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OIA-2024-4966

2 August 2024

[REDACTED]
[REDACTED]

Dear [REDACTED]

I refer to your email of 20 March 2024, requesting under the Official Information Act 1982 (OIA) copies of the below Courts of Inquiry Reports and the associated Assembling Authority Comments:

Unauthorised entry to HMNZS Philomel and HMNZS Te Mana
Firearm training accident
Injuries incurred during Vehicle Mobility Training Course
Injury during training (frostbite)
Incorrect routing of release mechanism on Parachute

I apologise for the delay in responding to your request. The Court of Inquiry and Assembling Authority Comments for the *Unauthorised entry to HMNZS Philomel and HMNZS Te Mana* are withheld in full in accordance with section 6(a) of the OIA. This is because disclosure of the security matters concerned would unreasonably prejudice the security or defence of New Zealand.

Copies of the other requested Court of Inquiry reports and Assembling Authority Comments are released to you in accordance with section 200T of the Armed Forces Discipline Act 1971. Where indicated, the following information is withheld: information concerning capability and/or operations in accordance with section 6(a) of the OIA to avoid prejudice to the security or defence of New Zealand; witness statements and testimony in accordance with section 9(2)(ba)(i) of the OIA to protect information provided on a basis of confidence; and, staff information in accordance with section 9(2)(k) of the OIA to avoid its malicious or inappropriate use such as phishing, scams or unsolicited advertising. Personal information is also withheld to protect privacy in accordance with section 9(2)(a) of the OIA. The names of some individuals are therefore marked by role for ease of reference.

You have the right, under section 28(3) of the OIA, to ask an Ombudsman to review this response to your request. Information about how to make a complaint is available at www.ombudsman.parliament.nz or freephone 0800 802 602.

Please note that responses to official information requests are proactively released where possible. This response to your request will be published shortly on the NZDF website, with your personal information removed.

Yours sincerely

AJ WOODS
Air Commodore
Chief of Staff HQNZDF

REPORT OF THE COURT OF INQUIRY

General

1. The Court proceeded on order of the Assembling Authority (MD634 dated 21 September 2022) and was to examine the policy, guidance, control environment and safety related to the use of the New Zealand Defence Force (NZDF) facility by the civilian club. The conduct of the civilian club itself was a matter for the New Zealand Police to investigate.
2. The inquiry was carried out over the period 19 October 2022 to 27 March 2023. Evidence from nine witnesses was gathered and considered.

Circumstances of the Accident

3. The accident took place at approximately 10:53 a.m. on the 10th September 2022 on Aylesbury Range (a NZDF Controlled Range), Aylesbury Road, Burnham. The accident was the result of an unintentional discharge during a civilian club activity, whereby a Burnham Rod and Gun Club member sustained a perforated gunshot wound to his right foot whilst performing a pistol re-holstering drill.

Non-Defence use of the Estate

4. The Court was presented evidence that clearly defines the NZDF application, approval and range licence requirements, for use of a NZDF Controlled Range by a civilian shooting association or club.¹ The Court also heard evidence that the policy was in a "transition state"² due to changes with the Arms Act 1983, but was presented supplementary evidence - namely, an amendment to policy (dated 5th of October 2022, post-accident)³ - that further specifies the conditions that a civilian shooting association or club are to meet prior to the use of a range within a Defence Area.
5. Prior to amendment⁴ the Court heard that authorisation for the use of a NZDF Controlled Range by a civilian shooting association or club, primarily rested with the local Range Controlling Authority (RCA).⁵ Nonetheless, the court notes that this has now been amended and, for regular range use, a civilian shooting association or club requires a formal licence agreement to be established with Defence Estate and Infrastructure (DEI).⁶ The Burnham Rod and Gun Club does not have a current formal licence agreement with DEI.⁷ Although, at the time of the accident the club had sought approval through the relevant RCA, being the Sothern Regional Support Centre (SRSC).⁸
6. A civilian shooting association or club also requires NZ Police certification, as well as approval to use a NZDF range. In addition, pistols are not to be fired unless the range has been approved by NZ Police.⁹

¹ Exhibit G.

² Witness 8 Q2.

³ Exhibit H.

⁴ Exhibit I.

⁵ Witness 8 Q2.

⁶ Witness 8 Q2; Exhibit G.

⁷ Witness 7 Q75; Witness 8 Q31-33.

⁸ Exhibit F.

⁹ Witness 8 Q4 and Q5; Exhibits G and H.

Rules and Safety Control Measures

7. The Court heard evidence that on the day of the accident RSOs for Aylesbury Range were being applied by the Burnham Rod and Gun Club, specifically an annex containing rules pursuant to club pistol practices.¹⁰ Aylesbury Range RSOs “detail the safety control measures that are to be considered and applied by users when either utilising or firing on a purpose-built range.”¹¹ Evidence was presented that the club was also bound to apply Pistol NZ (PNZ) rules and if there was a discrepancy between these rules and the RSOs then the club was to adhere to the higher level of safety requirement.¹² Evidence provided to the Court implied that the interpretation of “the higher level of safety requirement” varied between individuals, particularly with the medical requirements (difference between stipulated minimum NZDF requirements and those of Pistol NZ).¹³

8. The Court heard evidence that the SRSC required that the Burnham Rod and Gun Club submit a Purpose-built Range Practice Instruction (PBRPI) prior to the conduct of the activity on the 10th September.¹⁴ This appeared to be a standard practice in accordance with Aylebury Range RSOs and a process that enabled approval and oversight by the RCA, for/of Burnham Rod and Gun Club activities on a range within a Defence Area. It also provided assurance to the RCA that safety control measures were in place and meet the authorities stated requirements. The RCA believed the level of detail and accuracy within the Burnham Rod and Gun Club PBRPI needed improving and the SRSC was not entirely clear on the authorisations.¹⁵ The club did not always know who was going to turn up on the day and therefore listed several people within a single range safety appointment – the RCA was often never made aware of any changes made.¹⁶

9. There was no evidence presented to the Court that implied that the minimum requirements for safety staff was not being met by the Burnham Rod and Gun Club on the day of the accident. Evidence did suggest that the interpretation of the minimum requirements and the hierarchy of the RSOs and PNZ rules was somewhat different.¹⁷ Standard safety briefs were conducted on the day and the physical act of the pistol shoot followed a combination of both NZDF and PNZ guidelines.¹⁸

Accident Reporting

10. The Court heard evidence that once immediate actions taken with regard to the accident had occurred (notifying Emergency Services and NZ Police), CAPTAIN **Officer 1** notified the Officer Commanding, SRSC and STAFF SERGEANT **NCO 1** also notified the Burnham Camp Duty Staff to inform them of the situation, with the Duty Staff turning up at the accident site on request of STAFF SERGEANT **NCO 1**.¹⁹ Officer Commanding, SRSC then informed Commanding Officer Regional Support (Army) and it is assumed (based on Standard Operating Procedures) that Duty Staff raised an INCIDENTREP and NOTICAS.²⁰ Other reporting requirements included an internal club investigation report to NZ Police and Pistol NZ.

¹⁰ Witness 7 Q36; Witness 8 Q2; Exhibit D.

¹¹ Exhibit H.

¹² Witness 1 Q14-20; Witness 5 Q20-22; Witness 7 Q36; Witness 8 Q8; Exhibit C and D.

¹³ Witness 1 Q14-22; Witness 2 Q11-29; Witness 5 Q16-22; Witness 6 Q21 and Q23; Witness 7 Q60-62; Witness 8 Q9-19

¹⁴ Witness 1 Q2 and Q51; Witness 6 Q2; Witness 7 Q5; Exhibit D.

¹⁵ Witness 7 Q1 and Q8-27; Witness 6 Q22-24.

¹⁶ Witness 1 Q57-64; Witness 7 Q30.

¹⁷ Witness 1 Q46-64; Witness 5 Q16-22 and Q32-37; Exhibit C and D.

¹⁸ Witness 1 Q36-39; Witness 2 Q1-7; Witness 5 Q5; Exhibit B.

¹⁹ Witness 1 Q103; Witness 5 Q1-8; Witness 6 Q2

²⁰ Witness 1 Q103; Witness 6 Q2.

11. The Court heard evidence that the military incident/accident reporting procedures (in particular those contained in DFO(A) Volume 7, Book 2, Chapter 2, Section 4) do not necessarily suit a civilian club reporting an accident on a range in a Defence Area.²¹ This created a sense of uncertainty by the club, with regard to military reporting lines, on who was to be informed, when and in what format.

12. A NZ Police investigation into the unintentional firearm discharge injury on Aylesbury Range on the 10th September 2022 reported (concluded) that neither the Defence Range or the RSO being applied on the day were contributing factors to the accident, but rather the findings highlighted that the individual's equipment was not correctly set-up (holster belt).²²

Conclusions

13. The Court would like to firstly acknowledge that the Burnham Rod and Gun Club was founded to promote, organise and foster, all types of sports shooting, fishing and other outdoor activities within the Burnham Military Camp and wider community, and New Zealand Defence Force in general. The club provides the community with a recreational option and relies heavily on volunteers to run and administer.

14. The Court commends all those who assisted immediately on occurrence of the accident and post-accident. The actions by those involved contributed to the outcome of s. 9(2)(a) receiving first aid and then being evacuated to higher medical aid. The Court would like to make special mention of s. 9(2)(a) for his calmness after sustaining a perforated gunshot wound, which potentially aided in the composure of the actions of others.

15. Changes to the Arms Act 1983 have necessitated the NZDF amend its policy, which is currently in progress. What is clear to the Court, is amendments to DFO(A) Volume 7, Book 1 and Book 5 (specifically: Book 1 - 11/22 dated 21 Mar 22 and Book 5 - 12/22 dated 05 Oct 22) state that: for regular use [of NZDF Controlled Ranges] a formal licence agreement between a civilian shooting association or club and DEI is to be established; or must comply with the 'Non-Defence use of Estate' policy - respectively. This did not appear to have been fully communicated (based on the fact of when amendment 11/22 was dated) to the RCA, SRSC as the RCA authorised the Burnham Rod and Gun Club activity without policy compliance.

16. NZDF policy is still under action, namely DFO 43 (Estate and Infrastructure, Chapter 8, 3.8.2 c. (version 1.01, 15 December 2022)) refers readers to DFI 43.3 (Estate: Operate and Maintain) for the approval requirements for non-Defence use of the Estate. DFI 43.3 is in draft (awaiting sign off, not published yet).

17. The findings of the NZ Police investigation into the accident concluded that the Aylesbury Range was certified for use by the Burnham Rod and Gun Club and, the RSOs being applied and the actual conduct of the activity were not contributing factors to the accident. The NZ Police did have concerns with PNZ's training manuals and qualifications for which they [Police] plan to follow-up. There is no further follow-up action by the NZDF in relation to the NZ Police investigation.

18. The Court finds that when the Pistol Shooting Branch of the Burnham Rod and Gun Club conduct their activities on a range within a Defence Area, they are bound by NZDF regulations, NZ Police regulations and PNZ rules. The Court finds that club members who are the planners of activities or who are holding key safety staff appointments must determine, based on their knowledge and experience, what "the higher level of safety requirement" is between the various regulations and rules.

²¹ Witness 1 Q115, Q117 and 123; Witness 5 Q9-13; Witness 6 Q52-55.

²² Witness 9 Q4 and Q8; Exhibit J.

19. The Court finds that the NZDF minimum requirement to have a Defence Force First Aid qualified person present is “the higher level of safety requirement”, versus the PNZ minimum requirement of a first aid kit. On the day of the accident the Court is satisfied that there was an appropriate level of medical cover provided based on the immediate care provided to s. 9(2)(a). Yet, the nominated medic within the activity documentation (PBRPI) submitted to the RCA, a requirement, was the individual who sustained the injury on the day of the accident.

20. Compilation and submission of a PBRPI is required by the RCA, SRSC no less than three days prior to the activity. However, there appeared to be different understandings of the qualification/appointment requirements for certain appointments and what needed to be entered in particular content fields of the document, in particular Officer-In-Charge of the Practice and Medic. Currently the Burnham Rod and Gun Club have an annex (annex B to Chapter 3, dated 12 May 20) within Aylesbury RSOs which specifies the NZDF qualification requirements for safety appointment holders.

21. The Court finds RSOs for Aylesbury Range address operational aspects of health and safety, and the facility had a range safety certificate (dated 10 June 2022). A Maintenance and Environmental Management Plan (with a revision date of July 2019) also exists for Aylesbury Range, with the next revision due in 2023. There was no evidence presented to the Court that implied that the environmental/facility health and safety measures were not fit for purpose.

22. Based on the evidence provided to the Court, NZDF reporting of the accident and injuries did occur. Though, the Court finds there to be a lack of clarity on what reporting process the Burnham Rod and Gun Club needed to follow, from a NZDF perspective, as the military information requirements may not necessarily apply to a civilian shooting association or club.

Recommendations

23. The Court therefore recommends:

- a. DEI be required to confirm whether interim guidance for ‘non-Defence use of the Estate’ was promulgated in lieu of the release of DFI 43.3 or if there was previous policy on ‘non-Defence use of the Estate’ that Regional Support (Army) should have been aware of.
- b. DEI be required to conduct a national assurance check to validate the existence of formal licence agreements with all civilian shooting associations or clubs who are regular users of NZDF Controlled Ranges.
- c. The Burnham Rod and Gun Club, in conjunction with the RCA, be required to establish a regular use formal licence agreement with DEI for use of non-Defence Estate NLT 1 Jun 23.
- d. The Burnham Rod and Gun Club be required to establish stand-alone Club RSOs in order to establish a policy hierarchy for safety requirements and mitigate varying interpretation. The RSOs should be checked and mutually agreed upon by the RCA, SRSC. The RCA should seek specialist advice from Weapons and Range Safety, Army General Staff prior to any approval of such RSOs.
- e. Regional Support (Army) is to seek assurance that all civilian shooting associations or clubs, who use ranges in a Defence Area managed by Army, have stand-alone RSOs based on “the higher level of safety requirement” as agreed upon by the Local RCA and the civilian shooting

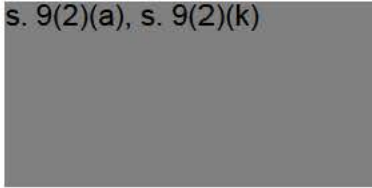
association or club. The final approval of such RSOs is to be the Local RCA in consultation with Weapons and Range Safety, Army General Staff.

- f. Regional Support (Army) reviews and standardises the authorisation procedures across all Army Support Centres for the use of NZDF Controlled Ranges by civilian shooting associations or clubs. This should include the requirements for a Range Instruction and any minimum NZDF safety staff requirements (including the Officer-in-Charge of the Practice).
- g. CATO/LC(L) reviews DFO(A), Volume 7, Book 2, Chapter 2, Section 4 and confirms the requirements for reporting an incident or accident, where a civilian shooting association or club is utilising a NZDF range.
- h. LC(L) consults with their RNZN and RNZAF counterparts, who manage ranges within Defence Areas, highlighting the outcome of this Court of Inquiry in order to have assurance across the NZDF that civilian shooting associations or clubs are operating consistently within the Arms Act 1983 and NZDF policy.

Dated at WAIOURU on 27 MARCH 2023.

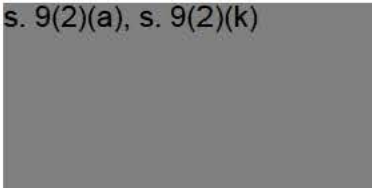
President

s. 9(2)(a), s. 9(2)(k)



Member

s. 9(2)(a), s. 9(2)(k)



COMMENTS BY ASSEMBLING AUTHORITY

23.a. I find this recommendation without purpose as it seeks to find a gap that maybe overtaken by the release of new policy. It could serve NZDF better to 'direct' DE&I to ensure current applicable guidance pertaining to the use of 'non-Defence use of the Estate' is promulgated and acknowledged if not already aligned to the release of DFI 43.3.


23.b. – g. I support.

23.h. This should sit with CO RS(A), through the Land Component as the Base and Camp support authority for raise train and sustain functions for Army. LC(M)/LC(A) may not operate in the same manner as Land does for Base / Camp management.

DATED AT 0900 ON 8TH JUNE 2023

SIGNED

s. 9(2)(k)



NA BAKER
COL
LC(L)

Enclosures:

1. Firearm training accident
2. Injuries incurred during Vehicle Mobility Training Course
3. Injury during training (frostbite)
4. Incorrect routing of release mechanism on Parachute

COURT OF INQUIRY

Assembled by

s. 9(2)(a) COL S Bolton, NZ ARMY, SOCC

into

THE BASIC MOBILITY COURSE 2022 – WAIOURU VEHICLE RECOVERY INCIDENT

Recovery Terms and References

1. **Deadman Anchor. NZ P94, Part 1, Chap 2, Sect 7.**
Buried earth anchors are sometimes called "Dead Man" anchors. There are two types, one for good ground and the other for loose sandy soil. The effort to construct them is considerable and they should only be used when no better anchorage is available.

