30,400.00
Printing and mailing home study package (Printing $25/package)(Mailing $5/package)	$1,200.00
Sub Total - Home Study Package	**$31,600.00**
Instructor Pay	$25,190.00
Instructor Travel and Temporary Duty	$1,648.00
Rations	$7,872.00
Stationary	$1,200.00
Laundry	$200.00
POL	$300.00
Printing	$150.00
Training Aids	$50.00
Rentals (photocopier)	$300.00
Reserve Student Pay	$61,440.00
Sub Total - Course	**$98,350.00**
Total (Home study + Course)	**$129,950.00**
Total (per student/course)(based upon 40 students)	$3,248.75

[94]Interviews with Individual Training Officer, WATC, March to May 1999.

It has been established that based upon current training statistics, provided by 41 CBG HQ, the required number of personnel are receiving the training. Accordingly, it can be recommended that the current status of the course be maintained in order to maximise the current situation. However, the fact that today's military is faced with fiscal restraint, it is prudent to delineate any cost savings that may be present in the event that a CBT product was introduced for the delivery of the bulk of the material associated with this course. Option 2 identifies that 78% of the course can be distributed utilising CBT. This in effect would cause an overall reduction in the course associated with the costs identified at Table 15. This would equate to a 78% reduction of the home study printing, instructor salary, instructor travel and TD, rations, stationary, laundry, POL, printing, training aids, and rental (photocopier) costs. This results in a 78% reduction of $38,110.00 which equates to $ 29,725.80. Therefore it can be surmised that there would be a savings of $ 29,725.80 per course with a course load of 40 personnel. The remaining 22% of the course, with the exception of Reserve student pay, would cost $ 8384.20.

The development of the CBT package for delivery of the knowledge material associated with this course is determined to be equal to that identified for the JLC, which is a sum of $47,000.00. This information is extrapolated from Appendix E. When compared to the training throughput of 41 CBG personnel it is determined that the brigade would require a minimum of four course serials to run in order to recover the costs associated with the development of the CBT package. This however does not negate the reality that this proposed delivery may have Area and national implications associated with cost. Consequently, the recovery of expenses would be realised in a shorter time frame in

comparison to being solely associated with 41 CBG. It is assumed that there would be no reduction in the amount of Reserve student pay as a result of instillation of this training media.

Summary

This chapter has revealed that the majority of the course content associated with the MOSC is cognitive in nature. Furthermore, this material is consistently delivered through a combination of home study followed by lectures assignments and discussions in a formal course setting. These instructional strategies are all applicable for instillation within the framework of a CBT package. Two options were also presented that offer the choice of maintaining the status quo, that appears to be meeting the training and personnel requirements, or developing CBT to the maximum extent that would see approximately 78% of the course being delivered in this format. The feasibility assessment also reveals that the development of a CBT product is affordable, however the low training through-put with respect to 41 CBG may nullify any cost savings due to the time required to put personnel through the training before savings can be realised. Finally it must be established weather or not there is significant savings at an area and national level in the event that a CBT product was introduced at those levels of the CF Reserve Force structure.

Chapter 6
Summary and Recommendations for Further Action and Study

Introduction

In an environment of fiscal restraint, decreased personnel resources and the inability of personnel to gain access to the necessary time away from civilian employment it is necessary for Reserve Force training units to explore the possibilities of distance education and CBT. It is essential to consider every avenue available to train, to a high standard, the required number of persons annually.

Summary and Recommendations

This project examined the problem of determining what portions of the CF JLC and MOSC were applicable to distance learning utilizing a CBT package. Current CF doctrine states that the inclusion of distance education is an alternate form for delivering training and should be treated as *just another option*. This in conclusion is another option however, it should not be viewed as *just* another option. There are a number of variables associated with distance education that can in fact enhance the effectiveness and efficiency of training. To view it in this terminology portrays a lassie faire attitude that is not representative of the material.

This study has outlined the essential ingredients of the CFITES and civilian literature pertinent to the evaluation of course material for delivery through CBT. This resulted in a creative concept for the application of CBT and a checklist to be utilised during the assessment of the JLC and MOSC. The building of the checklist was grounded

in the literature reviewed in the course of preparing this study. The training tasks were assessed and those aspects that matched the attributes of the media were selected for distance learning utilising a CBT product. Future TS/TP boards must now be convened so that the necessary subject matter experts (SMEs) can assess the plausibility of the developments outlined in this paper. While working independently, it is impossible to consider all the factors as a non-JLC and MOSC SME. It is therefore essential that the required personnel review this material and provide feedback to the on-going discussion. Only through a team atmosphere and cooperation will the problems associated with Reserve Force training be rectified.

It is essential that the inclusion of distance learning methods be included in all TS and TP Writing Boards and that sound doctrine and guidance be established for the development and implementation of distance learning solutions. This thesis contributes to the aim of establishing that guidance. By reviewing the literature, developing the checklist and applying it to two courses it can be ascertained that distance learning options are appropriate for the development of the CF Reserve personnel. Currently, Reserve Force personnel experience difficulty in obtaining the necessary training due to a host of factors. Distance learning options will reduce the problems and enable "the right person to receive the right training at the right time." In the event that alternate delivery options are not implemented it can be foreseen that many persons may not receive the necessary career training thereby causing unacceptable attrition and, more importantly, creating environment where properly trained personnel may not be available in the event of deployment.

It has further been assessed that major portions of both the JLC and MOSC are

applicable for delivery through CBT. Specifically, between 37% and 71% of the Junior Leadership Course content is applicable to distance education with approximately 30% being applicable for delivery by CBT. The MOSC, on the other hand, has been assessed to have between 44% and 78% of its content applicable for CBT. Finally, it was determined that this pursuit is feasible from both a training through-put and cost standpoint.

It was advocated early in the report that the notion that distance learning and CBT is *just another option* is false. The alternate delivery aspects of the media involved, in fact form a subset of criteria that must be examined during all phases of the CFITES. In particular the selection of distance learning technologies will impact most heavily upon the Analysis, Design and Development phases of the process. CF training personnel require the requisite knowledge and training to confront this changing training environment. Although CFTDC offers courses to alleviate some of the organizational stress associated with the adoption of alternate delivery methods it is incumbent upon NDHQ to provide clear guidance with respect to distance learning and media selection. It is therefore recommended that the Directorate of Recruiting Education and Training consider the development of an additional volume to the *Manuals of Individual Training* addressing this subject.

There were several incidents that occurred during the creation of this paper that will provide stimulation for further study and analysis. First, the JLC has been extended from a 23 day to a 29 day course. It is recommended that the content concerning the six additional days be assessed to determine whether or not it is applicable to CBT.

The second incident occurred during February 1999. At this point in time it was

revealed that the Computer Learning Labs established in the local area armouries were being dismantled due to a lack of CBT to justify their existence. The computers were transferred to administrative roles within the brigade. Although this initiative solved some administrative problems within the formation it failed to assess the requirement for future CBT. It is recommended that the G6 Telecommunications staff reassess the need for these learning labs and begin to procure, in the event of CBT development, the requisite computers to allow personnel access to technology to complete the courses. It is recommended that this technology be no less than Pentium II, 233 MHz, and have full multimedia capability.

