

A Needs Analysis of Maritime Helicopter Flight Instructor Training

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Abstract

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The purpose of this project is to conduct a training needs analysis of the Maritime Helicopter Flight Instructor Course at 406 Maritime Operational Training Squadron. This analysis will be a modified approach combining the academic process of the needs analysis with the Canadian Forces Individual Training and Education System approach training development.

This project will determine the current and required training of Maritime Helicopter Flight Instructors in order to address a performance gap that was identified following a flight safety accident. Finally, the end state of the project will be the development and implementation of a Flight Instructor Course Training Plan. This will set the conditions for the elimination of the performance gap in instructional capability through realignment with superior training guidance, subordinate documentation amendments and training adjustments.

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Chapter 1: Introduction

Purpose of the study:

The purpose of this study is to conduct a thorough needs analysis of the current and required training of Maritime Helicopter Flight Instructors (MHFIs) in order to produce a training plan (TP) for the Maritime Helicopter Flight Instructor Course (FIC) at 406 Maritime Helicopter Operational Training Squadron (406(M) OTS).

As the training for flight instruction focuses primarily on instructional technique, a common FIC TP for Pilots, Air Combat Systems Officers (ACSO) and Airborne Electronic Sensor Operators (AES Op) will be developed. Recommendations for follow on action will be included for the development stage and the creation of the master lesson plans (MLPs), but will not be the focus of this study.

Background:

The Canadian Forces Individual Training and Education System (CFITES) utilizes a systematic approach to training development in the Canadian Forces (Central Flying School, 2005, pp. 2-3). The CFITES principles apply to aircrew training and uses the same processes for training development. The CFITES process begins with a needs analysis and is guided by strategic level goals and operations. From this analysis, training documentation is produced which corresponds to six distinct phases; analysis, design, development, conduct, evaluation and validation (Central Flying School, 2005, pp. 2-3).

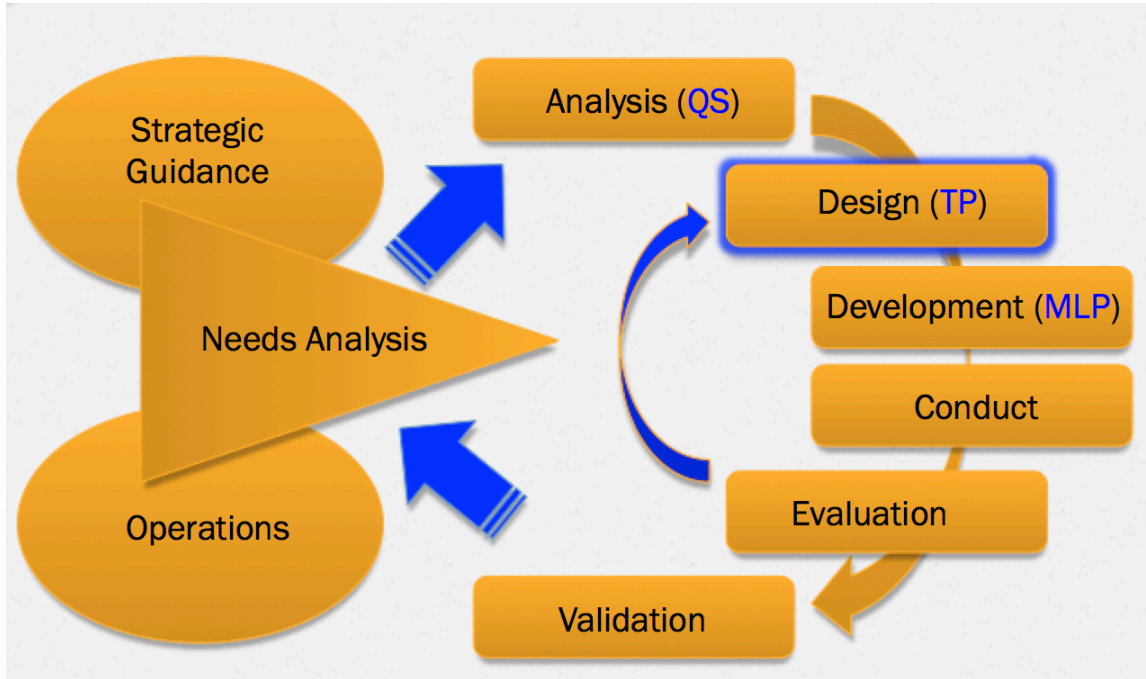


Figure 1 – The CFITES process recreated from the Flight Instructors Handbook shows the process flow and documentation produced in every phase (Central Flying School, 2005, pp. 2-3).

As seen in Figure 1, the analysis phase results in the production of a qualification standard (QS) established by 1 Canadian Air Division, the higher headquarters. The QS defines the standard of performance and the required performance objectives (POs) to be achieved for specific military occupational qualification.

The design stage results in the production of a subordinate document, the training plan. The TP is the primary unit level document, which is approved and authorized by the Commanding Officer of the training establishment. This document contains the detailed plan for achieving the POs stated in the QS through the subdivision into specific goals called enabling objectives (EOs) (Central Flying School, 2005, pp. 2-13).