2. **Snatch Recovery. NZ P94, Part 1, Chap 2, Sect 4 Issue 1, Feb 21.**
Snatch recovery is a simple recovery operation utilising a synthetic strap or rope which has an approx. stretch of 10 to 20% thereby providing an increased effort to the recovery process, snatch recovery will be most effective when the immobile vehicle is still operational and able to provide assistance by driving.

3. **Kinetic Recovery. NZ P94, Part 1, Chap 2, Sect 5. (Not issued as no authorised kinetic ropes currently in service).** Kinetic rope recovery is a similar process to snatch recovery however due to rope design there is a much higher risk of rope recoil upon failure. A kinetic rope may have as much as a 30% increase in length under load thereby allowing a greater application of force to assist with an extrication.
NB: Snatch straps and Kinetic ropes have completely different construction.


4. **Bridle LWP-CSS 4-2-1 Recovery Mechanics Handbook, Para. 2.63.**
In vehicle recovery a "bridle" or "compensating bridle" is used in conjunction with a sliding member, e.g. a block, to share the recovery load required to complete the recovery task across multiple attachment points if a single point is not sufficiently rated.

NB: A snatch block may be used to compensate the casualty weight on each leg of the *bridle* so that the weight on each leg is equal.

5. **Basket. Approved Codes of Practise for load-lifting rigging. Figure 27, Dec 2012.**
A single-leg sling back hooked to form basket hitch assumes the appearance of a two-leg sling but it should never be rated as such.

Excerpt from figure 2, AS1353.2-1997 Flat Synthetic Webbing Slings, Pt 2: Care and use.

Included angle between legs, degrees	Loading factor
0	2.0
> 0 <= 60	1.73
> 60 <= 90	1.41
> 90 <= 120	1.0



(c) Basket hitched slings

6. SUPACAT strops issued per vehicle as per NZ Complete Equipment Schedule (NZCES).

Niin	Description	Purpose
991614364	Sling Recovery anchor 4.5m, 14t	For use as an anchor to basket around a tree or other structure.
661646622	Black Rat recovery strap 9m, 30t	Designed for snatch recovery, assume 30 tonne minimum breaking strain (MBS) giving a 15t Recovery Load Limit (ReLL).
997248227	Double Apex Recovery Strop (SAP name: Strop towing, 3 Piece Kit)	Designed for flexible towing and contains 1 x 3.5m strop and 2 x 1.41m strops

7. **NZ P94 - Vehicle Recovery and Transport Handbook**

Written specifically to assist First line Unit recovery tasks providing vehicle recovery procedures in general, along with vehicle specifications and specific technical information for all in-service vehicles to assist the Operator.

8. **NZ P96 - New Zealand Land Equipment Manual**

Written specifically to assist owner Units and Equipment Managers, providing equipment general information, planned utilisation and management instructions.

9. **NZ P98 - Land Equipment Maintenance Information**

Written specifically to assist the maintenance of equipment and contains detailed technical support information, including equipment specifications, including a quantity of technical procedures.

10. **NZ P97 – Operators Manual**

Contains equipment manufacturer instructions for operating the vehicle and its auxiliary systems and items including towing and recovery procedures.

REPORT OF THE COURT OF INQUIRY

General

1. The inquiry was carried out over the period 1 Dec 22 to 15 Mar 23. Evidence from 26 witnesses was considered.

TOR 1. Background

1.1 Service History of the Casualties

2. s. 9(2)(a)

3. s. 9(2)(a)

4. s. 9(2)(a)

1.2 Training and Expertise of the Casualties

5. Soldier 1 is an experienced soldier and operator within 1NZSAS Regt. s. 9(2)(a)

6. The COI determined that Soldier 1 had the qualifications and experience to be a driver on the Basic Mobility Course in Nov 22.

7. Soldier 2 is a qualified Electronic Warfare Operator s. 9(2)(a)

8. The COI determined that Soldier 2 had the qualifications and experience to be a co-driver on the Basic Mobility Course in Nov 22.

¹ Exhibit 26-7

² Exhibit 26-7

³ Exhibit 26-6

⁴ Exhibit 26-6

⁵ Exhibit 26-6

1.3 Details of the incident

9. The incident will be described through three lenses; The Basic Mobility Course, Range Control and the Waiouru DHC. Below are the key timings of the event which occurred on the 1 Nov 23^{6 7 8}:

- a. Incident occurred: 1142 (approx).
- b. Range Control informed: 1145.
- c. Waiouru DHC informed by Range Control: 1145.
- d. Medic [REDACTED] informed: 1145.
- e. Range Control called 111: 1148.
- f. Range Control put through to paramedics: 1200.
- g. Helo departs for Waiouru Military Camp: 1230.
- h. Medic [REDACTED] arrives at causality site: 1235.
- i. Helo arrives on site: 1324.
- j. Helo departs: 1357.

Basic Mobility Course

10. On the 1 Nov 22 the Basic Mobility Course was conducting cross-country patrolling techniques in the SUPACAT in s. 6(a) [REDACTED] the Waiouru Military Training Area (WMTA)⁹. As this was the third phase of the course, the activity [the patrol] was largely student lead with instructors providing close supervision¹⁰.

11. The patrol of four SUPACAT vehicles approached a small muddy creek which the students were familiar with as the instructors had made them cross this obstacle the day before¹¹. The first vehicle got stuck upon attempting to cross the creek and used a dead-man anchor technique to recover the vehicle. The second vehicle in the patrol also got stuck and the students from both vehicles performed a successful first-line recovery using the snatch method. Whilst the students conducted the recovery successfully, the strops they used were the incorrect strops – this became apparent when the COI examined the video of the recovery (Exhibit 8-1). The third SUPACAT in the patrol (vehicle three) took the same route to cross the obstacle as vehicle two and also got stuck¹². The following actions then took place:

- a. Vehicle two reversed into a position where it could support the recovery of vehicle three¹³.

⁶ Witness 16, A1.

⁷ Witness 15, A4.

⁸ Witness 26, A3.

⁹ Witness 15, A5

¹⁰ Exhibit 1-1

¹¹ Witness 15, A5

¹² Witness 15 para 14

¹³ Witness 15 para 15

- b. The students set to work recovering the third vehicle; once again hooking up the incorrect strops. In this recovery a soft shackle was introduced to the recovery system which was already under strain due to the use of the incorrect strops. The soft shackle connected the bridle stop to the recovery strap¹⁴.
 - c. The students moved themselves into position for the recovery under the instruction of **Soldier 3** who was the Recovery Commander (Recov Comd)¹⁵.
 - d. On the signal from the Recov Comd, the vehicle failed to move. **Soldier 4** noticed that vehicle three's wheels remained static and instructed **Soldier 1** to engage the wheels for the second attempt¹⁶.
 - e. When the strops pulled taught during the second attempt the wheels also failed to engage and the recovery system failed¹⁷. The bridle stop snapped which resulted in the recovery strap flinging back and striking both **Soldier 1** and **Soldier 2** in vehicle three¹⁸. For details on the injuries see TOR 3.2.
12. The COI identified a number of factors that lead to the bridle stop breaking. These included:
- a. The introduction of a non-approved soft shackle into the recovery system¹⁹. Technical analysis of the soft-shackle is provided by Cookes Ltd in Exhibit 7-6.
 - b. The deployment of the incorrect bridle strops for the recovery²⁰.
 - c. The wheels of the SUPACAT failing to engage which effectively increased the tonnage of the recovery²¹.
13. **Soldier 4** took control of the incident site being the highest ranking NCO of those that were first on the scene. He ensured that communications were established with Range Control by relaying information to **Soldier 5**. **Soldier 5** remained 200m away from the site in an area where his communications with Range Control were stronger and more consistent. Communications were maintained between **Soldier 4** and **Soldier 5** via runner²². Within two minutes of the incident occurring, Range Control were advised that the Basic Mobility Course needed med support via Helo in Zone 8^{23 24}.
14. **Soldier 4** and **Soldier 3** administered first aid to **Soldier 1** who had significant lacerations to his face and head. **Soldier 3**, whilst not a trained medic, has qualified on the Advanced Medical Course²⁵.

¹⁴ Witness 14, A1

¹⁵ Witness 15 para 16

¹⁶ Witness 15 para 18

¹⁷ Witness 15, para 19

¹⁸ Witness 15 para 19

¹⁹ Exhibit 7-6

²⁰ Exhibit 8-1

²¹ Witness 1, A10

²² Exhibit 1-C, Witness 15 statement, para 21

²³ Witness 9, A38

²⁴ Witness 19, A2

²⁵ Exhibit 26-8

Soldier 2 was given a quick assessment but no immediate concerns were identified. She appeared to be in shock and was helped down from the SUPACAT and into a comfortable position away from the incident site²⁶.

15. At approximately 1145 **Soldier 5** called Range Control and asked for Helo assistance to evacuate a Pri 1 casualty²⁷. This was approximately two minutes after the injury. Immediately thereafter, **Soldier 5** called the exercise Medic located in Waiouru Military Camp (**Medic**) to make his way to the incident site using a six wheeled motorbike²⁸.

16. After 45 minutes of waiting with no Helo ETA being passed on from Range Control, **Soldier 5** made the decision to move the casualty from the incident site and start moving towards the Waiouru Military Camp MTC²⁹. A make shift stretcher was used to move **Soldier 1** into the back of a SUPACAT and the team made its way the nearest road and kept driving until they met up with **Medic** on the motor bike.

17. A HOTO of the patient was conducted and **Medic** took the lead in **Soldier 1**'s care. He administered s. 9(2)(a)³⁰. **Medic** had the authority to administer the drugs IAW the Defence Medical Treatment Protocols (exhibit 22-2). More detail is provided in TOR 3.5.

18. Concurrently **Soldier 6** was tasked by **Soldier 5** to conduct another check of **Soldier 2**³¹. She appeared to have a 'lowered level of consciousness' and the effects of her injuries were potentially delayed³².

19. At this point a message from Range Control advised **Soldier 5** that the MTC ambulance which had been sent had become stuck on route to their current location³³. **Soldier 5** deployed some additional staff to collect the medics from the ambulance so they could assist with the casualties³⁴.

20. At approximately 1315 Range Control advised **Soldier 5** that the civilian helo was inbound and had an ETA of 20 minutes. **Soldier 5** tasked **Soldier 7** and **Soldier 8** to identify and mark a Helo landing zone. The Helo landed onsite and a HOTO of the patients occurred between **Medic** and the paramedics. The paramedics decided to take **Soldier 2** as well as **Soldier 1** to Whanganui Hospital.

21. **Soldier 5** instructed his team to go and take photos of the incident site prior to moving the equipment back to Waiouru Military Camp³⁵. Due to the remote location of the incident site and the nature of the sensitive equipment the Basic Mobility Course were using, the COI deemed this action as appropriate based on the circumstances.

22. A Comd Investigation was initiated the next day by the CO of the Unit (2 Nov 22) and all Recov Equip was grounded until further notice. The investigation was completed on the 18 Nov 22 and the COI was initiated on the 28 Nov 22.

²⁶ Witness 15, A22

²⁷ Witness 9, A8

²⁸ Witness 9, A9

²⁹ Witness 9, A9

³⁰ Witness 16, A14

³¹ Exhibit 1-C, Witness 15 statement, para 15

³² Exhibit 1-C, Witness 15 statement, para 14

³³ Witness 9, A17.

³⁴ Exhibit 1-C attn. **Soldier 5** statement para 17.

³⁵ Witness 9, A22

23. The Unit initially failed to submit a Safety Critical Report for a Defective and Unsatisfactory Material (Safety Critical RODUM) for the broken strop. This was eventually initiated after prompting from the COI. All other notification processes were adhered to in IAW with policy³⁶.

Range Control

24. The on-duty Operations Officer, **Operations Officer**, received a call from the Basic Mobility Course at 1145 stating that there had been a Pri 1 injury and they required helo evac ASAP³⁷. As per the Range control SOP the first call for a medical emergency is to the Waiouru DHC³⁸. The Waiouru DHC requested confirmation of the injuries that Range Control provided before dispatching an ambulance. This ambulance was sent as an additional resource in case the weather was not going to allow a helo evacuation³⁹. Range Control then called 111 within 2-3 minutes from the original communications from the Basic Mobility Course⁴⁰. This is when Range Control experienced their first delay in the process. The National Call-Centre could not register Waiouru Military camp to a physical address and therefore could not determine or confirm the type of med-evac to deploy; this delayed the evacuation by 15 minutes⁴¹.

25. After 15 minutes, **Operations Officer** was eventually put through to the paramedics where he found himself in another 30 minute delay⁴². This delay was due to the paramedics using Lat/Long GPS coordinates where the NZ Army uses MGRS⁴³. The Basic Mobility Course attempted to provide a Lat/Long coordinate but the data provided did not work in the paramedics system⁴⁴. **Civ 1** who had come in off leave after hearing about the incident then requested the paramedics to deploy to Jay's Shed at Waiouru Military Camp and they would provide a guide onto the correct location⁴⁵. The Helo then deployed and arrived at the incident site at 1324; 1 hour and 39 minutes after the original call from the Basic Mobility Course⁴⁶. Under optimal conditions it is possible for a medivac helo to travel from Whanganui to Waiouru Military Training Area in 45 minutes⁴⁷.

26. Since the incident, Range Control have put measures in place to transfer MGRS coordinates to a Lat/Long form using a software application⁴⁸. Additionally, a visit to the National Call Center is being organised to prevent the address issue outlined in para 24 from happening again (see recommendations)⁴⁹.

Health Elements

27. The Waiouru DHC were the first contacted by Range control at approximately 1150⁵⁰. Concurrently **Medic** (the Units Medic) was made aware of the incident. The Waiouru DHC dispatched an ambulance at 1200 and **Medic** deployed via 6 wheeler at 1150^{51 52}. Concurrently Range control organised the helo

³⁶ Exhibit 1-C.

³⁷ Witness 19, A2.

³⁸ Witness 19, A2.

³⁹ Witness 19, A2.

⁴⁰ Witness 19, A21.

⁴¹ Witness 19, A2.

⁴² Witness 19, 24.

⁴³ Witness 19, A26.

⁴⁴ Witness 9, A49.

⁴⁵ Witness 18, A3.

⁴⁶ Witness 16, A1.

⁴⁷ Witness 18, A24

⁴⁸ Witness 18, A6

⁴⁹ Witness 18 A7

⁵⁰ Witness 26, A3.

⁵¹ Witness 26, A10

⁵² Witness 16, A1.

support outlined in para 25. The ambulance never made it to the incident site meaning Medic [redacted] was the first medical responder arriving at 1234⁵³. The Helo arrived 1 hour and 39 minutes after the incident occurred (1324) and took control of the medical assistance before departing for Whanganui Hospital at 1357⁵⁴. Further details of the health response are provided at TOR 3.5, para 65.

1.4 Purpose of the activity

28. The purpose of the NZSAS Cycle of Training (CoT), Phase three Basic Mobility and Support Weapon Module is to train selected personnel in the basic tactics, techniques and procedures of vehicle mobility force projection and employment of NZSAS support weapons utilised on a mobility patrol⁵⁵.

29. The nature of the training requires students to qualify at a minimum of level 3⁵⁶. This is defined in the instruction as a level of training assessed under job conditions to job standards. Students must demonstrate in training that they can perform the task at the level of accuracy and speed required on the job⁵⁷.

1.5 Events leading up to the incident

30. The Courts view is that there were two key events that are relevant leading up to the incident. These are:

- a. The miscommunication from HQ, 1 NZSAS Regt to the soldiers on the ground in relation to the Soft-Shackle and its purpose (see para 31).
- b. A skill gap had materialised within the Unit in regards to the understanding of how to correctly apply the relevant strops in SUPACAT operations; namely the different application between the towing strops and the recovery strops (see para 35).

31. **Soft Shackle.** The S8 of the Unit came into possession of the Soft Shackle from RopeWorks – a civilian company specialising in ropes and recovery equipment⁵⁸. It was provided in the hope that the NZDF would trial this equipment and, in turn, RopeWorks would become a provider if the trial was successful. The S8 passed on the soft-shackle to Soldier 9 [redacted] with the intent that its capabilities were discussed with the potential users within his Sqn⁵⁹. Soldier 9 [redacted] interpretation of the S8s intent was to trial the soft-shackle when an opportunity presented itself⁶⁰.