Third, it must be established whether or not NDHQ will allow for the accessing of material through the internet. It is therefore recommended that the G6, in concert with the G3 Training staff determine the essential security clearance requirements in the event that a CBT product is developed.

Fourth, training plan review boards must be convened to discuss the findings of this study. These boards must have the necessary subject matter experts in attendance in order to determine the will and time frame for development of any CBT initiative. This must include representatives of both the Regular and Reserve training staffs at WATC, members of the MTDs, DAT/Land Force Areas and 41 CBG HQ personnel.

Finally, an assessment must be launched to determine the extent to which reference material is contained on the DIN. During the preparation of this report numerous references were found in this venue that would support the development of CBT. It is recommended that a Digital Training Library be established for Land Forces Command and the CF. This

should include all of the reference material and future updates for any CBT product that is produced. It is recommended that such a library be established centrally, at the national level.

Conclusion

Although numerous portions of the courses under consideration are applicable for delivery through distance education and CBT the operational aim of the training must not be lost. CBT can only suit the scenario when the medium will support the performance objectives that are based upon a "real world" requirement. If diligence is not maintained to preserve this philosophy then the failure of the training system will result in personnel not having the necessary qualities to competently and confidently execute their assigned tasks.

Distance learning and Computer Based Training can produce the necessary graduates of the training programmes when it is designed, developed and implemented properly. The result will be more trained personnel at a reduced cost and potentially at a higher standard of achievement. This will culminate in a greater degree of job satisfaction, morale, esprit de corps and quality of life for those persons who choose the Reserves as a career.

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Appendix A
Delivery Methods and Media for Distance Learning

Traditional Training Delivery Method (Classroom Instruction)	
Definition An Instructor led learning situation that involves groups of learners in a place designated for instructional activity, usually in a centralized location such as a school, that is separate from the workplace. Conventional media such as chalkboards, print materials, and audio-visual devices are used to deliver training.	
Applications This method is very versatile and effective with a good instructor. Most training can be effectively conveyed this way. It may not be efficient or cost effective however.	
Advantages	**Disadvantages**
Instructional environment can be anywhere, including near the area where task is normally to be performed	The quality of the Instruction can vary greatly with the quality of the Instructors
Group size receiving instruction can vary, regardless of equipment	A standard of Instruction is difficult to maintain
Immediate Instructor feedback on learner progress	Content is hard to control
Instructor may modify the sequence or the presentation of instructional material as required	Little attention is paid to learner's learning style or attention span
The development time for instructional materials is relatively short; ratio is approximately 3:1(hours)	The pace of Instruction is set by the Instructor with lock step instruction for all learners
The Instructional materials are easily updated or modified	The scheduling of instruction is fixed
The interaction with both instructor and other students can be a significant factor in increased learning	The delivery method is fixed

Costs: Travel and accommodation costs for learners and instructors, temporary duty costs, training facility costs, support services, equipment and material costs. Instructor preparation time, delivery time and reproduction of course materials.

Print Media (Standard Text)	
Definition Print based materials that are sent to isolated learners	
Applications This type of media is appropriate for extremely isolated audience at a cognitive level only. Affective and Psychomotor domains could not be properly addressed using this method. It must be developed very thoroughly and comprehensively to allow the trainee to focus a learning path.	
Advantages	**Disadvantages**
Availability of courseware	Lack of Interactivity
Accessible anywhere, any time	Long Feedback cycle (generally)
User Friendly	Requires independent learning
Can be reviewed at will in any sequence	Requires competent level of literacy
Access mass audience in short period of time	Requires competent level of comprehension
Inexpensive to develop	Poor for developing higher level cognitive skills, such as problem solving
Ideal for teaching lower cognitive skills	Poor for developing motor skills.
Learning may be either linear or branched to allow for enrichment or remediation	

Print Media (Programmed text)	
Definition Print media that is designed comprehensively and thoroughly to provide a focus and basic feedback.	
Applications This type of media is appropriate for extremely isolated audience at a cognitive level only. Affective and Psychomotor domains could not be properly addressed using this method. It must be developed very thoroughly and comprehensively to allow the trainee to focus a learning path.	
Advantages	**Disadvantages**
Provides feedback and Interactivity	Instruction is in very small steps , may obscure broader view of concept.
Flexibility, accessible any time, any where.	Bulkiness of textbooks
Provides remedial information	Difficult to revise material
	Instructor role not clearly defined
	Not suitable for problem solving or decision making.

Standard Text: Costs: This is Generally a cost effective mode, particularly of delivered via postal service. It can become less cost effective as reproduction of materials each time the course is run adds up. In addition, revision of course materials must be taken into account. Training Instructors who require special skills to develop paper based training materials must be factored.
Programmed Text: Cost: High development costs, long development time.

Audio Cassettes	
Definition Verbal instruction sometimes with audio cues recorded on a typical cassette tape and distributed to audiences.	
Applications Good for cognitive and some affective applications. Applicable for distance delivery via mail.	
Advantages	**Disadvantages**
Material can be prepared quickly	Lack of feedback and interactivity
accessible any time, any where	May require reliance on postal service (downtime)
Communication can be personalized	Visual Representation not capable
Standardized equipment	Cannot address higher level cognitive skills
Integrates easily with other media	
Suitable for aural learning (music, language etc.)	
Trainees have limited control over pace of learning	
Good complement to written or visual material	

Cost: Equipment inexpensive. Cassettes inexpensive to produce.

Video Cassettes	
Definition This media incorporates text, audio and visual cues and demonstrations into one package, usually a VHS cassette tape.	
Applications Applicable for moderate levels of Cognitive, Affective and Psychomotor domains where interactivity and feedback are not an issue.	
Advantages	**Disadvantages**
Flexible, viewer can choose time to view material	Medium is relatively linear and lacks feedback and interactivity
Can be integrated with other forms of media	May require reliance on Postal service for distribution
Read/ write capability	Sequential access
Readily available	Poor handling of still images
Familiar to most audiences	Image quality quickly degrades with use
Long recording time (4-6 hours)	Does not Integrate well with computers
Trainees have limited control over pace of learning	Not suitable for achieving higher level cognitive skills
Appropriate for visual learning	Lacks Real time feedback and interactivity
Good for transmitting knowledge	Limited flexibility of course content
Can provide realism	
Can support group or independent study	
Addresses complex descriptions and procedures easily	

