

Board of Inquiry Minutes of Proceedings

Convened By:

LGen J.C.M. Gauthier, Commander CEFCOM

Date of Convention:

22 September 2006

Topic of Inquiry:

A-10A Friendly Fire Incident 4 September 2006  
Panjwayi District, Afghanistan

Board Members

Col J.L. Milot, President  
LCdr G.J. Davis, Member  
Maj G.H. Shepherd, Member  
Maj J.E. Allen, Member

Board Advisors and Support Personnel

Cdr J.D. Harrigan, Legal Advisor  
Lt Col J.L. Cowan, USAF Advisor  
Maj A.T.P. Farris, Legal Advisor  
Maj M. Storrier, Medical Advisor  
MWO K.W. McMillan, Administrative Officer  
WO M.C. Turcotte, Court Reporter

## Table of Contents

<b>Table of Contents</b> .....	<b>1</b>
<b>Executive Summary</b> .....	<b>4</b>
<b>Classification &amp; Designation</b> .....	<b>6</b>
<b>Statement by the Board</b> .....	<b>7</b>
<b>Chronology of Investigative Activities</b> .....	<b>10</b>
<b>Contextual Narrative</b> .....	<b>13</b>
General.....	13
Pre-deployment Activities.....	13
In-theatre Contextual Narrative.....	13
Post-incident Activities.....	16
Private Graham.....	17
<b>Findings and Analysis</b> .....	<b>18</b>
<b>Finding A</b> .....	<b>18</b>
Statement of Finding.....	18
Supporting Facts.....	18
Analysis.....	18
<b>Finding B</b> .....	<b>21</b>
Statement of Finding.....	21
Supporting Facts.....	21
Analysis.....	21
<b>Finding C</b> .....	<b>22</b>
Methodology.....	22
Statement of Finding (Injured and Deceased).....	22
Supporting Facts.....	22
Analysis.....	22
Statement of Finding (Others).....	22
Supporting Facts.....	22
Analysis.....	25
<b>Finding D</b> .....	<b>27</b>
Statement of Finding.....	27
Supporting Facts.....	27
Analysis.....	27
<b>Finding E</b> .....	<b>28</b>
Methodology.....	28
Statement of Finding/Supporting Facts.....	28
<b>Finding F</b> .....	<b>33</b>
Statement of Finding.....	33
Supporting Facts.....	33
Analysis.....	34
<b>Finding G</b> .....	<b>37</b>
Statement of Finding.....	37
Supporting Facts.....	37
Analysis.....	40

<b>Finding H</b> .....	<b>41</b>
Methodology.....	41
Statement of Finding (Safety Provisions).....	41
Supporting Facts.....	41
Analysis.....	43
Statement of Finding (Safety Procedures).....	44
Supporting Facts.....	44
Analysis.....	46
Statement of Finding (SAFETY Equipment).....	47
Supporting Facts.....	47
Analysis.....	48
<b>Finding I</b> .....	<b>49</b>
Methodology.....	49
Statement of Finding (Standards of TF-K Training).....	49
Supporting Facts.....	49
Analysis.....	50
Statement of Finding (Appropriateness of Pre-deployment training).....	51
Supporting Facts.....	51
Analysis.....	53
Statement of Finding (Appropriateness of In-theatre Familiarization).....	55
Supporting Facts.....	55
Analysis.....	55
STATEMENT OF FINDING (IN-THEATRE TRAINING - APPROPRIATENESS OF CR-NH CERTIFICATION).....	55
Supporting Facts.....	56
Analysis.....	57
<b>Finding J</b> .....	<b>58</b>
Methodology.....	58
Statement of Finding.....	58
Analysis.....	61
<b>Finding K</b> .....	<b>62</b>
Methodology.....	62
Statement of Finding (Ground Component's Preparation).....	62
Supporting Facts.....	62
Analysis.....	63
Statement of Finding (Air Component's Preparation).....	63
Supporting Facts.....	63
Analysis.....	65
Statement of Finding (Execution of CAS).....	65
Supporting Facts.....	65
Analysis.....	72
<b>Finding L</b> .....	<b>73</b>
Methodology.....	73
Statement of Finding (Medical Response).....	73
Supporting Facts.....	73

Analysis.....	78
Statement of Finding (Operational Response).....	78
Supporting Facts .....	79
Analysis.....	80
Statement of Finding (Notification of Next of Kin) .....	80
Supporting Facts .....	80
Analysis.....	81
Statement of Finding (Notification of Chain of command).....	81
Supporting Facts .....	81
Analysis.....	81
Statement of Finding (Pte Mark Graham) .....	82
Supporting Facts .....	82
Analysis.....	83
<b>Finding M .....</b>	<b>84</b>
Statement of Finding.....	84
Supporting Facts .....	84
Analysis.....	84
<b>Recommendations .....</b>	<b>86</b>
<b>Recommendation 1.....</b>	<b>86</b>
<b>Recommendation 2.....</b>	<b>86</b>
<b>Recommendation 3.....</b>	<b>87</b>
<b>Recommendation 4.....</b>	<b>87</b>
<b>Recommendation 5.....</b>	<b>88</b>
<b>Recommendation 6.....</b>	<b>88</b>
<b>List of Annexes .....</b>	<b>89</b>
<b>Annex A – Terms of Reference.....</b>	<b>1</b>
<b>Annex B - Witness Testimony.....</b>	<b>1</b>
<b>Annex C – List of Exhibits .....</b>	<b>1</b>
<b>Annex D - CIB Documentation/Information.....</b>	<b>1</b>
<b>Annex E –Report of Postmortem Examination.....</b>	<b>1</b>
<b>Annex F – Correspondence To or From the Board.....</b>	<b>1</b>
<b>Annex G – ATP 3.3.2.1(A).....</b>	<b>1</b>
<b>Annex H - CFAO 24-6 .....</b>	<b>1</b>
<b>Annex I - Glossary .....</b>	<b>1</b>

## Executive Summary

1. On 4 September 2006, a United States Air Force (USAF) A-10A mistakenly strafed the position of Charles Company (C Coy) group (gp) at Panjwayi District, Afghanistan, killing one Canadian soldier and wounding others. The following are the major points from this investigation:

- a. The incident pilot was responsible for the death and injuries of the Canadian soldiers in the incident. He lost his situational awareness. He mistook a garbage fire at the Canadian location for his target without verifying the target through his targeting pod (TGP) and heads-up display (HUD);
- b. The incident was preventable. If the incident pilot had verified the target using the TGP and HUD, he would have realized his error and discontinued the attack; and
- c. Although not causal to the incident, the Board noted deficiencies in regards to Forward Air Controller (FAC) training and equipment and makes recommendations in that regard.

2. The A-10A friendly fire incident that occurred on 4 September 2006 was a result of the A-10A pilot losing his situational awareness in the changing light conditions in the transition between night and day and his failure to check his TGP and HUD to verify target location. Because he was disoriented, he mistook the garbage fire lit by the Canadian soldiers for the fire from a previous bomb impact on the target he was supposed to strafe. While firing his cannon at the garbage fire, he killed one Canadian soldier and wounded others. The factors that contributed to the incident included a decision error by the pilot while pursuing his attack and a perceptual error when he incorrectly perceived the Canadian position to be the targeted location. Other contributing factors included the garbage fire that had been recently lit at the Canadian position and the changing light conditions in the transition from night to day.

3. The incident was preventable. The pilot had the target coordinates and had successfully strafed the target several times that morning. His visual reference point for the strafe was intended to be the residual fire and smoke from a bomb that had just been dropped by another A-10A. He padlocked (indicates that aircrew has locked his gaze onto an aircraft or ground target in order to maintain sight of it) on the garbage fire from C Coy gp, which was lit at about the same time and was the same distance from the A-10A as the target. If he had checked his TGP and HUD, he would have noticed the discrepancy between where his plane was pointed and the real target. That discrepancy should have caused him to abort that attack.

4. There were some extenuating circumstances. The incident pilot had removed his night vision goggles (NVGs) because the changing light conditions had limited their usefulness. They were removed less than a minute before he strafed C Coy gp. The transition period between night and day is a difficult one for the pilots because their eyes must adjust to ambient light and the cockpit instrumentation lighting also needs to be adjusted. The pilot was relying on his own

visual perception to identify the target. Further, neither the pilot nor the FAC were aware that C Coy gp had lit a garbage fire.

5. Although not causal to the incident, the Board finds that there were deficiencies with the FAC pre-deployment training and equipment. The FACs were not qualified Combat Ready Night High (CR-NH) before deploying to theatre, thus not meeting the requirements of the International Security Assistance Force (ISAF) Standard Operating Procedure (SOP) 311. Furthermore, the pre-deployment training, while providing FACs with the minimum knowledge to conduct Close Air Support (CAS), was insufficient to prepare them for the conditions they faced during Op MEDUSA. In regards to equipment, the FACs were provided with the minimum required to control aircraft. Many of their controls involved CAS during the night where more sophisticated equipment such as infrared (IR) pointers and other such devices would have greatly facilitated identification of targets and friendly positions.

6. The air coordinating agencies such as the Brigade and Battle Group level Tactical Air Control Party (TACP) were not properly manned. Prior to deploying, the Brigade Headquarters (HQ) exercised in Canada with a complete TACP but did not deploy it. Significant effort was made in theatre to overcome these shortfalls and to qualify FACs CR-NH and the efforts made by some individuals are commendable. But the fact still remains that the FACs arrived in theatre without the requisite qualification and the TACP was not properly manned. The President of the Board sent a letter to the Convening Authority while the Board was still in progress that identified these shortfalls, with the intention of ensuring that future rotations (ROTOs) would not deploy in a similar state of readiness.

7. The Board was impressed with the post-incident response. When the incident occurred, the medical response was remarkable. The soldiers responded immediately employing techniques and equipment received during the Combat Related First Aid (CRFA) training. The Tactical Combat Casualty Course (TCCC) trained soldiers were of invaluable assistance to the Medical Technicians (Med Techs). The casualty evacuation system was efficient and well coordinated as the wounded were very quickly prioritized and flown out in dedicated aeromedevac (AE) helicopters. The most severely wounded were treated at the Facility at Kandahar Airfield (KAF), then evacuated to Landstuhl and then Canada. wounded were diverted to the Dutch Facility at Tarin Kowt and treated and then either brought back to KAF or evacuated to Landstuhl and Canada. Task Force Kandahar's (TF-K) operational response in creating smoke to screen the situation from the enemy, coordinating A-10A presence to protect the AE and calling up the reserve Coy to enable the continuance of the mission were all timely and effective. The post-incident response in terms of next of kin (NOK) notification and chain of command information flow was excellent.

8. The post-incident response to Pte Graham's mortal injury was swift and thorough. All those who handled him, from the location of the incident to his return to Canada, treated Pte Graham's remains with deference and due respect.

## **Classification & Designation**

9. In the course of gathering evidence for this Board of Inquiry (BOI), the Board heard testimony and gathered documentation that concerned theatre operations, capabilities and current disposition of forces. Accordingly, this report is classified as SECRET.

10. The documentation/information provided by the United States (US) military authorities is classified SECRET and is contained in Annex D to the Report. Furthermore, much of this information was used by the Board and is used in the text of this report. This information requires the same protection as Canadian SECRET documentation/information. In addition, it must be emphasized that this documentation/information was provided "in confidence" by the US Government and is protected under s. 13 of the *Access to Information Act*. This documentation/information can only be released to the public where the US Government consents to the release or where the US Government has released the same information to the public.

## Statement by the Board

11. This BOI, tasked with investigating the A-10A friendly fire incident of 4 September 2006, faced some unique challenges. First, as the friendly fire incident took place in the Afghanistan theatre of operations, the Board was required to travel to theatre in order to hear the testimony of several key witnesses. Second, the Board had to ascertain to what degree it would inquire into the internal processes of the higher levels of command when examining the allocation, coordination and execution of CAS within the context of a larger multinational coalition operation. Third, the pilot involved in the incident was a member of the USAF and could not be compelled to testify.
12. As many of the witnesses to the incident were located in Afghanistan, the Board travelled to theatre to gather the majority of evidence. This required a significant amount of planning and preparation prior to arrival in order to minimize the impact on ongoing military operations. Furthermore, Board members were required to work “outside the wire” to gather eyewitness accounts of the incident. Such a decision required a thorough analysis of the potential risk involved compared to the potential benefits to be obtained.
13. Second, although determining the circumstances of the incident was a necessary finding, it was only one of thirteen findings that the Board was tasked to make. Several of the findings contained in the Terms of Reference (TORs) centered on the provision of CAS and, in some instances, expanded outside the scope of the incident itself. Although this is a normal process to enable a Board to capture all the elements that are causal to an incident, discretion was exercised in order to identify the limits within which the investigation should concentrate its efforts.
14. In identifying its parameters, the Board was cognizant that its fundamental task was to “investigate the injuries and death of Canadian Forces personnel, during OPERATION MEDUSA, at or near Panjwayi District, Afghanistan on or about 4 September 2006”. The Board appreciated that if it pursued all findings to their full potential, the Board could have found itself investigating matters that are well beyond its intent and scope. Accordingly, the Board limited its investigation to those matters directly relevant to the incident.
15. On two occasions, the President sought clarifications on specific findings. The first was defining the limit to which the investigation would scrutinize the medical evacuation process under Finding L. The Convening Authority directed that the Board confine its investigation of the evacuation process to the events up to the arrival of the wounded in Canada and would not extend its investigation to the care provided to the injured personnel once in Canada. Second, the Board’s investigation into the coordination of CAS mostly focussed on TF-K and Regional Command (South) (RC(S)) HQ. The Board addressed the interactions between the Battle Group, RC(S) HQ, ISAF HQ and the Combined Air Operations Centre (CAOC) in the coordination of CAS in order to ascertain the effectiveness of the coordination. However, the Board did not delve into the internal processes of either ISAF HQ or the CAOC because it was not necessary in order to make the findings required by the Convening Authority. It was also taken into account that a North Atlantic Treaty Organization (NATO) Bi-Strategic Analysis Lessons Learned (BALL) Team had been assembled and was better positioned to investigate the actions and



decisions made within ISAF HQ by those responsible for the coordination of CAS. It is anticipated that their report will provide the higher levels of command with the necessary findings and recommendations to make any necessary changes to improve the provision and coordination of CAS.

16. Third, the Board was limited in its ability to gain a complete picture of the incident from an air perspective; the incident pilot, his wingman and another pilot who was in the vicinity at the time of the incident, could not be compelled to testify since they were foreign nationals located outside the territorial jurisdiction of Canada. The inability to access the American witnesses was a handicap. The Board could not have completed its work without the support of the US, more specifically the Commander (Comd) and Staff of Ninth Air Force and US Central Command (CENTCOM). There was some delay in the determination of an information release protocol. However, great efforts were made to meet all requests made by this Board and ultimately included the transcripts of pilot testimony taken by the US Combined Investigation Board (CIB) as well as HUD and TGP footage from the incident aircraft. Furthermore, although the Board did not find it necessary, it was provided with the opportunity to submit written questions to the pilots for consideration by the proper US military authorities. Comd Ninth Air Force also appointed a senior A-10A pilot to assist the Board as an A-10A advisor.

17. The documents, including the transcripts of the US pilots' testimony provided by US authorities, were not entered as exhibits, as they were not presented to the Board by a witness under oath. However, the Board used that information to address the air aspect of the investigation and these documents have been included as a part of this report at Annex D.

18. The Report of Post-mortem Examination on Pte Graham was received by the Board on 28 September 2006. It had been produced by the Office of the Chief Coroner (Ontario) and, in accordance with pre-established procedure, sent directly to the J1 of Canadian Expeditionary Forces Command (CEFCOM). CEFCOM, the Convening Authority, passed it to the Board. This Report of Post-mortem Examination has been attached as Annex E to this report in accordance with Canadian Forces Administrative Order (CFAO) 24-6 Para 24. Also attached as Annex G to this report is the NATO publication Tactics, Techniques and Procedures for Close Air Support Operations (ATP-3.3.2.1(A)).

19. A separate issue that the Board President was required to address was whether to permit attendance of NOK of the deceased and seriously injured members at Board proceedings in accordance with CANFORGEN 047/06. The Board President, with the concurrence of the Convening Authority, determined that the NOK of the deceased and the seriously injured members would not be invited to attend the proceedings.

20. Four concerns formed the basis for this decision. The first was that the proceedings of the Board would, for the most part, take place in Afghanistan where safety could not be assured. Second, most of the testimony and evidence provided by the witnesses involved classified or personal information. Third, because some of the seriously injured members were invited to testify, it was felt that the presence of potential witnesses at the proceedings could undermine the independence and reliability of their testimony and might impact on the integrity of the evidence-

gathering process. Finally the sheer number of seriously injured members and the NOK of the deceased in this case would have rendered their attendance impractical.

21. Accordingly, a personal letter was sent to all seriously injured personnel and the NOK of Pte Mark Graham advising them of the President's decision to deny access to the proceedings of the Board. Each of the seriously injured members and the NOK of Pte Graham were also personally contacted by the President who explained the reasoning behind this decision to the satisfaction of all.

22. In the course of the interview process, the recording device was inadvertently left in record mode during the Board's brief recess from the testimony of Maj Withers, thereby recording the Board's deliberations. The transcribed deliberations have been removed from the transcript of that witness because they do not consist of witness testimony and are safeguarded with other Board internal correspondence.

23. Article 21.48 of the Queen's Regulations and Orders (QR&O) required the Board to record whether any injured personnel, or their personal representative, including the NOK of the deceased, had received, been offered, claimed, or intends to claim compensation from any person at fault for this incident. As of the date of submission of this report, none of the injured personnel, their personal representatives or the NOK of the deceased have indicated to this Board that they have a desire to claim compensation from any person at fault for this incident.

## **Chronology of Investigative Activities**

24. On 22 September 2006, LGen Gauthier, Comd CEFCOM, convened a BOI called "Board of Inquiry (BOI) Op MEDUSA – Friendly Fire Incident – 04 September 2006". The Board, composed of four members and assisted by four advisors and two support personnel, was tasked "to investigate the injuries and death of Canadian Forces personnel, during OPERATION MEDUSA, at or near Panjwayi District, Afghanistan on or about 04 September 2006." The TORs are appended at Annex A.
25. Prior to the Board being convened, the Administrative Investigation Support Centre provided formal training to both Board members and advisors from 21 to 22 September 2006.
26. From 23 September to 1 October 2006, the Board members initiated the planning and coordination process. This involved the early identification of documentation and witnesses required in order to elicit the necessary evidence. Board members and advisors also completed the necessary preparations to deploy to Afghanistan by receiving medical screenings, immunizations, weapons training, military kit issue, CRFA training and other administrative activities required for deployment.
27. As a US CIB and a NATO BALL Team were also convened shortly after the incident, initial discussions were held to consider how information would be shared. On 28 September 2006, a letter was sent to the Co-Presidents of the CIB requesting a list of witnesses interviewed by the CIB, a list of exhibits gathered by the CIB, information concerning the A-10A incident pilot and aircraft, and relevant operational orders for 4 September 2006.
28. Concurrently with the administrative preparations, the President of the Board visited seven of the twelve repatriated injured personnel. The remaining five seriously injured personnel were contacted by phone. On 29 September 2006, the President also travelled to Hamilton to meet with the NOK of Pte Mark Graham. Pte Graham's NOK and the seriously injured were briefed on the mandate of the Board and the procedures that the Board would follow. The President also informed the NOK and the injured members by letter that their attendance at the proceedings would be denied as outlined in the Statement of the Board.
29. Between 2 and 5 October 2006, before departing for Afghanistan, the Board heard testimony from five witnesses: Maj Michaud, Commanding Officer (CO) of Geomatics (GEO) Support Squadron; Maj Sprague, Officer Commanding (OC) C Coy, 1<sup>st</sup> Royal Canadian Regiment (1 RCR); MCpl Mitchell, Weapons Detachment Comd, 8 Platoon, C Coy, 1 RCR; Pte Lepage, 8 Platoon, C Coy, 1 RCR; and Maj West, Base Surgeon, Canadian Forces Health Services Centre (CF H Svcs C) Ottawa.
30. On 5 October 2006, the USAF A-10A advisor arrived in Ottawa to join the Board. Final pre-travel preparations were completed and, on 6 October 2006, the Board departed for  
On 7 October 2006, the Board arrived at  
On 9 October 2006, the President of the Board sent a second letter to the US CIB Co-Presidents requesting access to the incident pilot, his wingman and their Squadron Comd.

10/89

31. The Board departed \_\_\_\_\_ for \_\_\_\_\_ on the first available re-supply flight on 10 October 2006. From 11 October to 14 October 2006, the Board heard testimony from 13 witnesses: Capt Howell, RC(S) Air Liaison Officer (ALO); Maj Bradley, Deputy CO of the Role 3 Facility; Capt Spears, E Battery Fire Support Coordination Officer (FSCO); Maj Lauder, Chaplain, Task Force Afghanistan (TF-A); MWO Henwood, National Investigation Services (NIS); Capt Walsh, Social Worker, (TF-A); Maj Rankin, Land Force Doctrine Training Systems (LFDTS) HQ; LCol Ricard, RC(S) Medical Director; Maj Morissette, Medical Officer with Role 3 Facility in Kandahar; Maj Lavoie, J1 National Command Element (NCE); MCpl Somerset, Med Tech with TF-K; BGen Fraser, Comd TF-A and Comd RC(S); and Maj Brown, Acting OC C Coy.

32. On 15 October 2006, the Board members flew to Forward Operating Base (FOB) \_\_\_\_\_ to obtain testimony from LCol Lavoie, Comd of TF-K and then were taken by road to Ma'sum Ghar, to view the ground where the incident took place. Later that day, the Board members returned by road to KAF and heard testimony from: MBdr Melvin, 2<sup>nd</sup> Regiment Royal Canadian Horse Artillery (2 RCHA); Maj Ivey, Battery Comd of E Battery, 2 RCHA; and recalled LCol Lavoie for further questioning. It was also on that day that the Board was able to answer a question posed by Cpl Spence, one of the seriously injured members repatriated to Canada, and confirmed that none of the munitions from the A-10A on the day of the incident contained depleted uranium. This information was provided to the Board by Ninth Air Force to enable the Board to allay the concerns of the injured members.

33. On 16 October 2006, the Board members flew to FOB \_\_\_\_\_ in order to hear testimony from Sgt Myler, the FAC controlling the USAF A-10A aircraft at the time of the incident. Due to ongoing military operations, the Board members remained at \_\_\_\_\_ until a re-supply convoy returned to KAF on 18 October 2006.

34. On 19 October 2006, three witnesses testified before the Board: Maj Savage, OC TF-K Medical Facility; Cpl Laroche, C Coy Med Tech; and Maj Buchanan, Aide to Comd RC(S). A further two witnesses were recalled to submit documents to the Board.

35. The Board returned to \_\_\_\_\_ on 20 October 2006. Upon arrival in \_\_\_\_\_, the Board obtained testimony from Cpl Dewitte, 8 Platoon, C Coy, 1 RCR. By this time, it had become apparent to all Board members that, though not causal to the incident of 4 September 2006, shortfalls in Canadian FAC training and equipment was a serious finding that needed to be addressed immediately. On 22 October 2006, the President sent a letter to the Convening Authority that outlined several concerns regarding FAC training and proposed corrective actions.

36. On its return to \_\_\_\_\_, the Board intended to carry on its work at that location until US military authorities provided the Board with a response to its requests for information and access to the pilots. On 25 October 2006, the Board was advised that access to the US pilots would not be authorized. The Board was told that it would have access to the transcripts of the CIB in respect of the US pilots and that written questions could be submitted to these witnesses. All written questions would be vetted by the appropriate US authorities before submission to the relevant witnesses. At that point, it would be the decision of the individual pilots as to whether they would answer any written questions posed by the Board. Furthermore, on 1 November

2006, the Board received confirmation that the requested information would not be forthcoming until the final report of the CIB had been reviewed by US Comd CENTCOM.

37. While in [redacted] the Board interviewed a further three witnesses; Maj Withers, OC CF H Svcs C Ottawa, Detachment Geilenkirchen; Maj Baker, RC(S) J3 Airspace Coordination; and WO Roehl, RC(S) Fires Cell.

38. The Board, having ascertained that it would not be necessary to return to Afghanistan to obtain further evidence, departed [redacted] for Ottawa on 6 November 2006. On its return to Ottawa, the Board gathered additional testimony from: Maj Scott, OC Rear Party, 1 RCR; Cpl Spence, injured member of 8 platoon, C Coy, 1 RCR; Maj Rideout, 2 Canadian Mechanized Brigade Group Surgeon; and recalled Maj West and Maj Rideout.

39. On 10 November 2006, US and Canadian authorities concluded a Statement of Understanding signed by the respective Convening Authorities for both the CIB and the Canadian BOI, delineating the process and conditions under which information would be exchanged. Documentation would be provided "in confidence" by the US Government and would therefore be protected under s. 13 of the *Access to Information Act*. Accordingly, this documentation can only be released to the public with US Government consent or where the US Government has released the same information to the public.