32. Soldier 9 [redacted] passed the soft-shackle to Soldier 10 [redacted] who trialled it in a very controlled manner during the Light Patrol Utility (LPU) vehicle course⁶¹. Soldier 10 [redacted] made the assumption that he had approval from Soldier 5 [redacted] (as the Course Manager) to use the soft shackle⁶². Once the course was completed the soft-shackle remained with the LPUs⁶³.

⁵³ Witness 16, A1.

⁵⁴ Witness 16, A1.

⁵⁵ Exhibit 1-A, page B-21, para 1.

⁵⁶ Exhibit 1-A, page B-22, para 5.

⁵⁷ Exhibit 1-A, page B-22, para 5c

⁵⁸ Witness 2, Q2-2

⁵⁹ Witness 2, Q10-3

⁶⁰ Witness 4, A2.

⁶¹ Witness 4 A2

⁶² Witness 3, A1

⁶³ Witness 3, A1

33. The COI could not determine how the soft-shackle found its way onto phase 3 of the Basic Mobility course, however CPL Gibbs recollects the item being passed around the course⁶⁴. The soft-shackle was first used on the course for a real-time recovery when the back end of a SUPACAT slid out over a precipice⁶⁵. In this recovery the soft-shackle was used in its correct application (synthetic on metal) and it is the Court's view that this potentially gave the course confidence to use it in a more testing manner later in the course leading up to the incident.

34. **Skill gap.** There are five strops in the SUPACAT CES^{66 67}. These are:

- a. **991614364** Sling Recovery anchor 4.5m, 14t (to be used as a bridle or tree protector during winch recovery).
- b. **661646622** Black Rat recovery strap 9m, 30t (to be used to connect Recovery Sling bridles).
- c. **997248227** Double Apex Recovery Strop (SAP name: Strop towing, 3 Piece Kit). Note that this item comes in three pieces and is used for towing purposes only. It comes with two 1.41m strops (to be used as a bridle) and one 3.5m strop (to connect the two bridles).

35. Items 34a and 34b are only to be used together in recovery applications. Items under 34c are only to be used in towing applications. The Unit has been using a hybrid solution for recovery applications using item 34b with the short 1.41m strops as a bridle from item 34c. These items are not to be used together for recovery applications⁶⁸.

36. The Court noted that in the Use of a Kinetic Rope Lesson Plan⁶⁹ the incorrect strops are referenced for use with the Kinetic Recovery Strap. This is also the incorrect application that was used during the day of the incident.

TOR 2. Planning and Conduct of the activity

2.1 Authorisations

37. The OC SOTC approved the conduct of the activity and had the delegation to do so under DFO(A) Vol 7, Book 3, Chap 6. The COI had no concerns with the authorisations of the activity.

2.2 Responsibilities

38. The Module Manager for Phase three of the Basic Mobility Course was **Soldier 5**⁷⁰. The course had seven support instructors providing supervision to the students⁷¹. Two of the instructors were in the role of RCO and one as the lead DI. The exercise had a lead medic assigned (**Medic**) and two additional medics in support⁷². The student/instructor ratio was 1.3 instructors to every one student. There are no rules set to

⁶⁴ Witness 14, A4.

⁶⁵ Witness 14, A5

⁶⁶ Exhibit 4-5.

⁶⁷ Exhibit 22-1 shows pictorial

⁶⁸ Witness 12, A4

⁶⁹ Exhibit 4-1, pg9.

⁷⁰ Exhibit 1-A, pg2.

⁷¹ Exhibit 1-A, pg2.

⁷² Exhibit 1-A, pg14.

ensure student/instructor ratios, however, in this case there were more instructors on the course than students in order to help bolster the numbers of the course.

2.3 Orders, Policies and Procedures

39. There are a number of significant orders, policies and procedures that stipulate the requirements for exercise creation and authorisation. These include:

- a. DFO(A) Vol 7, Training Book 1 & 3 – General Policies and Procedures,
- b. DFO(A) Vol 2 – Army Health and Safety,
- c. DFO 36 Vol 1 – Movements – Land Transport,
- d. DFO 071 – Defence Force Safety, and
- e. DFO 081 – Risk Management.

40. The Court noted that a new G7 function has been created within AGS and the current orders, policies and procedures are being reviewed as part of this organisational change.

2.4 Adherence to Orders, Policies and Procedures

41. The COI deemed the lead-up, conduct and after action review of the exercise met current policy and guidelines. The following points of significance were observed:

- a. The activity was signed-off by the appropriate authority (OC SOTC)⁷³.
- b. Key positions and responsibilities were clearly articulated⁷⁴.
- c. A detailed training programme was designed and adhered to⁷⁵.
- d. A comprehensive medical plan was included in the exercise Instr (see para 53).
- e. A Communications Plan was included in the exercise Instr⁷⁶.
- f. Learning outcomes for the exercise were clearly identified⁷⁷.
- g. A risk management plan was designed for the activity (see TOR 2.6)⁷⁸.

2.5 Qualifications of personnel

42. Qualifications of the following pers were put under scrutiny of the Court.

⁷³ Exhibit 1-A, B-11.

⁷⁴ Exhibit 1-A, B-2.

⁷⁵ Exhibit 1-A, B-3.

⁷⁶ Exhibit 1-A, B-16

⁷⁷ Exhibit 1-A, B-21

⁷⁸ Exhibit 1-B

- a. Course Manager – Soldier 5 ,
- b. Recov Comd – Soldier 3 ,
- c. Exercise Medic – Medic ,
- d. Range Controller – Operations Officer ,
- e. Causality 1 - Soldier 1 (see para 5),
- f. Causality 2 – Soldier 2 (see para 7).

43. Soldier 5 . s. 9(2)(a)

³⁰. It was the Courts view that Soldier 5 was appropriately qualified to be the Course Manager and his actions on the day of the incident proved him to be a capable leader in an emergency.

44. Soldier 3 . s. 9(2)(a)

³³. The Courts view is that Soldier 3 had the necessary qualification to act as the Recov Comd for a first-line recovery and was the correct choice to provide immediate buddy aid of those that were present.

45. Medic . Medic is an RNZAF Medic who was attached to the exercise for the duration of the Basic Mobility course⁸⁴. Medic is fully qualified and has a number of additional qualifications that he has attained in order to enhance his professional knowledge. These include⁸⁵:

s. 9(2)(a)

46. The Court deemed Medic qualifications to be appropriate for the role he conducted during the incident.

⁷⁹ Exhibit 26-9

⁸⁰ Exhibit 26-9

⁸¹ Exhibit 1-A, B-2.

⁸² Exhibit 26-8

⁸³ Exhibit 26-8

⁸⁴ Exhibit 1-A.

⁸⁵ Exhibit 26-10

47. **Operations Officer**. **Operations Officer** is a NZDF civilian employee who served in the Regular Force in a previous career. s. 9(2)(a) . Personnel who work for Range Control do not attain formal qualifications as part of their BAU work, rather, they gain on-the-job training and experience in order to develop in the role⁸⁶. Additionally, personnel working within Range Control are never on duty by themselves as they are placed on duty in pairs⁸⁷.

48. **Soldier 1** . See TOR 1.2, para 5.

49. **Soldier 2** . See TOR 1.2 para 7.

2.6 Risk Management Plan

50. A Risk Management Plan was implemented as part of the exercise⁸⁸. Personnel with responsibilities for the facilitation of the exercise had viewed and signed the Annex prior to the activity commencing⁸⁹. Risks identified that pertain to the incident include:

- a. **Driving General**. Medium risk. Mitigations implemented⁹⁰:
 - i. All drivers must be qualified on the Driver Fatigue Management Course.
 - ii. All drivers must hold a relevant DDP.
 - iii. All drivers must hold a Class 1 licence.
- b. **General Vehicle Recovery**. High Risk. Mitigations implemented⁹¹:
 - i. Only approved recovery methods are to be utilised.
 - ii. All personnel not involved are moved from the recovery site.
 - iii. All personnel that are involved in recovery are trained IAW NZ DDP vehicle qualification courses.
- c. **Vehicle Recovery**. High Risk. Mitigations include⁹²:
 - i. Only qualified personnel are to assemble anchor points.
 - ii. All recovery equipment is to be serviceable and visibly rated.
 - iii. Only use designed anchor points on vehicles.

⁸⁶ Witness 18, A2.

⁸⁷ Witness 19, A30.

⁸⁸ Exhibit 1-B.

⁸⁹ Exhibit 1-B, pg15.

⁹⁰ Exhibit 1-B, pg2

⁹¹ Exhibit 1-B, pg2

⁹² Exhibit 1-B, pg10.

- iv. Only pers holding the relevant DDP can recover vehicles unless supervised by a DI or Advanced Mobility Operator.
- v. Safety equipment is worn and safety distances are adhered to.
- vi. Use correct hand signals and conduct foot recces.
- vii. Ensure student are trained on the SUPACATs winch capabilities.
- viii. Trained personnel to use the winch only.

51. It is the Courts view that the risks identified mitigated the potential for incident for a vehicle recovery. The serial identified in para 50bi was not adhered to and ultimately led to the incident occurring as the incorrect equipment was used during the activity (see para 12).

52. The Court determined that the Risk Management analysis that SOTC conducted was robust and put in place adequate mitigation and elimination methods to ensure the safety of the course participants. The Court does, however, recommend considering the inclusion of a risk that highlights the isolation of s. 6(a) in the WMTA. Some of the risks identified within the Annex can be amplified due to the isolated nature of the training areas utilised by the Unit.

2.6 & 2.7 Briefings

53. All students received the requisite lessons for first-line recovery and relevant driving DDPs prior to the exercise commencing⁹³. Road movement orders were conducted prior to each patrol commencing and a specific brief was conducted at the beginning of each phase of the activity⁹⁴.

2.9 Medical Plan

54. The Basic Mobility Course had a comprehensive medical plan in place⁹⁵. This included:
- a. Key medical personnel and contact numbers (civilian and military).
 - b. Identified medical facilities that could be used in an emergency.
 - c. Multiple forms of communications available to mitigate poor reception.
 - d. Lines of communication were identified in the case of an incident.
 - e. The NOTICAS process in outline.
 - f. Key medical equipment and its location throughout.
 - g. An evacuation plan.

⁹³ Exhibit 27-1

⁹⁴ Exhibit 27-1

⁹⁵ Exhibit 1-A, B-12.

55. The Court's view is that the medical plan was appropriate and in accordance with the relevant orders, policies and procedures; namely the DFO(A) Vol 2, Army Health and Safety⁹⁶. The Court does not believe the Unit should be held accountable for not knowing the correct GPS type to provide to Range Control. All Army training uses the MGRS form for providing coordinates. This system has been rectified within Range Control to mitigate this issue from arising again⁹⁷.

TOR 3. The Incident and Response

3.1 Contributing Factors to the Incident

56. **Vehicle Recovery.** The Court determined that the following factors contributed to the incident occurring:

- a. The introduction of a non-approved soft-shackle into the recovery system. Technical analysis of the soft-shackle is provided by Cookes Ltd is provided in Exhibit 7-6.
- b. The deployment of the incorrect bridle strops for the recovery⁹⁸.
- c. The wheels of the SUPACAT failing to engage which effectively increased the tonnage of the recovery⁹⁹. Due to Soldier 1's memory loss the Court would be speculating as to the reasoning for this.
- d. Incorrect build-up training in the Lesson Plan which did not cite the correct strop to use in a recovery¹⁰⁰.
- e. The HQ did not provide a clear intent with the handover of the soft-shackle to the operator or the intent was misunderstood^{101 102}.
- f. A significant number of the bridle strops (Double Apex Recovery Strop) that were (and have been) used incorrectly, failed the testing conducted by Cookes Ltd¹⁰³. This is potentially due to them having been used incorrectly over the years however this is speculation and no further analysis was conducted into this element. A ROUDEM has been raised for this event¹⁰⁴.

57. **Medical Evacuation Delay.** The Court determined that the following factors contributed in the delayed medical assistance:

- a. Range Control had a lack of experience guiding civilian air assets into the WMTA having conducted majority of civilian helo evacs from the Waiouru MTC¹⁰⁵.

⁹⁶ Exhibit 26-2

⁹⁷ Witness 18, A6

⁹⁸ Witness 12, A1

⁹⁹ Witness 15, A8

¹⁰⁰ Exhibit 4-1.

¹⁰¹ Witness 2, A10

¹⁰² Witness 4, A2

¹⁰³ Exhibit 7-3.


¹⁰⁴ Witness 22, A8

¹⁰⁵ Witness 19, A10


- b. Range Control did not have a system in place to convert MGRS to a Lat/Long grid reference which is the GPS-type that some civilian agencies use¹⁰⁶.

3.2 Nature and extent of Injuries


58. s. 9(2)(a)




59. s. 9(2)(a)



60. s. 9(2)(a)



61. s. 9(2)(a)



¹⁰⁶ Witness 19, A14

¹⁰⁷ Witness 15, A21

¹⁰⁸ Witness 23, A16

¹⁰⁹ Witness 23, A16

¹¹⁰ Witness 23, A16

¹¹¹ Witness 23, A16

¹¹² Witness 23, A19

¹¹³ Witness 23, A13

¹¹⁴ Witness 23, A20

¹¹⁵ Witness 10

¹¹⁶ Witness 15, para 19.

¹¹⁷ Witness 10, A7

¹¹⁸ Witness 20, A4

¹¹⁹ Witness 10, A9

¹²⁰ Witness 10, A13

3.3 Direct Cause of Injury

62. **Soldier 1**. **Soldier 1**'s injuries were sustained via the whiplash of the Recovery Strap which occurred when the strap shore through the soft-shackle causing it to fling back with excessive force¹²¹.

63. **Soldier 2**. **Soldier 2**'s injuries are not as well understood by the Court as she does not remember how or if she was struck by the Recovery Strap or if she recoiled back by reflex and hit her head on the seat behind her. s. 9(2)(a)

¹²².

3.4 Key Personnel Involved

64. Additional to TOR 2.5 the following pers were involved:

- a. **Soldier 4** – first responder and communications relay.
- b. **Civ 1** – Range Control IC who came in off leave to help his team co-ord.
- c. **Soldier 11** – Waiouru MTC Med-Det IC. Deployed an ambulance however this ultimately got stuck in the WMTA due to the inaccessibility of the area.
- d. **Medical Officer** – Waiouru MO.
- e. **Soldier 8** – Instr SOTC – placed the soft-shackle on the vehicle recovery.

3.5 NZDF Medical Treatment

65. The NZDF medical treatment to the casualties can be broken down into three phases.

- a. Phase 1 – the initial Buddy aid.
- b. Phase 2 – **Medic**'s pain relief.
- c. Phase 3 – On going care by the NZDF.

66. **Phase 1.** Phase 1 saw the initial buddy aid being provided by **Soldier 3** and **Soldier 6** with incident oversight being provided by **Soldier 4**¹²³. **Soldier 4** organised a makeshift stretcher and neck brace to be constructed once the delay in evacuation became apparent¹²⁴. The neck brace was not used due to **Soldier 1** finding it to uncomfortable so this was discarded and the neck was supported by the team¹²⁵. **Soldier 3** and **Soldier 1** ensured that **Soldier 1** was as comfortable as possible helping him down from the SUPACAT at his request whilst also supporting his neck and head¹²⁶. In the Courts view, **Soldier 4**

¹²¹ Exhibit 7-6

¹²² Witness 10, A13

¹²³ Witness 15, para 20

¹²⁴ Witness 15., para 20

¹²⁵ Witness 15, para 23

¹²⁶ Witness 15 para 20.

identified the most suitable persons to conduct the initial buddy aid from those persons that were on the ground; utilising experienced operators with the most medical qualifications and knowledge.

67. **Soldier 5** made the command decision to move the casualty to the road once it was apparent there were issues with the helo evac¹²⁷. The persons providing buddy aid utilised the makeshift stretcher to move **Soldier 1** onto the back of an operable SUPACAT and they made their way to the road side to conduct a HOTO with **Medic** who was moving to the location concurrently via road¹²⁸. The Court deemed this to be an appropriate action with the lack of knowledge on an ETA from the Helo. This was the best way to ensure the casualties were brought to the next level of care.