Computer Based Training (CBT, Internet)	
Definition CBT: Interactive educational experience in which the computer provides most of the stimulus and presents feedback based on student input. Internet: The same as above except the student logs on to a website to receive the course material.	
Applications CBT: CBT can be developed for most lessons which are relatively stable over time and have been traditionally taught through lecture, readings, case study, or individual exercises. It supports cognitive strategies requiring formative and/ or summative evaluations, or strategies which require application of previously learned material. Internet: Same as above.	
Advantages	**Disadvantages**
Interactivity between learner and Instructional Material	Users must be trained to the technology
Learners receive immediate and constant feedback	Computers are sensitive and volatile, especially when subjected to extensive use
Computers provide flexibility with regard to time and place of learning	Instructors require specialized skills for course development
Learning tends to be self paced	Pre-structured activities, menu driven. Students can be easily drawn off task.
Instruction can include cognitive as well as lower level affective and psychomotor objectives	The cost of hardware required for delivery is expensive
Variety of presentation modalities including audio, graphics, text, colours and animation (multimedia)	Development costs are high, but becoming more competitive. The development/ instructional hours ratio is about 300:1
CD-ROM expands available information	No short cuts are available for development
Internet vastly improves accessibility, and information	Adding complex feedback may significantly increase development costs
Remediation capability can be built in with privacy	Learner isolation/ lacks instructor interaction
Branching to suit learner	Fixed sequence of modules
Consistency of instruction	Lacks cooperative learning environment
Allows multisensory learning	Internet: Typically does not direct the path to be taken by the student.
Enables learners to remain in their own environment	Internet: Limited in its ability to direct specific learning or track student progress.
Decreases learning time	Internet: Student mastery of material is uncertain.
Reduces need for Instructors and assistants substantially	Internet: Will require detailed graphics
Motivates learners	Internet: Will require detailed electronic storage.
Internet: communications suited for high levels of interactivity	Multimedia: May lack standard operating software.
Internet: Resembles the adult learning process as higher levels of cognitive skills that are developed and the cognitive processes that occur.	

Internet: Discovery learning involving the continual construction and reorganization of knowledge to reflect the ways in which facts, concepts, procedures and principles are organized in memory.	
Multimedia: With the addition of video support, multi media can provide almost hands on learning of complex tasks while the interactive nature of multimedia allows for multiple alternatives.	

Cost: Can be very expensive to develop. CBT is cost effective when used appropriately. Delivery costs drop quickly once development is completed.

Computer Mediated Communication (CMC) **(Includes E-mail, computer conferencing etc.)**	
Definition CMC uses computer conferencing via personal computers and modems as a means of instruction. It provides instructor-student and student-student interaction in an asynchronous mode.	
Applications Developments are still being explored.	
Advantages	**Disadvantages**
Highly interactive, two-way asynchronous or synchronous communication	Availability of equipment
E-mail and bulletin boards invoke deeper analysis and reflection of messages	Instructors and students must be trained on technology
Standardization of equipment is not important (any computer with a modem will work)	Only small numbers of students can participate at one time
Greater variety of information can be transferred (text, graphics, programs, data files)	Requires specialized hardware and software
Allows the use of other computer applications software and database files	Relies heavily on students' reading comprehension and typing ability
The right software will allow student involvement and responses to be monitored and filed for future analysis	Often the pace of instruction/ discussion is slow because only one person at a time can be transmitting data/ information
Graphics can be included in the presentations.	Students are responsible for their own participatory learning.
Students usually work with same computer as they will on the job, therefore there is transfer of learning.	
These systems expand access to students regardless of location.	
They support interaction among students as individuals and as members of teams and between student and faculty.	
These systems provide access to data bases which can be down loaded and are available 24 hours.	
Students are responsible for their own participatory learning.	

Cost: Equipment can be expensive, programs can be expensive to produce.

Shared Graphics Devices **(Includes Facsimile, optical scanners, Telewriter, electronic blackboard (EBB) or tablet and slow scan or freeze frame video)**	
Definition These devices typically deliver print based and graphics quickly over long distances. Video methods are slightly more advanced delivering that media much like a television broadcast.	
Applications Using a combination of this devices, moderate levels of affective, cognitive and psychomotor domains can be addressed.	
Advantages	**Disadvantages**
TELEWRITER/EBB	TELEWRITER/EBB
Available for most computers	Generally session specific as to time
Allows remote blackboard type instruction	More lead time required than for traditional instruction
Instructor able to monitor students	Users must be trained to technology
Telewriters transmit graphic and textual information	Provides only written interaction unless combined with audio
EBB allows both voice and data transmission over a single line	
FACSIMILE, OPTICAL SCANNERS	FACSIMILE, OPTICAL SCANNERS
High speed and good quality transmission	High supply and line costs when transmitting large amounts of information
Practical alternative to postal and courier delivery for hard copy transfer	Data cannot be manipulated
SLOW SCAN /FREEZE FRAME VIDEO	SLOW SCAN / FREEZE FRAME VIDEO
Combines live visual with audio	Limited motion

Cost: Line charges can be high if large amounts of data transferred

Audio Conferencing **(Includes conference calls, conference calls with amplified speaker phone, desktop audio sets and audio teleconferencing)**	
Definition A system that enables two-way voice communications using phone lines.	
Applications Audio conferencing provides an excellent means for teaching short courses whose primary function is to pass on information. This system could be used with in conjunction with print media or other media.	
Advantages	**Disadvantages**
Telephone communication offers two way, real time, interactive communication between people at distant locations	No visual contact between learners and instructor
Can be multiple recipients or Instructors	Interaction modified by technological protocol
Can have multiple locations	Learning must occur at specified time and place
Lead time similar to traditional instruction	Initial costs can be high
Learning is interactive	Not appropriate for lectures
Familiar technology for trainers and trainees	Not appropriate for groups whose memberships constantly change
Easy to prepare	Not appropriate for instruction dependent on large number of visual cues
Not dependant upon students reading or comprehension levels.	Not appropriate for conveying lengthy procedures or instructions
Flexibility in time of presentation	No personal (first hand) contact
Guest speakers may be used to reinforce material	No support from other learners when participating alone at one's own site
May be linked with computer to provide graphics and photo stills during instruction	This system only allows voice communications and is not appropriate for higher levels of learning or psychomotor skills.
Possible to study topics that would not justify normal group instruction	Audio conferencing may not be appropriate for entire courses.
Provides excellent dissemination of lower cognitive levels of information.	
Audiographics	
Definition A system that enables two-way computer data and two-way audio interaction.	
Applications This medium is appropriate for courses that require electronic data transfer such as engineering and technical data courses.	
Advantages	**Disadvantages**
This system has the same advantages as audio conferencing, plus it allows graphic presentation and immediate two-way grahic feedback.	This system does not provide two-way video.
	Requires instructor training.
	Screen size may limit class size.

Cost: Long distance charges will be high

Video Conferencing/ Teleseminar
(Video conferencing includes full or limited motion two-way video with two-way audio. Teleseminar includes one-way video and two-way audio. Limited video options include slow scan video, picture phone and compressed video)

Definition
Video conferencing is a communication system that provides two-way video and two-way audio interaction between instructor and student. Teleseminar is a two-way telecommunications system that provides one-way video and two-way audio.

Applications
Most instructor led educational courses could use this technique and self taught seminar courses. Allows best interaction and feedback for distance learning that emanates traditional classroom instruction.