40. Once the understanding was signed, the US authorities expedited the exchange in accordance with directives and policies for the passage of classified and sensitive information between nations. On 16 November 2006, the Board was provided with information from the CIB including transcripts from the incident pilot and his wingman. On 21 November 2006, the Board was provided with both the 4 September 2006 HUD tape and TGP tape from the incident aircraft.

41. Because the US documentation and information were not received until five days before the initial end-date of 21 November 2006 specified in the TORs, the President requested and received approval for an extension until 15 December 2006 for the submission of the final report.

42. The Board spent 21 November to 14 December 2006 reviewing US CIB provided documentation and completing the final report. The final report was submitted to the Convening Authority on 15 December 2006.

## **Contextual Narrative**

### **GENERAL**

43. The following narrative situates the people, places, events and circumstances leading to the occurrence under investigation. Since the TORs directed the Board to investigate specific matters and make findings in a wide variety of areas, the narrative commences with some aspects of the pre-deployment training of TF-K prior to its arrival in Kandahar in early August 2006, then proceeds chronologically to the morning of 4 September 2006 and, finally, expands upon the post-incident activities with emphasis on medical response and NOK contact.

### **PRE-DEPLOYMENT ACTIVITIES**

44. Formal pre-deployment FAC training for ROTO 2 commenced in February 2006 and ended in June 2006. Significant effort was made to provide FACs with realistic CAS training with the aim of being certified Combat Ready (CR). Unfortunately, several factors impacted negatively on reaching this goal. They included the lack of availability of operational aircraft, aircraft night CAS equipment limitations, conflicts with other pre-deployment training, poor weather on nights that training was scheduled and a lack of integration of CAS during validation training. The result was that the FACs, though certified Combat Ready Day High/Day Low (CR-DH/DL), did not meet the NATO mandated requirement of being certified CR-NH before arrival in theatre.

45. The medical pre-deployment training for the soldiers was rigorous and complete. CRFA training was provided to everyone. The training focussed on the control of bleeding and taught soldiers how to use the three new pieces of medical equipment, namely the bandage, the combat application tourniquet and the Quick Clot. Approximately 70 soldiers from TF-K were provided with more in-depth medical training at a two week TCCC. This course emphasized the initial treatment for serious battlefield injuries.

### **IN-THEATRE CONTEXTUAL NARRATIVE**

46. The TF-K Battle Group was composed of three infantry companies, an artillery battery, a squadron of engineers, and a troop of armoured reconnaissance. Comd TF-K and some key personnel deployed to Afghanistan on 4 August 2006. TF-K had its Transfer of Command Authority on 19 August 2006.

47. Cognizant of the fact that the forward deployed TF-K FACs did not meet the certification requirements for the theatre, TF-K Fire Support Coordination Centre (FSCC) staff submitted Air Support Requests (ASRs) for CAS training flights to provide opportunities for upgrade. All the requests were refused by ISAF HQ based on the level of ongoing operations in theatre. Comd TF-K and, more specifically, the supervisory FAC (SUP-FAC) were left in a very difficult position. It was decided that the upgrade and certification would be acquired through the control of a Predator Unmanned Aerial Vehicle (UAV). Three FACs were certified CR-NH through this means on 28 August 2006 and forward deployed with their respective Coys.

48. Op MEDUSA commenced on 15 August 2006. This was a phased Battle Group level operation intended to defeat Taliban forces in Pashmul and in the vicinity of Bazar-e Panjvai in order to gain freedom of movement on Highway 1 (Hwy 1) as well as enable the establishment of the Kandahar Afghanistan Stability Zone (ASZ).

49. At the outset of Op MEDUSA, Taliban forces controlled Hwy 1 west of Kandahar City, as well as the route south from Hwy 1 to the town of Bazar-e Panjvai in Panjwayi district. These routes were important because they traversed a region known to be a Taliban stronghold approximately 27 km southwest of Kandahar city. The securing of these routes by the Afghan National Army, supported by TF-K, was a vital phase in Op MEDUSA.

On 2 September 2006, the soldiers of C Coy gp, were in position at Ma'sum Ghar, across the Arghandab River from Pashmul. They established a firing line looking northwest towards the "White Schoolhouse", a known Taliban strong point, in the area known as  
Late on 2 September 2006, C Coy gp was ordered to seize

51. After a successful and unopposed crossing of the Arghandab River on 3 September 2006, C Coy gp was ambushed. They suffered four killed in action (KIA) and several wounded in this battle. Under supporting fire from artillery and with CAS aircraft being directed by integral FAC personnel, C Coy gp successfully made a tactical withdrawal back to the original Ma'sum Ghar firing line leaving behind three damaged vehicles; a bulldozer, a G-Wagon and a Light Armoured Vehicle (LAV) III, in the vicinity of the "White Schoolhouse". The remainder of the day was spent reconstituting C Coy gp and bringing CAS, indirect and direct fire onto the objective to neutralize the enemy. Battle procedure continued throughout the day to prepare for a

52. At intervals throughout the day on the 3<sup>rd</sup> and into the early morning of the 4<sup>th</sup>, pre-planned CAS sorties conducted by a variety of aircraft were allotted to C Coy gp to engage pre-planned targets and targets of opportunity in the objective area. The integral C Coy FAC, call sign [redacted] controlled some of these sorties from his vehicle within the C Coy gp location.

53. During this same time period, at [redacted] (consisting of the two aircraft with call signs [redacted] and [redacted]) and [redacted] (consisting of two aircraft with call signs [redacted] and [redacted]) completed their crew rest. The pilots engaged in preparatory planning in anticipation of their upcoming night mission assigned through the Air Tasking Order (ATO). [redacted], the incident pilot, had logged approximately 60, A-10A combat missions in Afghanistan and was considered highly experienced and competent. His pre-flight preparations were complete and normal.

At [redacted] on 4 September 2006, Flight took off from [redacted] completed a mid-air refuelling and transited towards TF-K area of operation (AO). At they received an AO update from the TF-K TACP, [redacted] and he passed them to their terminal controller, [redacted] for employment. At [redacted] on 4 September 06

Flight, checked in with \_\_\_\_\_ and was advised that the friendly positions were south of the Arghandab River, \_\_\_\_\_ from the target area. Subsequently, under the control of \_\_\_\_\_ both aircraft successfully engaged targets in \_\_\_\_\_ with bombs and 30mm cannons. At \_\_\_\_\_ two additional USAF A-10A aircraft, \_\_\_\_\_ Flight, joined Flight. Under the control of \_\_\_\_\_ all four aircraft engaged intended targets in \_\_\_\_\_

55. On 4 September 2006, C Coy gp had reveille at approximately \_\_\_\_\_. They were all on duty engaged in packing personal gear, having breakfast, burning garbage and preparing combat loads in preparation for the upcoming 0700(L)

\_\_\_\_\_ A  
fire was lit nearby where personnel went to burn their garbage. Pte Graham was at the fire warming up.

56. While C Coy gp was engaging in these activities, \_\_\_\_\_ Flight and \_\_\_\_\_ Flight were both in the vicinity continuing to engage targets in \_\_\_\_\_ across the river. Sunrise was at 0544(L) and light levels were gradually increasing. The increasing daylight steadily diminished the effectiveness of NVGs and rendered target localization with NVGs significantly more difficult, particularly when pilots were flying toward the rising sun.

57. At \_\_\_\_\_ the FAC authorized both two-ship flights to conduct a subsequent engagement on the "White Schoolhouse", which had just been successfully attacked. At \_\_\_\_\_ requested that \_\_\_\_\_ Flight drop a Guided Bomb Unit (GBU) on the target and indicated that \_\_\_\_\_ Flight would follow with strafe. At \_\_\_\_\_ using his TGP, dropped a GBU, successfully impacting the intended target. At \_\_\_\_\_ rolled in to conduct a strafe but could not find the target and did not fire. \_\_\_\_\_ then informed \_\_\_\_\_ that he would follow up with a strafe once \_\_\_\_\_ had dropped his GBU on the target; the fire and smoke generated by this bomb would be used as a visual reference by \_\_\_\_\_

58. At \_\_\_\_\_ decided that light levels had increased to the point where he advised his wingman that he had removed his NVGs. At \_\_\_\_\_ successfully dropped a 500lb GBU directly onto the "White Schoolhouse". At \_\_\_\_\_ confirmed having visually identified (without NVGs) what he perceived to be \_\_\_\_\_ s bomb detonation point. During his attack geometry, he focussed his attention outside the cockpit looking for the smoke and fire from the previous bomb to use as his target marker. He mistook the garbage fire from C Coy gp to be the target marker. He failed to notice that his HUD and his TGP indicated that the expected target was to his left \_\_\_\_\_ and that he was flying south of the Arghandab River over friendly territory. He opened fire on C Coy gp location at \_\_\_\_\_. His wingman \_\_\_\_\_ was approximately 30 seconds behind and positioning himself for his strafe. The FAC reacted immediately to this friendly fire and at \_\_\_\_\_ called "ABORT, ABORT, ABORT" on the appropriate radio frequency. \_\_\_\_\_ terminated his intended strafe. At \_\_\_\_\_ acknowledged his mistake on the radio.

59. C Coy gp suffered \_\_\_\_\_ casualties due to shrapnel from \_\_\_\_\_ 30mm high explosive incendiary (HEI) rounds. Two local nationals were also injured.

15/89



## POST-INCIDENT ACTIVITIES

60. The incident precipitated two major activities: the treatment and evacuation of the injured and the initiation of defensive actions to prevent the enemy from capitalizing on the situation.

61. Both Flights were quick to request medical assistance for C Coy gp through their radio net.

62. Comd TF-K, present at the C Coy gp location requested immediate casualty evacuation through his own command net. Concerned with security, he directed that an artillery smoke screen be initiated along the river's edge to mask the ongoing activities at C Coy gp position. At the same time, took over from and controlled CAS assets over Flight stayed on station to maintain top cover and to provide security for the incoming AE helicopters.

63. Immediately following the incident, members of C Coy gp, including some of the injured, began to treat the wounded. Two injured Med Techs treated injured personnel but eventually passed on those duties to others. TCCC qualified soldiers and Med Techs from neighbouring friendly units came to render assistance treating the injured.

64. A casualty collection point (CCP) was established close to the helicopter landing zone. Wounded personnel were triaged by Med Techs for evacuation. A total of four helicopters evacuated the wounded to KAF between and The KAF Facility had been alerted and, at 0550(L), the duty medical officer declared Mass Casualty (MASCAL) calling in all medical staff. Other nations' medical staff volunteered and assisted in the treatment of some of the injured. injured members were transported by AE to the Dutch Facility located at Tarin Kowt, a short flight away.

65. Medical triage and treatment of the casualties was well orchestrated by the Facility staff. All injured personnel received quality rapid care. Several of the wounded, and one in particular, had sustained severe injuries that required follow-on treatment. Thirteen of the wounded were evacuated back to Canada. Of those to be evacuated, the most critical were evacuated the next morning to the US hospital in Landstuhl, Germany onboard an aircraft specially equipped and staffed with medical personnel.

66. The treatment received in the US Facility at Landstuhl was excellent. Some received further surgery and all were stabilized to the point where evacuation to Canada was feasible. A Canadian Forces (CF) Airbus, adapted for the transport of injured personnel and fully staffed with medical personnel conducted this evacuation.

67. Communication with the NOK was particularly well carried-out. Injured members, who were capable of doing so, contacted their NOK directly to advise them of their injured status. The Rear Party in Petawawa was advised of the names of those who were incapable of contacting their NOK. The Rear Party then took the necessary measures to notify the NOK.

16/89

~~SECRET~~—DECLASSIFIED

68. National Defence Command Centre (NDCC) was advised of the incident promptly.

**PRIVATE GRAHAM**

69. Pte Graham was found, within seconds of the incident, close to the fire.  
Two soldiers rendered first aid, one of which was TCCC qualified.  
A Med Tech assisted them within two minutes

70. A BOI was convened to investigate the friendly fire incident.

17/89

~~SECRET~~ DECLASSIFIED

## Findings and Analysis

### FINDING A

71. The cause(s) of the injuries and death (medical causes).

#### STATEMENT OF FINDING

The Board finds that the

#### SUPPORTING FACTS

Fact 1: The single fatality

a. Annex E - Report of Postmortem Examination.

74. Fact 2:

a. Exhibit 122, 139 and 140: Collection of pertinent Medical Records;

b. Exhibit 125: Summary of Medical Data - Friendly Fire Incident 4 September 2006; and

c. Exhibit 136: Summary of medical data with respect to repatriated members.

75. Fact 3: from the 30mm HEI rounds fired by the A-10A.

a. Testimony Maj Sprague: Page 17 Line 1 - 18;

b. Annex D - CIB Attachment 20: Data Transfer Cartridge Downloads: Page 32;

c. Exhibit 99: Medical Cell Documents, Tab G – AEGIS TOC Ops MiRC Operational Logs 3 and 4 September 2006, Page 25; and

d. Exhibit 122, 139 and 140: Collection of pertinent Medical Records.

#### ANALYSIS

The evidence conclusively established that the cause of the injuries to the soldiers was shrapnel and the cause of the death to Pte Graham was





**FINDING B**

77. **Whether the injured and deceased were on duty at the time of the incident.**

STATEMENT OF FINDING

78. **The Board finds that the injured and the deceased were on duty in Panjwayi District, Afghanistan, at the time of the incident.**

SUPPORTING FACTS

79. Fact 1: The injured and the deceased were deployed to Afghanistan as part of ROTO 2 at the time of the incident.

- a. Exhibit 120: Canadian Forces Tasking and Planning Organization Order (CFTPO) Op ATHENA ROTO 2;
- b. Exhibit 121: List of Members of ROTO 2 Clearing into NSE; and
- c. Exhibit 100: List of Casualties Received for Medical Treatment.

80. Fact 2: On 4 September 2006, the injured and deceased, members of TF-K, C Coy gp were participating in Op MEDUSA in Panjwayi District and were carrying out their morning routine and preparations for the upcoming offensive when they came under fire from the USAF A-10A.

- a. Exhibit 128: Change 1 RC(S) FRAGO 102 to Op O 001 OP MEDUSA Ops 155 29 Aug 2006;
- b. Testimony Maj Sprague: Page 4 Line 5 - 12; Page 17 Line 1 - 9; and
- c. Testimony LCol Lavoie: Page 11 Line 13 - 25; Page 12 Line 1 - 25.

ANALYSIS

81. The injured and deceased, members of TF-K, C Coy gp were deployed to Afghanistan as part of ROTO 2. The injured and deceased were participating in Op MEDUSA, in Panjwayi District. On the morning of 4 September 2006, they were carrying out their morning routine and preparations for the upcoming offensive when they came under fire from the USAF A-10A. Accordingly, it is conclusively established that the injured and deceased were on duty at the time of the incident.

### FINDING C

**82. Whether the injured and deceased or any other person(s) were to blame for the injuries and death.**

### METHODOLOGY

83. The Board will examine this finding from two points of view, first the responsibility of the injured and deceased and second the responsibility of others.

### STATEMENT OF FINDING (INJURED AND DECEASED)

**84. The Board finds that the wounded and deceased were not responsible for the injuries and death in C Coy gp.**

### SUPPORTING FACTS

85. Fact 1: The deceased and injured members of C Coy gp were participating in Op MEDUSA in Panjwayi District, Afghanistan on 4 September 2006 when their position was strafed by an A-10A aircraft. The members of C Coy gp were carrying out their morning routine and preparations for an upcoming offensive when mistakenly targeted and fired upon resulting in wounded and one killed.

- a. Testimony Maj Sprague: Page 12 Line 7 - 13; Page 14 Line 5 - 13; Page 17 Line 1 - 9; and
- b. Testimony LCol Lavoie: Page 11 Line 13 - 25; Page 12 Line 1 - 25.

### ANALYSIS

86. The deceased and injured members of C Coy gp were carrying out their morning routine and preparations for an upcoming offensive when they were mistakenly fired upon. They are not responsible for the incident.

### STATEMENT OF FINDING (OTHERS)

**87. The Board finds that, while there were extenuating factors, the pilot was solely responsible for the injuries and the death suffered by the Canadian soldiers.**

### SUPPORTING FACTS

88. Fact 1: \_\_\_\_\_ gave \_\_\_\_\_ the friendly locations as being southeast \_\_\_\_\_ in a proper, abbreviated-format 9-line CAS brief.

- a. Testimony Sgt Myler: Page 65 Line 15 to Page 66 Line 4.
- b. Exhibit 118: 9-line CAS brief; and
- c. Annex D - CIB Attachment 17: Communication Transcript Mishap Events and Communication Timeline: Page 5

89. Fact 2: acknowledged friendly locations as being south of the Arghandab River. was visual with the Arghandab River and had knowledge of friendly locations in relation to the river.

- a. Annex D - CIB Attachment 17: Communication Transcript Mishap Events and Communication Timeline: Page 4 and
- b. Annex D - CIB Attachment 22: Transcript CIB Interview of MP1: Page I-2.27 Line 2 - 8.

90. Fact 3: Flight successfully engaged the target area, with bombs and strafes, prior to, and after the arrival of Flight.

- a. Annex D - CIB Attachment 17: Transcript Mishap Events and Communication Timeline.

91. Fact 4: Shortly after a reveille on 4 September 2006, members of C Coy gp lit a garbage fire on their position, approximately from the active target area.

- a. Exhibit 82: Written Statement MCpl Somerset.

92. Fact 5: From to , and in succession, successfully strafed the correct target area. BOAR 13 used a combination of his TGP and NVG to identify and strafe the correct target.

- a. Annex D - CIB Attachment 17: Transcript Mishap Events and Communication Timeline to

93. Fact 6: At was "OFF DRY" on a strafe pass because he was unable to identify his specific target due to NVG washout.

- a. Annex D - CIB Attachment 22: Transcript CIB Interview of MP1: Page I-2.18 Line 19 - 22; and
- b. Annex D - CIB Attachment 17: Transcript Mishap Events and Communication Timeline: Page 28

94. Fact 7: Following this dry run, indicated that he would use s next GBU-12 bomb impact as his Desired Mean Point of Impact (DMPI) for his next strafe.



- a. Annex D - CIB Attachment 17: Transcript Mishap Events and Communication Timeline: Page 28 and
- b. Annex D - CIB Attachment 22: Transcript CIB Interview of MP1: Page I-2.19 Line 5 - 10.

95. Fact 8: At approximately one minute prior to the incident strafe run, and indicated that they had removed their NVGs.

- a. Annex D - CIB Attachment 17: Transcript Mishap Events and Communication Timeline: Page 28
- b. Annex D - CIB Attachment 22: Transcript CIB Interview of MP1: Page I-2.19 Line 1 - 5; and
- c. Annex D - CIB Attachment 25: Transcript CIB Interview of MP2: Page I-6.11 Line 13 - 18.

96. Fact 9: had his TGP slaved (locked on) to the correct target area and, at 0524:45(L), the GBU-12 bomb explosion delivered by BOAR 15 was clearly visible on TGP.

- a. Annex D - CIB Attachment 17: Transcript Mishap Events and Communication Timeline: Page 28 and
- b. Annex D - CIB TGP Video,

97. Fact 10: padlocked onto the garbage fire in C Coy gp's position, which he perceived to be the glow of exploded bomb, without checking his HUD and TGP before engaging.

- a. Annex D - CIB Attachment 24: Transcript CIB Interview of MP1: Page I-4.11 Line 5 - 17; and
- b. Annex D - CIB Attachment 22: Transcript CIB Interview of MP1: Page I-2.19 Line 23 to Page I-2.20; Page 6 Line 4 - 9; Page I-2.41 Line 3 - 4; Page I-2.69 Line 3 - 7; Page I-2.76 Line 19 to Page I-2.77 Line 7.

98. Fact 11: At the target direction displayed on the HUD was to the left (i.e. north) of the aircraft flight path, as presented by both the Destination Index and the symbol of the Desired Magnetic Heading to the target; and, the HUD indicated to the pilot that the distance to his intended target was coincidentally the same distance as C Coy gp's position. There was no Target Designation Cue (TDC) visible in the HUD.

- a. Annex D - CIB Attachment 17: Transcript Mishap Events and Communication Timeline Page 28 and

b. Annex D - CIB HUD Video,

99. Fact 12: At the programmed target was visible on TGP. The TGP symbology indicated that the aircraft was the programmed target, and south of the programmed target.

a. Annex D - CIB Attachment 17: Transcript Mishap Events and Communication Timeline: Page 28 and

b. Annex D - CIB TGP Video,

100. Fact 13: At fired 30mm HEI rounds for 3.3 seconds at the garbage fire in the C Coy gp firing line resulting in wounded and one KIA.

a. Annex D - CIB Attachment 17: Transcript Mishap Events and Communication Timeline: Page 28

b. Annex D - CIB Attachment 20: Data Transfer Cartridge Downloads: Page 32;

c. Annex D - CIB HUD/TGP Video,

d. Testimony Maj Sprague: Page 12 Line 7 - 13; Page 14 Line 5 - 13; Page 17 Line 1 - 9; and

e. Testimony LCol Lavoie: Page 11 Line 13 - 25; Page 12 Line 1 - 25.

101. Fact 14: admitted on the radio that the cause was pilot error and that he was confused by smoke coming from the C Coy gp position.

a. Annex D - CIB Attachment 17: Communication Transcript Mishap Events and Communication Timeline: Page 29 and “

and

Exhibit 92: Transmission report from Page 1 and

## ANALYSIS

102. The Board concludes that the incident pilot made a decision error in pursuing his attack. He could not clearly see his target, he misinterpreted the ground features, and he targeted a single light source and didn't check the relevant cockpit information because he was padlocked. His cockpit systems indicated that he was prosecuting the wrong target. He did not appreciate the discrepancy between the azimuth attack information on his HUD and TGP and what he was seeing. Although he was missing important HUD target cueing symbology that should have

25/89

alerted him to the fact that his nose was not aligned with his programmed target, he continued with the attack.

103. The Board concludes that the incident pilot made a perceptual error when he incorrectly perceived the battlefield features. This error was as a result of sensory input that was degraded by poor lighting.

104. The Board concludes that the ambient light conditions were a contributing factor to this incident. This incident occurred during the transition from night to day and as the incident pilot was transitioning from his NVGs to daytime visual references. The daytime lighting conditions were too bright for the use of NVGs; conversely, there was inadequate light to clearly distinguish a key point of reference, the Arghandab River.

105. Although the garbage fire in C Coy gp's position was a contributing factor to this incident, the Board concludes that [redacted] was solely responsible for the incident. [redacted] was specifically looking for the residual smoke and fire from [redacted] exploded bomb. [redacted] mistook the garbage fire in the C Coy gp firing line for the target location. [redacted] fired at the garbage fire in the C Coy gp firing line, believing it to be the smoke from exploded bomb without checking his cockpit systems before engaging the target. He admitted his error shortly thereafter.

## **FINDING D**

**106. Whether the injuries and death were attributable to military service.**

### STATEMENT OF FINDING

**107. The Board finds that the injuries and death sustained in the Op MEDUSA friendly fire incident in Panjwayi District, Afghanistan, on 4 September 2006 were attributable to military service.**

### SUPPORTING FACTS

108. Fact 1: The term "attributable to military service" means "arose out of or was directly connected with service".

- a. Annex H - CFAO 24-6, Para 30.

109. Fact 2: The injured and deceased, members of TF-K C Coy gp were participating in Op MEDUSA.

- a. Exhibit 128: Change 1 RC(S) FRAGO 102 to Op O 001 Op MEDUSA Ops 155 29 Aug 2006;
- b. Testimony Maj Sprague: Page 4 Line 5 - 12;
- c. Testimony LCol Lavoie: Page 11 Line 13 - 25; Page 12 Line 1 - 25; and
- d. Exhibit 120: CFTPO - Op ATHENA ROTO 2.

110. Fact 3: At 0525(L) 4 September 2006, the injured and deceased, members of TF-K, C Coy gp were carrying out their morning routine and preparations for the upcoming offensive when their position came under fire from a USAF A-10A.

- a. Testimony Maj Sprague: Page 4 Line 5 - 12; Page 17 Line 1 - 9; and,
- b. Testimony Pte Lepage: Page 9 Line 15 - 25; Page 10 Line 1 - 10.

### ANALYSIS

111. The injured and deceased, members of TF-K, C Coy gp were on military duty participating in Op MEDUSA, in Panjwayi District, Afghanistan. Early on 4 September 2006, they were carrying out their morning routine and preparations for the upcoming offensive when their position came under friendly fire from the USAF A-10A. Their resultant injuries were directly connected with service while on duty. Therefore, the Board concludes that the injuries and the death of the personnel in C Coy gp were attributable to military service.