68. **Phase 2**. Phase 2 commenced with the HOTO of the casualties from **Soldier 3** and **Soldier 6** to **Medic**. **Medic** was provided a thorough HOTO of the patients¹²⁹. **Medic** was concerned there could be a brain injury so he triaged the patient using the guidelines as outlined in Severe Traumatic Brain Injury Clinical Practice Guidelines¹³⁰. His first step was to check the basic airway, the casualty's breathing and his circulation. Oxygen was provided **s. 9(2)(a)**¹³¹. Pain relief that was provided to **Soldier 1** **s. 9(2)(a)**¹³². Once the helo had landed **Medic** also provided **s. 9(2)(a)** under the instruction of the paramedics who at this point taken the lead role in the casualty's medical care.

69. **s. 9(2)(a)**
s. 9(2)(a)
¹³⁴. Defence Medical Treatment Protocols (DMPT) allow **Medic** to administer the drugs that were used during his duty of care^{135 136 137 138}.

70. **Soldier 2** did not receive any drugs from **Medic**¹³⁹, however, he did insert an IV line in her arm just in case her injury deteriorated¹⁴⁰. **Medic** conducted a HOTO with the Flight Paramedic and from there the care of both casualties was handed over to civilian authorities who evacuated them to civilian medical specialists in Whanganui Hospital.

71. The Court deemed **Medic**'s care of the patients to be commendable and his actions were in line with NZDF policy.

72. **Phase 3**. **s. 9(2)(a)**
s. 9(2)(a)

¹²⁷ Witness 9, A9.

¹²⁸ Witness 9, A9.

¹²⁹ Witness 16, A13.

¹³⁰ Witness 16, A14

¹³¹ Witness 16, A14.

¹³² Witness 16, A14

¹³³ Witness 16, A16

¹³⁴ Witness 16 A16

¹³⁵ Exhibit 23-2 pg 9 (authorisations)

¹³⁶ Exhibit 23-2 pg 360 (Morphine allowance)

¹³⁷ Exhibit 23-2 pg 361 (ondansetron IV allowance)

¹³⁸ Exhibit 23-2 pg 353 (midazolam allowance)

¹³⁹ Witness 16, A20

¹⁴⁰ Witness 16, A20

¹⁴¹ Witness 10, A9

¹⁴² Witness 23, A20

s. 9(2)(a) [REDACTED]¹⁴³ ¹⁴⁴. The Court determined that the ongoing care that is being provided by NZDF is adequate based on the criteria outline in the DMPT.

TOR 4. Post Incident Actions

4.1-3 MEDEVAC

73. There are three primary references for medical emergencies pertaining to the WMTA; these are:

- a. Duty Medical Officer SOPs¹⁴⁵,
- b. Waiouru DHC Emergency Response SOP¹⁴⁶, and
- c. Waiouru DHC Emergency Response in the Trg Area SOP¹⁴⁷.

74. The Court noted that the incident followed the correct process as outlined in the Exhibits noted above. There was one area of concern identified when the Helo paramedic team switched from talking to Range Control on route to Waiouru and started communicating with Waiouru DHC¹⁴⁸. Whilst this did not delay the helo once it had left, it did cause some initial confusion for Range Control who had been coordinating the landing at Jay's Shed up until that point. As part of the recommendations provided by the COI a consultation between Range Control, Waiouru DHC and the FENZ National Air Desk would be beneficial.

75. The NOTICAS process was followed IAW with Exhibit 26-1¹⁴⁹ ¹⁵⁰.

TOR 5. Equipment

5.1 Key Equipment Utilised

76. Key equipment utilised to conduct the recovery of vehicle number three by vehicle number two were¹⁵¹:

- a. Quantity Two, 1.4m 7t apex towing straps:
 - i. One fitted to the rear of vehicle number two, rear tow bollards by two 7.5t bow shackles (one fitted to each side).
 - ii. One fitted to the front of vehicle three tow bollards by two 7.5t bow shackles (one fitted to each side).
- b. One soft shackle connecting one end of the 30t, 9mtr recovery strap to the 1.4 m apex bridle on the rear of vehicle two¹⁵².

¹⁴³ Witness 10, A9

¹⁴⁴ Witness 23, A20

¹⁴⁵ Exhibit 25-2

¹⁴⁶ Exhibit 25-3

¹⁴⁷ Exhibit 25-1

¹⁴⁸ Witness 19, A2.

¹⁴⁹ Exhibit 26-1Book3, Chap 6.

¹⁵⁰ Witness 1, Interview 2, A1

¹⁵¹ Exhibit 22-1

- c. One 30t snatch recovery strap connected to the 1.4 m apex towing strap, which was attached to the front of vehicle number three. The other end of the 30t recovery strap was attached to the soft shackle

5.2 Equipment Condition

77. Equipment used for the recovery of vehicle three was identified to be in an unusable condition upon inspection after the incident¹⁵³. The two 1.4 apex tow straps and the 30t, 9mtr snatch and recovery strop, were presented to Cookes Ltd for inspection after the incident and deemed unfit for continued use¹⁵⁴. Given the type of type of defects identified within the Cookes Ltd report, it is beyond reasonable doubt some would have had pre-existing issues prior to the incident. The soft shackle was in as new condition¹⁵⁵.

5.3 Equipment Maintenance

78. According to the transport staff, the equipment utilised to conduct the recovery has historically always been cleaned, dried and stored correctly after use¹⁵⁶.

5.4 Equipment Management

79. All equipment components used in the recovery incident (less the soft shackle) are part of the vehicle CES and managed IAW NZ P96 and are subject to a before use inspection^{157 158}. The soft shackle that was added into the incident recovery system is not an authorised NZ Army in-service item and has no management policy¹⁵⁹.

5.5 Equipment relevance to Incident

78 Recovery items used, were used incorrectly¹⁶⁰. Additionally the inclusion of the soft shackle was not an approved item to be used to connect the tow strap to the bridle¹⁶¹. There is a formally documented process for introducing all items into service for use in which they must be approved¹⁶².

5.6 Post-Incident Equipment Examination

79 All items used in the recovery incident were removed from the vehicles bagged and quarantined as soon as practically possible. These items were presented to WorkSafe NZ with the appropriate notification for processing^{163 164}.

¹⁵² Witness 14 A1

¹⁵³ Exhibit 7-1

¹⁵⁴ Exhibit 7-6

¹⁵⁵ Witness 7 A9

¹⁵⁶ Witness 9 A30

¹⁵⁷ Exhibit 4-5

¹⁵⁸ Witness 17 A16

¹⁵⁹ Witness 17 A25

¹⁶⁰ Witness 12 A3,A4

¹⁶¹ Witness 17 A26

¹⁶² Witness 17 A20

¹⁶³ Witness 1 A25

¹⁶⁴ Exhibit 1-24

5.7 & 5.8 Similar Occurrences

80 No known similar instances of this occurrence have been identified domestically or internationally¹⁶⁵.

5.9 Equipment safety for continued training

81 Upon a post incident inspection, Exhibit 7-6¹⁶⁶ summarises items used for the recovery were not fit to be used. The inspection in exhibit 7-6 notes equipment defects. Due to the nature of these defects it is highly likely some of these were present prior to the recovery taking place and were due to them being used incorrectly in other recovery applications. There is no evidence to suggest that the bridle strops are unsafe when used, managed and stored in the correct manner.

TOR 6. Miscellaneous

6.1 Recommendations

80. The following recommendations are broken down into Unit responsibility for the Assembling Authority's consideration.

LCL

81. Conduct a review of the inspection frequency of recovery CES items and whether Units are complying with current policy.

82. Conduct an evaluation into providing a protective sleeve for bridle strops permanently attached to SUPACATs to allow semi-permanent fixture to the outside of the vehicle.

83. Conduct a review into the purchase/introduction of recovery blankets into the NZDF recovery system¹⁶⁷.

84. Review the recovery SOPs for vehicles with no frontal protection such as SUPACAT and the Polaris with particular emphasis on additional mitigation measures such as recovery blankets.

85. Review the naming conventions of recovery equipment within SAP and the NZDF Publications for consistency across all of the key documents (DFOs, DFO(A)s and P-docs). Include a clause explaining the difference between towing items and recovery items and confirm their applications within the relevant P-Docs.

86. Review SUPACATs current Recovery CES items in light of the incident.

87. Review NZ SAS Regts lesson plan once it has been updated.

1 NZSAS Regt

88. **Medical.** It is recommended that future med-plans consider the potential impacts of training in an isolated zone s. 6(a) within the WMTA. More specifically:

¹⁶⁵ Witness 11, A11

¹⁶⁶ Exhibit 7-6

¹⁶⁷ This is an item that is draped over a recovery strap when it's live which will stop it from flinging back upon critical failure.

- a. When the Unit is conducting isolated training s. 6(a) it is recommended that consideration be given into positioning the medic forward or collocating with the activity rather than holding back at Waiouru Military Camp. This will reduce travel times and provide faster medical care.
- b. When the Unit is conducting isolated training s. 6(a) it is recommended that consideration be given into holding additional medical equipment in the event of adverse weather or poor road access i.e. stretchers, medical supplies.
- c. When the Unit is conducting isolated training s. 6(a) it is recommended that Med Points are pre-identified with MGRS and Lat/Long coordinates already determined.
- d. Include the isolated nature of training s. 6(a) as a potential risk in the risk management plan and emplace appropriate mitigations.

89. **Recovery.** All Recovery Lessons within the Unit are updated to incorporate the correct equipment and practice methods for first-line recovery SOPs with particular emphasis on the difference in towing CES and recovery CES. A specific reminder that only NZDF approved recovery equipment is authorised to be used during a first-line recovery should also be included.

90. First-line recovery refresher training is conducted across the Unit for relevant personnel in order to mitigate the knowledge gap that has materialised with particular emphasis on the difference in towing CES and recovery CES as well as the importance of pre-inspections prior to using the equipment as per the P98L.

91. Conduct a review into the use of towing straps on the SUPACAT. This would be beneficial as the Unit has not specifically trained to use this item (preferring the A-Frame method of towing). If the towing straps are not in the vehicle this would prevent this particular incident from occurring again as the Recovery Straps would be the only straps remaining within the CES.

92. Carrying straps on the outside of the vehicle, whilst providing promptness in a recovery, can lead to the degradation of the equipment as it is exposed to the elements and debris for extended periods of time. This is perhaps one factor in regards to the large failure report provided by Cookes Ltd. Potentially limiting this practice to operations could reduce the wear and tear on these straps.

93. It is recommended that the process for Unit equipment and material trials is reviewed in consultation with the Land Worthiness Authority.

WRSC

94. Consideration into an annual SPX running real time emergency simulations facilitated by a Unit such C2SS, TRADOC would ensure consistent practices across Range Control, Waiouru DHC and civilian agencies.

95. Coordinate a discussion between the National Call Centre, FENZ National Air authority, Range Control and the Waiouru DHC to coordinate emergency processes between the organisations.

96. Investigate the break down in communications between the paramedics and Range Control whilst the helo was on route to Waiouru.

97. Investigate, in conjunction with the National Call Centre, the reason why Waiouru Military Camp was not recognised as a physical address for an ambulance call-out. Identify a solution if this was the case.

98. Review the minimum number of staff required to be employed within Range Control whilst multiple Units are exercising in the WMTA.

Range Control

99. Investigate the concept of issuing Emergency Position Indicating Radio Beacons (EPIRB) to Units conducting isolated training within the WMTA with strict protocols on when they can be used (i.e. only after confirmation from Range Control that other Units have stooped live-firing).

100. Consider pre-determining a number of Med-Points in the isolated areas of the WMTA with MGRS and Lat/Long coordinates provided.

AGS

101. G7 conduct an assessment on whether other agencies using lat/long coordinates could affect the NZ Army training system in other situations i.e. in other training areas. Liaise with other Service counter-parts to ensure this prospective communication barrier is widely known about across the NZDF.

102. G7 conduct a review on Range Controls evacuation processes to ensure recent amendments align across the NZ Army and are fit for purpose.

6.2 Presidents Comment

103. The soldiers on the ground acted with haste and precision as soon as the incident occurred and should be commended for their swift actions. The COI determined that a skill gap had materialised within the Unit in regards to the difference in towing strops versus recovery strops which ultimately caused the incident when a foreign item was added into an already over stressed system. Recovery and towing are often skills that are taught on courses and not used often during general training due to the infrequency of vehicles getting stuck or breaking down. It only takes a few key personnel to move from a Unit and skill fade or a knowledge gap can materialise.

104. In hindsight, it can be easy to question the decisions made when all the information is looked at holistically, however, all elements in the emergency process did their utmost to get medical care to the casualties as soon as possible. A process which had not been tested for some time (helo evac in the WMTA as opposed to the Waiouru DHC building) was unfortunately tested in real time uncovering a number of communication barriers. Interagency consultation will go a long way in ensuring that future evacuations are more streamlined.

Dated at1309..... on 6 March 2023.

President
s. 9(2)(k)
Members s. 9(2)(k)

COMMENTS BY ASSEMBLING AUTHORITY

COI 5202/2/380

References

- A. Record of Proceedings for COI 5202/2/380, dated 06 Mar 22
- B. Legal Advice on Court of Inquiry Report – Basic Mobility Course 2022 Waiouru Vehicle Recovery Incident, dated 09 and 18 May 2023.

1. I have reviewed the record of proceedings and the report of the Court of Inquiry (COI) at Ref A. I am satisfied that the COI has comprehensively examined the circumstances surrounding the injuries to Soldier 1 and Soldier 2.
2. I acknowledge that the legal review at Ref B noted that the COI complied with the procedural requirements of the Armed Forces Discipline Act 1971.
3. This was a serious incident, which caused significant injured to the aforementioned personnel. My thoughts go out to Soldier 1, Soldier 2, and their families.
4. During the conduct of the COI a critical safety issue was identified, being the incorrect strops being used for recovery, and I commend the Court for the immediate notification and rectification of that issue to prevent any further harm.
5. I acknowledge that the soldiers on the ground at the time of the incident acted with precision and haste, with the Court recommending they be commended for their actions. SOCNZ will therefore take this statement into consideration relating to the individuals involved.
6. I agree with the key finding of the Court that a skill gap had materialised within the Unit in regards to the difference in towing strops versus recovery strops, which was then ingrained into lesson plans and briefs. This finding, and the relevant TOR are expanded on in the following paragraphs.
7. It was noted in Reference B that that TOR 2.8 was not explicitly addressed, however I am comfortable that TOR 2.8 was addressed in para 53, “2.6 and 2.7 Briefings”, as well as under paras 50-52, specifically TOR 2.6 which focused on risk management. I agree that the Court has interpreted the word ‘Activity in TOR 2.7 as the exercise in total and not just the recovery task, which is supported by the exhibits and witness statements that safety briefings occurred.
8. I note that para 56(d) of the report states that the brief failed to cite the correct strop to be used in recovery, and that the combination of incorrect equipment being taught when coupled with a new piece of equipment (the soft shackle) contributed to the cause of the injury.
9. I conclude that the limits of the soft shackle were not known by the users, nor adequately explained by the issuer, and that the recommendations will reduce the likelihood of such an incident occurring in future activities.
10. The Court also identified other procedural areas related to the use of equipment, and medical evacuation from the Waiouru Training Area which are captured in the

recommendations below. These recommendations will have a tangible impact on improving the safety of activities across the NZDF.

Recommendations

11. While I agree with the recommendations, I note I do not have the authority to implement some of the recommendations of the COI, and therefore liaison will occur by SOCNZ to ensure responsibility is assigned with a completion date with the following organisation:

- a. LCL for recommendations at paras 81, 82, 83, 84 and 85.
- b. WRSC for recommendations at paras 94, 95, 96, 97 and 98.
- c. Waiouru Range Control for recommendations at paras 99 and 100.
- d. AGS for recommendations at paras 101 and 102.

12. Recommendations at paras 88 – 93 are assigned to 1NZSAS Regt, with a completion date of 30 August 2023, noting many of the recommendations have already been implemented since the initial incident in 2022.

13. The Court of Inquiry is now closed.

Dated at Defence House this 19th day of June 2023

s. 9(2)(k)

SD BOLTON, DSD

COL

ASSEMBLING AUTHORITY

Findings of the Court of Inquiry into Frostbite injury sustained on NZSAS Cycle of Training 2023

Court President: s. 9(2)(a)

Court Member: s. 9(2)(a)

Legal Counsel Assisting: s. 9(2)(a)

Executive Summary

The Court finds that ultimately, as a result of not being issued ECW boots by 1 NZSAS Regt prior to undertaking Cycle of Training (CoT) the students on CoT 2023 sought to acquire their own boots. They were subsequently able to source appropriate ECW boots from a commercial vendor at a discounted rate. While the boots selected were fit for purpose, improper sizing procedures led to Soldier 1 (the casualty) being provided with boots that were too small. This cascaded to SERE Mod-B where poorly sized boots (impacting circulation) paired with not wearing ECW socks in conditions that were conducive to frostbite injuries converged to the point where the casualty sustained frostbite injuries. The Court noted other peripheral factors as part of its investigation including the level of training, and experience of the casualty as well as confliction in training levels. However it is the Courts balanced assessment that while important these were not material to the injury occurring.