Advantages	Disadvantages
Learners have visual contact with instructor	Instruction modified by technical protocol
Instructors have visual contact with learners (two way video)	Learning must occur at specified time and place
Immediate interaction between instructor and learners	Technical expertise required to set up and operate equipment (Instructor training)
Immediate interaction between learners	Requires a large audience to make it cost effective
More individualized instruction	Initial cost outlay is prohibitive
Scheduling may be flexible	No personal (first hand) contact
Learning is interactive	No support from other learners when participating alone at one's own site
Students have some involvement in control of learning	Teleseminar: Only allows voice feedback from students. May require a facilitator at remote sites.
Possible to learn at one's own geographic location.	Teleseminar: Lack of visual feedback may hinder instructor performance.
Possible to study topics that would not justify normal group instruction	
Access to distant "expert" instructors is possible	
Allows for a large audience	
Ensures standardization	
Reduces need for travel	
Video conferencing: Adds the additional capability of visual feedback to the instructor and allows for evaluation by observation.	
Allows for higher levels of learning including performance training.	

Cost: High costs associated with satellite dishes, satellite usage, long distance charges, and equipment rental/ purchase.

References/ Compiled From:

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Syvertsen-Bitten E.A. ***Distributed Training in the Canadian Forces: A Decision Model***. Unpublished MA Thesis: University of Calgary, 1994;

United States. Department of Defence. United States Air Force. Air University. Maxwell Air Force Base. ***Distance Learning Curriculum Analysis and Media Selection***. Maxwell AFB Alabama: Air University, no date.

Appendix B
Canadian Forces Training Development Centre
Course Descriptions

Canadian Forces Training Development Centre
Course Descriptions

Instructional Techniques

AIM - This 5 day course trains officers and non-commissioned members (NCMs) in basic instructional duties to be used at Canadian Forces (CF) Schools.

OUTLINE OF TRAINING - Each candidate prepares and presents one 20 minute knowledge lesson and one 25 minute skill lesson. Candidates learn the basic instructional techniques necessary to ensure an effective and satisfying instructional experience.

PREREQUISITES - Candidates must be employed or selected for employment as an instructor.

Advanced Instructional Techniques

AIM - This 5 day course provides officers and NCMs with knowledge and skill to prepare, deliver and facilitate advanced instruction at CF Schools.

OUTLINE OF TRAINING - Candidates will be able to facilitate adult learning methods and processes in a military environment. The course will cover the design of adult learning and the delivery of training using guided discussions, case studies, teaching interviews as well as other adult learning strategies.

PREREQUISITES - Candidates must be employed or selected for employment as an instructor.

Instructor Supervisor

AIM - This 9 day course provides officers and NCMs with the knowledge and skills required to carry out their duties as instructor supervisors within CF Schools.

OUTLINE OF TRAINING - The course is group-paced with emphasis on participation. Course material is presented by formal lessons, demonstrations, syndicate exercises and individual assignments.

PREREQUISITES - Candidates must be employed or selected for employment as an Instructor Supervisor.

Interactive Courseware Design

AIM - This 14 day course provides officers and NCMs with the knowledge and skill to design and evaluate ICW.

OUTLINE OF TRAINING - This is a hands on course conducted within a multimedia laboratory. The course is conducted over a three week period. In week one candidates look at the suitability of using ICW as a delivery method, and the project management considerations involved in any ICW project. In week two the students focus on the design of an ICW programme and the evaluation of existing courseware. In week three the students develop an ICW lesson using software packages such as Quest-Net, Adobe Premiere, Adobe Photoshop, and Creative WaveStudio. Course material is presented through guided discussions, formal lessons, reading assignments, software tutorials, group exercises, and demonstrations.

PREREQUISITES - Candidates are expected to have qualified in training design and evaluation. In addition, they must be familiar with using Microsoft Windows based applications. Developers working in Quest are requested to bring templates, applications, and samples of projects if possible.

Training Manager

AIM - This 3 day course provides officers with knowledge of the CF training management system to allow them to implement and manage effective and efficient training in the CF.

OUTLINE OF TRAINING - The course focuses on the management of quantity control, quality control, and resource aspects of the CF Individual Training and Education Management Framework (IT&E). Due to the nature of the course content and the experience of the candidates, the training relies heavily on the group discussion format. Candidates are required to interpret and explain the role and responsibility of managers in accordance with IT&E.

PREREQUISITES - Candidates must be officers whose responsibility includes the management and conduct of training.

Analysis, Design and Evaluation

AIM - This 10 day course provides officers and NCMs with knowledge and skills to produce qualification standards, and to design and evaluate training.

OUTLINE OF TRAINING - Training comprises analysis and design. Analysis includes: task analysis, developing performance objectives, assessment procedures, management requirements, producing qualification standards and documentation. Design includes: instructional analysis, developing enabling objectives, selecting instructional strategies, producing training plans and supporting documentation, developing performance checks, test construction, test item analysis, and evaluating courses. The course material is presented using a combination of lectures, briefing, practical exercises and group discussions.

PREREQUISITES - Candidates must be employed or selected for employment in positions which involve the production of qualification standards and training plans, or the evaluation of training.

Training Validation

AIM - This 5 day course provides officers and NCMs with the knowledge and skills to conduct validation of training.

OUTLINE OF TRAINING - The course focuses on the planning of a course validation study, validating the training provided against job performance, and producing reports and supporting documentation. The training is presented using a combination of lectures, briefings, practical exercises and group discussions.

PREREQUISITES - Candidates must be employed or selected for positions that involve conducting training program validation.

Distance Learning Technologies for Managers

AIM - This course is still in the development phase and the pilot serial will be conducted in May 1998.

OUTLINE OF TRAINING - Established to provide those personnel at the rank of Master Warrant Officer and above with the knowledge and skills necessary to:

3. Assess the merits of proposals to use distance learning technologies.
4. Investigate the use of distance learning technologies to address new learning requirements, enhance performance, and correct performance deficiencies.
5. Prepare proposals recommending the use of distance learning technologies.

Reference: ***Canadian Forces Training Development Centre*** at http://home.interhop.net/~cftste/iddev.htm

Appendix C
Canadian Forces Course Evaluation Checklist

Course Evaluation Checklist

COURSE REVIEW GUIDE					
PURPOSE:	This guide establishes systematic procedures for reviewing factors affecting the quality of training for a specific course.				
SECTION A - TRAINING PROGRAM PRODUCTIVITY					
ITEM	FACTORS	SERIAL # 1	SERIAL #2	SERIAL #3	SERIAL #4
A1	Number of students who began the course				
A2	# of Graduates				
A3	Attrition: Training Failures				
A4	Attrition: Not related to training (ex. injury)				
A5	# of Recourses recommended				
A6	# Recoursed				
A7	Recoursed Graduates				

Comments and other observations

SECTION B- CONTROL DOCUMENTATION		
ITEM	DOCUMENT	CURRENT DATE
B1	Specification	
B2	Training Standard	
B3	Training Plan	
B4	Other:	

ITEM	DESCRIPTION	YES	NO	'	N/A
B5	Course catalogue (CFP 206) contains an accurate description of course content and prerequisites?				
B6	In your opinion, is the specification aligned with operational requirements?				
B7	In your opinion, does the TS reflect the operational requirements defined in the OS(S)?				