The EOs are used in the development stage to create the MLP that direct the delivery of instruction, specific mission objectives and student progress expectations.

The 406 Maritime Operational Training Squadron (406(M) OTS) is the principal training facility for initial training of all aircrew and technicians on the CH-124 Sea King helicopter. The primary mission of 406(M) OTS is the production of qualified CH-124 aircrew and technicians for employment at the operational squadrons (406 (M) OTS Homepage).

Aircrew of the Pilot, Air Combat Systems Officer (ACSO) and Airborne Electronic Sensor Operator (AES Op) trades, must have achieved the highest operational category of their respective trades prior to selection for instructional duties. Once selected, all instructor candidates must complete an in-house Flight Instructor Course (FIC). The performance objectives and performance standard are established in the national qualification standard (QS) for Flight Instructor. Upon successful completion of the FIC aircrew are designated as Maritime Helicopter Flight Instructors (MHFI).

Need for Study:

A critical incident triggered the need for this study. While a pilot flight instructor was conducting single engine failure training with a new pilot student, a hard landing occurred resulting in a broken helicopter tail wheel. A flight safety investigation was initiated to determine the cause factors and identify possible preventative measures. It was determined that the pilot instructor was relatively junior and lacked experience instructing, specifically emergency simulation techniques, prompting a review of their FIC training records.

The investigation revealed that the pilot instructor had never completed training on how to teach this specific maneuver and it was not required by the established MLP. As a practice single engine failure is a dynamic event, further investigation was required to determine if this was in contradiction to the FIC TP. After extensive searching, it was discovered that 406(M) OTS does not currently have an established FIC TP and there is no record of one from recent history.

As the hierarchy of training documentation is clearly established within the CFITES, there are legal and practical requirements to ensure that training documentation is complete and effective.

The lack of an established TP for the Maritime Helicopter FIC jeopardizes the primary mission of 406(M) OTS. Effective flight instruction is a force multiplier and the successful production of qualified aircrew is directly dependent on the quality of instruction delivered. Without an established TP, there are no enabling objectives from which to create the MLPs. Performance gaps, stemming from this divergence in standard, have developed between the QS and the actual instructional training received by Maritime Helicopter Flight Instructors (MHFIs).

Statement of Problem:

406(M) OTS does not currently have an approved TP for the FIC. Performance gaps in instructional training have impacted the qualification and training standard of the MHFIs. This compromises the success of the operational goals of effective student aircrew production and the safe conduct of operations. This lack of required documentation is in violation of the CFITES and has resulted in a gap in training direction for the production of MHFIs.

Contribution of the Project:

The desired end state of this project is for the finalized FIC TP and recommendations to be approved by the Commanding Officer. The authorization of the FIC TP is the first step for implementation and will set the conditions for follow on action. This will result in a cascading effect through all subordinate documentation, which will require an overhaul of the currently established FIC MLPs for all three aircrew trades.

The end result of this project will set the conditions and provide the recommendations to rectify the current performance gaps in MHFI training. This will directly contribute to superior instruction, increased safety of flight and improved operational capability.

Chapter 2: Literature Review

Purpose and Scope of Literature Review:

At any given time, approximately one quarter of all personnel in the Canadian Armed Forces are undergoing some level of training. This makes effective instruction a fundamental capability (Central Flying School, 2005, pp. 1-1). The inherently dynamic nature of flight and the variance between individual aptitudes for instruction required a formalized standard of instruction to be developed. In the spring of 1999, a working group sponsored by the Royal Canadian Air Force Central Flying School (CFS) was convened with representatives from every operational community (Central Flying School, 2005, pp. 1-2). This resulted in the development of the Flight Instructor Occupational Specialty Specification (OSS) and the Qualification Standard (QS). This yearlong working group fulfilled the analysis phase of CFITES, during which they identified the training requirements for Flight Instructor Course and created the Flight Instructor Handbook.

The hierarchy of documentation required for individual training and evaluation (IT&E) in the Canadian Armed Forces is well established and strictly mandated. The governing methodology for training development is the Canadian Forces Individual Training and Education System (CFITES). This model is also used to establish the various documents required for flight training in the Royal Canadian Air Force. The literature review will start with the publications governing training development, followed by a review of the OSS and the QS for flight instructor and the currently in use master lesson plans (MLPs) for Maritime Helicopter Flight Instructors (MHFIs). Finally,

similar documentation within the RCAF, and existing within academic literature, will be reviewed for reference.

Literature Review Instructional Sources:

Flight Instructor Handbook – A-PD-050-001/PF-001

The Flight Instructor Handbook is the primary document that contains the standardized philosophies and theoretical foundation of RCAF flight instruction. It is divided into 14 modules of instructional theory concepts identified as critical capabilities. This foundation is used for instruction across all aircrew trades and all airframes. As this publication does not detail how to train specific trades on a specific platform, the CFITES hierarchy of training governance must be adhered to.