27/89

## FINDING E

112. The circumstances surrounding the injuries and death including the date, time, and location of the incident.

## METHODOLOGY

113. This finding will be presented as an account of the events with the supporting facts embedded in the narrative and therefore the appropriate references will follow each paragraph. To describe the events surrounding the friendly fire incident on 4 September 2006, the Board finds it necessary to provide a brief account of the preceding events.

## STATEMENT OF FINDING/SUPPORTING FACTS

114. On 15 August 2006 Op MEDUSA, an operation intended to defeat Taliban forces in the Panjwayi District of Afghanistan, was commenced in order to gain freedom of movement on Hwy 1 and to enable the establishment of the Kandahar ASZ.

- a. Exhibit 128: Change 1 RC(S) FRAGO 102 to Op O 001 Op MEDUSA Ops 155 29 Aug 2006: Page 4.

115. On 2 September 2006 C Coy gp was located approximately southeast of the village of Pashmul at the base of Ma'sum Ghar (41R QQ 327 924), a prominent high feature where they had established a firing line looking northwest towards , an area that included the "White Schoolhouse" a known Taliban stronghold. The Arghandab River, a major obstacle, separated C Coy gp from the Objective. C Coy gp was tasked to provide direct fire and observation on

- a. Testimony LCol Lavoie: Page 8 Line 2 - 18;
- b. Exhibit 6: Map of Kandahar District; and
- c. Testimony Maj Sprague: Page 3 Line 18 to Page 4 Line 12; Page 9 Line 17 to Page 10 Line 7.

116. Late on 2 September 2006, C Coy gp was ordered to seize At on 3 September 2006, C Coy gp crossed the Arghandab River with the intent to secure They pushed across the river and were ambushed Four CF personnel were killed and several others were wounded in this action.

- a. Testimony Maj Sprague: Page 10 Line 24 to Page 11 Line 4; Page 40 Line 12 to Page 43 Line 15;
- b. Testimony LCol Lavoie: Page 9 Line 14 to Page 10 Line 3; and

- c. Testimony MCpl Mitchell: Pages 6 to 8 Line 15.

117. Under supporting fire from artillery and with CAS aircraft being directed by integral FAC personnel, C Coy gp made a tactical withdrawal back to the Ma'sum Ghar firing line, their original starting position, abandoning three disabled vehicles near the white schoolhouse: a bulldozer, a G-Wagon and a LAV III. These vehicles were subsequently destroyed with CAS. The OC of C Coy gp was then directed to conduct [redacted] at 0700(L), 4 September 2006. The remainder of the day was spent reconstituting C Coy gp. Further, in order to neutralize the enemy, direct and indirect fire, as well as CAS, were directed onto [redacted] from the morning of 3 September 2006 until the friendly fire incident on the following day. The integral C Coy FAC, controlled some of these sorties from his vehicle within the C Coy gp location.

- a. Testimony Maj Sprague: Page 43 Line 5 - 18; Page 44 Line 11 - 19; and Page 45 Line 11 - 17;
- b. Testimony Capt Spears: Page 107 Line 1 - 25; and
- c. Testimony LCol Lavoie: Page 10 Line 3 to Page 11 Line 8.

118. At some point between 1900(L) and 1930(L) on 3 September 2006, [redacted] conducted his last control of the evening and was able to go to bed at approximately 2200(L). At [redacted] on 4 September 2006, approximately [redacted] a flight of two US A-10A aircraft, [redacted] Flight, checked in with [redacted] At [redacted] on 4 September 2006, [redacted] acknowledged that all friendly positions were still south of the Arghandab River,

Under the control of [redacted] both aircraft successfully engaged specific targets located north of the Arghandab River, within [redacted] At [redacted] two additional US A-10A aircraft, [redacted] Flight joined [redacted] Flight. Under the control of [redacted] all four aircraft successfully engaged their targets with bombs and strafes in [redacted]

- a. Testimony Sgt Myler: Page 64 Line 5 to Page 76 Line 25; Page 86 Line 4;
- b. Annex D - CIB Attachment 26: Transcript CIB Interview of MP3: Page I-7.8 Line 22 - 24 and Page I-7.9 Line 1 - 25; and
- c. Annex D - CIB Attachment 17: Communication Transcript Mishap Events and Communication Timeline: Page 4 [redacted] and [redacted] and Page 20 [redacted]

On the morning of 4 September 2006, the sky was clear with minor dust and haze. Visibility was 5000 m with the wind blowing at three knots. The temperature was 16° Celsius. Sunrise was at 0544(L). C Coy gp personnel awoke at approximately [redacted] and began to prepare for the upcoming [redacted] for 0700(L). This consisted of eating breakfast, morning ablutions, packing gear and, as per SOPs, burning all the garbage. A fire was lit in the C Coy gp firing line. The personnel of C Coy gp were spread out along the firing line. Some [redacted]

- b. Testimony MCpl Mitchell: Page 11 Line 4 – 13;
- c. Exhibit 14: Sketch of AO – MCpl Mitchell; and
- d. Exhibit 55: Document: Surface Weather Conditions.

120. At 0513(L) \_\_\_\_\_ authorized the two flights of A-10A aircraft to conduct a subsequent engagement on the “White Schoolhouse”, which had just been successfully attacked. At \_\_\_\_\_ requested that \_\_\_\_\_ Flight drop a GBU on the target and indicated that \_\_\_\_\_ Flight would follow with a strafe. At \_\_\_\_\_ dropped a GBU, successfully impacting the intended target. At \_\_\_\_\_ rolled in to conduct a strafe, but could not find the target and did not fire. \_\_\_\_\_ then informed \_\_\_\_\_ that he would follow up with a strafe once \_\_\_\_\_ had dropped his GBU on the target, providing a visual reference. At \_\_\_\_\_ successfully dropped a GBU on the target. Seconds before the GBU from \_\_\_\_\_ impacted on the target area at \_\_\_\_\_ both \_\_\_\_\_ and \_\_\_\_\_ confirmed that they had removed their NVGs because of wash out in the increasing light levels. At \_\_\_\_\_ radioed that he was visual on the impact from \_\_\_\_\_ . At \_\_\_\_\_ fired his 30mm cannon, strafing C Coy gp’s position with \_\_\_\_\_ HEI rounds, killing one CF member and injuring CF members and \_\_\_\_\_ Afghan interpreters.

- a. Annex D – CIB Attachment 17: Communication Transcript Mishap Events and Communication Timeline: Page 26 \_\_\_\_\_ Page 27 \_\_\_\_\_ and Page 28 \_\_\_\_\_ to \_\_\_\_\_
- b. Testimony Sgt Myler: Page 86 Line 1 – 4; Page 87 Line 16 to Page 88 Line 22; and
- c. Testimony LCol Ricard: Page 28 Line 4 – 7.

121. At \_\_\_\_\_ ordered an abort; \_\_\_\_\_ terminated his intended strafing run. At \_\_\_\_\_ radioed his mistake, “ \_\_\_\_\_ then confirmed that all \_\_\_\_\_ call signs had made their Master Arm Switch safe and inquired as to why \_\_\_\_\_ fired on the friendly location. At \_\_\_\_\_ responded,

- a. Annex D - CIB Attachment 17: Communication Transcript Mishap Events and Communication Timeline: Page 29

30/89

~~SECRET~~ DECLASSIFIED

Immediately following the incident, members of C Coy gp, each trained in CRFA, began to treat the wounded individuals. Pte Graham close to the fire.

Unfortunately, due to the injuries sustained by Pte Graham, the Med Tech was unable to save him

- a. Testimony Cpl Laroche: Page 6 Line 24 to Page 9 Line 2;
- b. Testimony MCpl Mitchell: Page 18 Line 5 to Page 19 Line 1; and
- c. Testimony Cpl Dewitte: Page 6 Line 16 to Page 7 Line 13.

123. Comd TF-K, who witnessed the friendly fire incident, immediately radioed the TF-K Operations Centre to inform them that C Coy gp was just engaged by friendly fire and requested medical assistance. He also requested artillery fire to suppress and blind the enemy located at preventing the enemy from observing and engaging C Coy gp

He activated his forward medical station located on the other side of the village in order to assist in treating the wounded and then focussed his attention on maintaining fire support for the protection of C Coy gp and the incoming AE.

- a. Testimony LCol Lavoie: Page 13 – 14.

124. At 0529(L) on the MiRC, the TF-K Duty Officer advised all stations of mass casualties. At 0545(L) the Facility at KAF began to receive initial reports on the number of casualties set to arrive. Over the next few minutes the number of reported casualties increased and, at 0550(L), the duty medical officer at the Facility declared a MASCAL situation. All medical personnel were called into the Facility and began to ready the Facility for the arrival of the wounded personnel. Other nations' medical staff volunteered and assisted in the treatment of some of the injured.

- a. Testimony Maj Bradley (11 Oct 06): Page 8 Line 1 to 22; Page 9 Line 25 to Page 10 Line 4;
- b. Exhibit 18: Written Narrative by Maj Bradley; and
- c. Exhibit 99: RC(S) Medical Cell Documents, Tab G: AEGIS TOC(OPS): Page 25.

125. Treatment of the wounded continued on scene by the Med Techs and those soldiers who were TCCC qualified. A CCP was established close to the helicopter landing zone in anticipation of the AE as Med Techs conducted casualty triage and placed the wounded into priority for evacuation.

- a. Testimony MCpl Somerset: Page 7 Line 24 to Page 8 Line 3; Page 10 Line 22 to Page 11 Line 9; Page 15 Line 1 – 12; Page 16 Line 1 - 13;



- b. Testimony MBdr Melvin: Page 3 Line 17 to Page 4 Line 18; and
- c. Testimony Cpl Laroche: Page 12 Line 6 – 24.

126. A total of        helicopters evacuated the wounded to the        Facility at KAF; a        helicopter arrived at        and evacuated        wounded personnel; a        arrived at        and evacuated        wounded; a second        and a second        arrived approximately between        and        respectively and evacuated the remaining wounded individuals.

- a. Exhibit 53: AEGIS TOC Ops File: Page 5; and
- b. Exhibit 99: RC(S) Medical Cell Documents, Tab G: AEGIS TOC (OPS): Pages 27 and 28.

127. The first        arrived at KAF at        Medical personnel met the helicopter on the flight line and immediately began to triage the wounded personnel ensuring that the most critically wounded received immediate medical attention. At        the first        arrived with        wounded individuals.        it was decided that        patients would be sent to the Dutch        Facility located in Tarin Kowt. At        the second        arrived with        wounded and, at        the final        arrived with the last        wounded. Once all of the casualties were evacuated by airlift, the remains of Private Graham were transported from Ma'sum Ghar to KAF.

- a. Testimony Maj Bradley (11 Oct 06): Page 9 Line 16 to Page 12 Line 16;
- b. Testimony Maj Morissette: Page 6 Line 4 to Page 8 Line 19;
- c. Exhibit 18: Written Narrative by Maj Bradley;
- d. Exhibit 53 – AEGIS TOC Ops File: Times 1315(L) – 1321(L);
- e. Exhibit 99: RC(S) Medical Cell Documents, Tab G: AEGIS TOC(OPS): Page 27; and
- f. Testimony LCol Lavoie: Page 20 Line 1 - 3; Page 37 Line 2 - 7.

## **FINDING F**

**128. The activities being conducted by the injured and deceased at the time of the incident.**

### **METHODOLOGY**

129. The Board examined this task from both general and specific perspectives. A schedule has been included with this finding that sets out the specific activities of the majority of the soldiers at the time of the incident. The Board relied on testimony from some of the injured soldiers and the written statements provided to the NIS by other injured soldiers. In the case of a few soldiers, the Board was unable to pinpoint their specific activities at the time of the incident.

### **STATEMENT OF FINDING**

**130. The Board finds that C Coy gp was located at Ma'sum Ghar, Grid 41 R QQ 327924, on the south side of the Arghandab River. They had positioned themselves in a firing line overlooking [redacted]. Having had a [redacted] reveille, the soldiers were carrying out their morning routine and preparations for an upcoming offensive. The activities of specific individual casualties appear below in the Schedule to this finding.**

### **SUPPORTING FACTS**

131. Fact 1: C Coy gp was located at Ma'sum Ghar, Grid 41R QQ 327924, on the south side of the Arghandab River in a firing line overlooking [redacted]

- a. Testimony Maj Sprague: Page 3 Line 18 to Page 5 Line 19.

132. Fact 2: [redacted] was at [redacted]

- a. Testimony Maj Sprague: Page 12 Line 7 - 13;
- b. Exhibit 74: Written Statement Sgt Russell; and
- c. Exhibit 73: Written Statement WO Olstad.

133. Fact 3: The soldiers were in the course of their normal morning routine, having breakfast, packing up and refuelling.

- a. Testimony Maj Sprague: Page 12 Line 7 - 13; Page 14 Line 5 - 13;
- b. Exhibit 62: Written Statement Pte Thompson;
- c. Exhibit 87: Written Statement Pte Lapointe; and
- d. Exhibit 74: Written Statement Sgt Russell.







## **FINDING G**

**136. The procedures for the provision of close air support for the operation, and whether those procedures were followed in this specific incident.**

### STATEMENT OF FINDING

**137. The Board finds that the procedures for the provision of CAS for the operation were set out in HQ ISAF SOPs 310 and 311, and that those procedures were followed in this specific incident.**

### SUPPORTING FACTS

138. Fact 1: HQ ISAF SOP 310 establishes the procedures for the conduct of air operations in support of the ISAF mission.

- a. Exhibit 26: HQ ISAF SOP 310, Air Operations: Page 2 Para 1.

139. Fact 2: HQ ISAF SOP 310 details the coordination requirements with coalition, national, and civilian organizations.

- a. Exhibit 26: HQ ISAF SOP 310, Air Operations: Page 2 Para 1(b).

140. Fact 3: HQ ISAF SOP 310 details SOP 311 as the supporting SOP for CAS.

- a. Exhibit 26: HQ ISAF SOP 310, Air Operations: Page 2 Para 2.

141. Fact 4: The procedures used for the conduct of CAS are outlined in HQ ISAF SOP 311. It states that all missions are to be conducted in accordance with the procedures detailed in Allied Joint Publication (AJP) 3.3.2 - Air Interdiction and Close Air Support and ATP 3.3.2.1(A) - Tactics Techniques and Procedures for Close Air Support Operations, with the exception of the FAC/Joint Tactical Air Controller (JTAC) to pilot briefing format.

- a. Exhibit 26: HQ ISAF SOP 311, Close Air Support: Para 13.

142. Fact 5: RC(S) had requested CAS for the period of 2 - 4 September 2006 and incorporated the requirement into the Operations Order (Op O).

- a. Exhibit 128: Change 1 RC(S) FRAGO 102 to Op O 001 Op MEDUSA Ops 155 29 Aug 2006: Page 5 Para 3b(1)(b);
- b. Exhibit 24: Change 1, Appendix 1 Fires, Annex E, Effects CTF AEGIS FRAGO 102 to Op O 001 OP MEDUSA; Page 1 Para 4(c); and
- c. Testimony WO Roehl: Page 9 Line 18 to Page 14 Line 1.

143. Fact 6: After RC(S) requested pre-planned CAS assets through ASR input, ISAF Air Support Operations Centre (ASOC) coordinated, prioritized and forwarded the requests to CAOC in accordance with the SOPs.

- a. Testimony Capt Howell (11 Oct 06): Page 50 Line 17 - 23;
- b. Exhibit 26: HQ ISAF SOP 310, Air Operations: Page 3 Para 5(c); and
- c. Exhibit 26: HQ ISAF SOP 311, Close Air Support: Page 4 Para 6.

144. Fact 7: The ASR routing for Op MEDUSA flowed from the RC(S) Fires Cell to ISAF Joint Fires Cell to the CAOC.

- a. Testimony WO Roehl: Page 3 Line 19 – 21; Page 4 Line 7 - 11 and 18 - 20; and
- b. Testimony Capt Howell (11 Oct 06): Page 50 Line 6 to Page 51 Line 10.

145. Fact 8: The CAOC prioritized and assigned pre-planned CAS aircraft via the ATO.

- a. Testimony Capt Howell (11 Oct 06): Page 50 Line 13 – 17; Page 50 Line 24 to Page 51 Line 1;
- b. Exhibit 26: HQ ISAF SOP 311, Close Air Support: Page 4 Para 6;
- c. Annex D - CIB Attachment 12: OIF-OEF ATO 3 Sep 06;
- d. Exhibit 22: JTASR 04 Sep 06; and
- e. Testimony WO Roehl: Page 4 Line 21 - 24.

146. Fact 9: The relevant portions of the ATO for 4 September 2006 were transmitted to TF-K in the form of a Joint Tactical Air Strike Request (JTASR) and contained all the necessary information to execute pre-planned CAS with Flight.

- a. Testimony Capt Howell (1 Nov 06): Page 18 Line 9 - 22;
- b. Testimony Capt Spears: Page 96 Line 19 to Page 97 Line 5;
- c. Testimony WO Roehl: Page 20 Line 12 to Page 21 Line 5;
- d. Annex D - CIB Attachment 12: OIF-OEF ATO 3 Sep 06; and
- e. Exhibit 22: JTASR for 4 September 2006.

147. Fact 10: The JTASR for 4 September 2006 listed Flight.

- a. Exhibit 22: JTASR for 4 September 2006; and

- b. Annex D - CIB Attachment 12: OIF-OEF ATO 3 Sep 06 Page 98.

148. Fact 11: The JTASR was a document that was issued several times a day because of changes. It does not refer to BOAR 15 Flight; however, BOAR 15 Flight was tasked via the applicable ATO.

- a. Exhibit 22: JTASR for 4 September 2006;
- b. Testimony Capt Spears: Page 96 Line 19 to Page 97 Line 11;
- c. Testimony WO Roehl: Page 6 Line 17 to Page 8 Line 14; Page 19 Line 12 - 15;
- d. Annex D - CIB Attachment 12: OIF-OEF ATO 03 Sep 06: Page 99; and
- e. Annex D - CIB Attachment 26: Transcript CIB Interview of MP3: Page I-07.5 Line 23 - 25.

149. Fact 12: Immediate CAS requests

- a. Testimony Capt Howell (11 Oct 06): Page 18 Line 25 to Page 23 Line 3; and
- b. Exhibit 26: HQ ISAF SOP 311, Close Air Support: Page 4 Para 7.

150. Fact 13: TF-K FSCC and Air Space Coordination Centre (ASCC) initiated and completed the detailed planning of the Fire Support Coordination Measures (FSCMs) and the Airspace Coordination Measures (ACM) for Op MEDUSA.

- a. Testimony Capt Spears: Page 70 Line 1 - 4;
- b. Exhibit 24: Change 1, Appendix 1 Fires, Annex E, Effects CTF AEGIS FRAGO 102 to Op O 001 OP MEDUSA; and
- c. Testimony of Maj Baker: Page 3 Line 14 to Page 5 Line 23.

151. Fact 14:

HIDACZ) MEDUSA was "bottom-up driven" from TF-K, coordinated at RC(S) J3 Air Coordination, passed to RC(S) RAOC and ISAF, actioned by the CAOC, and promulgated in the Air Coordination Order immediately before Op MEDUSA.

- a. Testimony Capt Spears: Page 69 Line 14 to Page 70 Line 21;
- b. Testimony Maj Baker: Page 9 Line 3 - 20;



- c. Exhibit 24: Change 1, Appendix 1 Fires, Annex E, Effects CTF AEGIS FRAGO 102 to Op O 001 OP MEDUSA: Page 3 Para 6(b);
- d. Exhibits 130: Map – HIDACZ – MEDUSA;
- e. Exhibit 131: Map – Op MEDUSA – ISR Sectors; and
- f. Exhibit 132: Map – CAS Coordination.

## ANALYSIS

152. The procedures for the provision of CAS are set out in HQ ISAF SOPs 310 and 311. The request for CAS assets during Op MEDUSA went from RC(S) to ISAF and then to the CAOC, where CAS assets were assigned to all Task Forces, including TF-K. In the case of Op MEDUSA, the ASR process commenced at the RC(S) Fires Cell and moved through the ISAF Joint Fires Cell (which included the ASOC) to the CAOC. It was then published in the ATO. The relevant portions of the ATO were then transmitted to TF-K in the form of a JTASR and contained all the necessary information to execute pre-planned CAS.

153. The Board concludes that TF-K and RC(S) appropriately planned and developed the ASRs and effected the necessary coordination with TF-K, ISAF Joint Fires/ASOC and the CAOC, from the planning stage to aircraft launch for Op MEDUSA. This was in accordance with the procedure outlined in ISAF SOP 311.

## **FINDING H**

**154. The Board shall make findings as to the safety provisions, procedures or equipment relative to the provision of close air support for this operation.**

### METHODOLOGY

155. This finding is sub-divided into three specific components that pertain to safety during the provision of CAS:

- a. Safety provisions;
- b. Safety procedures; and
- c. Safety equipment.

### STATEMENT OF FINDING (SAFETY PROVISIONS)

**156. The Board finds that, with one exception, the safety provisions relative to the provision of CAS for the operation met the minimum requirements of current directives and procedures and were not causal to the friendly fire incident.**

### SUPPORTING FACTS

157. Fact 1: The AO was well coordinated: ACMs and FSCMs and clearance of fires ensured that ground and air elements were de-conflicted.

- a. Exhibit 24: Change 1, Appendix 1 Fires, Annex E, Effects CTF AEGIS FRAGO 102 to Op O 001 OP MEDUSA; and,
- b. Testimony Capt Spears: Page 70 Line 1 - 13;
- c. Testimony Maj Baker: Page 9 Line 3 – 20;
- d. Exhibit 130: Map – HIDACZ – MEDUSA; and  
Exhibit 53: AEGIS TOC (OPS) LOG FILE

158. Fact 2: A Restricted Fire Line (RFL) was established

- a. Testimony Capt Spears: Page 85 Line 13 - 17; and
- b. Testimony Sgt Myler: Page 37 Line 16 - 18.

159. Fact 3: TF-K FSCC initiated and completed the detailed planning of urban-grid GEO maps of the target area. These maps were passed forward to both the FACs and the air chain of command for employment during Op MEDUSA.

- a. Testimony Capt Spears: Page 95 Line 9 to Page 96 Line 8.

160. Fact 4: As planned in Op O MEDUSA, coordinating authority for airspace de-confliction of HIDACZ MEDUSA passed to TF-K FSCC from RC(S) during the operation.

- a. Testimony Capt Spears: Page 74 Line 1 - 11; and
- b. Exhibit 24: Change 1, Appendix 1 Fires, Annex E, Effects CTF AEGIS FRAGO 102 to Op O 001 Op MEDUSA; Page 2 Para 6(b)(i)(1).

Fact 5

- a. Testimony Capt Spears: Page 129 Line 17 – 18; Page 131 Line 4 - 8;
- b. Testimony Maj Ivey: Page 5 Line 11 - 24;
- c. Annex D - CIB Attachment 22: Transcript CIB Interview of MP1: Page I-2.11 Line 12 - 14; and
- d. Annex D - CIB Attachment 17: Communication Transcript Mishap Events and Communication Timeline: Page 4

162. Fact 6: A TACP is defined as a subordinate operational component of a tactical air control system designed to provide air liaison to ground forces and/or the control of aircraft. TACPs are found at Corps, Division, Brigade, Battalion or Battle Group levels. The TACP ALO is usually located at Division and Brigade level and is a team that functions as the primary advisor to the ground commander on air power. The ALO plans and coordinates CAS in accordance with the ground commander's guidance and intent.

- a. Annex G - ATP 3.3.2.1(A) Tactics Techniques and Procedures for Close Air Operations Page 2-1 Para 0202 – 0202(a).

163. Fact 7: RC(S) did not incorporate a TACP within their organizational structure.

- a. Testimony Capt Spears: Page 7 Line 10 - 25; Page 73 Line 20 to Page 76 Line 2; Page 176 Line 20 to Page 177 Line 20; and
- b. Testimony Capt Howell (1 Nov 06): Page 27 Line 2 – 25.

165. Fact 9: The FSCO operating as TF-K TACP became overwhelmed as Operation MEDUSA continued.

- a. Testimony Capt Spears: Page 75 Line 4 - 25; and
- b. Testimony Maj Ivey: Page 43 Line 22 - 25.

166. Fact 10: The FAC had approximately \_\_\_\_\_ prior to controlling Flight on the morning of 4 September 2006; previously, he had last controlled CAS at 3 September 2006.

- a. Testimony Sgt Myler: Page 63 Line 7 – 10; Page 64 Line 5 - 9; and
- b. Annex D – CIB Attachment 17: Communication Transcript Mishap Events and Communication Timeline: Page 4

167. Fact 11:

- a. Annex D - CIB Attachment 22: Transcript CIB Interview of MP1: Page I.2.24 Line 15 - 20; Page I-2.49 Line 8 to Page I-2.50 Line 10.

## ANALYSIS

168. The AO was well coordinated and an RFL was established \_\_\_\_\_  
Further, detailed planning and coordination of air space was conducted for Op MEDUSA. The only testimony received by the Board that was suggestive of a safety concern in regards to airspace coordination

\_\_\_\_\_ This job might have been more effectively done by a brigade (RC(S)) TACP.