TRAINING STANDARD

INTRODUCTORY MATERIAL					
ITEM	DESCRIPTION	YES	NO	?	N/A
B8	Title page includes: - NDID number - security classification - OPI designation - date - complete title - authority notice - supersession notice				
B9	List of Effective Changes				
B10	Foreword includes: - authority notice - supersession notice - notice of interim status - request for suggestions for change				
B11	Preface includes: - purpose of TS - scope of TS - thrust of contents				
B12	Table of Contents includes: - chapter and main headings with corresponding page numbers - annexes and appendices listed				

Comments and observations:

CHAPTER 1 - GENERAL					
ITEM	DESCRIPTION	YES	NO	?	N/A
B13	The outline for training includes: - need for training - scope of training - training strategies to achieve objectives				
B14	The use of the training standard includes: - identification of training establishment(s) or Unit(s) tasked to plan/design and conduct training				

CHAPTER 2 - TRAINING MANAGEMENT DETAILS					
ITEM	DESCRIPTION	YES	NO	?	N/A
B15	The aim of the TS includes: - performance objectives defined - assessment procedures prescribed - resource requirements identified				
B16	The critical requirements include: - training duration - instructor allocation - training support requirements - language requirements for candidates				
B17	The additional management details include: - training agency - controlling agency - loading agency - selecting agency - course programming - training prerequisites - qualification awarded on completion - related documents - terminology				

CHAPTER 3 - ASSESSMENT OF THE TRAINEE					
ITEM	DESCRIPTION	YES	NO	?	N/A
B18	Has guidance been provided to establish: - that all POs must be achieved? - how, when and by whom PCs will be administered? - to what extent PCs can be grouped - action to be taken upon a PC failure - conditions and limitations for supplementary PCs - any POs that deserve special treatment - procedures for counselling trainees who do not maintain satisfactory progress - formal review procedures - administrative action to be taken to award recourse, re-supplementals (PRBs), etc ...				

B19	Has guidance been provided to establish: - grading procedures (if required) - criteria for grading - if ranking is required - criteria for ranking				
B20	Has guidance been provided on: - the completion of course reports - the distribution of course reports				

CHAPTER 4 - PERFORMANCE OBJECTIVES					
ITEM	DESCRIPTION	YES	NO	'	N/A
B21	Performance Statement: - has only one verb with one meaning - is observable and measurable - describes what actually happens on the job				
B22	Conditions Statement: - describe conditions on the JOB - include supervision, assistance, references, tools, etc. that are required or specifically denied - are not so obvious that they are redundant.				
B23	Standards statements: - are specified for each PO - based on the requirements of the job - define precisely the process and/or product expected including accuracy, quantity, time and sequence as applicable - are clear and not ambiguous - are detailed enough (especially those using LAW references)				
B24	Reference Material: - specific reference numbers included for each PO - specific reference numbers agree with main reference listing - requirement for bilingual references included				
B25	Specification Task Numbers: - relevant specification numbers included in each PO - spec numbers conform with the governing specification				
B26	Supporting Knowledge: - identified for design/development staff				
B27	Training Limitations: - have been identified - guidance provided for design/development team				

Comments and observations:

TRAINING PLAN

The following section is aimed at evaluating the design and implementation of instruction/training. It is expected that a TP be the document governing the conduct of training, however in some situations this may not be the case. If this is the case consider the following areas accordingly.

INTRODUCTORY MATERIAL					
ITEM	DESCRIPTION	YES	NO	?	N/A
B26	Cover pages identify: course title - course code - effective date - table of contents				

CHAPTER 1 - GENERAL					
ITEM	DESCRIPTION	YES	NO	?	N/A
B27	Aim of training is identified: - outcome of training described				
B28	Description of Need: - identifies who needs the training - identifies the training required - details the scope of the training - details the methods of achieving the objectives				

CHAPTER 2 - COURSE MANAGEMENT DETAILS					
ITEM	DESCRIPTION	YES	NO	?	N/A
B29	Resource Requirements: - number of personnel required including: - instructors - incremental staff - guest lecturers - admin support - facilities required: - classrooms - training areas - equipment required: - vehicles - training aids - learning aids - other				
B30	Time allocation requirements: - suggested sequence of instruction - training day length - period length - administrative periods - sport periods				
B31	Special instructions: - pre-course planning & prep - after-action details				

CHAPTER 3 - TRAINEE ASSESSMENT					
ITEM	DESCRIPTION	YES	NO	?	N/A
B32	Describes Trainee Assessment: - pass/fail assessment guidelines - criteria for grading - criteria for ranking - basis for supplementary assessment				
B33	Describes Trainee Assessment Procedures: - describes how PCs and ECs are managed - describes who administers tests - describes progress monitoring procedures - describes disposition of failures -describes unsatisfactory progress - describes completion of course reports				
B34	Chapter 3 of TP is consistent with Chapter 3 of the TS				

CHAPTER 4- LESSON SPECIFICATIONS					
ITEM	DESCRIPTION	YES	NO	?	N/A
B35	Is the EO clearly defined?				
B36	Are all the EO conditions, relevant to evaluating trainee performance, identified?				
B37	Does the EO standard clearly detail criteria that can be used to effectively judge student performance?				
B38	Are the Teaching Points (TPs): - detailed - specific - logically sequenced - easily understood by the trainees - easily understood by the instructors - linked with references				
B39	Methods of instruction are: - outlined - appropriate for subject material - appropriate for target population				
B40	Substantiation for method is provided				
B41	Test details are provided				
B42	References are: - clearly identified and coherent - current				
B43	Time is allocated and valid for each learning activity: - time for theoretical lessons - time for practical lessons - time for testing				
B44	Training aids are identified for each learning activity				
B45	Learning aids are identified for each learning activity				

B46	Additional remarks are provided to cover: - class preparation details - resources required - scheduling requirements				

SECTION C - TRAINING FACILITY AND EQUIPMENT					
ITEM	DESCRIPTION	YES	NO	'	N/A
C1	Classrooms are adequate for equipment and class size?				
C2	Air conditioning, heating, lighting, and ventilation are adequate?				
C3	Appearance of classrooms encourages trainee learning?				
C4	Noise level inside and outside of classroom is controlled?				
C5	Utilities are provided and available as required?				
C6	Safety equipment is installed where required?				
C7	Required supplies are on hand to support trainee load?				
C8	Are the training facilities adequate for field exercises				
C9	Are all required resources available and in working condition?				
C10	Is the consumption of resources monitored and controlled?				

Comments and observations:

SECTION D - SUPERVISORY AND INSTRUCTIONAL STAFF					
ITEM	DESCRIPTION	YES	NO	?	N/A
D1	Do instructors have the proper qualifications to instruct this course?				
D2	Proper number of instructors are available for current and projected trainee load				
D3	Have manning levels been sufficient to meet program requirements?				
D4	Instructor/trainee ratios and continuous instruction have not resulted in undue instructor fatigue				
D5	Are new instructors phased in and supervised by experienced instructors or supervisors?				
D6	Are instructors evaluated for instructional technique?				
D7	Are instructor evaluation forms maintained for reference?				
D8	Are instructors provided feedback on instructional technique/competence?				
D9	Do instructors hold a copy of the current TP?				
D10	Is the TP followed by the instructors?				
D11	Is the TP implemented correctly by the instructors?				

