

UNCLASSIFIED

**TARNAK FARM BOARD
OF INQUIRY**

Final Report



**COMMISSION D'ENQUÊTE
DE TARNAK FARM**

Rapport Final

UNCLASSIFIED



Tarnak Farm Board of Inquiry – Final Report

Letter from the President

Minister of National Defence (via Chief of the Defence Staff)
National Defence Headquarters
Major-General George R. Pearkes Building
Ottawa, ON K1A 0K2

19 June 2002

Minister,

Please find enclosed the Final Report for the Board of Inquiry convened to investigate the circumstances surrounding the friendly fire incident of April 17, 2002 at Tarnak Farm, Afghanistan.

Building upon the Interim Report submitted to your office on May 13, 2002, and having completed its formal proceedings, the Board now submits for your consideration a comprehensive response to all finding objectives assigned within the Terms of Reference. Given the extensive amount of information required to arrive at these findings, it was neither possible nor desirable to include all examined documents and material with the Final Report. Please be assured, however, that all evidence gathered has been catalogued and will be submitted for proper archival storage.

As previously indicated to the Chief of the Defence Staff, much of the supporting material is classified for operational security reasons, as is the main text of the Final Report itself. Nevertheless, to facilitate open and transparent communication with the affected families, the men and women of the Department of National Defence and the Canadian Forces, and the greater Canadian public, the included Executive Summary has been crafted to communicate the essential elements and findings of the investigation in an unclassified manner.

I hope you will agree with me that the unsevered release of this portion of the investigation will reaffirm the commitment of this Board and the Canadian Forces to submit the particulars of this tragic event to the broadest possible public scrutiny, consistent with operational imperatives. I trust also that this approach will balance the need of the families to understand what befell their loved ones with the desire of the wider public for information on this important national issue, in the most compassionate yet pragmatic manner.

In closing, I would like to take this opportunity to express my gratitude for the excellent administrative support that has been provided by all of the staffs with which we have come in contact. I would also like to highlight the outstanding nature of the cooperation provided to the Board by our comrades-in-arms in the military of the United States of America. Their sensitivity and compassion in the face of this incident has ingis in



Tarnak Farm Board of Inquiry – Final Report

Original signed by

General Maurice Baril (Retired)
President, Tarnak Farm Board of Inquiry



Tarnak Farm Board of Inquiry – Final Report

Executive Summary

Introduction

Late on the night of 17/18 April 2002, a section from “A” Company, 3rd Battalion, Princess Patricia’s Canadian Light Infantry BG (3 PPCLI BG) were conducting a live-fire exercise in the vicinity of Kandahar, Afghanistan, when they were mistakenly engaged by two American F-16 fighter aircraft.

At the time of the attack, the two aircraft were returning to their home base in the Arabian Gulf area after a long patrol over Afghanistan. As they transited through the Kandahar region, ground fire from the Tarnak Farm Multi-Purpose Range Complex (hereafter abbreviated as the Tarnak Farm Range) attracted their attention. This site, formerly one of the main Al-Queda training installations, had been partially converted into a multi-purpose firing range. In this regard, it was used regularly by local coalition forces to conduct much-needed training, both during the day and at night.

As part of the planned night exercise, “A” Company personnel were conducting a variety of firing drills, encompassing a range of weapons from personal side arms up to and including shoulder-fired anti-tank munitions. Though visible from the air, the armament being employed was of no threat to the aircraft at their transit altitude. Nevertheless, one of the F-16s invoked the right of self-defence and released a Mark 82 500-lb Guided Bomb Unit (GBU-12) Laser-Guided Bomb (LGB) on the soldiers’ firing position. The resulting blast killed four soldiers and injured eight others, one very seriously. Following their attack, the aircraft recovered at their home base without further incident.