Occupational Specialty Specification AIMB

The Occupational Specialty Specification (OSS) is the highest-level document and determines the minimum criteria for a flight instructor. As a generalized document that covers all aircrew flight instructors, the minimum requirements mandated at this level are to be qualified on the type of aircraft to the highest level of the applicable trade and broad term instructional objectives. These requirements are amplified in the qualification standard.

Qualification Standard AIMB

The QS is the final product of the analysis phase of CFITES. Established within the QS are the performance objectives (PO's) and the terminal performance standard that must be met to achieve occupational qualification as a flight instructor. It also dictates the conduct of training on the FIC such as training methodology, training

duration, pass/fail criteria and the associated administrative procedures. As the FIC QS is a sufficiently generic document to cover all aircrew trades, there is a requirement for trade and platform specific instructional specification to be further detailed in the TP's and MLP's.

Training Plan Template

The design phase of CFITES continues to build on the criteria established in the QS and results in the production of the subordinate document: the Training Plan. Embedded within the QS is a template for the design of the FIC training plans for each trade and airframe. This format ensures a level of standardization and consistency, as the individual TP's become more trade and platform specific. This template will be the foundation of the CH-124 Maritime Helicopter Flight Instructor Course Training Plan.

CH-148 Flight Instructor Course Training Plan

The CH-148 cyclone is the next generation of maritime helicopters and the future of the MH community. In preparation for the acceptance and ownership of the CH-148, members of the Helicopter Operational Test and Evaluation Flight have begun to develop the required documentation. One of these documents is a CH-148 FIC TP. As 406(M) OTS will eventually transition from the CH-124 to the CH-148, this document is a parallel reference, built from the same QS. More important, it is also created under the philosophy of combining multiple aircrew trades instructional training under a single TP. As that is the desired approach for this project, this reference will be invaluable.

CH-146 Flight Instructor Course Training Plan (Pilot)

The CH-146 Griffon is employed in the Tactical Helicopter community. While also employing multiple aircrew trades, the CH-146 FIC TP is trade specific. Within this TP, there are details and specifications not possible in one that is more generalized. The content included in this study will be referenced for follow-on recommendations and for use in the development phase for the creation of the trade specific MLPs.

Master Lesson Plans and the Flight Safety Operational Management System

The currently in-use MLPs will be used as baseline for identifying training gaps and will be the focal point for the immediately identified recommendations. The current training practices will provide perspective, as the TP develops, as to the magnitude of the performance gaps and the nature of the recommendations.

The Flight Safety Operations Management System (FSOMS) and associated reports can provide details about any specific occurrences, which will be used to substantiate or validate assumptions about the current status of training.

Literature Review Academic Sources:

Managing Performance through Training and Development

The framework presented in chapter four, in conjunction with the CFITES framework for training development, is the primary influence for the modified needs analysis used in this paper. This reference will form the foundation of the research methodology, while the process will be modified to focus on the design phase of CFITES and the production of the CH-124 FIC TP. A methodic approach will ensure that the building block nature of the hierarchy of training documentation is consistent

with the desired strategic outcome. It will provide guidance and perspective, ensuring that the developed training plan meets the criteria mandated in the QS.

Canadian Human Resource Management – A Strategic Approach

A second academic source for the conduct and purpose of a needs analysis, and the approach to training and development, will provide reinforcement to the foundational methodology being employed. Presented within this reference is a slightly different needs analysis process, though it is similar in overall process and intent to the CFITES training development. The processes share a systematic approach of training objective definition based on the evaluation criteria required for the job, followed by successive steps that refine the process to the training delivery stage. This is followed by an evaluation/validation stage to ensure the training intent has been met (Schwind, Das, Wagar, Fassina, Bulmash, 2013, p. 269).

This needs assessment methodology acknowledges the need for training to have alignment from the organizational strategy to the task criteria and environment of individual employees. This is accomplished by measuring current and desired behavior against established performance criteria (Schwind et al, 2013, p. 269).

Summary

The methodology of the needs analysis is founded in academic literature and modified in accordance with the CFITES. Using the QS provided template TP and the CH-148 FIC TP, a CH-124 FIC TP will be created. The QS mandates specific PO's that must be attained while the Flight Instructor Handbook provides the specific theoretical requirements and the CFITES clarifies the scope of the project. The design phase will

result in the development of a CH-124 Flight Instructor Course Training Plan, and provide recommendations for follow on action.

Chapter 3: Methodology

Introduction to Research Design

The needs analysis process for this study will be a modified approach inspired primarily by the academic frameworks developed by Saks and Haccoun (2010, p. 101) and in accordance with the CFITES model for training development (Central Flying School, 2005, pp. 2-3). The end state of the needs analysis will be the identification of the performance gap, the development of the Flight Instructor Course Training Plan (FIC TP) and the proposed follow-on recommendations.