Comments and observations:

SECTION E- COURSE ADMINISTRATION/MANAGEMENT					
ITEM	DESCRIPTION	YES	NO	?	N/A
E1	Are regular schedules posted for the course?				
E2	Were course objectives made available to the trainees?				
E3	Were all trainees informed of the pass/fail criterion for the course?				
E4	Were all trainees informed of ranking/grading procedures prior to instruction/testing?				
E5	The course ran smoothly with no major alterations to the schedule required because of: - equipment breakdown/availability - excessive failures/rechecks - environmental factors - programming errors - instructor deficiencies - other				
E6	Are there SOPs in place to provide direction on: - course loading messages - pre-course preparations - travel procedures - accommodation requirements for students - clearing-in procedures for students - completion of course reports - completion of course certificates - procedures for handling course failures				

Comments and observations:

SECTION F- TESTING/EVALUATION					
ITEM	DESCRIPTION	YES	NO	?	N/A
F1	Performance checks (PCs) are used to confirm all the POs in the TS?				
F2	All tests (PCs and ECs) accurately measure the performance required?				
F3	All tests contain clear instructions to course members regarding the conduct/completion of a test?				
F4	Knowledge tests are free of item deficiencies or clues?				
F5	Test invigilators are consistent in their judgements during practical tests				
F6	Checklists or guides are used by instructors for practical tests				
F7	Students are aware of pass/fail criteria before a test begins?				
F8	All tests are scheduled and conducted at a time that is conducive to maximizing trainee performance (ex. adequate study time)				
F9	All tests are administered IAW the suggested sequence detailed in the TP				
F10	Written Test instructions: - are provided to the test invigilator - detail required set-up and resources required for the test - detail the time allotted for the test - provide direction on post-test actions				
F11	Do standards personnel invigilate some of the tests?				
F12	Are test results recorded: - in student progress books - for historical record keeping - for standards monitoring of trends				
F13	Are students briefed on test results in a timely and appropriate manner?				
F14	Are adequate evaluation procedures in place (ECs and progress tests) prior to final summative tests (PCs)				
F15	Is counselling carried out for students having difficulty?				

SECTION G - STUDENT CRITIQUES					
ITEM	DESCRIPTION	YES	NO	?	N/A
G1	Is a student critique is used to obtain student feedback?				
G2	Students are informed of the critique program and its objectives during initial course orientation				
G3	Course critiques are handed out at the beginning of the course				
G4	All graduates complete a course critique				
G5	An individual other than the instructor administers and collects the course critique				
G6	Critiques are analyzed to identify strengths, weaknesses, and trends				
G7	Corrective actions are initiated at the lowest possible level				
G8	A routing system exists that includes review of critiques by supervisory and senior staff				
G9	Students are debriefed on the course critiques				
G10	Course critiques are filed and maintained by the standards staff for a definite period.				

SECTION H - INSTRUCTIONAL METHODS					
ITEM	DESCRIPTION	YES	NO	?	N/A
H1	Are the instructors capable of implementing the methods of instruction outlined in the TP?				
H2	Does the design of the instruction lend itself to active participation on the part of the trainees?				
H3	Is the overall instructional strategy appropriate for this program?				
H4	Do instructors encourage active trainee participation as appropriate?				
H5	Are the lesson plans current and complete?				

Comments and observations:

SECTION I - RESOURCES					
ITEM	DESCRIPTION	YES	NO	?	N/A
I1	Are the resources, identified in the TP as requirements for training, available?				
I2	Training aids used during training consistent with those identified in the TP?				
I3	Training aids used during training enhance/facilitate trainee learning?				
I4	Training aids (including videos, acetates, slides, etc) are of good quality?				
I5	Training aids are maintained, logged, and controlled to ensure availability for instructors?				
I6	Audio-visual equipment is available and in good working order?				
I7	Learning aids used during training are consistent with those identified in the TP?				
I8	Learning aids used during training enhance/facilitate student learning?				
I9	Learning aids (including handouts, manuals, study guides, etc) are of good quality?				
I10	Student's receive a pre-course package prior to course?				
I11	The reading level of the learning aids is appropriate for the target population?				
I12	Are all references and required publications available for trainee use? Is there a system in place to reorder stock as required?				
I13	Are references issued to students prior to the instructional period for which they apply?				
I14	Is the training literature current, essential and appropriate to the learning objectives?				
I15	Are all learning aids and references available in the student's language of choice?				

SECTION J - EXTERNAL TRAINING ENVIRONMENT					
ITEM	DESCRIPTION	YES	NO	?	N/A
J1	Are trainee reporting instructions adequate?				
J2	Are base in clearance procedures kept as simple as possible?				
J3	Are accommodation facilities clean and located reasonably close to the training facilities?				
J4	Are accommodation facilities suitable for study purposes: - quiet - furniture (ex. desk) provided - lit well enough				
J5	Are the messing facilities close and adequate?				
J6	Are their recreational facilities available for trainee use?				

Comments and observations:

References: This material was compiled from:

Canada, *Department of National Defence*. ***Manual of Individual Training Volume 11 Evaluation of Training***. Winnipeg: CFTMPC, 1991. and Cote, D. ***Project Report for the Jamacia Junior Command and Staff Course***. Borden: CFLSTC 1996.

Appendix D
Request for Quotation -
Computer Based Training Product
Icom Productions, Calgary

Request for Quotation -
Computer Based Training Product
Icom Productions, Calgary

Introduction.

41 Canadian Brigade Group (41 CBG) covers the geographic area of Alberta with units located at Edmonton, Red Deer, Calgary, Medicine Hat and Lethbridge. There are 17 units employing approximately 1500 personnel. The headquarters is located at Calgary under the command of a Colonel. The Brigade includes all Army reserve units in the province of Alberta. The Canadian Forces trains its personnel utilising a systems approach to training known as the Canadian Forces Individual Training and Education System (CFITES).

The CFITES is a management model incorporated by the Canadian Forces (CF), in the late 1960's, to optimize the effectiveness and efficiency of training personnel and resources. "The aim of the individual training system is to provide for the CF the right number of people, with the right qualifications, at the right time and at minimum costs. Implicit in this aim are the objectives of controlling the quality and quantity of, as well as the resources dedicated to individual training." To accomplish this aim training is focussed towards a performance orientation. The concept dictates that the tasks associated with training must mirror those connected with operational performance and conditions. Furthermore, these tasks must be clearly identified and specified. This request for quotation will work within this system.

Description of the Problem

41 Brigade has an annual requirement to produce approximately 100 Master

Corporals and has a problem providing training to all eligible personnel. Fiscal year 1998-99 data reveals that 94 persons were nominated for training while only 45 actually were available to attend. This shortfall, is primarily caused, in part, by the fact that members cannot afford the time away from their primary civilian employment to undergo Canadian Forces training. The Brigade is a diversely established formation of the Canadian Forces in terms of the occupations employed within units and the locations of these units. It is difficult, time consuming and costly to have personnel available for training, centrally, and for long periods of time.