Formation of the Board of Inquiry

From the outset, it was clear that this was the most serious case of fratricide or “friendly fire” to have been experienced by the Canadian Forces (CF) in Coalition operations since the Korean War. Accordingly, at the direction of the Minister of National Defence, a five-member Board (referred to as the *Tarnak Farm Board of Inquiry*) chaired by General Maurice Baril (retired) was formed. Board members initially included Brigadier-General Marc Dumais, Colonel Greg Matte, Colonel Mark Hodgson, and Chief Warrant Officer Denis Levesque. The Board was augmented by specialist advisors in air operations (including an F-16 pilot from the United States Air Force), legal, medical, and police personnel, as well as public affairs, support and administrative staff.

In parallel, an American investigation (eventually called the *Coalition Investigation Board* or CIB) was initiated to probe the incident from an American perspective. It was determined that the work of the American Board would be greatly facilitated with Canadian participation. Consequently, in an unprecedented move, Brigadier-General



Tarnak Farm Board of Inquiry – Final Report

Dumais was seconded to the American group in the position of co-president, with rank and position equivalent to the senior American officer. This reduced the Canadian Board to four members, but provided a degree of visibility for Canadian authorities into the proceedings of the CIB, commensurate with the coalition nature of the incident and the need to maintain a high level of public confidence in the proceedings.

Conduct of the Investigation

As quickly as possible following its formation, the Canadian Board traveled to the theatre of operations and commenced its work. This early initial visit to the area, undertaken to establish the exact nature of the ground situation in as comprehensive a fashion as possible, was characterized by tremendous support by local American military authorities. During visits to deployed Canadian forces in Kandahar and Bagram, the Board recorded testimony from 14 Canadian witnesses. It also received voluntary sworn statements from five American service personnel, including the Commander of Task Force (TF) Rakkasan, to which 3 PPCLI BG is attached. In addition to receiving verbal and physical submissions of evidence, the Board made an extensive inspection of the incident site at the Tarnak Farm Range.

While working in the Arabian Gulf area, the Board established and maintained regular contact with the American CIB, primarily with respect to process and travel issues, but also in terms of transfer of collected evidence. Concerns over how best to maintain the autonomy of both investigations while dealing with the same evidentiary sources were addressed by direct Board-to-Board legal consultations. This resulted in the enactment of a rigorous protocol for the exchange of raw, unanalyzed evidence, thereby enabling both boards to ensure that all analysis was completely independent, that any findings would be made without prejudice or influence of the other Board.

Since the American CIB had begun its investigation from the air side and was dealing mainly with US service personnel and military assets, it was able to amass a preponderance of technical data relatively early in the process. With the nature of events on the ground rapidly becoming clearer to the Canadian Board, it was evident that early access to this body of technical data would be critical for purposes of the Interim Report, due to the Minister of National Defence on 13 May 2002. Accordingly, through an intense effort by the CIB to process and collate the required material, the Canadian Board was delivered a very comprehensive collection of data prior to departing the theatre of operation.

Upon its return, Board staff focused their attention on producing the Interim Report, while Board members and some advisors continued to Edmonton to conduct the first of two planned visits, which consisted of a series of interviews with injured personnel in the region. During the initial Edmonton visit, and shortly after his return to Ottawa, the Board President was able to meet with all of the victims' next-of-kin (NOK), following



Tarnak Farm Board of Inquiry – Final Report

through on his personal pledge to pass them information on the progress of the Board in as timely a fashion as possible. After roughly a week in Ottawa, the Board again returned to Edmonton to conduct its second set of interviews. This period coincided with the acceptance and partial release of the completed Interim Report by the Department of National Defence, and the Board was able to make some of its findings public from the Edmonton Garrison, the home station of 3 PPCLI.

Following the submission of the Interim Report, the Board began a methodical re-examination of all information received to date to determine the degree to which the interim findings would need additional documentation or evidentiary support to be rendered final. Continued liaison with the American CIB supported this effort, and a number of additional information exchanges took place. By now, it had become clear that the Board still lacked sufficient evidence and information to accurately reconstruct all aspects of the air picture.

In particular, a number of questions concerning the doctrinal and functional controls over theatre air operations remained unresolved. Some of these might have been addressed through interviews with the pilots involved, but it was not yet evident whether these individuals would consent to appear before the Board. Accordingly, the Board elected to gather as much supporting information as possible from in-theatre sources. This necessitated a return to the Arabian Gulf region, with the intent of conducting additional interviews and fact-finding visits to key locations.