169. There were also concerns with respect to the handling of the TACP function. RC(S) and TF-K TO&E did not identify sufficient FAC qualified personnel and equipment in the

FSCC/ASCC to effectively perform TACP duties during 24/7 operations over the extended period of Op MEDUSA. In RC(S), no one was dedicated to TACP duties. In spite of this deficiency, both TF-K and RC(S) developed a plan (prior to Op MEDUSA) to cover off TACP responsibilities to ensure that the Comd's requirements were met safely. Once the battle commenced, the control and coordination of CAS assets were pushed down to TF-K by RC(S); all CAS then became the responsibility of the FSCO. Because this officer was the only FAC in the TF-K FSCC, he operated as a one-man TACP. This officer continued to function as the TACP throughout the first half of Op MEDUSA; however, he became overwhelmed as the operation continued because he had no FAC qualified relief within the TF-K FSCC. Regardless, he was effective in carrying out the TACP responsibilities and this deficiency was not causal to the incident.

170. The FAC that controlled \_\_\_\_\_ rested prior to the incident mission. He was aware of the safety provisions that were put in place by both TF-K and RC(S) and used them when Flight reported on station.

171. The incident pilot was provided with the opportunity to prepare for this specific mission. He was given the necessary information to execute the mission by the appropriate ground-liaison staff and by other squadron pilots who had previously flown missions in support of Op MEDUSA.

#### STATEMENT OF FINDING (SAFETY PROCEDURES)

**172. The Board finds that the safety procedures for the provision of CAS for the operation met the minimum requirements of current directives and were not causal to the friendly fire incident.**

#### SUPPORTING FACTS

173. Fact 1: US Publication Joint Tactics Techniques and Procedures for Close Air Support (JTTP) 3-09.3 and NATO publication ATP 3.3.2.1(A) Tactics, Techniques and Procedures for Close Air Support Operations are very similar CAS procedure publications. Planning for Op MEDUSA was done in accordance with JTTP 3-09.3.

- a. Testimony Capt Howell (11 Oct 06): Page 8 Line 22 - 25; Page 9 Line 7 - 13; Page 44 Line 16 - 21; and
- b. Testimony Capt Howell (1 Nov 06): Page 5 Line 21 to Page 6 Line 2.

174. Fact 2: \_\_\_\_\_ Flight reported on-station on the correct frequencies and provided an AO update in accordance with CAS tactics, techniques and procedures (TTPs).

- a. Testimony Capt Spears: Page 93 Line 16 to Page 94 Line 6;
- b. Annex D - CIB Attachment 17: Communication Transcript Mishap Events and Communication Timeline: Page 3

a. Testimony Sgt Myler: Page 57 Line 15 to Page 58 Line 15, and

b. Annex D - CIB Attachment 17: Communication Transcript Mishap Events and Communication Timeline: Page 4

176. Fact 4: using the proper abbreviated-format 9-line CAS brief, gave BOAR 13 the friendly locations as being southeast 1500 m from the "White Schoolhouse".

a. Testimony Sgt Myler: Page 65 Line 15 to Page 66 Line 4;

b. Exhibit 118: SLAYER 13 9-line CAS brief; and

c. Annex D - CIB Attachment 17: Communication Transcript Mishap Events and Communication Timeline: Page 5

177. Fact 5: acknowledged friendly locations as being south of the Arghandab River. BOAR 13 was visual with the Arghandab River and had knowledge of friendly locations in relation to the river.

a. Annex D - CIB Attachment 17: Communication Transcript Mishap Events and Communication Timeline: Page 4 (2155:55(Z)); and

b. Annex D - CIB Attachment 22: Transcript CIB Interview of MP1: Page I-2.27 Line 2 - 8.

178. Fact 6: provided with accurate target locations in the 9-line CAS briefs. could not see IR illumination ("sparkle") of the target and friendly position.

a. Testimony Sgt Myler: Page 71 Line 15 - 25;

b. Exhibit 118 9-line CAS brief; and

c. Annex D - CIB Attachment 17: Communication Transcript Mishap Events and Communication Timeline: Page 4 - 9.

179. Fact 7: Radio communication between and was workable, but sometimes broken.



friendly location and the target.  
fratricide incident.

procedures and techniques were not causal to the

### STATEMENT OF FINDING (SAFETY EQUIPMENT)

**185. The Board finds that the safety equipment used during Op MEDUSA was not causal to the friendly fire incident; however, it only met the minimum requirements for CAS.**

### SUPPORTING FACTS

186. Fact 1: A monocular NVG (MNVG), without a magnifier, was the sole portable night vision device (NVD) in \_\_\_\_\_'s possession. When \_\_\_\_\_ was in the back of his LAV, he was using a MNVG and did not use the LAV's optics to observe the target area.

- a. Testimony Sgt Myler: Page 25 Line 2 – 3; Page 87 Line 23; Page 11 – 15; Page 126 Line 12; Page 128 Line 5 – 15.

187.

\_\_\_\_\_ to mark the friendly vehicles and positions.

- a. Testimony Sgt Myler: Page 66 Line 11 - 20;
- b. Testimony Maj Sprague: Page 18 Line 2 - 25; and
- c. Testimony LCol Lavoie: Page 32 Line 6 - 18.

Fact 3: On the date of the incident,

- a. Testimony Sgt Myler: Page 71; and
- b. Testimony Capt Howell (11 Oct 06): Page 53 Line 23 to Page 54 Line 10.

Fact 4: On the date of the incident, the FAC did not have a

- a. Testimony Sgt Myler: Page 102 Line 19 – 20; Page 130 Line 5 – 7;
- b. Testimony Capt Spears: Page 66 Line 13 - 24; and
- c. Testimony Maj Ivey: Page 63 Line 8 - 16; Page 23 Line 19 to Page 24 Line 4.

190. Fact 5: \_\_\_\_\_ had no direct communications with \_\_\_\_\_ because of the distance and the topography (line of sight). \_\_\_\_\_ relayed information between \_\_\_\_\_ and \_\_\_\_\_.

47/89





## FINDING I

**194. The standards and appropriateness of TFA training relative to the provision of close air support for the operation.**

### METHODOLOGY

195. The Board understood that TFA was meant to refer to the operational element TF-K because it was TF-K that trained and conducted CAS. This finding is divided into the two specific components pertaining to the provision of CAS:

- a. The standards of TF-K FAC training (as outlined in Standard NATO Agreement (STANAG) 3797), which mandates the minimum requirements for FAC qualification; and
- b. The appropriateness of TF-K training:
  - (1) Pre-deployment training commencing with the stand-up of TF-K;
  - (2) In-theatre familiarization consisting of familiarization training pertaining to FAC duties and CAS assets specific to their employment as part of ISAF; and
  - (3) TF-K CR-NH certification training consisting of using a Predator UAV to simulate CAS platforms for the FACs CR-NH certification.

### STATEMENT OF FINDING (STANDARDS OF TF-K TRAINING)

**196. The Board finds that although TF-K FACs trained to the minimum qualification requirements for the number of controls mandated by STANAG 3797 for CR qualification, the STANAG does not require FACs to control aircraft employing live ordnance, multiple sorties of aircraft or Attack Helicopters (AH). Training to the minimum standards of the STANAG is not rigorous enough to prepare FACs for high intensity combat operations.**

### SUPPORTING FACTS

197. Fact 1: STANAG 3797 “Minimum Qualifications for Forward Air Controllers” specifies the minimum conditions for initial FAC qualification to limited combat ready (LCR) status, upgrade evaluation and currency.

- a. Exhibit 25: STANAG 3797 Edition 2 (Ratification Draft 1): Page 1.

198. Fact 2: STANAG 3797 states “LCR-DH/DL FAC should be trained in practice (e.g. major Field Training Exercises with a manoeuvre unit or FAC training days etc.) to become more experienced. The apprentice shall then be examined and awarded the qualification CR-DH

*and/or CR-DL at the discretion of the national authorities after having completed upgrade training under the supervision of a SUP-FAC..."*

- a. Exhibit 25: STANAG 3797 Edition 2 (Ratification Draft 1): Page 7 Para 17.

199. Fact 3: STANAG 3797 states that a LCR-DH FAC can be upgraded to CR-DH after completing 4 additional controls of which 2 must be integrated.

- a. Exhibit 25: STANAG 3797 Edition 2 (Ratification Draft 1): Page 8 Para 17(a).

200. Fact 4: STANAG 3797 does not require FACs to control aircraft employing live ordnance during initial qualification, upgrade or currency training.

- a. Exhibit 25: STANAG 3797 Edition 2 (Ratification Draft 1); and
- b. Testimony Capt Spears: Page 17 Line 8 – 9.

201. Fact 5: STANAG 3797 does not require FACs to control more than one aircraft or control AH.

- a. Exhibit 25: STANAG 3797 Edition 2 (Ratification Draft 1).

202. Fact 6: Some TF-K FACs were awarded the CR-DH and CR-DL qualifications after conducting the minimum numbers of controls mandated by STANAG 3797.

- a. Testimony Sgt Myler: Page 10 Line 6 – 11; Page 15 Line 5 – 9; and
- b. Exhibit 129: Sgt Myler FAC Logbook.

203. Fact 7: Most TF-K FACs had conducted between 50 and 60 CAS controls prior to deploying on operations, greatly exceeding STANAG requirements for CR-DH/DL.

- a. Testimony Capt Spears: Page 23 Line 5 – 7; and
- b. Exhibit 129: Sgt Myler FAC Logbook.

204. Fact 8: All TF-K FACs controlled CAS employing live munitions prior to deployment.

- a. Testimony Capt Spears: Page 22 Line 1 – 3.

## ANALYSIS

205. STANAG 3797 specifies the minimum number, type and conditions of controls required for CR upgrade assessment, as well as suggested timelines for apprenticeship to achieve the level of experience required prior to upgrade testing. However, the STANAG requirements do not detail the conditions of apprenticeship that would prepare FACs for actual combat, such as

dealing with multiple aircraft, AH, coordinating CAS, direct and indirect fire simultaneously and live drops.

206. Although some FACs were awarded the CR-DH/DL qualification shortly after their FAC course, based solely upon the minimum number of controls, most FACs greatly exceeded the STANAG CR-DH/DL requirements prior to deployment in both numbers of controls and live drops. Despite that, they were not prepared for the rigours of combat. The TF-K FACs did not receive the experience under training that would have matched the conditions they experienced during Op MEDUSA. This concern and the specific shortcomings of the training are discussed in greater detail under the Statement of Finding on Pre-Deployment Training below. The Board concludes that training to the minimum requirements set out in STANAG 3797 does not adequately prepare FACs for high intensity combat operations, such as those encountered during Op MEDUSA.

#### STATEMENT OF FINDING (APPROPRIATENESS OF PRE-DEPLOYMENT TRAINING)

**207. The Board finds that pre-deployment training relative to the provision of CAS was not appropriate and did not meet ISAF requirements for CR-NH.**

#### SUPPORTING FACTS

208. Fact 1: STANAG 3797 specifies the minimum conditions for initial FAC qualification to LCR status, upgrade evaluation and currency.

- a. Exhibit 25: STANAG 3797 Edition 2 (Ratification Draft 1): Page 1.

209. Fact 2: ISAF SOP 311 states that force contributing nations must provide FACs that are certified CR, equipped and have conducted pre-mission training prior to deployment in accordance with STANAG 3797 Edition 2.

- a. Exhibit 26: HQ ISAF SOP 311, Close Air Support: Page 2 Para 4.

210. Fact 3: The FAC qualification, CR-DH and CR-DL upgrade evaluation and currency of the Canadian FACs exceeded the requirements of STANAG 3797.

- a. Testimony Capt Spears: Page 21 Line 25 to Page 22 Line 5; and
- b. Exhibit 129: Sgt Myler FAC Logbook.

211. Fact 4: TF-K FACs did not achieve the minimum number of night controls prior to deployment, as mandated by STANAG 3797 and the ISAF SOP 311, in order to achieve their CR-NH qualification prior to arriving in theatre.

- a. Testimony Capt Spears: Page 30 Line 13 to Page 31 Line 2; Page 164 Line 1 - 2;

- b. Testimony LCol Lavoie: Page 30 Line 12 - 14;
- c. Testimony Maj Ivey: Page 8 Line 13 - 14;
- d. Exhibit 25: STANAG 3797 Edition 2 (Ratification Draft 1); and
- e. Exhibit 26: HQ ISAF SOP 311, Close Air Support.

212. Fact 5: Although night training was scheduled as part of pre-deployment training, conflicting priorities/exercises, schedules and inclement weather prevented its completion.

- a. Testimony Capt Spears: Page 31 Line 7 - 14; and,
- b. Testimony Maj Ivey: Page 7 Line 21 to Page 8 Line 3.

213. Fact 6: Although there was no initial air integration into the Master Events List for validation training at Canadian Manoeuvre Training Centre (CMTC), TF-K requested 60 hours of CAS aircraft support at CMTC; TF-K received approximately one hour with a CF-18 Hornet sortie and between 90 to 180 minutes with Alpha jets.

- a. Testimony Capt Spears: Page 167 Line 7 – 23; Page 169 Line 8 - 11;
- b. Testimony Maj Ivey: Page 8 Line 4 - 10; and
- c. Exhibit 129: Sgt Myler FAC Logbook.

214. Fact 7: TF-K pre-deployment CAS training was conducted in isolation from the Battle Group due to convenience and safety constraints.

- a. Testimony Capt Spears: Page 25 Line 1 – 18; Page 166 Line 17 - 21; and
- b. Testimony Maj Ivey: Page 46 Line 14 - 25.

215. Fact 8: Pre-deployment training did not inoculate FACs or friendly troops to the employment of air to ground weapons within TIC parameters as encountered during Op MEDUSA.

- a. Testimony Capt Spears: Page 25 Line 19 - 22; Page 26 Line 1 - 13; Page 27 Line 4 - 18;
- b. Testimony Maj Ivey: Page 33 Line 9 - 12; Page 35 Line 16 - 18; and
- c. Testimony Capt Howell (11 Oct 06): Page 10 Line 5 - 6.

216. Fact 9: TF-K FAC duties were viewed as a secondary function/duty within the Forward Observation Officer (FOO) party. Other training exercises, activities and primary duties often took precedence over FAC training.

- a. Testimony Maj Ivey: Page 45 Line 16 to Page 46 Line 6;
- b. Testimony Capt Spears: Page 22 Line 10 - 14; Page 32 Line 15 - 20; Page 166 Line 4 - 8; and
- c. Testimony Capt Howell (11 Oct 06): Page 34 Line 8 to Page 35 Line 12.

217. Fact 10: The majority of TF-K FAC pre-deployment training was conducted with a single Alpha jet. There was limited support from multi-sortie night capable operational ground attack aircraft employing TGPs and live munitions.

- a. Testimony Capt Spears: Page 19 Line 5 - 12; Page 24 Line 13 - 16;
- b. Testimony Sgt Myler: Page 111 Line 17 - 21; and
- c. Exhibit 129: Sgt Myler FAC Logbook.

218. Fact 11: During pre-deployment training, the FACs did not conduct training with aircraft using

- a. Testimony Capt Spears: Page 66 Line 22 to Page 67 Line 6; and
- b. Testimony Sgt Myler: Page 18 Line 2 - 8.

219. Fact 12: Pre-deployment training did not prepare TF-K FACs to control AH as encountered during Op MEDUSA.

- a. Testimony Capt Spears: Page 120 Line 5 - 14; Page 122 Line 4 - 16;
- b. Testimony Sgt Myler: Page 22 Line 23 - 24; and
- c. Testimony Maj Ivey: Page 16 Line 4.

220. Fact 13: Pre-deployment training did not prepare TF-K FACs to control groups of multiple aircraft, day and night, for lengthy periods as encountered during Op MEDUSA.

- a. Testimony Sgt Myler: Page 39 Line 21 - 24; Page 40 Line 1 - 7.

## ANALYSIS

221. STANAG 3797 specifies the minimum conditions for initial FAC qualification to LCR status, upgrade evaluation and currency. ISAF SOP 311 states that force contributing nations must provide FACs that are certified CR, equipped and have conducted pre-mission training prior to deployment in accordance with STANAG 3797 Edition 2.

222. Although TF-K FACs met the requirements in STANAG 3797 for CR-DH and CR-DL qualifications, they did not meet the requirements for CR-NH in order to satisfy ISAF SOP 311, which required all FACs to be CR-NH prior to deployment.

223. Furthermore, pre-deployment training did not adequately prepared FACs to assume their CAS related combat functions and never inoculated manoeuvre commanders or soldiers to the effects and employment of CAS. For example:

- a. TF-K requested 60 hours of combat aircraft time for validation training at CMTC and received approximately one hour with CF-18 Hornets and between 90 and 180 minutes with an Alpha jet. This did not provide sufficient air support to conduct the necessary confirmatory training given the extensive CAS fire dealt with in theatre.
- b. Although pre-deployment training involved some integration of fire support into manoeuvre plans, CAS was often conducted in isolation from the Battle Group. This lack of true integration did not prepare FACs or manoeuvre commanders for the realities they faced in relation to the employment of CAS during Op MEDUSA. Op MEDUSA demonstrated the importance of coordinating and integrating CAS into the air-land battle.
- c. Training did not incorporate any scenarios which required air to ground weapons employment near friendly troops using TIC parameters. TICs were frequently declared during Op MEDUSA, which required FACs to control CAS in complex terrain in close proximity to troops. Quote from Capt Spears; *"Based on our experience here and what we faced in the past two months of our deployment, I would say it was not prudent to not inoculate them to those effects at closer ranges."*
- d. The CF assigns FAC duties as a secondary duty within the FOO party. During pre-deployment training, FAC training opportunities were reduced because of primary training needs. Quote by Maj Ivey *"For whatever reason in our forces, forward air controlling is like an afterthought...if you are going to put as much effort into getting the battle group ready to be deployed, the same principle has to be applied to the forward air controller, just like every other organization out there."*
- e. The majority of TF-K FAC pre-deployment training was conducted with a single Alpha jet. As there was limited support from multi-sortie night capable operational ground attack aircraft employing TGPs and live munitions, FACs were not adequately prepared for the conditions experienced under Op MEDUSA where they controlled various ground attack aircraft utilizing a wide variety of munitions and TGP with which they were unfamiliar.

- f. Although not mandatory, pre-deployment training did not provide any opportunities for the FACs to control aircraft with which resulted in incomplete training for night operations;
- g. Pre-deployment training did not provide any opportunities for the FACs to control AH. However, FACs were frequently called upon to control AH during operations. It is the Board's opinion that the FACs were not adequately prepared for this role; and
- h. During pre-deployment training, sorties and missions were normally divided amongst FACs, which resulted in them controlling single aircraft or two aircraft for short durations. This did not prepare TF-K FACs to control groups of multiple aircraft, day and night, for lengthy periods as encountered during Op MEDUSA. Such level of activity was never encountered during training and proved potentially overwhelming.

STATEMENT OF FINDING (APPROPRIATENESS OF IN-THEATRE FAMILIARIZATION)

**224. The Board finds the TF-K in-theatre familiarization was appropriate.**

SUPPORTING FACTS

225. Fact 1: TF-K FACs completed ISAF indoctrination on Rules of Engagement (ROE), Special Instructions (SPINS), ASR procedures and theatre CAS aircraft and their capabilities.

- a. Testimony Capt Spears: Page 28 Line 20 to Page 29 Line 5;
- b. Testimony Sgt Myler: Page 19 Line 17 to Page 20 Line 9; and
- c. Testimony Capt Howell (11 Oct 06): Page 14 Line 17 - 24.

ANALYSIS

226. TF-K FACs completed ISAF indoctrination on ROE, SPINS, ASR procedures and theatre CAS aircraft and their capabilities, which is designed to provide FACs with the necessary theatre specific information in that regard. This indoctrination was effective and provided FACs with adequate knowledge of these subjects to perform their duties in theatre.

STATEMENT OF FINDING (IN-THEATRE TRAINING - APPROPRIATENESS OF CR-NH CERTIFICATION)

**227. The Board finds that although attempts were made to correctly certify FACs CR-NH, the TF-K training that was conducted using a Predator UAV did not meet the requirements of STANAG 3797.**



## SUPPORTING FACTS

228. Fact 1: TF-K FACs arrived in theatre without CR-NH qualification. The FSCO submitted training ASRs to achieve this qualification in theatre. ASRs were denied due to operational requirements.

- a. Testimony Capt Spears: Page 34 Line 15 - 18; Page 57 Line 9 - 17; Page 164 Line 12 - 19; and
- b. Testimony Maj Ivey: Page 10 Line 1 - 8.

229. Fact 2: STANAG 3797 defines a CR-NH FAC as “*A FAC who has successfully demonstrated his ability to control high level air attacks at night and has demonstrated the knowledge and skill required to apply FAC procedures in a tactical environment.*” It further states that two controls are required with an operational aircraft and two more using simulation or non-CAS fixed wing aircraft capable of airspeed in excess of 200 knots (indicated airspeed).

- a. Exhibit 25: STANAG 3797 Edition 2: Page 5 Para 4(k); Annex A-1.

230. Fact 3: UAVs are not considered a CAS platform under the STANAG 3797 requirements for CR-NH qualification. However, Predator UAVs armed \_\_\_\_\_ are often employed in operations.

- a. Exhibit 25: STANAG 3797 Edition 2: Annex A Para 1(a); and
- b. Testimony Capt Spears: Page 50 Line 5 - 6.

231. Fact 4: Three FACs conducted night training with a Predator UAV and were, through this means, certified CR-NH.

- a. Testimony Capt Spears: Page 35 Line 16 - 24; Page 57 Line 24 to Page 58 Line 9; Page 68 Line 7 - 12; and
- b. Testimony Sgt Myler: Page 23 Line 10 - 24.

232. Fact 5: TF-K was engaged in high intensity combat operations hours after its change of command.

- a. Testimony Maj Ivey: Page 9 Line 5 - 8; and
- b. Testimony LCol Lavoie: Page 23 Line 11 - 20.

233. Fact 6: Since TF-K was involved in combat operations hours after its change of command, the sole SUP-FAC available to certify its FACs CR-NH was otherwise occupied in the FSCC.

- a. Testimony Maj Ivey: Page 10 Line 1 to Page 11 Line 4.

## ANALYSIS

234. The FACs arrived in theatre without CR-NH qualification for the reasons described under the finding on pre-deployment training. In order to address this critical shortfall, the FSCO immediately submitted ASRs to higher HQ to enable the conduct of the necessary night training to attain CR-NH certification for Canadian FACs. CAS assets were unavailable due to low prioritization driven by operational requirements and ASRs were refused.

235. Already involved in combat operations, TF-K used the only assets available to them, Predator UAVs, to conduct night training and CR-NH certification of three FACs. Although Predator UAVs are being regularly employed in operations in CAS, and require very similar FAC planning and control to that used with CAS aircraft, armed UAVs are not considered CAS platforms under the provisions of STANAG 3797. Accordingly, this CR-NH certification of three FACs did not meet the requirements of STANAG 3797.

## **FINDING J**

**236. The co-ordination between CF, ISAF, and US military authorities regarding the provision of close air support for the operation.**

### METHODOLOGY

237. The Board considers that this finding was to address coordination and measures taken by the various authorities to secure CAS for the operation. This process extends from the request for air support to the arrival of aircraft on station. The individual preparations of the aircrew and ground forces and coordination of CAS from the arrival of the aircraft on station will be separately addressed at Finding K.

### STATEMENT OF FINDING

**238. The Board finds that the coordination between the CF, ISAF, and US military authorities regarding the provision of CAS was generally appropriate. However, coordination could have been more effective as**

**Furthermore, there were deficiencies with regard to TACP manning levels that required key personnel to be double-hatted within J3 Air at RC(S) and the FSCC at TF-K. Coordination was not causal to the incident.**

### SUPPORTING FACTS

239. Fact 1: HQ ISAF SOP 310 establishes the procedures for the conduct of air operations in support of the ISAF mission and details the coordination requirements with coalition, national, and civilian organizations.

- a. Exhibit 26: HQ ISAF SOP 310, Air Operations.

240. Fact 2: The procedures used for the conduct of CAS are outlined in HQ ISAF SOP 311. It states that all missions are to be conducted in accordance with the procedures detailed in AJP 3.3.2 - Air Interdiction and Close Air Support and ATP 3.3.2.1(A) – Tactics Techniques and Procedures for Close Air Support Operations, with the exception of the FAC/JTAC to pilot briefing format.

- a. Exhibit 26: HQ ISAF SOP 310, Air Operations: Para 13.