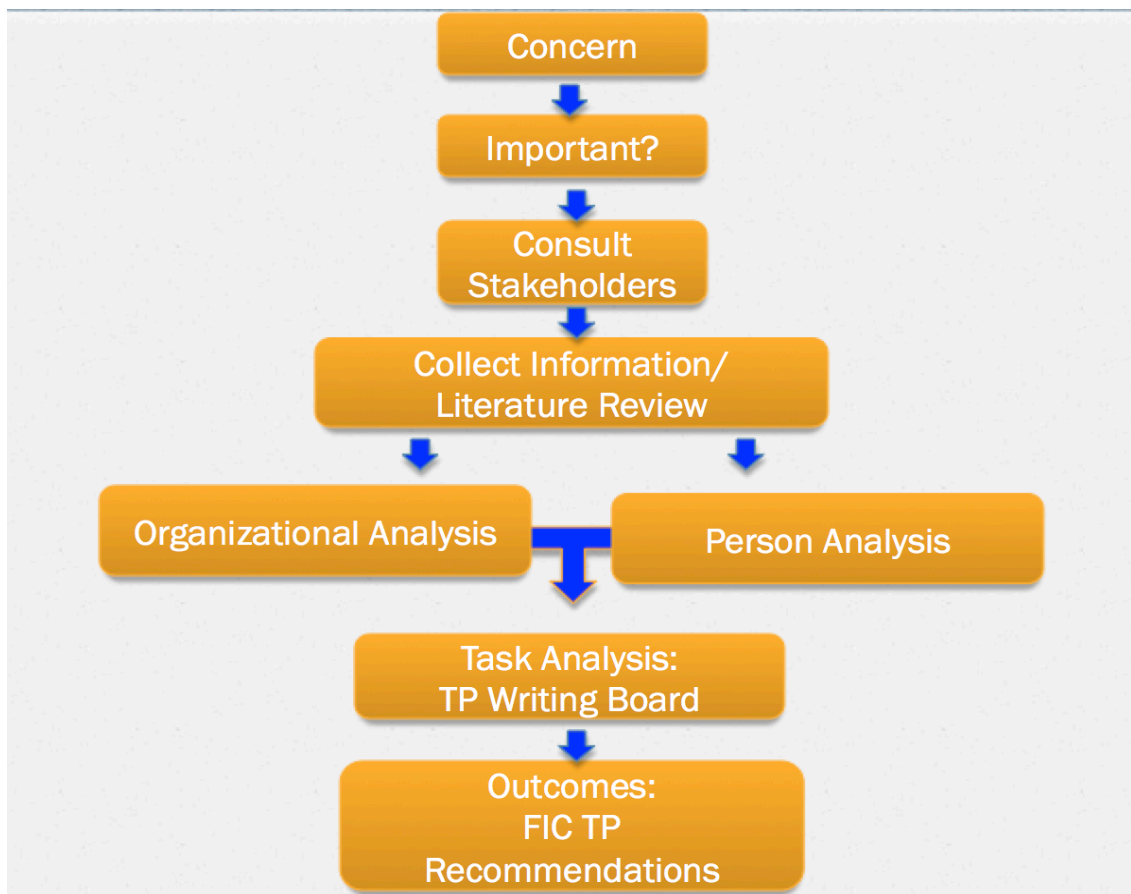


Figure 2 - The modified needs analysis inspired by Saks and Haccoun (2010, p. 101).

Step 1 – A Concern

The needs analysis process starts with a concern. This creates a requirement to gather information from key stakeholders, both internal and external, and subject matter experts about the current and expected performance. The concern prompting this study was a flight safety incident during a student pilot training mission. While conducting practice single engine failures from the hover, a hard landing occurred resulting in a collapse of the tail wheel structure. This incident led to a flight safety investigation to determine the cause of the accident, which ultimately revealed a significant deficiency in the training of Maritime Helicopter Flight Instructors (MHFI). While incidents of this nature are rare, the lack of training was determined to be a direct contributing factor.

Step 2 – Importance

As a critical enabler for the basic force generation of the operational capability of the Maritime Helicopter community, the quality of the MHFI training standard is extremely important. This importance is further magnified given the dynamic nature of conducting inflight training with unqualified aircrew students. Consequences of the lack of adequate instructional training are a potential compromise in the safety of flight and a depreciated quality of student provided to the operational units for employment.

Given the risks inherent to flight and the potential operational impact, the requirement to maintain a high instructional standard and produce high quality aircrew is a clear priority. Comparing the potential implications of the performance gap against the cost of ignoring them, this concern was determined to be significant enough that a needs analysis process was initiated.

Step 3 – Consult Stakeholders

The role of instruction has a cascading effect through an organization. As the sole source for training CH-124 aircrew to their basic operational category, high quality flight instruction at 406 (M) OTS is a force multiplier. The graduating students are sent to the operational units for immediate employment, where a depreciated output quality can have very serious operational implications. As the impact of a gap in flight instructor training resonates throughout all of 12 Wing, there are several key stakeholders who must be involved in the process.

The primary stakeholder is the Commanding Officer (CO) of 406 (M) OTS. As the CO, he is responsible for the successful completion of the squadron mission to train and produce qualified aircrew. The CO executes this mandate through the Operational Training Flight Commander (OTFC), through which the responsibility is further delegated to three Section Commanders. Each Section Commander is responsible for producing students of a specific trade (Pilot, ACSO and AES Op), and maintaining the required instructional capability to meet the tasked output requirements.