References

- A. MD634 (Order for the Assembly of a Court of Inquiry) issued by s. 9(2)(a) LTCOL G.M Scobie, CO 1 NZSAS Regt dated 14 June 2023.
- B. s. 9(2)(a) .
- C. DM69 (2 ed) Volume 1.
- D. DM69 (2 ed) Volume 3.

Background

5. **TOR 1.1** Outline briefly the relevant service History of **Soldier 1** (the casualty).

a. s. 9(2)(a)

b.

6. **TOR 1.2** What level of training and expertise did the casualty have?

a. The casualty's level of training and expertise prior to the incident was assessed cumulatively s. 9(2)(a) up to the time of the incident.

b. s. 9(2)(a) the Court considers that the casualty was, prior to conducting selection, and subsequent training with 1 NZSAS Regt a qualified soldier. s. 9(2)(a)

c. The Court heard from **Soldier 2** who ran SERE Mod-A s. 9(2)(ba)(i) "2 On further questioning it was stated to the Court that due to other courses being injected into CoT³ and in this case, Special Purpose Reconnaissance (SPR) the time allocated for SERE Mod-A was condensed from 12 days down to six days.⁴ s. 9(2)(ba)(i)

¹ Witness 6, Q10

² Witness 11, Q6

³ Witness 11, Q9

⁴ Witness 11, Q7 & 9

⁵ Witness 11, Q17

s. 9(2)(ba)(i)

- d. The Court considers that the condensing of SERE Mod-A by 50% warrants further investigation by SOTC to determine if either, Mod-A should be amended back to the original 12 days or, if the outcomes, or exercise design of SERE Mod-B is altered to reflect a lower level of preparedness offered by a condensed SERE Mod-A. However, while the condensing of SERE Mod-A is deemed relevant to the trained state of the individual the Court concedes that this may not have had a direct impact on preventing the injury sustained by the casualty from occurring.
- e. In addition to SERE Mod-A, the Court finds that there were a number of modules of CoT that were undertaken prior to SERE Mod-B which the Court accepts would have enhanced the level of training and expertise in relation to operating in a field environment on the part of the casualty. s. 6(a)
- ⁸ The Court accepts that these phases of training would have increased the casualties experience in managing himself in the field environment. It was noted during an interview with Soldier 3 that the casualty received instruction from a medic during the SR Module on monitoring his feet after the casualty sought medical assistance s. 9(2)(ba)(i)
- ⁹ The Court does however concede that time in the field operating with full Felid Service Marching Order (FSMO) is notably different from a survival like scenario such as SERE Mod-B.
- f. It is clear to the Court that the casualty is a very junior soldier s. 9(2)(a). The Court also notes that the casualty was awarded the COVID-19 Response Award which indicates he served at a time of significant disruption to the Army's ability to conduct training. While it is difficult to determine the precise impact this period had on the casualty's training and experience (as opposed to pre-COVID training norms) it is the Courts considered opinion that this period, combined with the casualty's short time in the military indicates a less inexperienced soldier then others on CoT (s. 9(2)(a)).¹⁰ However, the Court concedes that the casualty was provided with the same level of training,

⁶ Witness 11, Q13

⁷ Witness 11, Q7

⁸ Witness 11, Q19 & 20

⁹ Exhibit P

¹⁰ Witness 8, Q23

and exposure as his peers whilst on CoT. It must be noted, that Court considers the reduction in training time for SERE Mod-A requires further investigation.

7. **TOR 1.3:** Briefly outline the relevant phase of NZSAS CoT that was being assessed when the incident took place.

8. The phase of CoT being assessed at the time of the incident was the Survive, Evasion, Resistance, and Escape Module-B (SERE Mod-B) named Exercise Great Escape.¹¹ This phase is commonly known as the run¹² and on CoT for 2023 this phase of training was conducted immediately post Exercise Blue Sabre¹³ OTP 07 – 12 Jun 23 in the Waiouru Military Training Area (WMTA).¹⁴ s. 6(a)

This exercise included a Hunter Force used to track or block student's movements¹⁷ as they progressed. The desired end state of this activity was for the CoT students to successfully move through their designated ERV's before they were then handed over to additional staff for the Conduct after Capture (CAC) module.¹⁸

¹¹ Exhibit L

¹² Witness 11, Q3

¹³ Witness 4, Q2

¹⁴ Exhibit L

¹⁵ Witness 8, Q2

¹⁶ Exhibit L

¹⁷ Exhibit L

¹⁸ Exhibit L

that this was essentially a dot-point brief delivered by the medics posted to 1 NZSAS Regt covering learning outcome 3.3.3 Demonstrate Knowledge of First Aid for Climatic Conditions. This was delivered as part of the CoT Medical Course conducted on 13 March 23.²⁵ On examination, the briefing covers a number of cold related injuries, their signs and symptoms and treatment options.²⁶ In particular, the brief contains information specific to frostbite (both superficial and deep) and lists the signs and symptoms.²⁷ This brief was presented to Doctor [REDACTED] (MD) to provide comment on whether the signs and symptoms listed were accurate to which he stated that they were.²⁸ s. 9(2)(ba)(i) [REDACTED]²⁹ The Court is satisfied that training was provided to the students on CoT regarding cold weather injuries. However, the Court finds that this package should be enhanced with imagery to allow students to clearly visualise what frostbite looks like as it progresses. s. 9(2)(ba)(i) [REDACTED]

[REDACTED]³¹ This indicates to the Court that generally, there is a lack of experience and knowledge to correctly diagnose frostbite which may be a result of not being provided images to clearly highlight what this type of injury looks like as it progresses. This may mitigate the stereotypical view that frostbite presents as blackness which is in fact a far later stage of the injury.

10. **TOR 2.2** Analyse the NZSAS CoT SERE Mod-B training in respect of safe conduct, and whether this is sufficient.

- a. The Court heard evidence around the safe conduct of the exercise which stretched from the planning stages to the execution of the activity. One of the first documents analysed during this investigation was the Risk Assessment Matrix (RAM)³² which articulated the key hazards identified and the risk score without mitigations being applied. This document then clearly listed the measures in place to minimise the risk and then a residual risk score once the relevant mitigations (controls) had been applied. During this investigation, two copies of this document were provided³³ including the signed copy which had been presented to Officer 1 [REDACTED], which was signed, and approved on 27 Apr 23. The Court notes that in addition to approving the RAM document Officer 1 [REDACTED] added additional handwritten comments

²⁵ Exhibit R, Page 1

²⁶ Exhibit R, Pages 5-22

²⁷ Exhibit R, Pages 18-24

²⁸ Witness 6, Q7

²⁹ Witness 6, Q8

³⁰ Witness 9, Q110

³¹ Witness 8, Q 31

³² Exhibit B

³³ Exhibits C & B

articulating the cumulative manner in which individual risks identified have the potential to converge, s. 9(2)(ba)(i)

.³⁴ The Court finds that while this discussion and the notes made centred on Hypothermia as the specific risk it demonstrates a level of deliberateness around risk identification and mitigation on SERE Mod-B and at SOTC. It was however noted by the Court that the RAM document³⁵ was not signed by all staff members listed who would have had some degree of responsibility for ensuring the controls and specific mitigations were adhered to. While the Court generally accepts that staff members were aware of the RAM document and associated risks³⁶ this was not reflected by a signed acknowledgement on the RAM document.³⁷

- b. The Court notes that on examining other aspects of the RAM document to satisfy the overall safety conscious approach to the activity other risks such as Police and Military working Dog's as well as weather conditions were correctly identified. In addition, the mitigations in place in the RAM document reflect requirements of DFO(A) Vol 7, Book 3, Chapter 6 Section 31³⁸ (Special Operations Training, Survive, Escape, Resist, Evade) such as dog's being muzzled when pursuing, or in pursuit of participants.³⁹ It further states that weather conditions are to be monitored and forecasts obtained to determine the possible adverse effects on the participants⁴⁰. In both of these examples the Court was satisfied that not only were risks correctly identified but appropriate controls were in place and adhered to during the conduct of the activity.
- c. Taking a more holistic approach to examining the overall safe conduct of the exercise the Court finds that the exercises had;
 - (1) a detailed and accurate medical plan (detail contained in response to TOR 4.1),
 - (2) a detailed and suitable communications plan,
 - (3) appropriately identified risks and correlating mitigations,
 - (4) relevant decision points were highlighted during exercise planning, and
 - (5) good control on the part of the staff, and monitoring of the students and overall control being maintained.
- d. Overall, the Court finds that SERE Mod-B was conducted safely, and IAW the guidance and direction provided by training documents and publications.

³⁴ Witness 1, Q16

³⁵ Exhibit B

³⁶ Witness 4, Q105-Q107

³⁷ Exhibit B

³⁸ Exhibit E, Pages 4 & 5

³⁹ Exhibit E, Pages 4 & 5

⁴⁰ Exhibit E, Pages 4 & 5

11. **TOR 2.3** Was a safety brief given prior to the conduct of the activity? If so, was it appropriate?

- a. The Court finds that there was a relevant, and sufficiently detailed safety brief⁴¹ that was given to all students on CoT prior to commencing SERE Mod-B. This was delivered to the respective patrols as they arrived at the start line of the activity.⁴² This brief was delivered by **Soldier 4** (Module Manager) and covered off on the following information;
 - (1) The locations of, and timings for ERVs,
 - (2) control measures for route selection by patrols,
 - (3) actions on injury,
 - (4) actions on lost,
 - (5) actions on lahar / volcanic eruption,
 - (6) emergency communications plan,
 - (7) location of the medic,
 - (8) general restrictions, and
 - (9) minimum equipment list.
- b. It was noted by the Court that in addition to the safety brief all students were issued an Exercise Great Escape Emergency Card⁴³ which replicated the critical information provided during the brief. This included communication information and emergency contact details which was handed to students prior to stepping off on the exercise.⁴⁴
- c. The Court also notes that during the administration period before the patrols stepped off medics were made available to students⁴⁵, a full serviceability and equipment check was conducted⁴⁶, and instruction on how to use the **s. 6(a)** Tracking device was provided.⁴⁷

12. **TOR 2.4** Was a health/medical plan in place for NZSAS CoT SERE Mod B prior to the conduct of the activity? If so, was it appropriate?

- a. The Court finds that there was a medical plan in place prior to the conduct of SERE Mod-B. The Court was presented with the medial plan⁴⁸ which was briefed by **Soldier 4** to **Officer 1** prior to the activity commencing. On examination, the Court finds that the medical plan was appropriate for the exercise and workable given the locations of the activity

⁴¹ Exhibit J

⁴² Witness 4, Q1-6

⁴³ Exhibit M

⁴⁴ Witness 4, Q37-38

⁴⁵ Witness 4, Q11

⁴⁶ Witness 4, Q17

⁴⁷ Witness 7, Q6

⁴⁸ Exhibit L

being undertaken. The Court also confirmed with the casualty that during SERE Mod-B there was always the means to seek medical aid if required s. 9(2)(ba)(i) ⁴⁹. In addition, the Court noted that immediately before SERE Mod-B began the outgoing medic conducted a handover with the incoming medic (Soldier 3 ⁵⁰) s. 9(2)(ba)(i) ⁵⁰. The Court is satisfied that the medical plan and overall health plan for the students on CoT was continuous from Exercise Blue Sabre onto SERE Mod-B.

- b. Furthermore, during the same the period immediately prior to SERE Mod-B (during the safety brief) Soldier 3 had conducted a check of the students health conditions. s. 9(2)(ba)(i)

- c. Overall, the Court finds there was consistent and timely access to medics if required and a sound medical plan was in place prior to the start of SERE Mod-B. The Court notes that the evacuation plan was not examined in detail here but this is discussed in detail in response to TOR 4.1.

13. **TOR 2.5** What risk mitigations were identified in relation to cold weather for NZSAS CoT SERE Mod-B? Were they appropriate and adhered to?

- a. There were two key identified risks with regards to cold weather in the RAM⁵² document these being adverse weather and exposure.
- b. With regards to exposure the mitigations listed were;
- (1) weather to be monitored and updates ae to be given to all personnel,
 - (2) provide an equipment list required for the activity prior to departing,
 - (3) have measures in place to surge cold weather equipment if required, and
 - (4) Course Manager and Medic are to monitor participants for signs of cold weather injures.
- c. The Court finds that the risk of exposure was correctly identified as a feasible risk and the mitigations listed were followed. It was stated by Soldier 4 that he was monitoring the weather,⁵³ provided and enforced an

⁴⁹ Witness 9, Q35

⁵⁰ Witness 3, Q23

⁵¹ Witness 3, Q23

⁵² Exhibit B, Page 5

⁵³ Witness 4, Q92

equipment list,⁵⁴ had surge warm clothing if required,⁵⁵ and monitored students through agent meet ups and check in's which were built into the exercise construct.⁵⁶ The Court does note that given the nature of the exercise it would be impractical to have a medic and/or the Course Manager directly monitoring the students.

- d. With regards to adverse weather the mitigations listed were;
 - (1) conduct training for cold weather conditions before activity proceeds,
 - (2) educate candidates to identify signs and symptoms of cold weather injuries,
 - (3) medics to monitor candidates, and
 - (4) ensure CASEVAC plan is in place and workable.
- e. The Court finds that cold weather training was conducted⁵⁷, lessons on cold weather injuries were delivered⁵⁸, medics were available and did conduct checks on candidates⁵⁹ and a CASEVAC plan was in place.⁶⁰

14. **TOR 2.6** What cold weather equipment was used by personnel on NZSAS CoT 23?

- a. Cold weather equipment used by personnel on NZSAS CoT 23 specifically relating to the period over which SERE Mod-B was conducted was investigated. The Court found that the requirements for this phase of training (with regards to equipment) are explicitly stated. DFO(A) Vol 7, Book 3, Chap 6, Section 31⁶¹ (Special Operations Training, Survive, Escape, Resist, Evade) states that *"The safety equipment is to be tailored to for the time of year the training is conducted and the environmental conditions the participants will be exposed to"*.⁶² This guidance is issued whilst also explicitly listing (in Annex B) the minimum equipment the participants are to have access to.
- b. The Court heard evidence from Soldier 4 [REDACTED] that the minimum equipment listed in Annex B of DFO(A) Vol 7, Book 3, Chap 6, Section 31⁶³ was complied with and that amendments were made to the equipment authorised for the students on the exercise. s. 9(2)(ba)(i) [REDACTED]

⁵⁴ Witness 4, Q17

⁵⁵ Witness 4, Q102 - 103

⁵⁶ Witness 7, Q17

⁵⁷ Exhibit K, Pages 102 - 119

⁵⁸ Exhibit R, Pages 5-24

⁵⁹ Witness 3, Q23

⁶⁰ Exhibit R

⁶¹ Exhibit E

⁶² Exhibit E, Page 2

⁶³ Exhibit E, Page 8

s. 9(2)(ba)(i)

The Court was satisfied that under questioning Soldier 4 clearly made a conscious decision to alter the minimum equipment list based on his appreciation of the environment IAW DFO(A) Vol 7, Book 3, Chap 6, Section 31.⁶⁵ In addition the Court found additional equipment not stated in Soldier 4 interview was also issued and reflected in the exercise safety brief⁶⁶ including;

- (1) beanie,
- (2) gloves, and
- (3) face buff.

- c. The Court is satisfied that not only was it specified to the students verbally what they were to take on the exercise but that it was also physically checked.^{s. 9(2)(ba)(i)}

The Court does note however, that this was not extended to boots or socks.^{s. 9(2)(ba)(i)}

The Court considers that there was a degree of confliction here in that from the feet up students on the exercise were allowed to begin in dry uniform and make changes based against the equipment list directed by staff but that did not extend to boots or socks.^{s. 9(2)(ba)(i)}

⁶⁴ Witness 4, Q15

⁶⁵ Exhibit E

⁶⁶ Exhibit J, Page 4

⁶⁷ Witness 4, Question 17


⁶⁸ Witness 8, Q44


⁶⁹ Witness 8, Q44

⁷⁰ Witness 4, Q18

⁷¹ Witness 4, Q18

s. 9(2)(ba)(i)



- d. On balance, the Court finds that cold weather equipment used by students on CoT 23 conducting SERE Mod-B was IAW the basic equipment list and appropriately modified by Soldier 4  to suit the conditions. The Court accepts that part of the intent of this exercise is to not provide what would be considered totally appropriate for the conditions and that the deficiency in cold weather equipment is intended to be made up through the application of survival skills taught on SERE Mod-A. In addition, the Court does consider that it would have been appropriate to allow students to access dry socks at the beginning of the exercises however, the Court does concede that this would not have guaranteed that student's feet would have remained dry given the climatic conditions.