Similarly the MOSC has experienced a training production shortfall, but not to the extent of that experienced by the potential JLC candidates. During the 1998-99 fiscal year 25 officers were nominated for training, of which 18 attended the course. This represents 72% of the population receiving the instruction.

The Requirement

The purpose of the project will be to analyse the problem, identify those aspects of each course that are applicable to distance learning and in particular Computer Based Training (CBT). The major objective is to maximize the potential of having a greater number of personnel trained annually and reduce the high attrition as a result of the inability of receiving training.

This evaluation has occurred with options identifying between 37% and 71% of the Junior Leadership Course content is applicable to distance education with approximately 30% being applicable for delivery by CBT. The MOSC, on the other hand has been assessed to have between 44% and 78% of its content applicable for CBT. It is requested

that this material be costed and presented by Performance Objective (PO). This will enable personnel to examine the modules in a format in which the course was designed.

CBT Creative Concept

The original intent was to examine and propose media that allows students to work independently and at a distance on the course material prior to attending a formal course.

This would entail that the teaching points, explanations, definitions, examples and reference material would be provided through a hybrid CD-ROM for each Enabling Objective. A list of these objectives is enclosed as Annex 1 for the JLC and Annex 2 for the MOSC. A hybrid CD product is defined as being designed where "the media and program structure are delivered on a CD-ROM, and hotlinks to the Web are embedded along the way. ... Hybrid CD systems can utilise information that changes often." The objective of using this media is to provide a structured learning environment that will impart the requisite knowledge required to complete training.

At present there appears to be numerous changes on the DIN and the DND homepage. The advantages of using a hybrid CD include the fact that many references contained in the course are available on the DIN. In order to reduce development costs, by saving numerous hours of input, it would make sense to enable the CD material to interact with the DIN. Access to such references as the *Queen's Regulations and Orders* and the *Canadian Forces Administration Orders* would ensure that students would have the most up to date material as well as reduce development costs.

It is essential that the performance oriented nature of the CFITES be maintained. It is paramount that knowledge be coupled with performance in order to effectively produce

confident junior leaders. Without practice, performance and evaluation the course objective will not be met. Current technology does not allow for the complete simulation and interaction required to lead personnel and complete tasks in the field. Furthermore, the cost of developing such a simulator would be prohibitive in the current period of fiscal restraint.

Therefore, the material presented should be at a level 2 interactivity. This is defined as having the following characteristics:

1. More complex graphics and animation used;
2. Audio may be used;
3. Between computer centred and student centred design;
4. Simple on-line testing offered; and
5. Simple student management to include test results, lessons completed.

"Interactivity at its best is a simulation of the work situation. At a minimum, it can include application exercises, drag-and-drop, column matching, testing [and] text entry. ... This goes beyond simple text and graphics presentation and brings the learner into the program to engage with the content and practice the skills." Students must furthermore, be stimulated by the presentation of material, therefore screen design must be carefully constructed allowing for appropriate use and amount of colour and graphics. Audio instructions for each module should be included to allow for the explicit statement of the requirement and any substantiation. Student navigation is also essential and appropriate tools are required to allow movement and exploration through the program. Examples and definitions should be accessible through hyper links as well as test and practice material.

Self examinations must be incorporated in order that students can confirm, to

themselves, that they have mastered the content. Written assignments must also be included. These would normally be the homework assignments contained in the course. An example of this would be the material associated with writing a memorandum or message contained in PO 405. Completed assignments must be transmitted to WATC for evaluation. Therefore, the program must have an e-mail capability. The instructional staff must ensure prompt and immediate feedback to support motivation and continued enthusiasm towards the course content. Furthermore, a bulletin board be established for both instructors and student to carry on discussions and ask questions that may be of interest to the entire course.

It is recommended that material be accessible through both the Internet as well as the Intranet. This would enable students to access material from any location from which they are working. This notion however, creates a security concern that must be addressed. The primary purpose for allowing students to gain reference material through the Internet is to enable them to work on the material from any location. In the event that the CD-ROM is lost or stolen then any experienced hacker can potentially manipulate the material to gain access to more sensitive areas of the DND computer network. To combat this each student must enter the disc through a password that is established on the first day of the course. Furthermore, access to Internet and Intranet material must be restricted upon completion of the course. Therefore, the CDs produced must have imbedded in them an encoded instruction that will cause the expiration of access to Intranet material through the Internet. In other words once a student has completed, for example at the end of 12 weeks, the training, access to the reference material must be denied however, the student can retain the

instructional material on the CD for future reference.

Student management must also be considered and imbedded evaluation instruments placed in the program. The program must collect data and reveal it to both the student and instructional staff for the purposes of course evaluation. Information required would be biographical data, length of time personnel took to complete lesson modules and the results of self mark examinations. Also part of this process should be the student course critique that would be electronically sent to WATC upon completion of the CBT modules.

Target Audience

The target population consists of reserve force military personnel who are occupation qualified, at the rank of Corporal and have been selected for Junior Leader training and officers at the rank of Lieutenant that have been selected for MOSC. The population will have an education level equal to or greater than grade 12 (Alberta). Individual interests vary however, collectively there is an overriding sense of loyalty to the organization. Career advancement hinges upon the training that is available and completed. Students are located throughout the province of Alberta.

Product Development and Deliverables

It is requested that Icom Productions provide a detailed cost for the two course CBT products. This costing should be on a PO by PO basis. It should also include the cost of translation. This will enable Brigade personnel to make an informed decision as to the feasibility to pursue conducting the course in this format.

Resources Available

The contractor will be provided access to all relevant documentation to complete

the project. This includes all Canadian Forces Manuals of Individual Training and relevant Qualification Standards and Training Plans.

DISCLAIMER

Submission of the quotation does not in an respect endorse the company or cause an entry into a contract concerning the development of any future course material. **This quotation is requested for research purposes only and is not an indication of any future development**.

Point of Contact

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Annex 1
JLC Performance Objectives
and Enabling Objectives

The "purpose of junior leader training is to broaden the trainees' knowledge of general military subjects, to develop their leadership/management skills and to obtain practical experience in the application of individual leadership and supervisory duties to the minimum level required by junior supervisors."The course is 5 weeks in duration and encompasses the following Performance and Enabling Objectives:

PO 401 Lead Subordinates:

EO 401.01 Enforce Dress and Deportment;
EO 401.02 Apply the principles of leadership;
EO 401.03 Enforce Discipline;
EO 401.04 Motivate subordinates;
EO 401.05 Demonstrate a basic knowledge of human behaviour;
EO 401.06 Represent subordinates;
EO 401.07 Evaluate job performance;
EO 401.08 Maintain personnel files and records;
EO 401.09 Demonstrate an understanding of leadership and management;
EO 401.10 Demonstrate an understanding of human needs of subordinates;
EO 401.11 Apply leadership styles and approaches;
EO 401.12 Give verbal orders;
EO 401.13 Apply planning and organizing techniques;
EO 401.14 Direct subordinates;
EO 401.15 Supervise subordinates.