The presence of a training gap impacts each of these commanders and their training capability. Each commander controls some of the resources required to conduct a needs analysis, mostly the subject matter experts, so buy-in must be obtained through the entire chain of command up to, and specifically including, the Commanding Officer.

Another key stakeholder is the 12 Wing Standards section. Tasked with the annual verification of all aircrew categories at 12 Wing, a training gap in flight instructor training is of particular consequence. The implications here are two fold. First, aircrew standards officers receive their training and qualification from the same training standard as MHFIs, so if the FIC has training gaps, so do the qualification as a 12 Wing Standards

officer. Secondly, all aircrew, including themselves, have been trained by MHFIs, who do not have a valid Training Plan for their instructional category. As such, inclusion of the 12 Wing Standards Section Commander is required.

Other stakeholders, though less tangible in nature, are every person involved in flight operations. The presence of a training gap in flight instruction presents the possibility that the quality of standard of every individual's primary aircrew qualification has become degraded. While a significant impact is unlikely, it is necessary to consider for a thorough analysis.

In order for the needs analysis process to move ahead with the appropriate resources, authorization to initiate and commitment to the process must be gained from the key stakeholders identified.

Step 4 – Collect Information

The first step in the collection of information will be a thorough literature review of the currently established and governing publications for the conduct of training is required. The hierarchy of orders and regulations for training is well established and the publications of specific importance to instructional training are presented in the Flight Instructor Handbook. The publications of specific applicability for flight instruction include the Occupational Specialty Specification (OSS), the Qualification Standard (QS) and the currently in use MLPs of each trade at 406(M) OTS.

Following this review an organizational and personal analysis will be completed. This step will ensure that a training solution is aligned with the organizational strategy and that the return on investment justifies developing the training. The personal analysis

will validate that training (aside from being CFITES mandated) is actually the correct solution to the observed performance gap.

The next step will be the task analysis. Much of the task analysis has already been completed through the CFITES process, however, a Training Plan Writing Board will need to be convened. The board members must include subject matter experts from each of the in-house aircrew trades with appropriate instructional experience, and ideally having taught instruction at 406(M) OTS. Other members will include the 12 Wing Standards Section Commander (or representative), a Training Development Officer (for guidance on the writing board process and associated administration) and a chairman of the board.

The goal of the writing board is to develop a FIC TP that is aligned with the superior training documentation, the QS. The findings of this process will determine the way ahead by identifying areas for follow-up action and recommendations.

In summary, the modified needs analysis and CFITES guidance will be the guiding methodology. The observed performance gap has been deemed significant enough that key stakeholders share the concern. This process requires information gathering, a literature review and an organizational, personal and task analysis to be completed.

Chapter 4: Results

The initial concern for the investigation into the Maritime Helicopter Flight Instructor's standard of training was due to an inflight training accident. An instructional trip resulted in a hard landing while the pilot instructor was teaching a new student how to conduct emergency landings from the hover during single engine failures. The impact resulted in the collapse of the tail wheel assembly and the damage prompted a flight safety investigation. It was determined that a gap in instructional training was a direct contributing factor.

As the flight safety system process flow requires Commanding Officer acceptance of all preventative measures prior to implementation, a high level of awareness of a potential training gap was present from early in the process.

Following completion of the flight safety investigation, in March 2014, initial discussion informed the CO and the Operational Flight Training Commander (OTFC) of the lack of a Flight Instructor Course training plan. Of specific concern was the possible compromise of the quality of flight instruction, the potential for further safety of flight compromise and a cascading impact throughout 12 Wing. Support from the CO early in the process was critical as he is the final approving authority for all unit level training documentation.

Once the performance gap and lack of mandated training documentation was identified, an analysis of the training environment was required. This involved an analysis of the organizational, task and individual levels (Saks, 2010, p. 101).

Organizational Analysis:

The goal of the organizational analysis is to determine if the development and implementation of “a training program is congruent with an organization’s strategy” (Saks, 2010, p. 104). The mission of 406(M) OTS is to produce qualified aircrew (and technicians) for operational employment. To better understand the organization, an analysis of the strategy, environment, resources and context must be completed (Saks & Haccoun, 2010, p.104).

Strategic Analysis:

At its core, training is a long-term investment in the human capital of an organization (Schwind et al, 2013, p. 268). The organizational strategy is to maintain a motivated and qualified flight instructor cadre capable of executing all aspects of training required for new members to achieve the standard of the basic operational aircrew categories. As such, the ability to effectively train to a specified standard is a core competency. This depends directly on the quality of the instructors, which are trained in-house.

Inherent in this, is the requirement for a core cadre of experienced instructors capable of training new instructors. It follows logically that the ability to effectively train flight instructors is a critical strategic capability and essential to the long-term sustainability of the mission. Without an effective flight instructor training plan, there is an acute risk of an insidious loss of instructional skill set leading to a compromised operational capability of the MH community.