241. Fact 3: The Op O for Op MEDUSA provided direction for the employment of fire support and coordination of CAS.

- a. Exhibit 128: Change 1 RC(S) FRAGO 102 to Op O 001 Op MEDUSA Ops 155 29 Aug 2006; and

- b. Exhibit 24: Change 1, Appendix 1 Fires, Annex E, Effects CTF AEGIS FRAGO 102 to Op O 001 Op MEDUSA.
242. Fact 4: RC(S) requested pre-planned CAS assets through ASR input and ISAF ASOC coordinated, prioritized and forwarded the requests to CAOC in accordance with the SOPs.
- a. Testimony Capt Howell (11 Oct 06): Page 50 Line 17 - 23;
  - b. Exhibit 26: HQ ISAF SOP 310, Air Operations: Page 3 Para 5(c); and
  - c. Exhibit 26: HQ ISAF SOP 311, Close Air Support: Page 4 Para 6.
243. Fact 5: The ASR routing for Op MEDUSA flowed from the RC(S) Fires Cell to ISAF Joint Fires Cell to the CAOC.
- a. Testimony WO Roehl: Page 3 Line 19 - 21; Page 4 Line 7 - 11 and Line 18 - 20; and
  - b. Testimony Capt Howell (11 Oct 06): Page 50 Line 6 to Page 51 Line 10.
244. Fact 6: The CAOC prioritized and assigned pre-planned CAS aircraft via the ATO.
- a. Testimony Capt Howell (11 Oct 06): Page 50 Line 13 - 17; Page 50 Line 24 to Page 51 Line 1;
  - b. Exhibit 26: HQ ISAF SOP 311, Close Air Support: Page 4 Para 6;
  - c. Annex D - CIB Attachment 12: OIF-OEF ATO 03 Sep 06;
  - d. Exhibit 22: JTASR 04 Sep 06; and
  - e. Testimony WO Roehl: Page 4 Line 21 - 24.
245. Fact 7: The ATO for 4 September 2006 was transmitted to TF-K in the form of a JTASR and contained all the necessary information to execute pre-planned CAS.
- a. Testimony Capt Howell (11 Oct 06): Page 18 Line 9 - 22;
  - b. Testimony Capt Spears: Page 96 Line 19 to Page 97 Line 5;
  - c. Testimony WO Roehl: Page 20 Line 12 to Page 21 Line 5;
  - d. Annex D - CIB Attachment 12: OIF-OEF ATO 3 Sep 06; and
  - e. Exhibit 22: JTASR for 4 September 2006.

246. Fact 8: The JTASR for 4 September 2006 listed call sign \_\_\_\_\_ Flight. This information was transmitted to the supporting Squadron, to RC(S), onward to TF-K and to the supporting FAC.

- a. Exhibit 22: JTASR for 4 September 2006: Page 3;
- b. Annex D - CIB Attachment 12: OIF-OEF ATO 3 Sep 06: Page 98; and
- c. Annex D - CIB Attachment 22: Transcript CIB Interview of MP1: Page I-2.10 Line 8.

247. Fact 9: \_\_\_\_\_ and \_\_\_\_\_ Flights arrived on station close to their assigned timings and were aware of radio frequencies to dial-in to contact \_\_\_\_\_ in accordance with ATO/JTASR published information.

- a. Annex D - CIB Attachment 22: Transcript CIB Interview of MP1: Page I-2.57 Line 15 - 22;
- b. Testimony Capt Spears: Page 134 Line 2 - 10; and
- c. Testimony Sgt Myler: Page 74 Line 9 – 17; Page 76 Line 23 - 25.

248. Fact 10: Both \_\_\_\_\_ and \_\_\_\_\_ indicated that coordinating actions between themselves and the FAC went well and were carried out in accordance with SOPs.

- a. Annex D - CIB Attachment 25: Transcript CIB Interview of MP2: Page I-6.18 Line 19 to Page I-619 Line 5; and
- b. Annex D - CIB Attachment 26: Transcript CIB Interview of MP3: Page I-7.28 Line 13 - 23.

249. Fact 11: Deficiencies in manning levels in organizations responsible for coordination between CF, ISAF and US forces, such as the lack of established TACPs at both TF-K and RC(S), were reported.

- a. Testimony Capt Spears: Page 7 Line 18 - 25; Page 74 Line 14 – 25; Page 176 Line 20 to Page 177 Line 21;
- b. Testimony Capt Howell (11 Oct 06): Page 34 Line 9 - 14; Page 62 Line 19 to Page 63 Line 14; Page 64 Line 11 - 18; and
- c. Testimony Maj Ivey: Page 42 Line 7 to Page 44 Line 21; Page 53 Line 16 to Page 55 Line 5; Page 60 Line 23 to Page 62 Line 13.

250. Fact 12: Specific to the TF-K FSCC, TACP duties fell primarily on an individual whose primary duty was senior FSCC officer. In the high tempo context of Op MEDUSA, this officer's primary and secondary duties severely conflicted.

- a. Testimony Capt Spears: Page 176 Line 20 to Page 177 Line 21; and
  - b. Maj Ivey: Page 42 Line 7 to Page 44 Line 21; Page 60 Line 23 to Page 62 Line 13.
- 
- a. Testimony Capt Spears: Page 129 Line 17 – 18; Page 131 Line 4 - 8;
  - b. Testimony Maj Ivey: Page 5 Line 11 - 24;
  - c. Annex D - CIB Attachment 22: Transcript CIB Interview of MP1: Page I-2.11 Line 12 - 14; and
  - d. Annex D - CIB Attachment 17: Communication Transcript Mishap Events and Communication Timeline: Page 4
  - e.

## ANALYSIS

252. The Board reviewed the SOPs and orders that address the coordination between the CF, ISAF and US authorities and reviewed the testimony of the individuals who worked within that framework. It was apparent that the coordination and conduct of CAS is a highly dynamic task. The air resources were well coordinated by TF-K but could have been more effective at higher levels of the coalition. This successful level of coordination was accomplished despite deficient manning levels and conflicting duties assigned to the staff responsible for the coordination of CAS. The level and accuracy of coordination between CF, ISAF, and US military authorities regarding the provision of CAS for this operation is best exemplified by the fact that the aircraft arrived on target and on time with the appropriate information in hand.

## **FINDING K**

**253. The coordination between Canadian Ground Forces and US Air Forces as it relates to the incident.**

### **METHODOLOGY**

254. The Board understood the coordination between Canadian ground forces and US Air Forces to mean the actual execution of CAS between the FAC on the ground and the pilots of the allocated CAS aircraft as it relates to the incident. For this finding, the Board will address the individual preparations of \_\_\_\_\_ and aircrew, focusing on \_\_\_\_\_, and the execution of CAS. This finding has been subdivided into three categories:

- a. Ground component's preparation;
- b. Air component's preparation; and
- c. Execution of CAS.

### **STATEMENT OF FINDING (GROUND COMPONENT'S PREPARATION)**

**255. The Board finds that the battle space was well coordinated from the ground perspective and that the preparations for the 3<sup>rd</sup> and the 4<sup>th</sup> of September 2006 were appropriate.**

### **SUPPORTING FACTS**

256. Fact 1: Coordination of the battle space had been well planned through formal and informal ACMs, FSCMs and clearance of fires.

- a. Testimony Capt Spears: Page 70 Line 1 - 13;
- b. Testimony Sgt Myler: Page 36 Line 20 to Page 38 Line 1;
- c. Testimony Major Ivey: Page 5 Line 17 to Page 6 Line 4;
- d. Exhibit 53: AEGIS TOC (OPS) LOG FILE:
- e. Exhibit 24: Change 1, Appendix 1, Fires, Annex E, Effects CTF AEGIS FRAGO 102 to Op O 001 Op MEDUSA;
- f. Exhibit 130: Map – \_\_\_\_\_ and \_\_\_\_\_
- g. Exhibit 131: Map – Op MEDUSA – ISR Sectors.





- a. Annex D - CIB Attachment 7: MP1 Medical History; and
- b. Annex D - CIB Attachment 8: Toxicology Report.

264. Fact 2: The incident pilot testified that he was well rested and had eaten properly in the 72 hours previous to the incident.

- a. Annex D - CIB Attachment 6: MP1 72-Hour History; and
- b. Annex D - CIB Attachment 22: Transcript CIB Interview of MP1: Page 2.80 Line 18 to Page 2.81 Line 2.

Fact 3:

- a. Annex D - CIB Attachment 3: MP 1 Flight Records; and

266. Fact 4: The incident pilot had completed approximately 60 combat missions during four months of theatre operations prior to incident.

- a. Annex D - CIB Attachment 27: Statement,

267. Fact 5: The incident pilot was a qualified and current 2-ship Element Lead; the pilot had been a 4-ship Section Lead on the A-10A during his first A-10A tour of duty.

- a. Annex D - CIB Attachment 22: Transcript CIB Interview of MP1: Page I-2.23 Line 17 - 23; Page I-2.45 Line 21 to Page I-2.46 Line 10.

268. Fact 6: Mission planning information and the pre-mission flight briefing were thorough and complete.

- a. Annex D - CIB Attachment 22: Transcript CIB Interview of MP1: Page I-2.24 Line 15 to 20; and Page I-2.49 Line 8 to Page I-2.50 Line 13; and
- b. Annex D - CIB Attachment 25: Transcript CIB Interview of MP2: Page I-6.7 Line 14 – 16.

269. Fact 7: The incident A-10A aircraft was serviceable with a clean windscreen and HUD.

- a. Annex D - CIB Attachment 9: Maintenance Summary; and
- b. Annex D - CIB Attachment 22: Transcript CIB Interview of MP1: Page I-2.78 Line 19 to Page 2.79 Line 14.

270. Fact 8: Flight took off at conducted refuelling and received updates on targets and other aircraft in the AO en route.

- a. Annex D - CIB Attachment 22: Transcript CIB Interview of MP1: Page I-2.10 Line 25 to Page I-2.11 Line 21; and
- b. Annex D - CIB Attachment 25: Transcript CIB Interview of MP2: Page I-6.7 Line 16 – 24.

271. Fact 9: The incoming CAS aircraft arrived on station with the necessary data for the target area and the pilots were familiar with the target areas for Op MEDUSA during the period of 3 and 4 September 2006.

- a. Testimony Sgt Myler: Page 73 Line 8 - 9;
- b. Testimony Major Ivey: Page 25 Line 25 to Page 26 Line 8;
- c. Annex D: CIB Attachment 17: Communication Transcript Mishap Events and Communication Timeline: Page 3 and
- d. Annex D: CIB Attachment 22: Transcript CIB Interview of MP1: Page I-2.24 Line 15 - 20; Page I-2.49 Line 8 to Page I-2.50 Line 13.

#### ANALYSIS

272. The conditions for mission success from the incident pilot's perspective were good: his personal physical condition was good; he had the required resources, qualifications, training, and experience to properly execute this mission; and, pre-mission coordination, planning, and briefing were complete and thorough. The incident pilot had a serviceable aircraft and executed in-flight coordination en route.

#### STATEMENT OF FINDING (EXECUTION OF CAS)

273. **The Board finds that the coordination between and was appropriate and did not contribute to the incident.**

#### SUPPORTING FACTS

274. Fact 1: Flight reported on-station on the correct frequencies and provided an AO update in accordance with CAS TTPs.

- a. Testimony Capt Spears: Page 93 Line 16 to Page 94 Line 6;
- b. Annex D - CIB Attachment 17: Communication Transcript Mishap Events and Communication Timeline: Page 3 and

Annex G: ATP-3.3.2.1(A) Tactics Techniques and Procedures for Close Air Operations Page 5 -

275. Flight to work with on 4 September 2006 at 2150:24(Z).

- a. Annex D - CIB Attachment 17: Communication Transcript Mishap Events and Communication Timeline: Page 4 and
- b. Exhibit 23: TF-K FSCC Ops Log Page 1.

276. Fact 3: Flight checked in with .

- a. Testimony Sgt Myler: Page 64 Line 11 – 14; and
- b. Annex D - CIB Attachment 17: Communication Transcript Mishap Events and Communication Timeline: Page 4

277. Fact 4: confirmed that Flight had received an AO update.

Annex D - CIB Attachment 17: Communication Transcript Mishap Events and Communication Timeline: Page 4

278. Fact 5 gave a timely 9-line CAS brief for each target covering the mandatory items including target location programmed each target correctly into his aircraft computers.

- a. Testimony Sgt Myler: Page 71 Line 15 - 25;
- b. Exhibit 118: 9-line CAS brief;
- c. Annex D - CIB Attachment 17: Communication Transcript Mishap Events and Communication Timeline: Page 5 – Page 9 and
- d. Annex D - CIB Attachment 20: Data Transfer Cartridge Downloads: Page 27.

279. Fact 6: Radio communication between and was workable, but sometimes broken.

- a. Annex D - CIB Attachment 17: Communication Transcript Mishap Events and Communication Timeline: Page 4 Page 5 Page 6 Page 15 Page
- b. Annex D - CIB HUD Tape and Reconstruction Video; and
- c. Testimony Sgt Myler: Page 101 Line 22 – 25.

280. Fact 7: \_\_\_\_\_ could not see the IR illumination (“sparkle”) provided by \_\_\_\_\_ to help identify friendly positions and targets.

- a. Annex D - CIB Attachment 17: Communication Transcript Mishap Events and Communication Timeline: Page 6 \_\_\_\_\_ Page 14 \_\_\_\_\_ and \_\_\_\_\_
- b. Annex D - CIB Attachment 22: Transcript CIB Interview of MP1: Page I-2.26 Line 18 to Page I-2.2.7 Line 6.

281. Fact 8 \_\_\_\_\_ gave \_\_\_\_\_ the friendly locations as being southeast from the “White Schoolhouse” in a proper, abbreviated 9-line CAS brief.

- a. Testimony Sgt Myler: Page 65 Line 15 to Page 66 Line 4;
- b. Exhibit 118: \_\_\_\_\_ 9-line CAS brief; and
- c. Annex D - CIB Attachment 17: Communication Transcript Mishap Events and Communication Timeline: Page 5

282. Fact 9 \_\_\_\_\_ acknowledged friendly locations as being south of the Arghandab River. \_\_\_\_\_ was visual with the Arghandab River and had knowledge of friendly locations in relation to the river.

- a. Annex D - CIB Attachment 17: Communication Transcript Mishap Events and Communication Timeline: Page 4 \_\_\_\_\_ and,
- b. Annex D - CIB Attachment 22: Transcript CIB Interview of MP1: Page I.2.27 Line 2 - 8.

283. Fact 10: The incident pilot did not state that he was “VISUAL” to indicate that he had positively identified the friendly position.

- a. Annex D - CIB Attachment 17: Transcript Mishap Events and Communication Timeline.

284. Fact 11: During the mission, \_\_\_\_\_ transmitted that the friendly position was marked by IR and requested confirmation from pilots, but did not receive an acknowledgement.

- a. Annex D - CIB Attachment 17: Transcript Mishap Events and Communication Timeline: Page 6

Fact 12:

- a. Testimony Sgt Myler: Page 25 Line 2 – 3.

286. Fact 13 used to observe the target area during the mission; however, he did not have good target definition.

- a. Annex D - CIB Attachment 17: Transcript Mishap Events and Communication Timeline and and
- b. Testimony Sgt Myler: Page 113 Line 13 – 15.

287. Fact 14: On earlier attacks during the incident mission, on-board A-10A sensors/systems were used in order to identify target locations.

- a. Annex D - CIB Attachment 17: Transcript Mishap Events and Communication Timeline
- b. Annex D – CIB Attachment 20: Data Transfer Cartridge Downloads: Page 27: Way points 5, 6 and 7.

288. Fact 15: Upon the arrival of Flight, gave Flight the mandatory items of the 9-line CAS brief.

- a. Testimony Sgt Myler: Page 112 Line 6 – 21;
- b. Annex D - CIB Attachment 17: Transcript Mishap Events and Communication Timeline: Page 20 and
- c. Annex D - CIB Attachment 26: Transcript CIB Interview of MP3: Page I-7.7 Line 14 to Page I-7.8 Line 7.

289. Fact 16: sectored the target area along a 045°M bearing for de-confliction between Flight and Flight. Flight operated south of the 045°M line, while Flight worked north of the line.

- a. Annex D - CIB Attachment 17: Transcript Mishap Events and Communication Timeline: Page 22

290. Fact 17: Type 2 control was in effect for the duration of the mission (except for one earlier strafe attack by all aircraft at when they were given a “blanket clearance” in accordance with Type 3 control for that specific attack).

- a. Testimony Sgt Myler: Page 78 Line 23 - 25; and
- b. Annex D - CIB Attachment 17: Transcript Mishap Events and Communication Timeline: Page 5 Page 23

291. Fact 18: did not provide target marks during the mission for any call signs.

- a. Testimony Sgt Myler: Page 105 Line 20; and
- b. Annex D - CIB Attachment 17: Transcript Mishap Events and Communication Timeline.

292. Fact 19: Flight successfully engaged the target area prior to, and after, the arrival of Flight with bombs and strafing attacks.

- a. Annex D - CIB Attachment 17: Transcript Mishap Events and Communication Timeline

293. Fact 20: The rapport and confidence level between and Flights and was good.

- a. Testimony Sgt Myler: Page 106 Line 8 – 18;
- b. Annex D - CIB Attachment 25: Transcript CIB Interview of MP2: Page I-6.18 Line 19 to Page I-6.19 Line 5; and
- c. Annex D - CIB Attachment 26: Transcript CIB Interview of MP3: Page I-7.28 Line 19; Page I-7.48 Line 24 to Page I-7.49 Line 6.

294. Fact 21: Shortly after a , members of C Coy gp lit a garbage fire on their position, approximately from the active target area.

- a. Exhibit 82: Written Statement MCpl Somerset.

295. Fact 22: was unaware that C Coy gp had lit a fire in their position.

- a. Testimony Sgt Myler: Page 93 Line 18 - 20.

296. Fact 23: From to and in succession, successfully strafed the correct target area. used a combination of his TGP and NVGs to identify and strafe the correct target.

- a. Annex D - CIB Attachment 17: Transcript Mishap Events and Communication Timeline to

297. Fact 24: At was “OFF DRY” on a strafe pass because he was unable to identify his specific target due to NVG washout.

- a. Annex D - CIB Attachment 22: Transcript CIB Interview of MP1: Page I-2.18 Line 19 - 22; and

Annex D- CIB Attachment 17: Transcript Mishap Events and Communication Timeline: Page 28

298. Fact 25: Following this dry run, [redacted] indicated that he would use [redacted] next GBU-12 bomb impact as his DMPI for his next strafe.

- a. Annex D - CIB Attachment 17: Transcript Mishap Events and Communication Timeline: Page 28 [redacted] and [redacted]
- b. Annex D - CIB Attachment 22: Transcript CIB Interview of MP1: Page I-2.19 Line 5 - 10.

299. Fact 26: At [redacted] approximately one minute prior to the incident strafe run, [redacted] 13 and [redacted] confirmed they had removed their NVGs.

- a. Annex D - CIB Attachment 17: Transcript Mishap Events and Communication Timeline: Page 28
- b. Annex D - CIB Attachment 22: Transcript CIB Interview of MP1: Page I-2.19 Line 1 - 5; and
- c. Annex D - CIB Attachment 25: Transcript CIB Interview of MP2: Page I-6.11 Line 13 - 18.

300. Fact 27: [redacted] had his TGP slaved to the correct target area and, at [redacted] the GBU-12 bomb explosion delivered by [redacted] was clearly visible on [redacted] TGP.

- a. Annex D - CIB Attachment 17: Transcript Mishap Events and Communication Timeline: Page 28 [redacted] and [redacted]
- b. Annex D - CIB TGP Video,

301. Fact 28: [redacted] padlocked onto the garbage fire in C Coy gp's position, which he perceived to be the glow [redacted] exploded bomb.

- a. Annex D - CIB Attachment 24: Transcript CIB Interview of MP1: Page I-4.11 Line 5 - 17; and
- b. Annex D - CIB Attachment 22: Transcript CIB Interview of MP1: Page I-2.19 Line 23 to Page I-2.20 Line 6.

302. Fact 29: At [redacted] eleven seconds prior to incident, [redacted] called "in from the southwest" and, at [redacted] responded "Cleared Hot."

- a. Annex D - CIB Attachment 17: Transcript Mishap Events and Communication Timeline: Page 28

303. Fact 30: At [redacted] the target direction displayed on the HUD was to the left (i.e. north) of the aircraft flight path, as presented by both the Destination Index and the symbol of the Desired Magnetic Heading to the target; and, the HUD indicated to the pilot that the distance to [redacted]

his intended target was coincidentally the same distance as C Coy gp's position. There was no TDC visible in the HUD.

- a. Annex D - CIB Attachment 17: Transcript Mishap Events and Communication Timeline Page 28 and
- b. Annex D - CIB HUD Video,

304. Fact 31: At the programmed target was visible on TGP. The TGP symbology indicated that the aircraft was from the programmed target, and south of the programmed target.

- a. Annex D - CIB Attachment 17: Transcript Mishap Events and Communication Timeline Page 28 and
- b. Annex D - CIB TGP Video,

305. Fact 32: At fired 30mm HEI rounds for 3.3 seconds at the garbage fire in the C Coy gp firing line.

- a. Annex D - CIB Attachment 17: Transcript Mishap Events and Communication Timeline: Page 28
- b. Annex D - CIB Attachment 20: Data Transfer Cartridge Downloads: Page 32; and
- c. Annex D - CIB HUD/TGP Video,

306. Fact 33: At the programmed target symbol traversed HUD field of view from right to left (indicating that gun reticule was well right of the programmed target HUD symbology).

- a. Annex D - CIB Attachment 17: Transcript Mishap Events and Communication Timeline: Page 28

307. Fact 34: At transmitted "Abort, Abort, Abort".

- a. Annex D - CIB Attachment 17: Transcript Mishap Events and Communication Timeline: Page 28 and
- b. Testimony Sgt Myler: Page 94 Line 18 - 23.

308. Fact 35 aborted his attack run after the abort call by

- a. Annex D - CIB Attachment 17: Transcript Mishap Events and Communication Timeline: Page 29 and



- b. Annex D - CIB Attachment 25: Transcript CIB Interview of MP2: Page I-6.12  
Line 1 - 2.

## ANALYSIS

309. The incident pilot was provided an adequate AO update by [redacted] and provided clearance into the established HIDACZ. The pilots were provided 9-line CAS briefs in a timely manner for all targets, and read them back correctly.

[redacted] He generally followed established TTPs and HQ ISAF SOP 311. Using Type 2 control [redacted] conducted several successful talk-ons and gave authority for [redacted] Flight to prosecute targets. [redacted] maintained observation of the target area using his [redacted] but did not have good definition of the target area. Upon the arrival of [redacted] Flight, [redacted] remained on station; subsequently, [redacted] briefed [redacted] Flight and [redacted] that the four aircraft would be operating as two separate elements in the same target area but would be sectorized for de-confliction. They all conducted successful strafes in the correct target area. As the sun began to rise, NVGs became ineffective because the target area was washed out. [redacted] stated his intent to use a GBU-12 impact from [redacted] as his aiming point. [redacted] and [redacted] removed their NVGs.

310. Cockpit and aircraft recording devices indicate that both [redacted] and [redacted] had the correct target programmed into their aircraft; however, [redacted] padlocked onto a visual glow that he assumed to be the lingering effects of the detonation of [redacted] bomb and rolled-in on that glow. As a result of the geometry of the attack (in relation to the intended target and C Coy gp's position), the distances to both locations matched closely two seconds before engaged. [redacted] did not sufficiently cross-reference his HUD information with the visual information on which he had lined up because he was padlocked onto the garbage fire. If he had done so, he would have noticed that the TDC indication in the HUD was not coincident with his cannon sight: the TDC was not present because it was programmed to be on the correct target, which was outside of the HUD field of view. [redacted] opened fire on the glow that he had visually acquired; this glow was the garbage fire at the C Coy gp position on the south side of the Arghandab River. Ten seconds later, [redacted] transmitted the "ABORT" call.

## FINDING L

### **311. The post-incident TFA response and reporting of the incident.**

#### METHODOLOGY

312. Due to the broad nature and extent of this finding, it has been subdivided into the following five categories:

- a. the medical response;
  - (1) the immediate post-incident first aid,
  - (2) casualty evacuation via AE from the site of the incident,
  - (3) the triage and treatment at the Facility, and
  - (4) the critical incident stress counselling response.
- b. the operational response;
- c. the notification of the NOK;
- d. the reporting to the chain of command; and
- e. the events surrounding the mortal wounding and the evacuation of the remains of Pte Graham.

#### STATEMENT OF FINDING (MEDICAL RESPONSE)

**313. The Board finds the post-incident medical response was exceptional. The first aid techniques, the AE, the triage, and the treatment of casualties are combat-proven and effective.**

#### SUPPORTING FACTS

314. Fact 1: All deployed personnel were taught CRFA and control of bleeding with the Israeli bandage, tourniquet, and Quick Clot prior to deployment. The RC(S) Medical Director noted the use of this equipment has been effective in saving life and limb during the course of this ROTO.