PO 402 Conduct drill:

EO 402.02 Demonstrate a knowledge of ceremonial drill;

PO 403 Instruct personnel:

EO 403.01 Demonstrate a knowledge of the use of instructional objectives and lesson plans;
EO 403.02 Employ effective speech technique;
EO 403.03 Employ the concepts of instruction;
EO 403.04 Prepare verbal support;
EO 403.05 Employ oral question techniques;
EO 403.06 Employ visual aids;
EO 403.07 Prepare a skill lesson plan;
EO 403.08 Prepare a knowledge lesson plan;

PO 404 Apply policies, principles, regulations and acts:

EO 404.01 Locate and interpret regulations and orders contained in QR&Os, CFAOs and CFSOs;

EO 404.02 Apply regulations in QR&O Vol 2 dealing with service offences;
EO 404.03 Apply QR&Os pertinent to arrest and custody;
EO 404.04 Prepare charge reports;
EO 404.05 Apply QR&Os pertaining to service tribunals;
EO 404.06 Administer personnel policies;
EO 404.07 Demonstrate a detailed knowledge of the CF Drug and Alcohol Policy;
EO 404.08 Demonstrate a detailed knowledge of the CF Personal Harassment and Mixed Gender Policies;
EO 404.09 Demonstrate a detailed knowledge of general safety principles and procedures;

PO 405 Communicate orally and in writing;

EO 405.01 Prepare memorandum and minutes;
EO 405.02 Prepare a military message;
EO 405.03 Demonstrate a detailed knowledge of interviewing theory;
EO 405.04 Demonstrate a detailed knowledge of counselling theory;
EO 405.06 Demonstrate a detailed knowledge of the NCM PER system;
EO 405.07 Demonstrate a detailed knowledge of the PER forms;
EO 405.08 Complete a NCM PER;
EO 405.09 Communicate orally;

Annex 2
MOSC Performance Objectives
and Enabling Objectives

The purpose of the Militia Officer Staff Course is to prepare officers to perform the administrative and staff functions of a junior officer employed at a unit or headquarters. In its present state the MOSC constitutes 18 training days. This is comprised of an eight day home study package and a ten day formal course.

PO 401 Conduct Unit Administration

EO 401.01 Supervise orderly room personnel;
EO 401.02 Explain QM administration;
EO 401.03 Prepare material resource reports and returns;
EO 401.04 Monitor the procedures for the handling of dangerous goods, including the storage and transport of weapons and ammunition;
EO 401.05 Staff the accident reporting process;
EO 401.06 Submit safety and security reports;
EO 401.07 Prepare armoury management documentation; and
EO 401.08 Explain procedures for organizing a conference.

PO 402 Communicate effectively orally and in writing

EO 402.01 Demonstrate effective speaking
EO 402.02 Use principles and conventions of military writing

PO 403 Plan and Coordinate Training

EO 403.01 Supervise instructors
EO 403.02 Maintain a student file and write a course report from the file
EO 403.03 Write a unit training plan
EO 403.04 Plan and organize collective training
EO 403.05 Plan and organize individual training

PO 404 Apply military law

EO 404.01 Prepare a Charge Report
EO 404.02 Act as a delegated or assisting officer

PO 405 and PO 407 Not Allocated

PO 406 Administer Personnel

EO 406.01 Explain the purpose of the annual Historical Report;
EO 406.02 Explain Total Force Recruiting and Advertising;
EO 406.03 Explain the CF Grievance System;
EO 406.04 Explain the CF security clearance programme; and

EO 406.06 Explain the organization and manning of the Canadian Forces.
EO 406.05 Explain the fundamentals of the Canadian Human Rights Act and the Freedom of Information Act
EO 406.07 Staff a Summary Investigation
EO 406.08

PO 408 Administer financial resources

EO 408.01 Explain basic bookkeeping practice
EO 408.02 Administer unit funds and unit held non-public property
EO 408.03 Administer institutes and institute held non-public property
EO 408.04 Audit a non-public fund institute; and
EO 408.05 Prepare a CF 52 General Allowances claim to claim either public funds or a public grant

PO 409 Administer career management study

EO 409.01 Make entries to each type of UER forms
EO 409.02 Write a PER narrative
EO 409.03 Perform intermediate counselling techniques
EO 409.04 Conduct a programme of administrative measures
EO 409.05 Action requests for individuals transfers between units, areas and commands and an occupational transfer
EO 409.06 Explain MITCP and RESO career progression.

Appendix E
Icom Productions Response to Request for Quotation

07 May, 1999

Capt A. Anderson
Brigade Training Development Officer
41 Brigade Headquarters
Calgary, Alberta T3E 7A7
Office: (403) 686-0346

RE: Request for Quotation – Computer Based Training Product.

1) Project Overview: This program would be a Hybrid CD-ROM project, involving both online, and offline content. The offline portion of the program would make up the bulk of the program, consisting of all the content of the course (JNCO or MOSC). Online content would be of existing reference materials such as the QR&O's and CFAO's. This would be included in the project in the form of hyperlinks to the DIN.

2) Security: The program will provide a secure log-on through the use of a distributed password system, whereby the password would be course specific. Passwords would be terminated at the end of the course to prevent further unauthorized access to the DIN. Responsibility for password creation and termination would lie with the course administrator.

3) Content: The content would be broken down by PO's. Content will include 4 x 30-min videos, as well as the standard text included in the package. 2D graphics will be included for appropriate sections, estimated at 20% of overall package content. An audio introduction will be included for each section in order to reinforce the learning objectives of each section. . Each PO and/or EO would have its own confirmation testing section. These tests may take the form of computer marked multiple choice and/or True/False, or written tests which are then emailed to course staff for marking. A Bulletin Board System would also be made available for staff – candidate discussion.

4) Engine Features:

- The program engine will include a secure monitoring system, which allows instructors to receive weekly updates of student progress; including time on the system, areas studied, and test results. This would be a process transparent to the user with an Internet connection. Personal without access to the Internet would have to periodically transmit a file over the DIN.
- Hyperlinks will be utilized throughout the program to provide the most current reference material available on the DIN through a course homepage.
- The program will feature an active update, which allows the instructional staff to change course content, and then have the new content automatically downloaded and integrated into the program. Thus if a page require any content change it can be done by course staff at no additional cost. This feature would only be enabled for those personal that have an active Internet connection.
- Testing is randomized, so that the computer will have a larger number of questions to choose from than it is required to ask. This prevents repeat testing from becoming repetitive.
- The engine will maintain an master lesson guide for the student, which indicates areas of the course content yet to be completed and suggests a recommended course of action.

5) Cost: (MOSC)

Programming:	10,000
Project Management:	6,000
Graphic Design:	5,000
Audio:	3,000
Content Integration:	10,000
Video Encoding/Integration:	1,000
French Language Version:	12,000
TOTAL	$47,000

- **Notes**: The cost for doing each program would be approximately equivalent. The cost for the French Language Version does not include translation, which would be required from the content experts. To be provided by DND would be the following:
  Electronic versions of all text.
  All course content, including tests (English & French).
  Content Expert contact.

6) If you have any further questions regarding this bid, or the specifications included within please feel free to contact me.

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