Environmental Analysis:

The RCAF possesses a hierarchy of regulations; most relevant is the mandate that all operational training squadrons (OTS) shall have a training plan for every category of student. This includes the requirement for an MHFI training plan.

Resource Analysis:

The organizational structure at 12 Wing introduces unique challenges to the mission. 406(M) OTS is tasked with the production of operationally ready aircrew and technicians, but lack the resources to independently complete this. All the aircraft used to train students and maintain aircrew currency at 12 Wing Shearwater are owned and maintained by 423 Maritime Helicopter Squadron, the operational unit. All of 12 Wing, including 406(M) OTS, is also subject to a 12 Wing flying schedule and competing priorities, as determined by 12 Wing Operations. This means that 406 (M) OTS is charged with the production of qualified personnel, using aircraft that they don't own and are constrained by a schedule that they don't control.

The key resource that 406(M) OTS possesses is experience. All of the instructors have achieved their highest aircrew category and completed at least one operational posting prior to being selected to become an MHFI. This experience has dampened the potential impact stemming from the lack of a FIC TP, which may have contributed to the known condition being unaddressed, as it was not properly considered a priority.

The first step in flight instructor training is the ground school theory, which is controlled by the Central Flying School and standardized across the RCAF. This initial training covers the theoretical portion of flight instruction and provides the skills and knowledge required to develop and deliver training.

The current flight instructor training is taught by the most experienced instructors who are specifically designated by the CO as FIC flight training officers (FTO). This instructional experience is supplemented by the availability of an on-staff Training Development Officer (TDO). Together, there is an appropriate skillset to develop a FIC training plan.

Organizational Context:

Two important concepts that affect the success of a training program are the transfer of training climate and the learning culture (Saks & Haccoun, 2010, p. 107). The transfer of training climate at 406 (M) OTS for flight instructor training is very high. Through the use of common courseware for instruction, the support of supervisors and peers for instructional skill employment and the presence of instructional category checks, application of theoretical instructional skills is continuously reinforced. Instructors must complete an instructional category checks every six months and are observed by a designated FIC FTO. The ongoing evaluation of instructional techniques by the instructors that taught the FIC supports a practical application of theoretical material.

The learning culture within military aviation is inherently high due to the nature of the job and the selection criterion of instructor candidates ensures that this culture remains strong. Every member selected for employment as an MHFI has undergone years of category upgrades and a constant struggle for maintaining proficiency. A high level of personal accountability is deeply engrained in the aviation culture, and is continually reinforced by instructors who work with untrained students on a daily basis.

Task Analysis:

In accordance with the methodology of a modified needs analysis, a detailed task analysis was not required as the QS dictates the performance objectives for qualification as a flight instructor. The job description, nature of duties and expected performance have been previously determined as part of the Flight Instructor Occupational Specialty Specification and Qualification Standard working group.

In accordance with the CFITES model for training development, the task analysis has been completed in the analysis phase and the TP production is the objective of the design phase. Without a TP, subsequent steps like the development of the MLPs, conduct, evaluation and validation cannot be completed (Central Flying School, 2005, pp. 2-3). Consequently, while the QS established the standard, without the TP (the design phase), the CFITES process is incomplete.

Due to the dynamic nature of aircrew instruction the rectification of a performance gap in the instructional standard can most effectively be completed through training. The tasks are complicated, performed frequently, the correct performance of instruction duties is critical and performance goals need to be clear (Saks & Haccoun, 2010, p.119). This reinforces the requirement to develop training to ensure the maintenance of standard of flight instruction.

Person Analysis:

The aim of the person analysis is to determine if current individual performance is meeting the required standard. From the mission statement, catalyst for concern and the previously identified lack of documentation, it is clear that there is a gap in the desired performance of MHFIs. This analysis aims to define the desired performance,

determine the nature of the performance gap and identifying obstacles to performance (Saks & Haccoun, 2010, p.107).

Desired Performance:

The QS is a training document common to all aircrew flight instructors in the RCAF. It contains the required performance objectives for effective instructional duties and clearly states the desired performance levels and standards of assessment. Prior to selection as a candidate for flight instruction, there are pre-requisites that must be achieved. These may vary amongst trade or airframe, but the pre-requisites ensure that the qualification to conduct the primary job in a non-instructional role has been assured. Therefore, it is not necessary for the FIC TP to dictate primary aircrew category criteria, but to translate the QS established standard of instructional performance into a practical application. The flight instructor QS provides a template for the TP's that are to be developed by the individual operational training squadrons.

In order to effectively define the desired performance, it was proposed that a FIC TP writing board be conducted. Gaining buy-in from the chain-of-command was an important step as any tasks that prevent availability for MHFI's for instructional duties are undesirable. The primary flight instruction subject matter experts (SME) required for the writing board are in the Operational Training Flight, and after discussing the implications of the performance gap and lack of mandated training documentation, a convening order for a TP writing board was issued by the OTFC.