⁷² Witness 8, Q6

⁷³ Witness 8, Q6

⁷⁴ Witness 8, Q44

The Injury

15. **TOR .31** Identify and describe the extremity of cold weather exposure that NZSAS CoT 23 was exposed to.

- a. During the period in question of CoT (SERE Mod-B) weather reports provided by Soldier 4 indicate that temperatures over the period 06-09 Jun 23 in Waiouru ranged from 0.7 degree low's to 10.7 degree highs with a moderate – high easterly wind.⁷⁵ However, he Court accepts that it likely that conditions in the training area at altitude, and in more exposed positions may very well have been below freezing. The Court takes this position based on testimony provided by Soldier 3 (medic on the ground at the time) s. 9(2)(ba)(i)

The Court also notes that deliberate monitoring of the weather was conducted by Soldier 4 s. 9(2)(ba)(i)

- b. Despite the data provided to the Court regarding the temperature range and conditions which, on examination do not indicate exposure to extreme cold weather conditions (ECW) the Court is satisfied that conditions were such that an injury of this nature was still entirely possible. The Court is convinced in this deduction owing to the high likeliness that actual temperatures experienced by those on SERE Mod-B were likely lower then indicated on the forecast and the testimony of Civilian 1 (a mountain expert with significant experience in ECW conditions and alpine terrain from the New Zealand Army Experiential Wing of the Leadership Development Centre). s. 9(2)(ba)(i)

The Court finds that conditions were near zero, and that the conditions were damp and based on testimony from Officer 2 it is apparent that the casualty's footwear may have also still been damp from a previous phase s. 9(2)(ba)(i)

16. **TOR 3.2** Where, when and at what time did the injury occur?

⁷⁵ Exhibit N

⁷⁶ Witness 3, Q15

⁷⁷ Witness 4, Q92

⁷⁸ Witness 4, Q93

⁷⁹ Witness 4, Q92

⁸⁰ Witness 10, Q8

⁸¹ Witness 8, Q6

- a. In determining when this injury occurred the Court had to consider that the nature of this injury is non-traumatic and no single point, or singular event can be attributed to this injury. Rather, frostbite occurs over four overlapping phases being pre-freeze, freeze-thaw, vascular stasis, and late ischemic⁸² which occur over a period of time.
- b. The Court therefore determined a timeframe where the injury developed working backwards from the night the injury was identified. The point at which the injury was identified was approximately 2200 on 09 Jun 23 which is deduced from the time Soldier 4 [REDACTED] received a phone call from Officer 2 [REDACTED] at 2230⁸³ regarding the injury and then deducting the time it took to move the casualty from the LUP to Bobb's hut (approximately 500 meters away)⁸⁴ and the period of deliberation taken by the patrol on the best course of action on discovering the injury (approximately 20 minutes).⁸⁵ From here, the court determined (based on evidence provided by the casualty) that the last time he had physically observed and inspected his feet was sometime on the morning of 08 Jun 23. s. 9(2)(ba)(i) [REDACTED]
- c. While the Court acknowledges that the casualty inspected his feet during the morning of 08 Jun 23 s. 9(2)(ba)(i) [REDACTED]⁸⁷ on balance the Court finds that it is possible that he was already beginning to suffer from the early stages of frost bite. s. 9(2)(ba)(i) [REDACTED]
- [REDACTED]
- [REDACTED] It is therefore possible that the casualty did not recognise the symptoms of early onset frostbite leading the Court to considering it entirely possible that the casualty was suffering from this injury prior to the morning of 08 Jun 23. This is however is in confliction with further testimony presented by Civilian 1 [REDACTED] who, when question about the surprisingly short time frame in which this type (and severity) of injury occurred

⁸² Exhibit S

⁸³ Witness 4, Q55

⁸⁴ Witness 9, Q5

⁸⁵ Witness 8, Q30

⁸⁶ Witness 9, Q18

⁸⁷ Witness 9, Q18

⁸⁸ Witness 3, Q7

⁸⁹ Witness 3, Q8

s. 9(2)(ba)(i)

- d. On balance, the Court finds that while the injury was discovered at (or around) 2200 on the night of 09 Jun 23 the injury occurred in the WMTA over an approximate 36 hour period from the morning of 08 Jun 23 – 09 2200 Jun 23. However, the Court accepts that the early stages of this injury may very well have been developing prior to this period.

17. **TOR 3.3** Briefly outline the nature of the injuries sustained by the casualty.

- a. The Court finds that the confirmed diagnosis of the injury sustained by the casualty was bilateral frostbite to the toes. This definitive diagnosis was provided as part of the casualty's discharge notes from Palmerston North Hospital.⁹¹ The Court notes that initially, the medic attending (Soldier 3) made the decision to evacuate the casualty prior to confirming a diagnosis of frostbite based on the appearance of the casualty's feet. s. 9(2)(ba)(i)

18. **TOR 3.4** What factors contributed to the injury occurring?

- a. The Court found that one of the most significant factors in this incident and the injury occurring was that the casualty was wearing boots that were a size smaller than he was used to wearing. During an interview with the casualty it became clear that after having passed selection in February some members of CoT found a deal s. 9(2)(a) ⁹³ to purchase Meindl Island Pro ECW boots⁹⁴ at a discounted rate. s. 9(2)(ba)(i)

the casualty ordered size 11 boots and on questioning why he had ordered larger sized boots he stated s. 9(2)(ba)(i)

Despite this order he received a size 10 boot⁹⁸ on the recommendation from the vendor that this was the correct size for him.⁹⁹

⁹⁰ Witness 10, Q11

⁹¹ Exhibit U

⁹² Witness 3, Q4

⁹³ Witness 9, Q87

⁹⁴ Witness 9, Q64

⁹⁵ Witness 9, Q68

⁹⁶ Witness 9, Q68

⁹⁷ Witness 9, Q70

⁹⁸ Exhibit W

⁹⁹ Witness 9, Q72

- b. The Court was provided significant evidence from multiple witnesses that ill-fitting boots (in this case boots that were too tight) could contribute to frostbite. This line of questioning was primarily driven by the fact that others on selection had the same boots¹⁰⁰, were exposed to the same conditions (and that those conditions were such that frostbite was possible)¹⁰¹ and yet only the casualty suffered frostbite injuries. Under questioning, two expert witnesses and two witnesses to the fact provided testimony that this could have been a key contributing factor. s. 9(2)(ba)(i)

[REDACTED]

It was noted in the SOE¹⁰⁴ for SR that ECW socks were issued to CoT but were not worn by the casualty during Exercise Great Escape.¹⁰⁵ s. 9(2)(ba)(i)

[REDACTED]

¹⁰⁷ The Court received two sets of further statements from witnesses to the fact which added additional weight to the assessment that undersized boot's combined with poor sock choice contributed to this injury. s. 9(2)(ba)(i)

[REDACTED]

- c. With regards to the size of the boots worn by the casualty that Court is convinced that this was one of the most significant physical factors that contributed to the injury occurring. This was paired with the fact that because the casualty's boots were too small we was not wearing the issued ECW socks at

¹⁰⁰ Witness 8, Q13

¹⁰¹ Witness 10, Q8

¹⁰² Witness 10, Q4

¹⁰³ Witness 10, Q6

¹⁰⁴ Exhibit G, Page 11

¹⁰⁵ Exhibit V

¹⁰⁶ Exhibits S & T

¹⁰⁷ Witness 6, Q13

¹⁰⁸ Witness 8, Q17

¹⁰⁹ Witness 8, Q18

¹¹⁰ Witness 3, Q10

the time.¹¹¹ However, there are other factors that have peripheral relevance that must also be examined.

- d. The Court questioned why members of CoT in 2023 found it necessary to purchase boots at their own expense. The Court was provided the Scale of Entitlement (SOE) for Special Reconnaissance (SR) and noted that while ECW Socks are issued¹¹² no corresponding ECW Boot is listed. This essentially means that those currently on CoT were not issued ECW boots. s. 9(2)(ba)(i)



¹¹³ It also became apparent on interviewing the casualty that a number of students on CoT were waiting on Loss and Damage reports (L&D's) for boots they had worn on selection which required replacing.¹¹⁴ He noted that because individuals on selection were not posted to 1 NZSAS Regt at the time, their orders for new boots post-selection had to be sent back to their parent Units for action.¹¹⁵ In the case of the casualty this saw his order being sent to 2/1 RNZIR based in Burnham. s. 9(2)(ba)(i)



- e. The Court considers that the following are core drivers for why students on CoT 2023 found themselves needing to purchase their own boots;
- (1) they had received advice that ECW boots would be the best option for SR,
 - (2) they lacked faith that L&D's would be actioned on time to replace boots that were damaged during selection, and
 - (3) ECW boots were not issued by 1 NZSAS Regt and not on the SR SOE.
- f. Considering the above the court finds that by not providing ECW boots to students on CoT students went and acquired their own boots from a commercial vendor. While the boots selected are deemed fit for purpose, improper sizing procedures led to the casualty being provided boots that were too small. This cascaded to SERE Mod-B where multiple factors (too small boots which impacted circulation along with inappropriate socks) in conditions that were conducive to frostbite injuries all converged to the point where the casualty sustained frostbite injuries.

19. **TOR 3.5** Did any human factors lead to delays in this injury being reported?

¹¹¹ Exhibit V

¹¹² Exhibit G, Page 11

¹¹³ Witness 8, Q12

¹¹⁴ Witness 9, Q61

¹¹⁵ Witness 9, Q55

¹¹⁶ Witness 9, Q63

- a. The Court investigated if pressure to pass cycle on the part of students (and in this case the casualty) resulted in a delayed reporting of this injury. Evidence was presented to the Court that indicated there is always pressure on students to pass the course and a certain fear of not being able to re-test. s. 9(2)(ba)(i)



¹¹⁸ The Court is satisfied that where appropriate and feasible, efforts are made to enable retesting but in certain modules this may be impractical or potentially unclear to candidates. The Court was provided with the SOTC Student Performance Management & Removal Process flow diagram¹¹⁹ and notes explicit sections indicate the possibilities of retesting certain parts, or assessments of CoT but not others. s. 9(2)(ba)(i)



While the Court generally accepts that there will always be pressure to pass sections of CoT that may not, or cannot be easily retested and push past, or manage injuries there is no substantive evidence to suggest this attitude delayed the reporting of the frostbite injuries on the night in question. This view is supported by the fact that the casualty has sought medical aid during Exercise Blue Sabre¹²⁰ which itself could not be retested¹²¹ and was known to be managing issues with his feet which he proactively sought advice on. It is also clear that on witnessing the injury the casualty and his patrol made the correct decision to seek assistance IAW their issued orders regardless of the potential impact on his place on CoT. The Court does note a period of deliberation was had prior to arriving at this decision of approximately 20 minutes¹²².

- b. The Court also identified that while reporting from 1 NZSAS Regt to Army General Staff and Special Operations Command New Zealand (SOCNZ) through a formal Notification of Casualty (NOTICAS)¹²³ was within 24 hours there were some delays due to human factors in internal reporting. s. 9(2)(ba)(i)



¹¹⁷ Witness 9, Q43

¹¹⁸ Witness 1, Q54

¹¹⁹ Exhibit H

¹²⁰ Exhibit P

¹²¹ Exhibit H

¹²² Witness 8, Q30

¹²³ Exhibit F

s. 9(2)(ba)(i)

While the Court finds that this delay did not impact the evacuation of the casualty it did mean that reporting from the Module Manger to OC SOTC was somewhat delayed. In addition to this delay, confliction between what could be defined as routine and priority reporting somewhat delayed notification from OC SOTC to the Commanding Officer of 1 NZSAS Regt. The Court accepts that while a serious injury (as this was) would fall under priority reporting and trigger a CCIR for immediate notification to the CO¹²⁴ the delay in reporting this until first light s. 9(2)(ba)(i)¹²⁵ did not adversely affect the casualty, the evacuation, or access to higher medical aid.

- c. Overall, the Court finds that internally there were minor delays in reporting this injury up the COC. However, the Court is satisfied that at no point did this impact the evacuation, and effective treatment of the casualty.

20. **TOR 3.6** Identify immediate actions taken upon identifying the injury.

- a. At the time that the injury was identified by the casualty, he and his patrol s. 6(a) were in an LUP 500m away from Bob's Hut (ERV 2). s. 9(2)(ba)(i)

At this point the Court finds that there was approximately a 20 minute period of deliberation before action was taken to seek medical assistance.

s. 9(2)(ba)(i)

¹²⁴ 1 NZSAS Regt Command Directive 2023 (S)

¹²⁵ Witness 1, Q31

¹²⁶ Witness 9, Q5

¹²⁷ Witness 9, Q5

¹²⁸ Witness 8, Q30

s. 9(2)(ba)(i)

- b. At this point the casualty was handed over to Soldier 6 [redacted] who placed him inside Bob's Hut and made contact with Soldier 4 [redacted].¹³⁰ At this point Soldier 3 [redacted] guided Soldier 6 [redacted] through an assessment of the injury over the satellite phone which initiated the deployment of Soldier 3 [redacted] forward as the medic to evaluate the casualty himself. s. 9(2)(ba)(i)
- c. With regards to the immediate actions taken on identifying the injuries the Court finds that actions taken by the casualty and the patrol members s. 6(a) [redacted] were appropriate and relatively timely.

¹²⁹ Witness 8, Q2

¹³⁰ Witness 7, Q17

¹³¹ Witness 7, Q25

Post-Incident Management

21. **TOR 4.1** Identify and analyse the NZSAS CoT medical evacuation plan.
- The Court was presented with a medical evacuation plan which had been presented to Officer 1 [REDACTED] as part of the exercise planning back-brief¹³² by the module manager Soldier 4 [REDACTED] for SERE Mod-B.
 - The Court finds that primary, alternate, and contingency evacuation plans had been articulated and planned for inclusive of where the transfer from one evacuation platform to another may be required.¹³⁴ The Court also found that evacuation planning included the use of all available assets to facilitate an effective evacuation plan.
 - The Court finds that the evacuation plan considered, and appropriately listed both military and civilian assets and specified the respective capabilities each of the platforms identified¹³⁵. In addition, the Court noted that response timings and communication plans to enact these capabilities were also explicitly listed¹³⁶.
 - Overall, the Court finds that the medical evacuation plan for NZSAS CoT specific to SERE Mod-B was sound.
22. **TOR 4.2** Analyse the medical evacuation carried out for the casualty and whether it was timely and appropriate in the circumstance.
- The Court analysed the Medical evacuation of the casualty from the point at which the attending medic Soldier 3 [REDACTED] made the decision to evacuate the patient which was on his arrival at Bob's Hutt on the night in question. On arriving at Bob's Hut and examining the casualties injuries Soldier 3 [REDACTED] s. 9(2)(ba)(i) [REDACTED] began evacuating he patient.
 - The Court notes that prior to the medical evacuation taking place the responding medic Soldier 3 [REDACTED] assisted by Soldier 7 [REDACTED] departed from the Tactical Operations Centre (TOC) of the exercise based at J Shed in Waiouru Military Camp¹³⁸ in an NMV with a trailer carrying a 4x4 quad bike¹³⁹. Due to the terrain the NMV was taken as close to the location of the casualty by road as possible before further travel to the casualty was undertaken utilising the 4x4 quadbike down a tank track.¹⁴⁰