The Board returned to Ottawa on 4 June 2002 and commenced drafting the Final Report, which was due to the Minister on 21 June 2002. During the course of its investigation, the Board conducted 26 direct interviews, received sworn testimony from 65 others, and independently generated over 800 pages of information and transcripts. Through the assistance of the American CIB, it was provided with imagery and technical data of the most sensitive nature, recorded radio transmissions, and all applicable orders and directives surrounding the conduct of the relevant air and ground operations in the Afghanistan campaign.

To gather additional information, the Board intended to visit the Combined Air Operations Centre (CAOC) in the Arabian Gulf region, but were not issued with visas by the appropriate national authorities within sufficient time to conduct the visit. On return to Canada, the Board was able to arrange for a video-teleconference with CAOC members that adequately met the requirement.



Tarnak Farm Board of Inquiry – Final Report

, the Board membership is collectively satisfied that the evidence and testimony received over the past 60 days is entirely sufficient to allow an accurate reconstruction of the events prior to, during, and after the incident. This has permitted the Board to make conclusive findings in all areas as assigned by the Terms of Reference, and to make recommendations that both seek to prevent recurrence and to highlight other areas for improvement for future coalition operations.

Board Findings

In accordance with the Terms of Reference the Board makes the following findings:

What were the circumstances surrounding the injuries and deaths? Beyond the introductory narrative included here and the extensive detail contained within the full report, the Board has concluded that the members of 3 PPCLI BG who were undertaking live-fire training at the Tarnak Farm Range on the night of the incident had done nothing wrong by way of coordination procedures or safety regulations.

From an air operations point of view, however, the F-16 pilots involved were not aware of the Tarnak Farm nor the planned live-fire exercise. There were a number of reasons why this was the case. Lacking this critical information, it seems clear that the F-16 pilots mistakenly interpreted the live fire as a threat to their formation, and engaged upon a decision-making process that led to the declaration of self-defence and the release of a weapon on friendly troops.

What caused the injuries and deaths? All injuries and deaths have been attributed to the blast and shrapnel effects created by the explosion of a Mk-82 500-lb GBU-12 LGB dropped by an American F-16 fighter plane. The seriousness of each injury was relative to several factors, such as proximity to the explosion, position within the Eastern wadi (drainage ditch) and surrounding area, and degree of protection from flying shrapnel. In general, those members who were in closest proximity to the point of impact received the gravest of injuries; certainly, had the bomb impacted in even a slightly different location, many more casualties might have been incurred.

Were the deceased and injured non-commissioned members on duty at the time the incident occurred? It has been confirmed that all of the deceased and injured non-commissioned members were on duty at the time of the incident.

Were the deceased and injured non-commissioned members to blame for the injuries or deaths? None of the deceased, injured or other members of the 3 PPCLI BG who planned, coordinated or participated in the subject live-fire exercise at the Tarnak Farm



Tarnak Farm Board of Inquiry – Final Report

Range can be blamed in any way for the injuries or deaths that occurred as a result of the subject incident.

Were any other person(s), to blame for the injuries or deaths? The Canadian Board has determined that the actions of the *Flight* are the primary cause for the injuries and deaths.

It is the conclusion of the Board that the pilot's actions were not consistent with either the expected practice for a defensive threat reaction or the existing published procedures. This represented a failure of airmanship and technique. Furthermore, their actions contravened the published Commander's direction

Were the injuries and deaths attributable to military service? The injuries and deaths resulting from the incident were entirely attributable to military service. At the time of the accident, the individuals involved were on continuous duty in a theatre of operations and were undertaking authorized and necessary continuation training in preparation for an upcoming mission, as part of ongoing Coalition operations.

What was the nature and quality of the planning and conduct of the live fire exercise? The planning of the exercise was appropriate for the established objectives (section level night fire training) and the simulated tactical scenario. The planning and subsequent conduct of the live fire exercise was entirely consistent with established regulations and coordination procedures, as directed by the CF and the Commander of TF Rakkasan.