The SME board members required from 406(M) OTS are experienced MHFIs from each of the three aircrew trades (Pilot, Air Combat Systems Officer and Airborne Electronic Sensory Operator). Each member selected holds the highest operational

category for their respective trades and, in addition to their basic instructional duties, members have been designated by the CO as Flight Training Officer's (FTO) authorized to instruct the existing FIC.

Other members required for the board included the Training Development Officer and representatives from 12 Wing Standards for each aircrew trade. Inclusion of 12 Wing Standards was necessary as their training and qualification is derived from the FIC.

Assuming the role of the writing board chairman, I would not be participating in the board as an instructor SME. This would ensure a degree of impartiality in order to avoid unnecessary influence on the development of the training plan. The writing board was held over four days, from 22-25 April 2014.

The goal of the writing board was to create a Flight Instructor Course training plan that translates the QS stated performance objectives into manageable enabling objectives. The decision was made early in the process that a common training plan for all three aircrew trades at 406(M) OTS would be better. This would ensure a better maintenance of instructional standard across the trades and prevent further organizational drift. Subtle differences in interpretation and the practice of organizational stove piping have developed in significant differences between trades in the application of instruction. This created a necessity to balance adequate detail in the training plan with being suitable generic to address multiple trades. This is possible as the course is primarily focused on instructional theory. The specific details for practical training would be delegated to the individual trades MLPs.

Using the template TP provided in the QS (as well as referencing the CH-148 Cyclone FIC TP and the CH-146 Griffon Pilot FIC TP) an initial draft was produced on 24 Apr 14.

Determining the Gap in Performance

The gap in performance though hard to quantify, is most simply the difference between required results and the current results (Saks & Haccoun, 2010, p.100). While instructor currency checks are completed by designated FTO's every six months, the desired standard was uncontrolled. There is a Fight Instructor Course that all MHFI's have completed, including trade specific MLPs that detail the training syllabus, but without a FIC TP it is difficult to measure the gap between actual and desired performance. This is especially difficult due to the dynamic nature of flight training and the lack of available personnel and resources to commit to the process. Some areas have been identified such as a lack of appropriate safe emergency simulation techniques and interpretation of definitions, which has led to a divergence in the instructional standard between trades.

A key factor that was identified by the board members is that instructing students inflight is not simply the summation of trade skills and instructional theory. The nature of the environment is different, as the students are untrained, which makes the crew interaction fundamentally different. This is especially pertinent when conducting dynamic maneuvers like inflight emergency simulation; a skillset that all members agreed was lacking standardization.

The gap in performance seen in the figure below, while not readily quantifiable, is evident as a result of the lack of training documentation from the TP. This has led to a

lack of guidance for the practical application of instructional theory, and safe and effective emergency simulation.

While the extent of the performance gap is difficult to quantify, the development and enforcement of the FIC TP will correct this gap. Subsequent rewriting of the trade specific FIC MLPs will ensure realignment with the QS designated standard of instruction.

In addition to the development and realignment of the instructional training documentation, there is the training of the currently qualified MHFIs and FIC FTOs. Once the MLPs are rewritten and the gap is more clearly identified, a training program must be completed to establish the standard within the existing instructors.