- a. Testimony LCol Ricard: Page 13 Line 17 to Page 16 Line 11;
- b. Testimony Maj Rideout: Page 9 Line 17 to Page 11 Line 17;
- c. Testimony MCpl Somerset: Page 11 Line 10 to Page 12 Line 4;

- d. Exhibit 89: Incident Lessons Report, Page 3 Para 3; and
- e. Exhibit 134: CD – Combat Related First Aid Course presentations.

315. Fact 2: The TCCC is a two-week course that emphasizes initial actions for serious battlefield injuries. Two TCCC courses of approximately 36 students each provided TF-K with sufficient numbers to allow for one TCCC qualified soldier per section.

- a. Testimony Maj Rideout: Page 11 Line 21 to Page 14 Line 7;
- b. Testimony Maj Sprague: Page 13 Line 1 - 5;
- c. Testimony MBdr Melvin: Page 5 Line 13 - 17; and
- d. Exhibit 133: CD – TCCC Course Presentations and Administration Detail.

316. Fact 3: The TCCC members provided valuable assistance to the Med Techs in the aftermath of the friendly fire incident receiving accolades from the Med Techs who described them as a “godsend” and that they “are worth their weight in gold”.

- a. Testimony MCpl Somerset: Page 10 Line 6 to Page 11 Line 5;
- b. Testimony Cpl Laroche: Page 12 Line 9 - 17;
- c. Testimony LCol Ricard: Page 15 Line 15 - 25; and
- d. Exhibit 89: Incident Lessons Report, Page 3 Para 3.

317. Fact 4: In the aftermath of the friendly fire incident, all who could assist provided first aid to their fellow soldiers.

- a. Testimony MCpl Mitchell: Page 18 Line 21 to Page 19 Line 1; and
- b. Exhibit 71: Written Statement Cpl Gill.

318. Fact 5: Potential MASCAL incidents were anticipated and planned for prior to Op MEDUSA.

- a. Exhibit 99: Briefing Note: RC(S) Medical Cell Documents Tab E, Op O Op MEDUSA, Annex L: Page 3 Para (h);
- b. Exhibit 99: Briefing Note: RC(S) Medical Cell Documents Tab B, CTF AEGIS Battle Drill; and
- c. Testimony LCol Ricard: Page 5 Line 3 to Page 6 Line 17.

319. Fact 6: There was dedicated rotary wing AE available during Op MEDUSA.

- a. Exhibit 99: RC(S) Medical Cell Documents Tab E, Op O Op MEDUSA, Annex L: Page 3 Para e (3), f, g;
- b. Exhibit 99: RC(S) Medical Cell Documents Tab A, CTF Surg SOI 02 Medical Support and Evacuation; and
- c. Testimony LCol Ricard: Page 23 Line 11 to Page 24 Line 13.

320. Fact 7: Forward AE, Tactical AE and Strategic AE were successfully coordinated and carried out following the incident. Forward AE occurred from the incident location to KAF, Tactical AE from KAF to Tarin Kowt and Strategic AE from KAF to Landstuhl, Germany and from Landstuhl to Canada. Of those to be evacuated, the most critical were evacuated the morning of 5 September 2006 to Landstuhl.

- a. Testimony LCol Ricard: Page 16 Line 16 – 25; Page 17 Line 1 - 18;
- b. Testimony Maj West (5 Oct 06): Page 23 Line 14 - 25 to Page 25 Line 2;
- c. Exhibit 99: RC(S) Medical Cell Tab G, MiRC Operational Logs: Page 25 – 28
- d. Exhibit 108: Sheet Records AEGIS Med Ops.20060904.log and
- e. Exhibit 89: Incident Lessons Report, Page 2 Para 1(e).

321. Fact 8: The communications and transfer of patient information were effective between all the intermediate care facilities including Germany, KAF and Tarin Kowt.

- a. Testimony LCol Ricard: Page 10 Line to Page 13 Line 10; Page 16 Line 17 to Page 17 Line 18; Page 18 Line 1 to 19 Line 19;
- b. Testimony Maj Withers: Page 16 Line 21 to Page 17 Line 21; Page 20 Line 12 to Page 21 Line 9; and
- c. Exhibit 99: RC(S) Medical Cell Documents Tab K, RC(S) Medical Inc Rep: Page 24.

322. Fact 9: There was a lack of encryption capability in Landstuhl, making the transfer of confidential patient information back to Canada difficult. However, patient care did not suffer as a result.

- a. Testimony Maj West (5 Oct 06): Page 8 Line 16 – 19; Page 31 Line 2 - 13.

323. Fact 10: For all phases of AE, the patients were medically prepared and their wounds were dressed for their safe transportation. On these flights, there was dedicated medical staff to attend to them.

- a. Testimony Maj Morissette: Page 11 Line 18 - 23;
- b. Testimony Maj Withers: Page 16 Line 21 to Page 17 Line 8; and,
- c. Testimony Maj West (21 Nov 06): Page 2 Line 5 – 16; Page 3 Line 17 to Page 4 Line 20.

324. Fact 11: Triage effectively grouped casualties by priority for all stages of AE.

- a. Testimony MCpl Somerset: Page 15 Line 2 - 12;
- b. Testimony Maj Morissette: Page 7 Line 11 - 20;
- c. Exhibit 18: Written Narrative by Maj Bradley;
- d. Exhibit 19: Stat AE Landstuhl Patient Listing; and
- e. Exhibit 125: Summary of Medical Data – Friendly Fire Incident.

Fact 12: In regards to the forward AE,

- a. Testimony MCpl Somerset: Page 13 Line 14 - 18;
- b. Testimony MBdr Melvin: Page 9 Line 14 - 22; and,
- c. Exhibit 89: Incident Lessons Report: Page 3 Para 3.

326. Fact 13 \_\_\_\_\_ of the Canadian injured were treated at \_\_\_\_\_. The \_\_\_\_\_ was prepared to receive and treat seriously wounded.

- a. Exhibit 18: Written Narrative by Maj Bradley;
- b. Testimony Maj Bradley: Page 10 Line 11 to Page 13 Line 6; and
- c. Testimony LCol Ricard: Page 20 Line 3 – 15.

327. Fact 14: \_\_\_\_\_ patients were treated at the Dutch \_\_\_\_\_ at Tarin Kowt.

- a. Testimony Maj Bradley: Page 11 Line 3 – 7;
- b. Testimony Pte Lepage: Page 23 Line 11 - 18; and
- c. Exhibit 99: RC(S) Medical Cell Tab H, MiRC Operational Logs Med Net: Page 8 (0946(L)).

328. Fact 15: The Facility was described by the RC(S) Medical Director as “probably the best facility“ that he had seen in 26 years of service for medical care citing the fact there is no waiting line and its 24/7 operations.

- a. Testimony LCol Ricard: Page 20 Line 3 - 15.

329. Fact 16: The Facility in Landstuhl is an extensively equipped hospital that dealt with follow on care for the critically wounded and those requiring the kind of specialist care and surgery not available at the Facility. The Facility was described by the wounded as a “top of the line hospital” providing very good care. Several of the critical patients at Landstuhl returned to Canada on a CF Airbus provided specifically for AE.

- a. Testimony LCol Ricard: Page 17 Line 5 – 8, Line 13 – 16; Page 21 Line 14 to Page 22 Line 25;
- b. Testimony Maj Withers: Page 11 Line 6 – 12;
- c. Testimony Pte Lepage: Page 24 Line 19 – 21;
- d. Testimony Maj Sprague: Page 20 Line 4 – 5; Page 33 Line 18 – 19; and
- e. Exhibit 138: Message 071842Z SEP 06 AEROMEDICAL EVACUATION 06-08 SEP 2006

330. Fact 17: A Padre and Social Worker met with every wounded individual as they came through the Facility and interviewed the casualties who were initially sent to Tarin Kowt upon their return to KAF. At least one soldier pursued further counselling while others did not.

- a. Testimony Capt Walsh: Page 6 Line 11 - 12;
- b. Testimony Maj Lauder: Page 21 Line 17 to Page 24 Line 13;
- c. Testimony MCpl Somerset: Page 19 Line 18; and
- d. Testimony Pte Lepage: Page 29 Line 5 to Page 30 Line 7.

331. Fact 18: Group counselling was provided to the remaining non-injured soldiers of the affected platoons of C Coy gp and to wounded soldiers who were evacuated to Landstuhl.

- a. Testimony Maj Brown: Page 49 Line 10 to Page 50 Line 9; Page 52 Line 14 - 18;
- b. Testimony Maj Sprague: Page 21 Line 7 - 20; and
- c. Testimony Maj Withers: Page 24 Line 5 to Page 25 Line 17.

## ANALYSIS

332. The medical response was remarkable. The soldiers responded immediately employing techniques and equipment received during the CRFA training. The TCCC trained soldiers were of invaluable assistance to the Med Techs. Triage effectively grouped casualties by priority for evacuation ensuring the most seriously wounded were treated and evacuated first. Testimony from both casualties and medical staff established the conduct of the MASCAL and the AE worked as planned. The only minor exception was the difficulty fitting the stretchers into the helicopters.

333. Forward AE, Tactical AE and Strategic AE were successfully carried out following the incident. Patient evacuation was very well coordinated, communications and transfer of patient information was effective between all the intermediate care facilities including Germany, KAF Facility, and Tarin Kowt . While there is a lack of Canadian encryption capability in Landstuhl, making the transfer of confidential patient information back to Canada difficult, this did not impact negatively on patient care. For all phases of AE, the patients were medically prepared and their wounds were dressed for their safe transportation. On these flights, there were dedicated medical staffs to attend to them.

334. of the injured were treated at the Facility, which was very well prepared to receive and treat the seriously wounded. Six patients were treated at the Dutch at Tarin Kowt at the Facility. Several patients were evacuated to Landstuhl where they were well cared for in a “top of the line” Facility.

335. The soldiers of the affected platoons, wounded or not, received some form of counselling after the incident. The Padre and Social Worker met with every wounded individual as they came through the Facility. The casualties who were initially sent to Tarin Kowt were interviewed upon their return to KAF Facility. Group counselling was provided to the remaining non-injured soldiers of the affected platoons of C Coy gp and to patients treated at Landstuhl. The effectiveness of immediate post incident stress counselling is difficult to assess. Because of the drugs used to treat the casualties' pain, their recollection of events was sometimes confused on this point. However, all who testified before the Board remembered receiving assistance and discussing the incident and their feelings. It is recognized by the Board that often the emotional effects of an incident such as this are not evident for long periods of time.

## STATEMENT OF FINDING (OPERATIONAL RESPONSE)

336. **The Board finds that the operational response to the incident was effective and appropriate and protected the casualties from further harm while enabling their timely evacuation. By activating the Coy held in reserve, TF-K was able to continue its efforts to secure**

## SUPPORTING FACTS

337. Fact 1: Comd TF-K ordered an artillery smoke screen to obscure the situation from the enemy.

- a. Exhibit 53: AEGIS TOC Log File (                      and
- b. Testimony LCol Lavoie: Page 13 Line 14 - 25.

338. Fact 2:                      Flight provided airborne coverage for the AE helicopters.

- a. Testimony LCol Lavoie: Page 13 Line 25 to Page 14 Line 5;
- b. Annex D - CIB Attachment 26: Transcript CIB Interview of MP3: Page I-7.13 Line 6 to Page I-7.14 Line 2; and
- c. Testimony Capt Spears: Page 139 Line 2 - 11.

339. Fact 3: The second in command took command of C Coy gp after the OC was wounded.

- a. Exhibit 53: AEGIS TOC Log File                      and
- b. Testimony Maj Brown: Page 20 Line 16 - 24.

340. Fact 4: Comd TF-K activated the reserve Coy to reinforce C Coy gp's position.

- a. Exhibit 53: AEGIS TOC Log File                      and
- b. Testimony LCol Lavoie: Page 16 Line 16 - 24.

341. Fact 5: Comd TF-K requested AE shortly after the incident.

- a. Exhibit 53: AEGIS TOC Log File
- b. Testimony Maj Brown: Page 21 Line 16 - 25; and
- c. Testimony LCol Lavoie: Page 13 Line 5 - 10.

342. Fact 6:                      took over from                      and controlled CAS assets over Objective RUGBY.

- a. Testimony Capt Spears: Page 135 Line 24 to Page 136 Line 1; Page 138 Line 23 to 139 Line 9.



## ANALYSIS

343. Shortly after the incident, AE was requested. Comd TF-K ordered a smokescreen using artillery to conceal the situation on Ma'sum Ghar from the enemy and provide protection to the personnel in the area. In addition, the airborne A-10As provided coverage for the helicopters involved in the Forward AE. When the C Coy gp OC was wounded, the second in command immediately assumed his responsibilities. The Coy in reserve was activated to reinforce C Coy gp's position.

## STATEMENT OF FINDING (NOTIFICATION OF NEXT OF KIN)

**344. The Board finds that the NOK notification was done efficiently and in a timely manner while the details of the incident and wounded were safeguarded.**

## SUPPORTING FACTS

345. Fact 1: The wounded were provided phones and encouraged to personally call their NOK and inform them of their injuries and prognosis. The wounded at the KAF Facility were given specific instructions on what they were not allowed to discuss and encouraged to give precise details regarding their injuries.

- a. Testimony Maj Lauder: Page 9 Line 7 to Page 10 Line 5; and
- b. Testimony MCpl Somerset: Page 21 Line 2 - 7.

346. Fact 2: The TF Padre notified the TF-A Administration Officer (NCE J1) of those wounded who couldn't call their NOK. Where the wounded were incapable of calling home, NCE J1 notified Deployment Support Centre (DSC) in Petawawa. The DSC contacted the appropriate unit rear party who then contacted the NOK in accordance with TF-A SOPs. The notification was conducted in a timely manner.

- a. Testimony Maj Lauder: Page 27 Line 17 - 21;
- b. Testimony Maj Lavoie (13 Oct 06): Page 11 Line 1 – 15; Page 12 Line 4 – 10; Page 14 Line 6 – 16; Page 21 Line 1 - 24;
- c. Exhibit 110: TF-A ROTO 2 - Procedure for KIA/VSI/SI;
- d. Testimony Maj Scott: Page 15 Line 3 – 12; and
- e. Exhibit 109: MSG: TFA HQ J1 19 SEP 06.

347. Fact 3: Despite the incident being leaked to the media, CF authorities did not provide the media with personal information about the wounded or deceased until all NOK had been informed.

80/89

- a. Exhibit 49: Titan Chat Print Out; and
- b. Testimony Maj Lavoie (13 Oct 06): Page 12 Line 14 – 20; Page 26 Line 3 - 10.

#### ANALYSIS

348. The notification of the NOK of the injured and deceased was well organized and carried out in a timely manner. The wounded, who were capable of calling home, were given the opportunity to use a phone to call their NOK. The TF Padre notified the NCE J1 of those wounded who couldn't call their NOK. The J1 passed this to the DSC in Petawawa who assigned responsibility for contacting the NOK to the appropriate unit rear party. Information was contained despite an early leak of the incident to the media.

#### STATEMENT OF FINDING (NOTIFICATION OF CHAIN OF COMMAND)

**349. The Board finds that the chain of command in Canada was notified quickly (31 minutes after the incident) and was provided with the details of the incident and the casualties later the same day.**

#### SUPPORTING FACTS

350. Fact 1: NDCC was informed promptly and TF-A followed up with a Significant Incident Report (SIR) providing details of the incident and the casualties later the same day.

- a. Exhibit 49: TITAN LOG and
- b. Exhibit 48: Significant Incident Report TFA SIR 011 Friendly Fire Incident, Dated SEP 06.

351. Fact 2: NDHQ Ottawa CEFCOM and Director Land Force Readiness were provided with an Incident Lessons Report dated 9 September 2006.

- a. Exhibit 89: Incident Lessons Report 06-045, Dated 09 Sep 2006.

#### ANALYSIS

352. NDCC was advised of the incident promptly and was updated on the incident by SIR later the same day. An Incident Lessons Report was prepared and provided to the Chain of Command. The post-incident TF-A reporting of the incident to the Chain of Command was appropriately carried out and in a timely manner.

STATEMENT OF FINDING (PTE MARK GRAHAM)

353. **The Board finds that the immediate response to the mortal wounds suffered by Pte Graham and the subsequent evacuation and repatriation of his remains were carried out appropriately.**

SUPPORTING FACTS

354. Fact 1: Immediately following the strafing, Pte Graham was tended to by Cpl Dewitte and Cpl Laroche (Med Tech).

- a. Testimony Cpl Dewitte: Page 6 Line 16 - 25; and
- b. Testimony Cpl Laroche: Page 6 Line 13 to Page 7 Line 2.

Fact 2: Cpl Laroche assessed

- a. Testimony Cpl Laroche: Page 8 Line 1 - 21.

356. Fact 3

- a. Exhibit 35: Written Statement Lt Corby.

Fact 4:

- a. Testimony LCol Lavoie: Page 19 Line 15 to Page 20 Line 3;
- b. Testimony Cpl Laroche: Page 8 Line 20 - 21;
- c. Testimony MBdr Melvin: Page 18 Line 23 to Page 19 Line 7; and
- d. Testimony MWO Henwood (13 Oct 06): Page 10 Line 18 to Page 11 Line 9.

Fact 5:

- a. Testimony Maj Morissette: Page 9 Line 21 to Page 10 Line 2; and
- b. Testimony MWO Henwood (13 Oct 06): Page 5 Line 11 - 16; Page 8 Line 6 - 10; Page 10 Line 18 to Page 11 Line 9.

Fact 6:

- a. Exhibit 54: CF Medical Certificate of Death; and
- b. Testimony Maj Morissette: Page 9 Line 13 to Page 10 Line 11.

Fact 7: Pte Graham primary NOK,

- a. Testimony Maj Lavoie (13 Oct 06): Page 12 Line 14 – 17; and
- b. Testimony Maj Scott: Page 16 Line 16 to Page 17 Line 20.

361. Fact 8:

- a. Testimony MWO Henwood (13 Oct 06): Page 8 Line 11 to Page 10 Line 14; and
- b. Testimony Maj Lauder (12 Oct 06): Page 18 Line 9 to Page 20 Line 9.

Fact 9:

- a. Annex E - Report of Postmortem Examination.

## ANALYSIS

## **FINDING M**

**364. Whether the incident was preventable.**

### STATEMENT OF FINDING

**365. The Board finds that incident was preventable.**

### SUPPORTING FACTS

366. Fact 1: The incident pilot mistook the garbage fire in the C Coy gp firing line for the target location.

- a. Annex D - CIB Attachment 22: Transcript CIB Interview of MP1: Page I-2.20 Line 12 – 13; Page I-2.40 Line 18 to Page I-2.41 Line 4; and
- b. Annex D - CIB Attachment 17: Communication Transcript Mishap Events and Communication Timeline: Page 29 and

367. Fact 2: padlocked onto the garbage fire in the C Coy gp firing line, believing it to be the smoke from exploded bomb and did not check his cockpit systems before engaging the target.

- a. Annex D - CIB Attachment 22: Transcript CIB Interview of MP1: Page I-2.20 Line 4 – 9; Page I-2.41 Line 3 - 4; Page I-2.69 Line 3 - 7; Page I-2.76 Line 19 – 24 to Page I-2.77 Line 1 - 7.

368. Fact 3: Conducting CAS during the transition from night to day was difficult for the pilots, because light intensity levels had not risen to the point where the naked eye had good definition but had increased to the point where the pilots' NVGs were less effective.

- a. Annex D - CIB Attachment 21: Transcript 455 OG/CC Interview of MP1: Page 3; and
- b. Annex D - CIB Attachment 26: Transcript CIB Interview of MP3: Page I-7.59 Line 11 – 18; Page I-7.61 Line 7 - 9; Page I-7.70 Line 18 to Page I-7.71 Line 12.

### ANALYSIS

369. The friendly fire incident on 4 September 2006 was the result of a combination of several factors. For example, the incident could have been prevented if the incident pilot had not padlocked on the garbage fire located in the C Coy gp firing line and had checked his HUD and TGP to confirm that he was pointing at the proper target. In his testimony, the pilot confirmed that he was padlocked on what he believed to be the target area,

When questioned

~~SECRET~~—DECLASSIFIED

as to whether there were any checks that the pilot performed to ensure he was on the correct target, he confirmed that he had not checked the target in his HUD. He answered

Accordingly, the Board concludes that had the pilot performed his checks on his HUD and TGP prior to engaging, the incident could have been prevented.

370. In his testimony, the incident pilot discussed the difficulty he faced with the use of his NVGs and his HUD due to the changes in the lighting conditions during the transition from night to day. BOAR 15, the flight lead of the second two-ship operating in the same area, confirmed the challenge of target identification during the transition from night to day. He stated

The Board concludes that the incident could have been prevented had the incident pilot, or the FAC, given more consideration to the changing lighting conditions; for instance, the attack could have been delayed or the attack heading could have been reversed.

## Recommendations

371. The Board makes the following recommendations.

### RECOMMENDATION 1

**372. Requirement: What changes, if any, are required to the policies and planning for combined and joint close air support operations in Afghanistan?**

373. The Board makes no recommendations regarding the policies and planning for combined and joint close air support operations in Afghanistan.

### RECOMMENDATION 2

**374. Requirement: What changes, if any, are required for training and other preparation for combined and joint close air support operations in Afghanistan?**

375. The Board recommends that the CF institute a National FAC training program to include:

- a. National FAC training standards, which are more rigorous and more clearly defined than the minimum requirements outlined in STANAG 3797.
- b. Committed air resources, including operational ground attack aircraft that are NVG capable and equipped with a TGP, to support the initial LCR qualification and national training standards, and pre-deployment training;
- c. The creation of a FAC Standards Evaluation (STANEVAL) team that is assigned to evaluate the national FAC training program in accordance with national standards.

376. The Board recommends that all Brigade HQ TO&Es reflect the requirements of current and ongoing combat operations and that the TACP/G3 Air cell be fully staffed and trained to operate continuously over an extended period.

377. The Board recommends that Battle Group TO&E reflect the requirements of current and ongoing combat operations and that the TACP/ALO cell be fully staffed and trained to operate continuously over an extended period.

378. The Board recommends that consideration be given to establishing dedicated and independent FAC teams, in addition to the FAC capability in FOO parties.

379. The Board recommends that combined arms training and theatre specific validations realistically integrate all fire support resources into supported manoeuvre plans.

380. The Board recommends that training place greater emphasis on employing both training and live ordnance at much closer distances to friendly troops.

381. The Board recommends that FACs train to control fire support assets while manoeuvring and fighting their vehicle.
382. The Board recommends incorporating AH assets into all aspects of FAC training.
383. The Board recommends that STANAG 3797 be amended to include:
- a. The qualification and currency requirements for control of AH;
  - b. Armed UAVs as CAS platforms; and
  - c. A requirement for the use of live ordnance.

**RECOMMENDATION 3**

- 384. Requirement: What changes, if any, are required to the procedures for provision of close air support for combined and joint operations in Afghanistan?**
385. The Board makes no recommendations regarding procedures for provision of close air support for combined and joint operations in Afghanistan.

**RECOMMENDATION 4**

- 386. Requirement: What changes, if any, are required to safety provisions relative to the provision of close air support for combined and joint operations?**
387. The Board recommends that during times of adverse conditions such as additional techniques be incorporated into FAC and pilot training to increase their situational awareness.
388. The Board recommends that FACs be better equipped to perform their duties  
The following surveillance, target acquisition and night observation  
(STANO) and combat identification (CID) equipment should be considered for Canadian FACs:
- a. ;



389. The Board recommends that standard terminology should be developed and implemented which would permit the FAC to indicate their level of STANO capability to the pilot.

390. The Board recommends that there be better liaison between units operating in the same battle space in order to safely coordinate and synchronize operations in controlled airspace.

### **RECOMMENDATION 5**

**391. Requirement: What measures, if any, should be taken to prevent a similar occurrence in the future?**

392. The Board recommends that, during adverse conditions such as additional techniques such as those outlined in Recommendation 4 be used. Such techniques may prevent fratricide occurrences in the future.

### **RECOMMENDATION 6**

**393. Requirement: Other recommendations regarding actions or corrective measures to be taken in the future.**

394. The Board recommends the following concerning the medical and post incident reporting processes:

- a. Establishment of communications between Landstuhl and Canadian medical treatment facilities capable of transmission and reception of confidential medical records;
- b. Review of equipment compatibility with an emphasis on patient evacuation (stretchers); and
- c. Continuing the medical training policy with respect to deployed service members; specifically, all CF personnel should receive the CRFA training and a minimum of one soldier per section (or equivalent) should receive the TCCC course.