Were the safety procedures applicable to the exercise properly followed? In general, the safety procedures considered and employed during the conduct of the live fire exercise on the evening of 17 April 2002 were in accordance with CF directives. Minor procedural irregularities regarding the use of ricochet danger area templates and the drills during preparation of the C-19 Area Defence Weapon (ADW) were noted by the Board, but these had no bearing on the incident and immediate recommendations have been made to address these shortcomings. In fact, precautionary measures taken with respect to in-place accident response were particularly commendable.



Tarnak Farm Board of Inquiry – Final Report

What was the nature and quality of the co-ordination between Canadian and United States authorities surrounding the exercise? Use of the range for night, live-fire exercises was common practice within TF Rakkasan, and was coordinated through a variety of scheduling, communications, and procedural measures. These measures included a dedicated communications net and the stationing of a sentry in the Kandahar Airfield Facility (KAF) control tower. The conduct of the training at the Tarnak Farm Range on the night of the incident was entirely in accordance with all established procedures for the TF.

What was the nature and quality of the co-ordination between ground and air forces surrounding the incident?

What was the quality of in-theatre post-incident response and incident reporting? In all respects, the medical response to the incident was exceptional, and saved the life of at least one of the injured. From the initial actions taken in the field through to the medical evacuation of some of the injured out of theatre to American hospital facilities at Landstuhl, Germany, the Coalition medical response was appropriate. The reporting of the incident by the 3 PPCLI BG to the Canadian and the Coalition chains of command was timely and adequate, complete with follow-up reports as additional, relevant details became known.

Are there any other issues of relevance to this investigation? As part of its investigation, the Board has commissioned a study on the current and evolving state of air-ground combat identification (CID) technologies. This study has produced a number of pertinent recommendations and is available to the public at the Board Web Site.

Conclusion

Until the bomb struck their position, the troops involved had no idea that they were being targeted or that they were in serious danger. Though demanding, the training undertaken that evening was of a routine and well-understood nature, was being carried out in a



Tarnak Farm Board of Inquiry – Final Report

known location under controlled conditions, and had been organized and authorized properly through the local chain of command. While Afghanistan remained a combat zone under conditions of Coalition air supremacy there was no apparent need for ground troops of any nationality to indulge in exceptional force protection activity to prevent air attack, either from friendly or enemy forces.

Accordingly, it is the overall conclusion of the Board that the proximate fault for the outcome of the attack lies with the two F-16 pilots

Corrective action has already taken place in a number of instances; other proposed changes will require additional study to address, and some areas of weakness may only be resolved in the long-term. What is certain, however, is that this event has opened a new chapter on the study and understanding of the mechanisms and preconditions surrounding fratricide. Furthermore, it is a study that is being undertaken in the context of ongoing joint and combined operations, wherein Coalition forces of vastly differing capabilities and methods of operation are coming face to face with both the vast potential and the great peril implied by high-speed, high-technology warfare in a fluid and uncertain environment.

Many observers have called “friendly fire” a military fact of life – some argue that it is inevitable, especially in the evolving “network centric” style of modern Western warfare. These opinions aside, the Board strongly recommends that Canada must continue to actively engage her allies in a concerted effort to understand why and how fratricide incidents occur, with the aim of prevention and with the ultimate goal of preserving our scarce and increasingly valuable operational resources.

Reaffirmation of Intent

From its inception, the Board set and demonstrated a strong commitment to the highest standards of openness and transparency, consistent with operational imperatives and the sensitive nature of the incident. This approach, consistent with the current operating philosophy of the Department of National Defence, was taken to ensure that the families of the deceased and injured, the personnel of the CF, and the people of Canada were sufficiently informed as to the circumstances and causes of this unfortunate event.



Tarnak Farm Board of Inquiry – Final Report

General Maurice Baril (Retired), President
Colonel Greg Matte, Member
Colonel Mark Hodgson, Member
Chief Warrant Officer Denis Levesque, Member