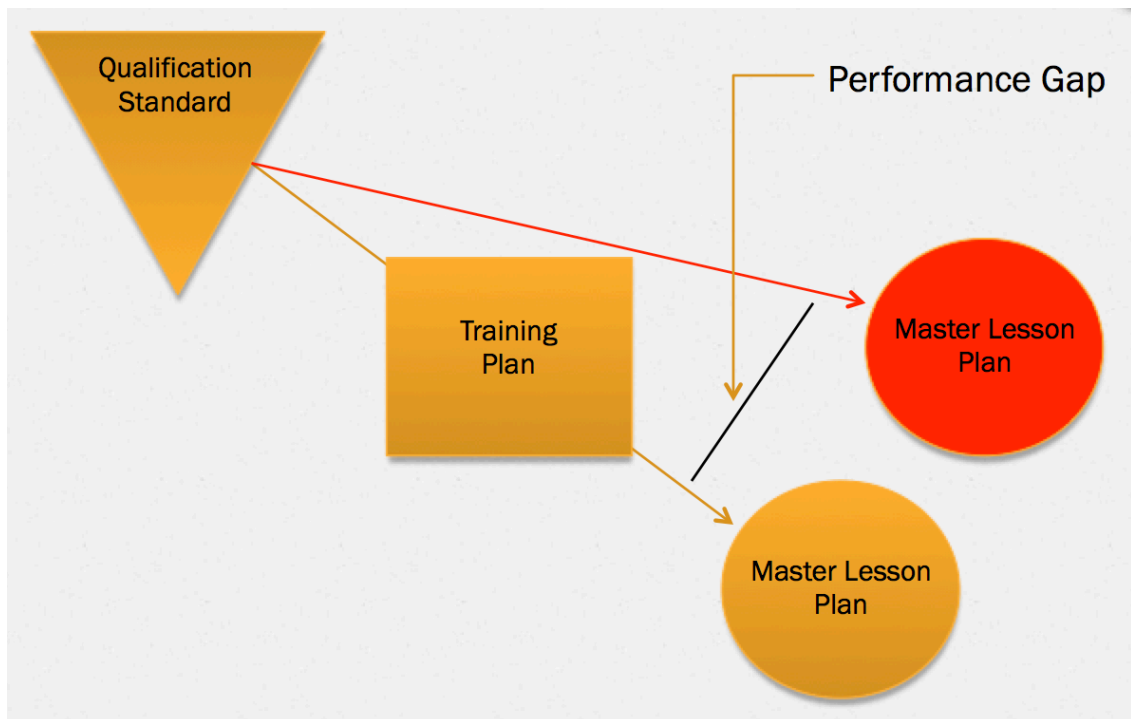


Figure 3: The Performance Gap in MH Flight Instructor Training

Obstacles to Performance

The primary obstacles identified to the instructional performance of MHFIs are human and informational in nature (Saks & Haccoun, 2010, p.114). The human factors are the lack of knowledge of all required instructional techniques and the lack of skill as a result of no proficiency employing these techniques. The fundamental lack of instructional training must be resolved at the highest instructional level. A training program for the FIC FTO's should be developed to ensure that the TP defined standard is met and enforced. Next the current MHFIs and 12 Wing standards personnel must undergo training to ensure the performance gap is corrected across 12 Wing.

The informational obstacles are the lack of defined goals and performance measurements stemming directly from the lack of a FIC TP. The presence of MLPs, which appear to be based primarily on collective experience, have lessened the severity of the obstacles and the magnitude of the performance gap, but they persist nonetheless.

Chapter 5: Conclusions

This needs analysis process has identified several critical points that support the development of the FIC TP and the follow on recommendations for practical implementation. The initial flight safety investigation revealed that there was a missing piece of documentation that governed the standard of flight instruction and that a performance gap had developed. While quantifying the performance gap may not be within the capabilities of 406 (M) OTS, the capability to correct it is. The first step in correcting this is the implementation of the Commanding Officer approved Flight Instructor Course Training Plan.

The organizational analysis revealed that an effective and sustainable organizational instructional capability is a core competence. The strategic implications of an insidious depreciation of instructional standard may resonate through the operational capability of the entire MH community. This risk has been dampened somewhat through the professionalism and experience of aircrew instructors, but a performance gap has still developed.

It was determined that the ground school portion of the current FIC, standardized by CFS, covers the required training to develop training documentation. In conjunction with the in-house Training Development Officer and the experience of the currently delegated FIC FTOs, 406 (M) OTS has the capability to develop the FIC TP. In addition, analysis of the organizational context identified the learning culture and transfer of training climate is high and therefore, conducive to the successful implementation of a training program.

The personal analysis revealed that the desired performance was unclear due to the lack of systemic documentation. The QS established the aircrew generic instructional

standard, but without the TP to guide the development, the training performance end states of the MLPs were uncontrolled. This, combined with the organizational drift of instructional practice between trades, resulted in a performance gap. While it was not possible to clearly define the gap, the solution was evident. The development of the FIC TP and subsequent realignment of all subordinate documentation will ensure the appropriate terminal performance the FIC. Concurrent with this realignment is the requirement to develop a training program to set the standard of instruction for all current instructors and 12 Wing Standards personnel.

The decision to develop and implement a training program is the best option. The development of a FIC TP is explicitly mandated by the CFITES requirement for documentation. More importantly, the needs analysis process revealed that the capability to produce the FIC TP was present and that the development and implementation of the FIC TP would correct the performance gap. Moreover, due to the criticality of the aircrew instructional capability in an inherently dynamic environment, possession of the QS dictated instructional skills is mandatory.

Key Findings:

1. The creation of the FIC TP is explicitly mandated by the CFITES doctrine;
2. The capabilities to develop and implement the FIC TP exist within 406(M) OTS;
3. The subsequent realignment of training documentation subordinate to the FIC TP and the training of current FIC FTOs, MHFIs and 12 Wing Standards Officers on the new instructional standard will correct the performance gap; and
4. The development and training of the FIC TP is the best solution.

Recommendations:

1. Align the MLPs and associated courseware with the QS and TP. This alignment should involve FIC FTOs from all trades to ensure a collaborative approach to the process and to facilitate cross trade understanding of the application of instructional theory.
2. Develop training for the current and future FIC FTOs to better prepare for the instructional duties of teaching on the FIC.
3. Develop training for the current MHFIs and 12 Wing Standards on the identified areas of realignment to reset the instructional standard at the appropriate level.
4. Improve instructional understanding across the aircrew trades through periodic joint training. As all three trades employ instructional theory from the same FIC TP, this will help prevent stove piping and future organizational drift.
5. Establish a Chief Flight Instructor position within the operational training flight to ensure unified oversight over all aircrew instruction.

The development and implementation of the Flight Instructor Course Training Plan is the first step in the realignment of the nationally mandated Flight Instructor Qualification Standard and the MHFI standard. The Commanding Officer of 406 Maritime Operational Training Squadron has approved the developed FIC TP and implementation has begun.

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