¹³² Exhibit L

¹³³ Witness 4, Q36

¹³⁴ Exhibit L

¹³⁵ Exhibit L

¹³⁶ Exhibit L

¹³⁷ Witness 3, Q2

¹³⁸ Witness 4, Q2

¹³⁹ Witness 3, Q2

¹⁴⁰ Witness 3, Q2

- c. Initially, the evacuation of the casualty from Bob's Hut utilised the 4x4 quad bike to evacuate the patient to the NMV for onwards movement. This became unfeasible when mechanical failure of the quad bike¹⁴¹ forced the evacuation to continue on foot for approximately one kilometre.¹⁴² At this point the casualty had already been moved approximately two thirds of the way back to the NMV from Bob's Hut. This section of the evacuation was achieved with the casualty being moved through a combination of walking and being carried.¹⁴³ Once the casualty arrived at the NMV he was moved to the TOC by road where the casualty was then s. 9(2)(ba)(i) transported by road to Palmerston North Hospital by Soldier 3
- d. The Court notes that during the evacuation process Soldier 3 considered the most appropriate hospital to evacuate the casualty to. On consideration, he made the decision that Palmerston North hospital was the most appropriate given the nature of the injuries.¹⁴⁵
- e. In addition to examining how the evacuation took place the Court also examined the timeline of the evacuation. Soldier 4 was notified of the possibility a medic would be required at approximately 2230¹⁴⁶ by Officer 2 who was directed to move the casualty to Bob's Hut.¹⁴⁷ At this point the casualty was handed over to Soldier 6¹⁴⁸ who had been positioned at the Hutt as part of the overall scenario conducting 'agent meet up's as the patrols passed through their ERV's¹⁴⁹. s. 9(2)(ba)(i)
- Based on the estimated travel time provided by Soldier 4 of 75 minutes¹⁵³ to get from the TOC to Bob's hut (including the time required on the quad bike) this would have seen an approximate arrival time of 0015. The court finds the next most accurate time stamp of the evacuation to be at 0130 when Soldier 4 made

¹⁴¹ Witness 9, Q5

¹⁴² Witness 3, Q2

¹⁴³ Witness 3, Q2

¹⁴⁴ Witness 3, Q2

¹⁴⁵ Witness 3, Q2

¹⁴⁶ Witness 4, Q55

¹⁴⁷ Witness 8, Q2

¹⁴⁸ Witness 7, Q17

¹⁴⁹ Witness 7, Q17

¹⁵⁰ Witness 3, Q2

¹⁵¹ Witness 3, Q2

¹⁵² Witness 3, Q2

¹⁵³ Witness4, Q76

contact with Soldier 6 [REDACTED] who informed him that Soldier 3 [REDACTED], Soldier 7 [REDACTED] and the casualty had already left Bob's Hut¹⁵⁴ on the 4x4. At 0200 Soldier 4 [REDACTED] received communications via Tait Radio that the casualty was in the NMV and they were beginning their return movement to the TOC in Waiouru Camp.¹⁵⁵ Given a 45 minute return time from the location of the NMV to TOC the Court deduced that the casualty arrived back in Waiouru at approximately 0245 to be transferred to a van for onward evacuation and an arrival time in hospital of 0505.¹⁵⁶

- f. The Court finds that the total time from when the injury was notified to the casualty receiving hospital level care was approximately six hours and thirty five minutes. On consideration, the Court finds that given the isolated location of the casualty, and the failure of the 4x4 quad that the evacuation was timely and appropriate for the nature of the injury.
- g. The Court notes that the use of a helicopter based evacuation was considered. However, as the injury was deemed non-life threatening combined with the accessed risks associated with trying to get a helicopter into that area it was deemed road evacuation was sufficient.¹⁵⁷ s. 9(2)(ba)(i) [REDACTED]
- h. The Court considers on balance, that at the point at which the 4x4 quadbike broke down the decision to move the casualty by foot to the NMV was the most appropriate decision given that the distance back to Bob's Hut was greater than the distance to the NMV.
- i. Overall, the Court finds that on activation, the medical evacuation plan was quickly enacted and enabled an effective CASEVAC from POI to a hospital level facility.

¹⁵⁴ Witness 4, Q77

¹⁵⁵ Witness 4, Q77

¹⁵⁶ Witness 4, Q79

¹⁵⁷ Witness 4, Q80

¹⁵⁸ Witness 4, Q80

Other

23. **TOR 5.1** Comment on any other matters the Court considers relevant to the purpose of the Inquiry.

- a. During the investigation the Court found that determining the level of capability desired from SERE Mod-B (B-LOC, D-LOC or O-LOC) was difficult. This made determining what the actual training levels SERE Mod-B somewhat difficult. The Court was also provided conflicting evidence with the Course Directive stating that SERE Mod-B is at training level two¹⁵⁹ and then in Annex C of the same document is states level three.¹⁶⁰
- b. This made it difficult for the court to determine if the exercise design (and therefore the risks) were appropriate for the desired outcome given the Court was unclear as to what level of capability was desired and the level of training.

24. **TOR 5.2** Make any recommendations the Court considers relevant, that will help prevent similar injuries occurring to other members of the NZDF in the future.

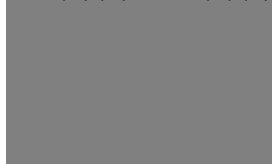
- a. Ambiguity is apparent in understanding what parts of CoT are deemed B-LOC, or D-LOC O-LOC. It is recommended that SOTC confirm what is meant by these terms in the context of CoT and then subsequently confirm the level of capability SERE-Mod B is expected to deliver.
- b. Based on the determined level of capability (see above) it is recommended that Training Development Cell determine the correct level (L1, 2, 3 or 4) of training for SERE Mod-B. This then needs to be standardise this across all SOTC documentation, including the Training Management Plan (TMP), Course Data Sheet (CDS), Course Reports and the Course Directive (CD).
- c. It is recommended that policy and capacity to conduct retesting on for each module or phase of CoT is clearly articulated to students as the course progresses.
- d. It is recommended that the Risk Assessment Matrix, hazards and controls need to be more explicit with regards to cold weather injuries (frostbite). Associated to this point is that all individuals (staff) responsible for the implementation or management of controls need to have read, understood and signed the RAM's document prior to the activity.
- e. It is recommended that the messaging on the importance of seeking medical aid and attention at all phases of the course is continued and re-enforced.
- f. It is recommended that the condensing of SERE Mod-A in the 2023 CoT is reviewed and a reversion back to the original course timeline is considered.

¹⁵⁹ Exhibit D, Page 7

¹⁶⁰ Exhibit D, Page 27

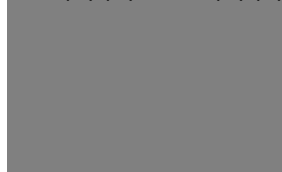
- g. It is recommended that the Medical training provided on CoT is enhance to include greater detail in cold weather injuries and their progression through the use of imagery in briefs.
- h. It is recommended that SME advice is sought to provide supplementary instruction on cold weather injury identification, prevention, and management. This could be provided internally by Mountain Troop or outsourced to other organisations such as the Army Leadership Centre (ALC) and delivered within the Medical training package.
- i. It is recommended that either the SR SOE is amended with ECW boots being issued to all members of CoT at the commencement of cycle or, a new SOE is established specific to CoT. Regardless ECW boots are to be issued and these are to be physically sized alongside the ECW or cold weather socks intended for use with guidance from Cold weather SME.
- j. It is recommended that any Loss and Damages submitted by successful SAS Selection candidates are actioned by 1 NZSAS Regt (but costed to parent Units).
- k. It is recommended that prior to the beginning of SERE Mod-B students are given the option or replacing both (or either) boots and socks if students have a more appropriate boot to utilise. It is accepted that the most appropriate boot may very be the ones they have with them at the time.
- l. It is recommended that SOTC approve any non-issue boot desired to be used on CoT by students.
- m. The Court recommends that those in the CoC with incident reporting responsibilities ensure phone settings are such that critical contacts for reporting are set up to by-pass sleep mode, or silent phone settings.

s. 9(2)(a), s. 9(2)(k)



President

s. 9(2)(a), s. 9(2)(k)



Member

GM SCOBIE, DSD
LTCOL
CO

COMMENTS BY ASSEMBLING AUTHORITY

s. 9(2)(a) LTCOL GM SCOBIE

General

A Court of Inquiry (Col) was assembled into the circumstances concerning a frostbite injury sustained by Soldier 1 during NZSAS Cycle of Training (CoT) course SERE Mod-B on 09 Jun 2023 in Waiouru Military Training Area.

The Col has conducted a wide ranging and thorough investigation to determine both causal factors of the incident, and preparedness for, and management of, the incident once it occurred. The Col executive summary provides a robust conclusion that the incident occurred due to ill-fitting personally purchased boots, and that the preparation and procedures of staff to manage the incident were satisfactory. The Col makes several comments and recommendations that I deem are neither contributing or aggravating factors to the incident; and these have wider ranging impacts than have been recorded. Where possible these will be included in future activity design and are commented against specifically below.

Recommendations of the Col

The Col has made 13 recommendations under para 24 of the report. The Col -

- a. Recommends that SOTC confirms the context and application of B-LOC, D-LOC and O-LOC as they apply to CoT courses and subsequently confirm the expectation of SERE Mod-B. **Comment:** This recommendation does not relate to the injury or procedures of the incident and relates to Rec b. Furthermore is not applicable solely to SERE-Mod B, nor am I of the opinion that it impacts the future safe running of the course. This recommendation is part of a body of work being conducted by SOTC TD cell. No further action is required. **End.**
- b. Recommends that Training Development Cell determine the correct level of training for SERE Mod-B (Level 1-4) and that this is standardised across all SOTC documentation. **Comment:** This recommendation does not relate to the injury or procedures of the incident and is similar to Rec a, but relates to Rec f. SERE Mod-B is the evasion component of the SERE continuum and is to a subjective job standard. In that while the students do not fail should they be caught, the conditions under which they are required to evade are determined by the environment they find themselves in. No further action is required. **End.**

- c. Recommends the retest policy is confirmed for each module on NZSAS CoT. **Comment:** This is conducted by the Activity Manager and, regardless, is subjective interpretation by the students. OC SOTC is to reiterate the retest policy for each module. **End.**
- d. Recommends that the Risk Assessment Matrix needs to be more explicit for cold weather injuries, and that all personnel responsible for implementation sign the RAM prior to the activity. **Comment:** TWO currently has as action to run refresh training for completion of RAM which includes consideration of specific factors influencing an activity. Providing explicit direction to consider cold weather injuries goes against the spirit of the RAM for Activity Managers to conduct an appreciation. TWO to review. **End.**
- e. Recommends that the messaging on the importance of seeking medical aid during all phases of NZSAS CoT is continued. **Comment:** OC SOTC to ensure included in safety and participants briefs. **End.**
- f. Recommends that the condensing of SERE Mod-A in 2023 CoT is reviewed and reversion considered. **Comment:** I do not deem this to be a causal factor of the incident. SERE Mod-A focuses on the techniques and procedures of survival, whereas the incident was the result of poor boot selection during an evasion activity, or patrol. OC SOTC to include review as part of yearly review of the entire CoT. **End.**
- g. Recommends that the medical training provided on CoT includes greater detail on cold weather injuries. **Comment:** This is a degree of creeping excellence. The CoT medical course is a generalised course and time is a zero sum, to add will mean removal elsewhere. OC SOTC to review the balance and applicability of medical and environmental medical training delivered to CoT. **End.**
- h. Recommends that SME advice is sought to supplement instruction on cold weather injury identification, prevention and management. **Comment:** Mountain Troop members of SOTC are included on the SOTC Staff to provide SME input. No further action required. **End**
- i. Recommends that the Scale of Entitlement (SoE) is amended to include the issue of ECW boots to all students of CoT. **Comment:** The frostbite was not caused by the lack of ECW boot issue, but the ill-fitting boots. CoT are issued a cost efficient SoE, noting that not all will pass the course and will therefor sink cost in personal issues. OC SOTC to cost and budget for the inclusion of ECW boots on CoT SoE. **End.**
- j. Recommends that any Loss and Damages submitted by students to parent units are actioned by 1 NZSAS Regt prior to the commencement of CoT. **Comment:** OC SOTC to ensure to investigate fast tracking L&D for CoT students, noting that SAS operators have from time to time waited for months for clothing issues. **End**
- k. Recommends that prior to commencing SERE Mod-B students are given the opportunity to replace both boots and socks. **Comment:** This is not overly practical and is against the spirit of the activity. Any adjustments to clothing issue for SERE Mod-B is at the judgement of the Activity Manager. No further action is required. **End.**
- l. Recommends that any non-issue boot worn by CoT students is approved by SOTC. **Comment:** OC STOC to ensure that non-issue equipment is approved for use by CoT Manager. **End.**

- m. Recommends that those in the Chain of Command for incident reporting ensure phone settings enable by-pass of silent mode for critical contacts: **Comment:** I don't see this as a pragmatic solution due to the changing positions and numbers. A robust system of alternate PoC is maintained to ensure by pass in emergency, to be reviewed.

Assembling Authority Conclusions

It is my conclusion that the frostbite was the result of ill-fitting personally purchased boots. That the procedures planned for and executed for a safety incident were satisfactory and carried out with timeliness and dedication by the staff involved. While elements of the recommendations will be taken forward, these are assessed to be under action as part of business as usual training reviews and are incorporated into other bodies of work being undertaken by HQ 1 NZSAS Regt.

The following recommendations are taken forward.

OC SOTC will –

- a. Include the retest policy and reminder for students to seek medical aide if required in safety and participants briefs.
- b. Include the review of SERE Mod-A in the yearly review of CoT.
- c. Review the balance of medical and environmental medical training delivered to CoT.
- d. Review the SoE issues to CoT students at cost to 1 NZSAS Regt.
- e. Ensure outstanding L&D from cycle students with parent units are actioned.
- f. Ensure any non-issue equipment is approved for use by CoT Manager.

TWO will review and provide supplementary training notes and instruction on the Risk Assessment procedures and documentation

S6 will review call out procedures and contact details.

It is my opinion that the Col can now be closed.

END

DATED AT PAPA KURA MILITARY CAMP ON 20 SEP 2023

COURT OF INQUIRY

assembled by

GROUP CAPTAIN M.J. CANNON, BASE COMMANDER RNZAF WHENUAPAI

into

INCORRECT RIGGING OF THE SOV3-TS PARACHUTE SYSTEM

REPORT OF THE COURT OF INQUIRY
INVESTIGATING INCORRECT RIGGING OF THE SOV3-TS PARACHUTE
SYSTEM

General

2. On 12 July 2023, Base Commander Auckland, GPCAPT M.J Cannon assembled this Court of Inquiry to investigate the incorrect rigging of the three-ring release on the SOV3-TS parachute system. The Court comprised:
 - (a) s. 9(2)(a) ██████████ President;
 - (b) s. 9(2)(a) ██████████ Member;
 - (c) s. 9(2)(a) ██████████ Member;
 - (d) s. 9(2)(a) ██████████ Counsel Assisting; and
 - (e) s. 9(2)(a) ██████████ Officer Assisting.
3. The Court carried out its investigation over the period 12 July 2023 to 11 August 2023. It heard and considered evidence from 12 witnesses.
4. In addition to the witness statements and associated exhibits, the following publications have been used as references and are referred to in this report:
 - (a) DAR 100.
 - (b) Aviation Orders (AVOs).

Executive Summary

The Incident

5. On 30 May 2023, as part of a routine bay service, the three-ring release on SOV3-04 was incorrectly rigged. The white locking loop was passed through both the small and middle rings of the system, rather than only the small ring. The fault was discovered prior to the despatch of a parachute sortie on 14 June. SOV3-04 was not jumped while carrying the fault.

6. The Court finds that the underlying causes of the incident are:
 - (a) unregulated, high operational tempo;
 - (b) a corresponding lack of suitably qualified and experienced personnel in the parachute bay; and
 - (c) a lack of effective control and accountability for the balancing of operational demands against adequate resourcing of the parachute bay.
7. In the same period of bay servicing, an identical fault was introduced into SOV3-01 by a different rigger.
8. The Court found four previous similar events, all of which had similar causes to the incidents giving rise to this Inquiry.

Reporting

9. The reporting of the fault found in SOV3-04 was timely and appropriate.
10. The reporting of the fault found in SOV3-01 was inappropriate due to the failure to comply with the Defence Aviation Rules (DAR) 12 requirement to report a Flight Safety Event (FSE) within 72 hours.

Relevant Orders and Procedures

11. The technical publications relating to parachute systems are fit for purpose but can be improved to aid their navigation and alleviate confusion around which orders are currently active. With the exception of AVOs, the operational publications are not fit for purpose and require significant attention.
12. Despite its release in 2020, the Court heard no evidence of a formal transition to DAR 105. The Court finds there to be a limited understanding of the airworthiness system, particularly in the technical space. Current parachuting operations appear to adhere to the legacy rule-set, which contains stricter controls than under DAR 105.

Risks and Hazards

13. The Court finds that the risk associated with operating a SOV3-TS parachute with an incorrectly rigged three-ring release system is LOW.

14. The Court was unable to make quantitative assessments of the likelihood of fault going undetected during maintenance or prior to operation. The likelihood varies significantly depending on a range of human factors.

Training

15. The Court finds that while the current parachute packing training is adequate, the parachute lacks in-depth knowledge around the function and fundamentals of the various parachute systems.
16. The lack of succession planning for the parachute packing trainer, and the lack of a second SNCO in the parachute bay, present a significant risk to the future of the entire parachuting capability.