## List of Annexes

Annex A	Terms of Reference
Annex B	Witness Testimony
Annex C	List of Exhibits
Annex D	CIB Documentation/Information
Annex E	Report of Postmortem Examination (Pte Graham)
Annex F	Correspondence To and From Board
Annex G	ATP 3.3.2.1(A)
Annex H	CFAO 24-6
Annex I	Glossary

~~SECRET~~ DECLASSIFIED

Annex A  
To Minutes of Proceedings  
Date

## Annex A – Terms of Reference



TERMS OF REFERENCE.pdf

A - 1/1

~~SECRET~~ DECLASSIFIED

~~SECRET~~ DECLASSIFIED

Annex B  
To Minutes of Proceedings  
Date

## Annex B - Witness Testimony

Sequence	Name	Service Number	Date	Volume
1	Swearing in of Members		02 October 2006	I
2	Maj Y. Michaud		02 October 2006	I
3	Maj M. Sprague		02 October 2006	I
4	MCpl G.E. Mitchell		02 October 2006	I
5	Pte F. Lepage		03 October 2006	I
6	Maj S. West		05 October 2006	I
7	Capt P.R. Howell		11 October 2006	I
8	Maj J.A. Bradley		11 October 2006	I
9	Capt J.T. Spears		11 October 2006	II
10	Maj R.A. Lauder		12 October 2006	II
11	MWO M. Henwood		12 October 2006	II
12	Capt C. Walsh		12 October 2006	II
13	Maj S. Rankin		12 October 2006	II
14	LCol J. Ricard		12 October 2006	II
15	Maj P.J. Morissette		13 October 2006	II
16	Maj C. Lavoie		13 October 2006	II
17	MCpl J.P. Somerset		13 October 2006	II
18	BGen D. Fraser		14 October 2006	III
19	Maj S. Brown		14 October 2006	III
20	LCol O. Lavoie		15 October 2006	III
21	MBdr M.A. Melvin		15 October 2006	III
22	Maj G. Ivey		15 October 2006	III
23	Sgt J.P. Myler		16 October 2006	III
24	Maj E. Savage		19 October 2006	III
25	Cpl S. Laroche		19 October 2006	IV
26	Maj D. Buchanan		19 October 2006	IV
27	Cpl C. Dewitte		20 October 2006	IV
28	Maj N.J. Withers (by telephone)		31 October 2006	IV
29	Maj B. Baker		31 October 2006	IV
30	WO C. Roehl		01 November 2006	IV

B - 1/2

~~SECRET~~ DECLASSIFIED

~~SECRET~~ DECLASSIFIED

Annex B  
To Minutes of Proceedings  
Date

Sequence	Name	Service Number	Date	Volume
31	Maj Scott		15 November 2006	IV
32	Cpl Spence		16 November 2006	IV
33	Maj Rideout		16 November 2006	IV

~~SECRET~~ DECLASSIFIED

~~SECRET~~ DECLASSIFIED

Annex C  
To Minutes of Proceedings  
Date

### Annex C – List of Exhibits

Sequence	Title of Exhibit	Date	Received From	Volume
1	Memo 3500-1 dated 27 Sept 06, entitled: GEO SP SQN OP O 007/06 GEO SP TO CEFCOM BOARD OF INQUIRY ON A10 BLUE ON BLUE ENGAGEMENT (3 pages)	02 Oct 06	Maj Y. Michaud	I
2	Map of Bazar-E Panjvai, Afghanistan, 2080-2 U 711 Edition 4-GSGS	02 Oct 06	Maj Y. Michaud	I
3	Map of Kandahar province, MCE 5047 Grid 41 R QQ 31 91	02 Oct 06	Maj Y. Michaud	I
4	Map of Kandahar province, MCE 5048 Grid 41 R QQ 32 91	02 Oct 06	Maj Y. Michaud	I
5	Map of Kandahar province, MCE 5049 Grid 41 R QQ 32 92	02 Oct 06	Maj Y. Michaud	I
6	Map of Kandahar province, MCE 5050 Grid 41 R QQ 31 91	02 Oct 06	Maj Y. Michaud	I
7	Map of Kandahar province, MCE 5051 Grid 41 R QQ 32 91	02 Oct 06	Maj Y. Michaud	I
8	Map of Kandahar province, MCE 5052 Grid 41 R QQ 32 92	02 Oct 06	Maj Y. Michaud	I
9	Map of Kandahar province, MCE 5053 Grid 41 R QQ 29 90	02 Oct 06	Maj Y. Michaud	I
10	Map of Kandahar province, MCE 5054 Grid 41 R QQ 30 91	02 Oct 06	Maj Y. Michaud	I
11	CD – MCE FLY-THROUGH A-10A Blue on Blue Incident Edition 2, dated 28 Sep 2006	02 Oct 06	Maj Y. Michaud	I
12	CD – Geo support to BOI dated 25 Sep 2006	02 Oct 06	Maj Y. Michaud	I
13	Sketch of Area of operation	02 Oct 06	Maj M. Sprague	II
14	Sketch of Area of operation (2 pages)	02 Oct 06	MCpl G.E. Mitchell	II
15	Sketch of Area of operation	03 Oct 06	Pte F. Lepage	II
16	Sketch of Pte Lepage's position in Area of operation	03 Oct 06	Pte F. Lepage	II
17	Sketch of CJOC organization chart	11 Oct 06	Capt P.R. Howell	II
18	Document entitled: A VERY BUSY DAY (3 pages)	11 Oct 06	Maj J.A. Bradley	II
19	Report: Mission ID: XLM 101122248 – Patient Listing (2 pages)	11 Oct 06	Maj J.A. Bradley	II

C - 1/8

~~SECRET~~ DECLASSIFIED

~~SECRET~~ DECLASSIFIED

Annex C  
To Minutes of Proceedings  
Date

Sequence	Title of Exhibit	Date	Received From	Volume
20	Document on transmission conversation (2 pages)	11 Oct 06	Maj J.A. Bradley	II
21	Document: R3 MMU – AFTER ACTION REVIEW – MASCAL 4 SEP AND 18 SEP (3 pages)	11 Oct 06	Maj J.A. Bradley	II
22	Document : JTASR (4 pages)	11 Oct 06	Capt T. Spears	II
23	Document : TF Khandahar FSCC Ops Log	11 Oct 06	Capt T. Spears	II
24	Document: Change 1 Appendix 1 Fires Annex E – Effects CTF AEGIS FRAGO 102 to Op O 001 OP MEDUSA Ops 155, 23 Aug 06	11 Oct 06	Capt T. Spears	II
25	Document: NATO Standardization Agreement (study Draft 1) (18 pages)	11 Oct 06	Capt T. Spears	II
26	Document: HQ ISAF, SOP 310 Air Operations and HQ ISAF SOP 311 (29 pages)	11 Oct 06	Capt T. Spears	II
27	Map of Panjwayi Valley, Series 3-06	11 Oct 06	Capt T. Spears	II
28	Document: Joint Fires Post Mission Report	11 Oct 06	Capt T. Spears	II
29	Document: Quick reference guide entitled: JFIRE, October 2004	11 Oct 06	Capt T. Spears	II
30	E-mail: subject: Information for Maj James Allen, BOI Mbr FFI TFK Dated 30 Sep 06 (2 pages)	11 Oct 06	Capt T. Spears	II
31	CD – JTTPs, JFIRE, SPINS	11 Oct 06	Capt T. Spears	II
32	List of Pers and written statement from Cpl Stirling (3 pages)	12 Oct 06	MWO M. Henwood	II
33	Written statement from Cpl Tisdale (2 pages)	12 Oct 06	MWO M. Henwood	II
34	Written statement from Bdr Walsh (2 pages)	12 Oct 06	MWO M. Henwood	II
35	Written statement from Lt Corby (3 pages)	12 Oct 06	MWO M. Henwood	II
36	Written statement from Sgt Bearisto	12 Oct 06	MWO M. Henwood	II
37	Written statement from MCpl Booker (2 pages)	12 Oct 06	MWO M. Henwood	II
38	Written statement from Pte Harding (2 pages)	12 Oct 06	MWO M. Henwood	II
39	Written statement from Pte Lejeune	12 Oct 06	MWO M. Henwood	II

C - 2/8

~~SECRET~~ DECLASSIFIED

~~SECRET~~ DECLASSIFIED

Annex C  
To Minutes of Proceedings  
Date

Sequence	Title of Exhibit	Date	Received From	Volume
40	Written statement from Capt Lockridge (2 pages)	12 Oct 06	MWO M. Henwood	II
41	Written statement from MBdr Weron (2 pages)	12 Oct 06	MWO M. Henwood	II
42	Memorandum 140 (Pers) dated 7 September 2006, entitled: WRITTEN STATEMENT – MAJ J.M. HARVEY – FRIENDLY FIRE INCIDENT – 4 SEPTEMBER 2006 (3 pages)	12 Oct 06	MWO M. Henwood	II
43	Written statement from Lt Chledowski (2 pages)	12 Oct 06	MWO M. Henwood	II
44	Written statement from Bdr Goodman (2 pages)	12 Oct 06	MWO M. Henwood	II
45	Written statement from Capt Spears (4 pages)	12 Oct 06	MWO M. Henwood	II
46	Written statement from Maj Bertoia (2 pages)	12 Oct 06	MWO M. Henwood	II
47	Document: 040100Z SEP 06 – A10 Fr Fire Incident – C/S 33 v1 (5 pages)	12 Oct 06	MWO M. Henwood	II
48	Msg TFA HQ 040 041653Z SEP 06 (5 pages)	12 Oct 06	MWO M. Henwood	II
49	Document: TFA SIR 011 – A10 Friendly Fire Incident C.2 33 (6 pages)	12 Oct 06	MWO M. Henwood	II
50	Document: 040100Z SEP 06 – A10 Fr Fire Incident – C/S 33 v2 (3 pages)	12 Oct 06	MWO M. Henwood	II
51	Document: 04 SEPTEMBER Role3_MMU LOG FILE (2 pages)	12 Oct 06	MWO M. Henwood	III
52	Document : 04 SEPTEMBER – TF 306(OPS) LOG FILE (2 pages)	12 Oct 06	MWO M. Henwood	III
53	Document : 04 SEPTEMBER – AEGIS TOC(OPS) LOG FILE (18 pages)	12 Oct 06	MWO M. Henwood	III
54	Canadian Forces Medical Certificate of Death – Pte Graham (7 pages)	12 Oct 06	MWO M. Henwood	III
55	Document: Surface Weather Conditions (8 pages)	12 Oct 06	MWO M. Henwood	III
56	Msg 1630-2(J3) TFA HQ 040 (4 pages)	12 Oct 06	MWO M. Henwood	III
57		12 Oct 06	MWO M. Henwood	III

C - 3/8

~~SECRET~~ DECLASSIFIED



~~SECRET~~ DECLASSIFIED

Annex C  
To Minutes of Proceedings  
Date

Sequence	Title of Exhibit	Date	Received From	Volume
58		12 Oct 06	MWO M. Henwood	III
59		12 Oct 06	MWO M. Henwood	III
60		4 Sep 06 12 Oct 06	MWO M. Henwood	III
61		12 Oct 06	MWO M. Henwood	III
62		12 Oct 06	MWO M. Henwood	III
63		12 Oct 06	MWO M. Henwood	III
64		12 Oct 06	MWO M. Henwood	III
65		12 Oct 06	MWO M. Henwood	III
66	Written Statement from MCpl Lamontagne (2 pages)	12 Oct 06	MWO M. Henwood	III
67	Written Statement from Pte Rufiange	12 Oct 06	MWO M. Henwood	III
68	Written Statement from MCpl Evans (4 pages)	12 Oct 06	MWO M. Henwood	III
69	Written Statement from Pte Kirk (2 pages)	12 Oct 06	MWO M. Henwood	III
70	Written Statement from Pte Needham (2 pages)	12 Oct 06	MWO M. Henwood	III
71	Written Statement from Cpl Gill	12 Oct 06	MWO M. Henwood	III
72	Written Statement from MCpl Bellamy (2 pages)	12 Oct 06	MWO M. Henwood	III
73	Written Statement from WO Oldstad (2 pages)	12 Oct 06	MWO M. Henwood	III
74	Written Statement from Sgt Russell (3 pages)	12 Oct 06	MWO M. Henwood	III
75	Written Statement from Cpl Loughheed	12 Oct 06	MWO M. Henwood	III

C - 4/8

~~SECRET~~ DECLASSIFIED

~~SECRET~~ DECLASSIFIED

Annex C  
To Minutes of Proceedings  
Date

Sequence	Title of Exhibit	Date	Received From	Volume
76	Written Statement from MCpl Rainey (2 pages)	12 Oct 06	MWO M. Henwood	III
77		12 Oct 06	MWO M. Henwood	III
78		12 Oct 06	MWO M. Henwood	III
79		12 Oct 06	MWO M. Henwood	III
80		12 Oct 06	MWO M. Henwood	III
81		12 Oct 06	MWO M. Henwood	III
82		12 Oct 06	MWO M. Henwood	III
83		12 Oct 06	MWO M. Henwood	III
84		12 Oct 06	MWO M. Henwood	III
85		12 Oct 06	MWO M. Henwood	III
86	Written Statement from Sgt Arsenault (2 pages)	12 Oct 06	MWO M. Henwood	III
87	Written Statement from Pte Lapointe (2 pages)	12 Oct 06	MWO M. Henwood	III
88	Document: A-10A Thunderbolt II (12 pages)	12 Oct 06	MWO M. Henwood	III
89	Memorandum 3350-3(ALLO) 9 Sep 06 entitled: FRIENDLY FORCE ENGAGEMENT – BAZZAR- E-PANJWAYI – 4 SEP 06 – INCIDENT LESSONS REPORT (ILR) 06 – 045	12 Oct 06	MWO M. Henwood	III
90	CD – ASIC INT SPG PDG – Copy from original – CFNIS GO 2006-25564	12 Oct 06	MWO M. Henwood	III
91	CD – CDN SPERWER (TUAV) – Copy from original – CFNIS GO 2006-25564	12 Oct 06	MWO M. Henwood	III
92	Document: Transmission report from (2 pages)	12 Oct 06	MWO M. Henwood	III

C - 5/8

~~SECRET~~ DECLASSIFIED

~~SECRET~~ DECLASSIFIED

Annex C  
To Minutes of Proceedings  
Date

Sequence	Title of Exhibit	Date	Received From	Volume
93	Document 11500-1 (UAV) dated 3 May 2005 entitled: FLIGHT TEST PRIORITY AMENDMENT – SPERWER ET&E (2 pages)	12 Oct 06	MWO M. Henwood	III
94	Document: Acute stress disorder scale	12 Oct 06	Capt C. Walsh	III
95	Document: Managing Reactions to Critical Stress & Traumatic Events	12 Oct 06	Capt C. Walsh	III
96	Document: Information for Relief Workers on Emotional Reactions to Human Bodies in Mass Death (10 pages)	12 Oct 06	Capt C. Walsh	III
97	Document: Disclosure of Personal Health Information (21 pages)	12 Oct 06	Capt C. Walsh	III
98	Document: NOK Notification by Member	12 Oct 06	Maj R.A. Lauder	III
99	Briefing Note: RC(S) MEDICAL CELL DOCUMENTS FOR BOARD OF INQUIRY OP MEDUSA – FRIENDLY FIRE INCIDENT 04 SEP 06 (115 pages)	12 Oct 06	LCol J. Ricard	III
100	Document: List of Injured Personnel	13 Oct 06	Maj P.J. Morissette	III
101	Document: OP ARCHER – Role 3 MMU statistics	13 Oct 06	Maj J.A. Bradley	IV
102	Sheet Records – AEGIS_TOC(OPS).20060904.log (23 pages)	13 Oct 06	Maj J.A. Bradley	IV
103	Sheet Records – MED NET.20060904.log (3 pages)	13 Oct 06	Maj J.A. Bradley	IV
104	Sheet Records – CTF_ (OPS).20060904.log (5 pages)	13 Oct 06	Maj J.A. Bradley	IV
105	Sheet Records – AEGIS_JIops.20060904.log	13 Oct 06	Maj J.A. Bradley	IV
106	Sheet Records – AEGIS_DO.20060904.log	13 Oct 06	Maj J.A. Bradley	IV
107	Sheet Records – TFA_SDO.20060904.log	13 Oct 06	Maj J.A. Bradley	IV
108	Sheet Records – AEGIS_Med_Ops.20060904.log (4 pages)	13 Oct 06	Maj J.A. Bradley	IV
109	Msg: TFA HQ J1 19 061348Z SEP 06 (20 pages)	13 Oct 06	Maj C. Lavoie	IV
110	Document: TFA ROTO 2- PROCEDURE FOR KIA/VSI/SI (2 pages)	13 Oct 06	Maj C. Lavoie	IV
111	Document: Casualty Database R2 and Personal Emergency Notification (38 pages)	13 Oct 06	Maj C. Lavoie	IV
112	Document: CFTPO (41 pages)	13 Oct 06	Maj C. Lavoie	IV
113	Document: Task Force Database (73 pages)	13 Oct 06	Maj C. Lavoie	IV

C - 6/8

~~SECRET~~ DECLASSIFIED

Annex C  
 To Minutes of Proceedings  
 Date

Sequence	Title of Exhibit	Date	Received From	Volume
114	Document: Copy of Exhibit 14 amended by MCpl Somerset (2 pages)	13 Oct 06	MCpl J.P. Somerset	IV
115	Sketch made by BGen Fraser	14 Oct 06	BGen Fraser	IV
116	Map Grid 41R QQ	14 Oct 06	Maj S. Brown	IV
117	Document: Copy of Exhibit 14 amended by Sgt Myler (2 pages)	16 Oct 06	Sgt J.P. Myler	IV
118	Document: 9 Liner card provided by Sgt Myler (2 pages)	16 Oct 06	Sgt J.P. Myler	IV
119	Map of Kandahar Province – Grid 41 R QQ 31 91 MCE 5050 amended by Sgt Myler	16 Oct 06	Sgt J.P. Myler	IV
120	Document: Corrected copies of CFTPO (45 pages)	19 Oct 06	Maj C. Lavoie	V
121	Documents: Task Force Afghanistan Roto 2 – Members no longer in Theatre and Task Force Afghanistan Roto 2 (65 pages)	19 Oct 06	Maj C. Lavoie	V
122	Document: Medical notes on 33 of the 35 injured personnel (44 pages)	19 Oct 06	Maj E. Savage	V
123	Document: Summary of medical data – Friendly Fire Incident 04 September 2006	19 Oct 06	Maj E. Savage	V
124	Copy of Exhibit 14 amended by Cpl Laroche	19 Oct 06	Cpl S. Laroche	V
125	Document: Amended summary of medical data – Friendly Fire Incident 04 September 2006	19 Oct 06	Maj E. Savage	V
126	Letter 3350-1 (Comd) 13 August 2006 entitled: REQUEST FOR REVIEW OF COLLATERAL DAMAGE ESTIMATES (CDE) (3 pages)	19 Oct 06	Maj D. Buchanan	V
127	Letter 3350-1 (Comd) 13 August 2006 entitled: AUTHORITY TO EMPLOY JOINT FIRES AND SAFETY DISTANCES (2 pages)	19 Oct 06	Maj D. Buchanan	V
128	Document: Change 1 RC(S) Frag O 102 to Operation Order 001 Op MEDUSA Ops 155 29 Aug 2006 (13 pages)	19 Oct 06	Maj D. Buchanan	V
129	Document: Forward Air Controller's Record of Training of Sgt Myler (8 pages)	19 Oct 06	Capt T. Spears	V
130	Map –	31 Oct 06	Maj B. Baker	V
131	Map – OP MEDUSA –	31 Oct 06	Maj B. Baker	V
132	Map – CAS Coordination	31 Oct 06	Maj B. Baker	V
133	CD – TCCC, dated Jan 06	16 Nov 06	Maj Rideout	VI
134	CD – Combat First Aid	16 Nov 06	Maj Rideout	VI

~~SECRET~~ DECLASSIFIED

Annex C  
To Minutes of Proceedings  
Date

<b>Sequence</b>	<b>Title of Exhibit</b>	<b>Date</b>	<b>Received From</b>	<b>Volume</b>
135	Document – 2 Field Ambulance Tactical Combat Casualty Course Serial 0601 Timetable	16 Nov 06	Maj Rideout	VI
136	Sheet – Update – Prognosis of Re-Patriated Personnel	16 Nov 06	Maj Rideout	VI
137	Document – ROTO 2 Issued Items to be Returned – List – Combat Related First Aid Course	16 Nov 06	Maj Rideout	VI
138	Message – Aeromedical Evacuation 06-08 Sep 2006	21 Nov 06	Maj West	VI
139	Document – Military Members in Civilian Hospital Report for Cpl Miller	22 Nov 06	Maj Rideout	VI
140	Document – Homecare Referral for Sgt Arsenault	22 Nov 06	Maj Rideout	VI

C - 8/8

~~SECRET~~ DECLASSIFIED

~~SECRET~~ DECLASSIFIED

Annex D  
To Minutes of Proceedings  
Date

## Annex D - CIB Documentation/Information

Attachment	CIB Documentation/Information	Volume
1	List of Witnesses	I
2	List of Exhibits	I
3	Flight Records – MP1 (10 pages)	I
4	Flight Evaluation Records – MP1 (120 pages)	I
5	AF Form 1042 – Medical Recommendation For Flying or Special Operational Duty (2 pages)	I
6	MP 72 Hour History – MP1 (3 pages)	I
7	MP Medical History – Chronological Record of Medical Care – MP1 (6 pages)	I
8	MP1 Toxicology Report – MP1 (1 page)	I
9	Maintenance Executive Summary – Aircraft 81-0988 (2 pages)	I
10	OIF-OEF Special Instructions (SPINS) (9 pages)	I
11	ISAF Rules of Engagement (57 pages)	I
12	OIF-OEF ATO 3 Sep 06	II
13	NATO / ISAF Confidential Releasable to CFC-A (8 pages)	II
14	OPEF (ACP) Airspace Control Plan (55 pages)	II
15	Joint Tactical Air Strike Request (1 page)	II
16	GLO INTEL BRIEF (34 pages)	II
17	Communication Transcript Mishap Events Communication Timeline (29 pages)	II
18	MiRC LOG (10 pages)	II
19	AFTO FORM 781 MP1 (1 page)	II
20	Data Transfer Cartridge Downloads – Weapon Events	II
21	455 OG/CC Interview MP1 (7 pages)	III
22	Interview of MP1 (93 pages)	III
23	Telephonic Interview #1 MP1 (81 pages)	III
24	Telephonic Interview #2 MP1 (15 pages)	III
25	Interview MP2 (66 pages)	III
26	Interview MP3 (81 pages)	III
27	Summarized Statement of dated 4 Oct 06 (1 page)	III

D - 1/1

~~SECRET~~ DECLASSIFIED

~~SECRET~~ DECLASSIFIED

Annex E  
To Minutes of Proceedings  
Date

## **Annex E –Report of Postmortem Examination**



Report of Postmortem Exam.pdf

E - 1/1

~~SECRET~~ DECLASSIFIED

~~SECRET~~ DECLASSIFIED

Annex F  
To Minutes of Proceedings  
Date

## Annex F – Correspondence To or From the Board

Date Sent	Sent To/Received	Subject
21 Nov 06	Memorandum for Col Milot, President BOI from COMUSCENTAF	Addendum to Release of Combined Investigation Board Evidence Concerning the 4 Sep 06 Mishap Near Kandahar, Afghanistan – HUD Video/TGP Video/MAAF
17 Nov 06	E-Mail from MGen Gauthier, CEFCOM Comd to Col Milot, Board President, Fri, 2006-11-17 5:56 pm	Extension Approval – Delivery of Minutes of Proceedings – BOI Op MEDUSA – Friendly Fire Incident 04 Sep 06
16 Nov 06	E-Mail from Col Milot, President BOI to Capt(N) Eldridge, CEFCOM, Thurs, 2006-11-16 12:50 pm	Update – BOI FF Incident 04 Sep 06
15 Nov 06	E-Mail from Maj Scott, OC Rear Party, 1 RCR to Col Milot, Board President, Wed, 2006-11-15 10:27 am	Cas Update as of 15 Nov 06
13 Nov 06	Department of the Air Force, Headquarters USCENTAF, Shaw Air Force Base, South Carolina	Release of Combined Investigation Board Evidence Concerning the 4 Sep 06 Mishap Near Kandahar, Afghanistan
10 Nov 06	From LGen Gauthier, CEFCOM Comd to USCENTAF	Use of Documents Exchanged Between US-Canadian Combined Investigation Board and the Canadian Board of Inquiry – Statement of Understanding
4 Nov 06	LCol Coulthard, CO, TSE, TFA	Provision of Support by Camp Mirage Personnel to the Op MEDUSA Friendly Fire Board of Inquiry
3 Nov 06	E-Mail from USAF JAG, Mon 2006-10-30 18:46 pm	Interview of Pilots
1 Nov 06	E-Mail from Col Milot, President BOI to Maj Scott, OC Rear Party 1 RCR, Wed, 2006-11-1 4:20 pm	Update on The Progress of the BOI – Friendly Fire Incident – 04 September 06
30 Oct 06	E-Mail from Col Milot, President BOI to Capt(N) Eldridge, CEFCOM, Mon, 2006-10-30 10:29 am	SITREP

F - 1/6

~~SECRET~~ DECLASSIFIED



~~SECRET~~ DECLASSIFIED

Annex F  
To Minutes of Proceedings  
Date

Date Sent	Sent To/Received	Subject
27 Oct 06	E-Mail from Col Milot, President BOI – FF to Capt(N) Eldridge, CEFCOM, Fri, 2006-10-27 12:26 am	Interviews of Pilots
26 Oct 06	E-Mail from USAF JAG, Thur 2006-10-26 15:11 pm	Interview of Pilots
25 Oct 06	E-Mail from Cdr Archer, CEFCOM, Wed 2006-10-25, 1:52 pm	Media Query//Op ATHENA – Sep 4 Friendly Fire BOI//Canadian Press
24 Oct 06	LCol Coulthard, CO, TSE, TFA	Barbeque for Board of Inquiry – 23 Oct 06
22 Oct 06	LGen Gauthier, Comd, CEFCOM	TFA Training and Combat Ready Upgrade Testing for Forward Air Controllers
20 Oct 06	E-Mail from Col Milot, President BOI to Capt(N) Eldridge, CEFCOM, Fri, 2006-10-20 8:50 am	Request Meeting with VCDS – Update
19 Oct 06	LCol Lavoie, Commanding Officer, Task Force 3-06 Battle Group, Afghanistan	Provision of Support by Task Force 3-06 Battle Group to Board of Inquiry – Op MEDUSA Friendly Fire Incident
19 Oct 06	BGen Fraser, Comd Multi National Brigade, Task Force Afghanistan	Provision of Support by Task Force Afghanistan to Board of Inquiry – Op MEDUSA Friendly Fire Incident
17 Oct 06	E-Mail From Cdr Manning (CEFCOM) Tues, 2006-10-17 10:07 am	Approval Transcribing Costs – 48 Hours Turnaround
13 Oct 06	E-Mail from USAF JAG, Fri 2006-10-13 4:12 pm	Friendly Fire BOI – Question/Answer Regarding Depleted Uranium
10 Oct 06	Co-Presidents, Combined Investigation Board, Friendly Fire Incident, 4 Sep 06, Department of the Air Force, United States Central Command Air Forces, Shaw Air Base, South Carolina	Board of Inquiry – Friendly Fire Incident – Op MEDUSA – Request to Interview A10 Pilots and Commanding Officer
9 Oct 06	Maj Morissette, Surgeon, Task Force, Afghanistan	Board of Inquiry – Friendly Fire Incident – Op MEDUSA – Attendance at Proceedings
9 Oct 06	LCol Ricard, Area Surgeon, Task Force, Afghanistan	Board of Inquiry – Friendly Fire Incident – Op MEDUSA – Attendance at Proceedings

F - 2/6

~~SECRET~~ DECLASSIFIED

~~SECRET~~ DECLASSIFIED

Annex F  
To Minutes of Proceedings  
Date

<b>Date Sent</b>	<b>Sent To/Received</b>	<b>Subject</b>
9 Oct 06	Capt Wessan, Coy 2i/c C Coy gp 1 RCR, Task Force 3 – 06 Battle Group, Afghanistan	Board of Inquiry – Friendly Fire Incident – Op MEDUSA – Attendance at Proceedings
9 Oct 06	Capt Spears, FAC, Task Force 3 – 06 Battle Group, Afghanistan	Board of Inquiry – Friendly Fire Incident – Op MEDUSA – Attendance at Proceedings
9 Oct 06	MCpl Somerset, Medic, C Coy gp 1 RCR, Task Force 3 – 06 Battle Group, Afghanistan	Board of Inquiry – Friendly Fire Incident – Op MEDUSA – Attendance at Proceedings
9 Oct 06	Sgt Myler, FAC, Task Force 3 – 06 Battle Group, Afghanistan	Board of Inquiry – Friendly Fire Incident – Op MEDUSA – Attendance at Proceedings
9 Oct 06	WO Olstead, CQ, C Coy gp 1 RCR, Task Force 3 – 06 Battle Group, Afghanistan	Board of Inquiry – Friendly Fire Incident – Op MEDUSA – Attendance at Proceedings
9 Oct 06	Cpl Dewitt, C Coy gp 1 RCR, Task Force 3 – 06 Battle Group, Afghanistan	Board of Inquiry – Friendly Fire Incident – Op MEDUSA – Attendance at Proceedings
9 Oct 06	MCpl Evans, Medic, C Coy gp 1 RCR, Task Force 3 – 06 Battle Group, Afghanistan	Board of Inquiry – Friendly Fire Incident – Op MEDUSA – Attendance at Proceedings
9 Oct 06	MWO Henwood, NCIS, Task Force Afghanistan	Board of Inquiry – Friendly Fire Incident – Op MEDUSA – Attendance at Proceedings
9 Oct 06	Co-Presidents, Combined Investigation Board, Department of the Air Force	Board of Inquiry – Friendly Fire – Attendance at Proceedings
9 Oct 06	BGen Fraser, Comd, Multi National Brigade, Kandahar, Afghanistan	Board of Inquiry – Friendly Fire Incident – Op MEDUSA – Attendance at Proceedings
9 Oct 06	Maj Lavoie, J1, Task Force Afghanistan	Board of Inquiry – Friendly Fire Incident – Op MEDUSA – Attendance at Proceedings
9 Oct 06	Maj Rankin, Lessons Learned, Task Force Afghanistan	Board of Inquiry – Friendly Fire Incident – Op MEDUSA – Attendance at Proceedings
9 Oct 06	Maj Ivey, BK, Task Force 3 – 06 Battle Group, Afghanistan	Board of Inquiry – Friendly Fire Incident – Op MEDUSA – Attendance at Proceedings

F - 3/6

~~SECRET~~ DECLASSIFIED

~~SECRET~~ DECLASSIFIED

Annex F  
To Minutes of Proceedings  
Date

<b>Date Sent</b>	<b>Sent To/Received</b>	<b>Subject</b>
9 Oct 06	Maj Lauder, Padre, Task Force Aghanistan	Board of Inquiry – Friendly Fire Incident – Op MEDUSA – Attendance at Proceedings
9 Oct 06	LCol Lavoie, CO, Task Force 3 – 06 Battle Group, Afghanistan	Board of Inquiry – Friendly Fire Incident – Op MEDUSA – Attendance at Proceedings
9 Oct 06	Capt Matheson, FAC, Task Force 3 – 06 Battle Group, Afghanistan	Board of Inquiry – Friendly Fire Incident – Op MEDUSA – Attendance at Proceedings
9 Oct 06	Capt Howell, AEGIS, Task Force 3 – 06 Battle Group, Afghanistan	Board of Inquiry – Friendly Fire Incident – Op MEDUSA – Attendance at Proceedings
7 Oct 06	Comd, 2 CMBG Headquarters, Petawawa, ON	Information Requirements – Op MEDUSA
7 Oct 06	Brigade Surgeon, 2 Field Amb, Petawawa, ON	Information Requirements – Op MEDUSA
4 Oct 06	E-Mail to AISC (Capt Haynes) Wed 2006-10-04-11:34 am	AISC Task Authorization
4 Oct 06	Comd, Multi-National Brigade Headquarters, Afghanistan	Information Requirements – Op MEDUSA
4 Oct 06	Task Force Surgeon, Task Force Afghanistan	Information Requirements – Op MEDUSA
2 Oct 06	E – Mail from Col Milot, President BOI to BGen Sullivan, Co-President CIB – Mon 2006-10-02-12:55 pm	Introduction – Link Up – Request for Information
2 Oct 06	Canadian Forces Provost Marshal, NDHQ	Information Requirements – Op MEDUSA
2 Oct 06	CEFCOM HQ, J1/J3	BOI – Op MEDUSA – Visit Request to Host Nation and Kandahar Air Field
30 Sep 06	Cpl Lougheed, Task Force 03-6 Battle Group Afghanistan	Board of Inquiry – Friendly Fire Incident – Op MEDUSA – Appraisal of Proceedings
30 Sep 06	Cpl McLaren, Task Force 03-6 Battle Group Afghanistan	Board of Inquiry – Friendly Fire Incident – Op MEDUSA – Appraisal of Proceedings
30 Sep 06	Cpl Miller, Task Force 03-6 Battle Group Afghanistan	Board of Inquiry – Friendly Fire Incident – Op MEDUSA – Appraisal of Proceedings

F - 4/6

~~SECRET~~ DECLASSIFIED

~~SECRET~~ DECLASSIFIED

Annex F  
To Minutes of Proceedings  
Date

<b>Date Sent</b>	<b>Sent To/Received</b>	<b>Subject</b>
30 Sep 06	Pte Mitchell, Task Force 03-6 Battle Group Afghanistan	Board of Inquiry – Friendly Fire Incident – Op MEDUSA – Appraisal of Proceedings
30 Sep 06	Cpl Gill, Task Force 03-6 Battle Group Afghanistan	Board of Inquiry – Friendly Fire Incident – Op MEDUSA – Appraisal of Proceedings
30 Sep 06	Sgt Kennedy, Task Force 03-6 Battle Group Afghanistan	Board of Inquiry – Friendly Fire Incident – Op MEDUSA – Appraisal of Proceedings
30 Sep 06	Pte King, Task Force 03-6 Battle Group Afghanistan	Board of Inquiry – Friendly Fire Incident – Op MEDUSA – Appraisal of Proceedings
30 Sep 06	Pte Kirk, Task Force 03-6 Battle Group Afghanistan	Board of Inquiry – Friendly Fire Incident – Op MEDUSA – Appraisal of Proceedings
30 Sep 06	Sgt Arsenault, Task Force 03-6 Battle Group Afghanistan	Board of Inquiry – Friendly Fire Incident – Op MEDUSA – Appraisal of Proceedings
30 Sep 06	MCpl Bellamy, Task Force 03-6 Battle Group Afghanistan	Board of Inquiry – Friendly Fire Incident – Op MEDUSA – Appraisal of Proceedings
30 Sep 06	MCpl Engley, Task Force 03-6 Battle Group Afghanistan	Board of Inquiry – Friendly Fire Incident – Op MEDUSA – Appraisal of Proceedings
30 Sep 06	MCpl Evans, Task Force 03-6 Battle Group Afghanistan	Board of Inquiry – Friendly Fire Incident – Op MEDUSA – Appraisal of Proceedings
30 Sep 06	Pte Needham, Task Force 03-6 Battle Group, Afghanistan	Board of Inquiry – Friendly Fire Incident – Op MEDUSA – Appraisal of Proceedings
30 Sep 06	MCpl Oland, Task Force 03-6 Battle Group, Afghanistan	Board of Inquiry – Friendly Fire Incident – Op MEDUSA – Appraisal of Proceedings
30 Sep 06	WO Olstad, Task Force 03-6 Battle Group Afghanistan	Board of Inquiry – Friendly Fire Incident – Op MEDUSA – Appraisal of Proceedings
30 Sep 06	Pte Rawls, Task Force 03-6 Battle Group Afghanistan	Board of Inquiry – Friendly Fire Incident – Op MEDUSA – Appraisal of Proceedings

F - 5/6

~~SECRET~~ DECLASSIFIED

~~SECRET~~ DECLASSIFIED

Annex F  
To Minutes of Proceedings  
Date

<b>Date Sent</b>	<b>Sent To/Received</b>	<b>Subject</b>
30 Sep 06	MCpl Lamontagne, Task Force 03-6 Battle Group Afghanistan	Board of Inquiry – Friendly Fire Incident – Op MEDUSA – Appraisal of Proceedings
30 Sep 06	Pte Lapointe, Task Force 03-6 Battle Group Afghanistan	Board of Inquiry – Friendly Fire Incident – Op MEDUSA – Appraisal of Proceedings
29 Sep 06	Maj Michaud, OC Geomatic Support Squadron, NDHQ Ottawa	Board of Inquiry – Friendly Fire Incident – Op MEDUSA – Attendance at Proceedings
29 Sep 06	Maj Sprague, C Coy gp Comd, 1 RCR, Petawawa, ON	Board of Inquiry – Friendly Fire Incident – Op MEDUSA – Attendance at Proceedings
29 Sep 06	MCpl Mitchell, C Coy gp, 1 RCR, Petawawa, ON	Board of Inquiry – Friendly Fire Incident – Op MEDUSA – Attendance at Proceedings
29 Sep 06	Pte Lepage, C Coy gp, 1 RCR, Petawawa, ON	Board of Inquiry – Friendly Fire Incident – Op MEDUSA – Attendance at Proceedings
28 Sep 06	COS Ops – CEFCOM HQ	Information Requirements – Op MEDUSA
28 Sep 06	Co-Presidents, Combined Investigation Board, Department of the Air Force	Information Requirements – Op MEDUSA
28 Sep 06	Comd, Task Force Afghanistan	Information Requirements – Op MEDUSA
27 Sep 06	Dr Cairns, Regional Coroner, Toronto	Request for Autopsy Report on Pte Graham

F - 6/6

~~SECRET~~ DECLASSIFIED

~~SECRET~~ DECLASSIFIED

Annex G  
To Minutes of Proceedings  
Date

## **Annex G – ATP 3.3.2.1(A)**



ATP 3.3.2.1(a) TTP for CAS.pdf

G - 1/1

~~SECRET~~ DECLASSIFIED

~~SECRET~~ DECLASSIFIED

Annex H  
To Minutes of Proceedings  
Date

## **Annex H - CFAO 24-6**



CFAO 24-6.pdf

H - 1/1

~~SECRET~~ DECLASSIFIED

Annex I  
To Minutes of Proceedings  
Date

## Annex I - Glossary

Word/Acronym	Meaning
ACM	Airspace Coordination Measure: Procedural measures that when established, reserve airspace for specific airspace users, restrict the action of airspace users, control the actions of specific airspace users and/or require airspace users to accomplish specific actions.
AE	Aeromedevac
AN/PEQ-4	Class 4 Infrared Laser Pointing and Illuminating System
AO	Area of Operations
AEGIS	Airborne Early warning Ground environment Integration Segment
AH	Attack Helicopter
AJP	Allied Joint Publication (NATO)
ALO	Air Liaison Officer
ASCC	Airspace Coordination Centre: An organization that consists of air, aviation and air defence artillery representatives that performs the coordination and advice functions regarding relevant airspace activity and tasks within its defined area of responsibility.
ASOC	Air Support Operations Centre: An agency of a tactical air control system co-located with a corps headquarters or an appropriate land force headquarters, which coordinates and directs close air support and other tactical air support.
ASR	Air Support Request: A means to request preplanned and immediate close air support, air interdiction, air reconnaissance, surveillance, escort, helicopter airlift, and other aircraft missions.
ASZ	Afghanistan Stability Zone
ATO	Air Tasking Order: An order used to task and disseminate to components, subordinate units, and command and control agencies, projected sorties, capabilities and/or forces to targets and specific missions. Normally provides specific instructions to include call signs, targets, controlling agencies, weapons loads, radio frequencies, take off times, refueling points, and other special instructions.
BALL Team	Bi-Strategic Analysis Lessons Learned Team (NATO)
Battle Group	An operational grouping based on either an infantry battalion or armoured regiment, each with at least a squadron or company of the other arm. Elements of other arms and services may be allocated according to need.
BGen	Brigadier General
BOI	Board Of Inquiry



Annex I  
To Minutes of Proceedings  
Date

Word/Acronym	Meaning
CAOC	Combined Air and Space Operations Centre: An organization consisting of flying, logistics, computer, information, legal, and engineering experts who translate air campaign strategy into a written plan.
Capt	Captain
CAS	Close Air Support: Air action against hostile targets which are in close proximity to friendly forces and which require detailed integration of each air mission with the fire and movement of those forces.
C Coy gp	Charles Company group, TF-K (1 RCR BG)
CCP	Casualty Collection Point
CEFCOM	Canadian Expeditionary Forces Command
CENTCOM	United States Central Command
CF	Canadian Forces
CFAO	Canadian Forces Administrative Order
CF H Svcs C	Canadian Forces Health Services Centre
CFTPO	Canadian Forces Tasking and Planning Organization
CIB	Combined Investigation Board (US)
CID	Combat Identification
CJOC	Combined Joint Operations Centre
CMTC	Canadian Manoeuvre Training Centre
CO	Commanding Officer
Comd	Comd
Coy	Company
Cpl	Corporal
CR	Combat Ready
CR-DH	Combat Ready Day High
CR-DL	Combat Ready Day Low
CR-NH	Combat Ready Night High
CRFA	Combat Related First Aid training
CTF	Combined Task Force
DMPI	Desired Mean Point of Impact
DSC	Deployment Support Centre
FAC	Forward Air Controller: A qualified individual who, from a forward position on the ground or in the air, directs the action of combat aircraft engaged in close air support of land forces.
FOB	Forward Operating Base
FOO	Forward Observation Officer: A fire support adviser and coordinator to the supported arm commander at sub-unit level (company, squadron or combat team).

Annex I  
To Minutes of Proceedings  
Date

Word/Acronym	Meaning
FRAGO	Fragmentary Order
FSCC	Fire Support Coordination Centre: A centralized location in all manoeuvre headquarters, from battle group to corps and above, at which representatives of fire support elements and other elements with a direct interest in fire support coordination meet. Each representative in the centre has access to communications, which will permit him to implement the necessary coordination. The FSCC is a full time focal point for fire support coordination, but it must not be regarded as the single location where all such coordination occurs. Wherever fire planning and coordination take place the resulting decisions and directions flow back through the FSCC where any further coordination necessary is effected. The required executive action is then taken by the fire support element concerned. The aim is to ensure coordination and not to infringe on the prerogatives of the commanders of the various fire support agencies.
FSCM	Fire Support Coordination Measure: Within their operational areas, land and naval force commanders employ permissive and restrictive FSCMs, which are positioned and adjusted in consultation with superior, subordinate, supporting, and affected commanders. The supported commander establishes FSCMs based on the recommendations of the FSCC, who coordinates all fire support impacting in the operational area of his commander. FSCMs are used to facilitate timely and safe use of fire support.
FSCO	Fire Support Coordination Officer
GAU-8	30mm Rotary Cannon used by the A-10A as main armament.
GBU	Guided Bomb Unit
GEO	Geomatics
GLO	Ground Liaison Officer
HEI	High Explosive Incendiary
HIDACZ	High Density Airspace Control Zone
HQ	Headquarters
HUD	Heads-up Display: A display that presents data without blocking the pilot's view. This technique was pioneered for fighter jets and low flying military helicopter pilots, for whom information overload was a significant issue, and for whom changing their view to look the aircraft's instruments could prove to be a fatal distraction.
Hwy 1	Highway 1
IR	Infrared
ISAF	International Security Assistance Force (NATO)

Annex I  
To Minutes of Proceedings  
Date

<b>Word/Acronym</b>	<b>Meaning</b>
JTAC	Joint Tactical Air Controller (US term which is synonymous with NATO term of FAC)
JTASR	Joint Tactical Air Strike Request: A document originated and distributed to formations by Headquarters ISAF that includes essential information from the ATO.
JTTP	Joint Tactics Training and Procedures: Publication for joint fire support and aviation planning, execution and control agencies, and aircrews in fixed and rotary-wing aircraft to attack targets in close proximity to friendly forces. It presents options the joint force commander can employ when planning and executing close air support in joint operations.
KAF	Kandahar Airfield
KIA	Killed In Action
(L)	Local Time
LAV	Light Armoured Vehicle
LCol	Lieutenant Colonel
LCR	Limited Combat Ready
LFTDS	Land Forces Doctrine and Training System
LGen	Lieutenant General
LRF	Laser Range Finder: A device that uses a laser beam in order to determine the distance to a reflective object.
Lt Col	Lieutenant Colonel (USAF)
LTD	Laser Target Designator: A device that provides ground forces with a low power laser pointer used to designate targets for precision guided munitions.
Maj	Major
MASCAL	Mass Casualty
MBdr	Master Bombardier
MCpl	Master Corporal
Med Tech	Medical Technician
MiRC	Internet Relay Chat
MNVG	Monocular Night Vision Goggles
MWO	Master Warrant Officer
NATO	North Atlantic Treaty Organization
NCE	National Command Element
NDCC	National Defence Comd Centre
NIS	National Investigation Service
N.M.	Nautical Mile
NOK	Next Of Kin
NSE	National Support Element (Canadian)

Annex I  
To Minutes of Proceedings  
Date

Word/Acronym	Meaning
NVD	Night Vision Device
NVGs	Night Vision Goggles
OC	Officer Commanding
OEF	Operation Enduring Freedom (US)
OFF DRY	Informative call from a pilot indicating attack is terminated and ordinance was not used.
Op	Operation
Op O	Operations Order
Padlocked	A term used to indicate that aircrew has locked his gaze onto an aircraft or ground target in order to maintain sight of it.
PPE	Personal Protection Equipment: Clothing and equipment, which protects personnel against the effects of kinetic, chemical and biological weapons. It can include kevlar body armour, fragmentation vest, ballistic eyewear, helmet, gloves and special respiratory equipment.
Pte	Private
QR&O	Queen's Regulations and Orders
Quick Clot	A patented hemostatic agent that almost instantly stops high-volume bleeding from open wounds. Made of a granulated mineral substance, it is biologically and botanically inert, leaving little chance of allergic reaction.
RAOC	Regional Air Operations Centre: An air operations cell, within a Regional Command, from which combat air operations are directed and controlled in coordination with other joint/combined operations.
RCHA	Royal Canadian Horse Artillery
RCR	Royal Canadian Regiment
RC(S)	Regional Command (South)
RFL	Restricted Fire Line: A restrictive fire support coordination measure that may be established to coordinate fire between two converging forces. No fire may be directed across the line without reference to the unit on the other side.
ROE	Rules Of Engagement
ROTO	Rotation
ROVER	Receive-only Video Enhanced Receiver: A device that uses a satellite data link to show the video feed from overhead UAVs or aircraft targeting pods to ground forces on a viewing screen.
SEESPOT	Dual-use High Sensitivity Imager to identify targets and laser designators simultaneously.
Sgt	Sergeant
SI	Seriously ill /Injured

Annex I  
To Minutes of Proceedings  
Date

<b>Word/Acronym</b>	<b>Meaning</b>
SIR	Significant Incident Report
SOP	Standard Operating Procedure
SPINS	Special Instructions: Specific mission-execution instructions that are contained either within the ATO, or as a supplement to the ATO.
STANAG	Standard NATO Agreement
STANEVAL Team	Standards Evaluation Team
STANO	Surveillance, Target Acquisition and Night Observation
SUP-FAC	Supervisory Forward Air Controller
TACP	Tactical Air Control Party: A subordinate operational component of a tactical air control system designed to provide air liaison to ground forces and/or the control of aircraft.
TCCC	Tactical Combat Casualty Care
TDC	Target Designation Cue
TF-A	Task Force Afghanistan
TF-K	Task Force Kandahar
TGP	Targeting Pod: A high-resolution sensor that displays an image of the target to the aircrew. They can be equipped with various sensors such as a laser designator for precise delivery of laser-guided munitions and a laser rangefinder or infrared sensor. These features simplify the functions of target detection and recognition, and permit attack of targets with precision-guided weapons.
TIC	Troops In Contact
TIRN	Tactical Incident Reporting Net
TO&E	Table of Organization & Equipment
TOC	Tactical Operations Centre
TORs	Terms Of Reference
TTPs	Tactics Techniques and Procedures: Tactics are based on doctrinal concepts, which units apply in combat. Tactics include the ordered placement and manoeuvre of units in relation to each other, the enemy, and terrain to obtain decisive results. Techniques are based on tactics, which small units, crews, or individuals apply to a given set of circumstances (such as battle drills and crew drills). Procedures are courses or modes of action that describe how to perform certain tasks. This is the lowest level of detail. Task-level performance requires one or more procedures.
Type 2 Control	Terminal attack control conducted when the commander assesses either visual acquisition of the attacking aircraft or target at weapons release is not possible and requires the FAC to control each individual attack. The commander assesses that there is an

Annex I  
To Minutes of Proceedings  
Date

Word/Acronym	Meaning
	acceptable risk of fratricide and/or collateral damage. The FAC maintains control of the attacks, making clearance or abort calls based on the information provided by observers. Examples of when type 2 controls may be used are night, adverse weather, high threat tactics, high altitude and standoff weapons employment.
Type 3 Control	Terminal attack control conducted when the commander decides that there is a low risk of fratricide. FAC grants a weapons blanket release clearance to an aircraft or flight attacking a target or targets, which meet the prescribed restrictions, set by the FAC. Attack aircraft flight leaders may then initiate attacks within the parameters imposed by the FAC. Observers may be equipped and in a position to provide terminal guidance to attack aircraft. The FAC will monitor radio transmissions and other available digital information to maintain control of the attacks. The FAC maintains abort authority throughout the attack.
UAV	Unmanned Aerial Vehicle
US	United States
USAF	United States Air Force
VSA	Vital Signs Absent
VSI	Very Seriously ill /Injured
WO	Warrant Officer
(Z)	Zulu Time