Recommendations

17. The Court's recommendations appear throughout the report and are collated in **Annex A**.

The Incident

Who's Who

18. Parachute Training Support Unit (PTSU) operate and train personnel on several parachute systems. The Officer Commanding PTSU is **Officer 1**.
19. The parachute systems are serviced, maintained and packed by personnel in the personnel parachute bay. We refer to the personnel parachute bay simply as the parachute bay. The technicians, referred to as riggers, belong to the Safety & Surface trade (S&S). The Senior Non-Commissioned Officer (SNCO) in the parachute bay is **SNCO 1**. As part of Maintenance Support Squadron (MSS), the parachute bay falls under the command of OC MSS, **Officer 2**.
20. **Civilian 1** a civilian member of the NZDF, delivers the training programmes relating to the servicing, maintenance, and packing of parachute systems.
21. In some circumstances, Parachute Jump Instructors (PJIs) are able to pack the main canopies of parachute systems which must then be checked by an authorised person from

the parachute bay. The only person able to jump with a PJI-packed system is the PJI who packed the main canopy.

22. Servicing, maintenance and the packing of reserve canopies is done only by properly authorised S&S technicians in the parachute bay.

Background

23. On 14 June 2023, NCO 1 [REDACTED] discovered a rigging fault on the SOV3-TS parachute system he was due to use in a PTSU training sortie that day. The three ring release system on the left shoulder of the system was incorrectly rigged, prompting NCO 1 [REDACTED] to lodge FSE 332/23 later that day.
24. FSE 332/23 started a chain of events which uncovered a near-identical fault in another SOV3-TS parachute system which had gone unreported, and called parts of the RNZAF airworthiness system into question. Concerns around the airworthiness of the maintenance, packing and operation of personnel parachute systems led to the formation of this court of inquiry. This report contains the Court's analysis and findings in relation to the terms of reference, based on the oral and documentary evidence presented.
25. The following section of this report goes back to 26 May 2023 to establish a brief timeline of events leading up to the assembly of this Court.

The Fault

26. The SOV3-TS is a military tandem parachute system designed for military tandem operations for two jumpers carrying full combat equipment, s. 6(a) [REDACTED]
27. The three-ring release system is a series of rings, interlocked in sequence, which attach the main parachute risers to the harness container. It allows a single handle to release both main parachute risers in unison, resulting in simpler emergency procedures for the operator.
28. Additionally, the three-ring system creates a mechanical advantage such that the system requires only a small amount of effort to release the main risers, but is able to withstand significant loads during parachute deployment.

29. The correct rigging procedure is to pass the middle ring through the large ring, then the small ring through the middle ring, and then feed the locking fabric loop through the small ring only. Once the locking loop passes through the small ring it passes through a grommet in the riser, through a metal eye and is secured by a Teflon cable attached to the cutaway handle.
30. The fault identified in FSE 332/23 saw the fabric locking loop passing through both the small and medium rings. This had the effect of bypassing the mechanical advantage created by the operation of the small ring. If the parachute system was used, the fabric locking loop would have been placed under greater load during and after deployment of the main canopy. The potential consequences of the fault are identified later in this report.
31. The following images are taken from FSE 332/23 and show the three-ring releases as found on SOV3-04:¹



Image 1



Image 2

32. Image 1 shows the correct routing of the locking loop, passing through the small ring only. Image 2 shows the locking loop incorrectly passing through both the small and middle rings.

Introduction of the Fault

33. On 26 May, personnel at the parachute bay started working on the bay service of SOV3-04.² It is a standard part of a bay service that the main canopy is detached from the rest of the system. That process involves disconnecting the three-ring release system. Towards the

¹ Witness 1, Exhibit 1-A.

² Witness 2, Exhibit 2-B.

end of the bay service, the main canopy is attached to the rest of the system and the three-ring release is rigged.³ The supervising SNCO must inspect and sign for that step.

34. In his testimony, **Soldier 1** recalled working on the bay service of SOV3-04.⁴ Based on the SAP maintenance log, the court finds on 30 May **Soldier 1** rigged the three-ring release on SOV3-04.⁵ The supervising SNCO, **SNCO 1**, signed as having carried out the checking step.⁶ The Court finds that this was the point at which the rigging fault was introduced into SOV3-04.
35. Nine days later, on 8 June, **Soldier 1** packed the main canopy of SOV3-04.⁷ The fully assembled system was then bagged, tagged, and stored until it was collected for use on 14 June.

Discovery of the Fault

36. PTSU sortie 0136 was scheduled to start on 14 June at 0900.⁸ That morning, **NCO 1** uplifted SOV3-04 from the PTSU parachute store. **NCO 1** was a tandem master under training and was not under any formal supervision.⁹
37. Before receiving a dispatcher's check, while **NCO 1** and his tandem passenger were fitted up, he noticed the incorrectly rigged three-ring release on his left shoulder. The sortie dispatcher, **NCO 2** confirmed the fault.¹⁰
38. PTSU SOPs require the person intending to use a parachute to conduct a pre-flight check before donning. The required set of checks includes the three-ring release. The Court therefore finds that the fault could have been detected after **NCO 1** uplifted SOV3-04,

³ Witness 2, Exhibit 2-C.

⁴ Witness 2, Q10-Q24.

⁵ Witness 2, Exhibit 2-B.

⁶ Witness 1, Exhibit 1-B.

⁷ Witness 1, Exhibit 1-B.

⁸ Witness 6, Exhibit 6-C.

⁹ Witness 6, Q55.

¹⁰ Witness 6, Q70-73.

before donning the parachute. In this case, the fault was detected after donning but prior to despatch.

39. Having reviewed the relevant Force Element Management System (FEMS) data, the Court finds that SOV3-04 had been not used for jumping between the introduction and discovery of the fault.¹¹

SOV3-01

40. On 14 June, **Soldier 1** discovered an identical fault in the three-ring release while repacking the main canopy on another SOV3-TS parachute.¹² While the Court heard conflicting evidence as to whether the affected parachute was SOV3-01 or SOV3-02, **Soldier 2** gave evidence that she personally made the mistake in SOV3-01.¹³ By giving particular weight to **Soldier 2**'s evidence, the Court finds that SOV3-01 was the affected rig. In both cases the three-ring release was not rigged in accordance with NZAP 6221.055-3M.
41. SOV3-01 was jumped on 13 June.¹⁴ The Court therefore finds that PTSU conducted a sortie with a parachute system containing an incorrectly routed three-ring release.
42. The repack log for SOV3-01 shows the main canopy was packed on 7 June and 11 June.¹⁵ However, there is no FEMS data to show SOV3-01 was jumped between those dates. In the 11 June entry, **Soldier 2**'s initials appear to have been overwritten by **Soldier 1** initials, or vice versa.
43. FEMS manifests show SOV3-02 was jumped on 13 June and 15 June.¹⁶ The repack log does not record the main canopy having been repacked between the two jumps.
44. The errors in the paperwork cannot be logically reconciled with the FEMS data for the affected parachutes. The inconsistencies in the repack log cards over the relevant period led

¹¹ Witness 6, Exhibit 6-C, 6-D, 6-E.

¹² Witness 2, Q49.

¹³ Witness 5, Q63.

¹⁴ Witness 6, Exhibit 6-E.

¹⁵ Witness 3, Exhibit 3-D.

¹⁶ Witness 3, Exhibit 3-E.

the Court to believe that the parachute bay was pressing to meet high operational demands. This is examined as a cause of the errors below.

Cause and Attributed Human Factors

45. The Court heard evidence from the riggers responsible for the incorrect routing of the three-ring releases on SOV3-04 and SOV3-01. In both cases the Court heard nothing to suggest a deliberate violation had occurred. All of the evidence heard leads the Court to believe that the riggers and supervisor suffered from lapses in concentration. The Court therefore finds that both events were performance based errors in which procedures were not correctly followed.¹⁷
46. We turn now to consider human factors as the potential underlying cause of the rigging errors.
47. NCO 3 [REDACTED] from the BFSO assessed FSE 332/23, FSE 344/23, and the witness testimony of SNCO 1 [REDACTED] against the Human Factors Analysis and Classification System (HFACS). In accordance with HFACS, NCO 3 [REDACTED] identified preconditions and examples relating to mental awareness and state of mind.¹⁸ The Court finds that the following factors contributed to the rigging errors:
- (a) **Distraction.** The SNCO frequently shifted between his roles as a supervisor and coordinator.¹⁹
 - (b) **Inaccurate Expectation.** The rigger and supervisor completed repetitive tasks, thereby creating a false perception that something is correct because it usually is.²⁰
 - (c) **Life Stressors.** There were intermittent absences of key personnel due to sickness and compassionate reasons during the period in question.²¹

¹⁷ Witness 11, Q18, Exhibit 11-A at AE103.

¹⁸ Witness 11, Q18-25, Exhibit 11-A.

¹⁹ Witness 11, Exhibit 11-A at PC106; Witness 3, Q73-74.

²⁰ Witness 11, Exhibit 11-A at PC110.

²¹ Witness 11, Exhibit 11-A at PC203; Witness 3, Exhibit 3-B.

- (d) **Emotional State.** Personnel in the parachute bay showed a lack of confidence and strong negative emotions towards making mistakes.²²
- (e) **Pressing.** Both command and personnel in the parachute bay were aware of self-imposed pressure, but would continue to push during low tempo periods in anticipation of surges.²³

48. **NCO 3** s analysis also identified the following issues relating to inadequate supervision and oversight. The Court makes the following observations and findings with respect to the lack of supervision, all of which contributed to the rigging errors:²⁴

- (a) **Supervisor.** The availability of the sole supervisor in the parachute bay was intermittent due to them being frequently distracted by competing responsibilities as the bay coordinator.²⁵ The parachute bay has limits for the number of parachutes that can be packed in a day, but no limit to the number of packers the supervisor could supervise at any one time.²⁶
- (b) **Flight Sergeant.** The Flight Sergeant responsible for the parachute bay did not have any relevant experience or qualifications to support the supervisor.²⁷
- (c) **Command.** The Flight Commander position has been vacant for nearly three years. The Flight Sergeant therefore reports directly to OC MSS.²⁸

49. It became apparent during the inquiry that operational tempo is an underlying risk to safety in the parachute bay.²⁹ s. 6(a)

There are no agreed outputs in terms of number of parachute jumps per month or year, nor is there any accountability for controlling outputs.³⁰

²² Witness 11, Exhibit 11-A at PC204; Witness 5, Q168-169.

²³ Witness 11, Exhibit 11-A at PC207; Witness 1, Q 72.

²⁴ Witness 11, Exhibit 11-A at SI001.

²⁵ Witness 3, Q73-74, 79.

²⁶ Witness 3, Q80-85.

²⁷ Witness 1, Q157, 169-170.

²⁸ Witness 1, Q147-156.

²⁹ Witness 11, Exhibit 11-A at OP001.

³⁰ Witness 12, Exhibit 12-B.

Additionally, the allocation of resources to the parachute bay, particularly at the supervisor level, is inadequate to meet the operational demand.³¹

50. The Court therefore finds that the unregulated, high operational tempo and a corresponding lack of staffing in the parachute bay are underlying causes of the incident.³² Additionally, the system lacks any effective control and accountability for the balancing of operational demands and scheduled maintenance activities against adequate resourcing of the parachute bay. These latent failures of the system underpin the preconditions and inadequate supervision set out above.

Recommendations

1. *Commanding Officer PTSU should be responsible for forecasting and setting operational demand in terms of the number and type of parachutes to be used each month.*
2. *Flight Commander S&S should be responsible for ensuring that the operational demands and scheduled maintenance activities are commensurate with the resourcing of suitably qualified and experienced riggers and supervisors in the parachute bay.*
3. *Consideration should be given to structuring the parachute bay and PTSU under a single chain of command.*
4. *Consideration should be given to co-location of the parachute bay and PTSU.*
5. *The parachute bay should have two SNCOs to allow concurrent and effective management and supervision of the bay.*
6. *Parachute bay supervisors should be limited to checking six parachute packing activities at one time.*

³¹ Witness 11, Exhibit 11-A at OS002.

³² Witness 4, Exhibit 4-I, 4-J; Witness 11, Exhibit 11-C.

Similar Events

51. A review of the RNZAF FSE database from 1 January 2000 – 28 July 2023 identified four incidents relevant to the current inquiry:
- (a) FSE 298/06;
 - (b) FSE 022/12;
 - (c) FSE 599/22; and
 - (d) FSE 603/22.
52. FSE 298/06 and FSE 022/12 involved the incorrect routing of the three-ring release on the Talon and Telesis parachute systems, respectively.³³
53. FSE 298/06 became the subject of a 2006 Court of Inquiry. Having considered the evidence of **Officer 2** the Court finds that the following recommendations from the 2006 COI were not implemented:
- (a) **Independent inspections.** *The three-ring release should be independently checked by a second SNCO in the parachute bay. There are currently no checks required over and above those carried out by the parachute bay supervisor.*³⁴
 - (b) **Amendments to documentation.** *The repack log should be amended to include the requirement for three ring inspection. The current repack log does not require this inspection.*
 - (c) **Senior rigger training.** Postgraduate senior rigger training should be formalised and coordinated with Training NCO in the Aerial Delivery Equipment (ADE) training bay. The S&S senior trade course does not currently include a parachute element.³⁵
54. The Court does not consider the failure to implement recommendations (a) and (b) to be of significance to this Inquiry. The current required checks of the three-ring release are effectively independent because the supervisor is not involved in the assembly process. Having a supervisor is a level of inspection over and above that required of civilian parachute

³³ Witness 4, Exhibit 4-I, 4-J; Witness 11, Exhibit 11-C.

³⁴ Witness 2, Exhibit 2-C.

³⁵ Witness 3, Q113.

packing.³⁶ The Court considers that an additional independent check would be impractical and would not add an additional level of safety.

55. The Court considers the failure to implement recommendation (c) to be significant, and examines the training aspect later in this report.
56. The causes attributed to FSE 022/12 are similar to the causes identified by this Court of Inquiry. They include:³⁷
- (a) high workloads compounded by an increase in parachute numbers;
 - (b) staffing shortfalls within the S&S trade;
 - (c) pressure to support jumping programmes that are often subject to constant change whilst still maintaining the serviceability of parachute fleets; and
 - (d) individuals having to work extended hours in order to meet bay outputs.
57. FSE 599/22 and FSE 603/22 occurred in December 2022.³⁸ Both involved the incorrect orientation of the locking pin spectra line on the SOV3-TS main container and were considered low risk. Similar to the events subject to this inquiry, the potential causes of FSE 599/22 and FSE 603/22 were described as pressure, stress and related human factors.³⁹
58. The Court finds that these four events are similar to the current inquiry in terms of both subject matter and identified causes. In particular, high workloads and a lack of formalised training are common to all events. The Court makes recommendations with respect to these issues elsewhere within this report.

Reporting

FSE 332/23

59. After discovering of the fault on SOV3-04 NCO 1 [REDACTED] isolated the parachute and informed Officer 1 [REDACTED]. Officer 1 [REDACTED] took photographic evidence before securing the

³⁶ Witness 10, Q109-110.

³⁷ Witness 11, Exhibit 11-C.

³⁸ Witness 7, Exhibit 7-B; Witness 8, Exhibit 8-D.

³⁹ Witness 11, Q34.

parachute in the quarantine cage.⁴⁰ The Court found that the actions taken by NCO 1 and Officer 1 in reporting the event and raising FSE332/23 met the reporting requirements of NZAP 201 and DAR 12.⁴¹ Testimony from PTSU personnel suggests a positive reporting culture and a firm understanding of the reporting process exists within the unit.⁴²

FSE 344/23

60. The Court found the incorrect routing of the three-ring release on SOV3-01, discovered in the parachute bay on 14 June, did not meet the reporting requirements of NZAP 201 and DAR 12.⁴³ While OC MSS promptly informed command of the second error, which led to the cessation of all parachute packing operations. Nevertheless, FSE 344/23 was only formally entered into the database on 22 June, eight days after the event.⁴⁴
61. The Court attributes the delay in reporting to several factors, including a lack of understanding about the consequence of the error, whether the parachute had been jumped since its bay service, and whether it constituted a reportable occurrence.⁴⁵ The Court finds that a negative reporting culture exists within the parachute bay, caused by a poor understanding of just culture and a fear of outcomes that appear punitive.⁴⁶
62. NCO 3 also noted the reporting in FSE344/23 lacked sufficient detail. To the Court, the lack of parachute experience in the Command chain of the parachute bay.⁴⁷

⁴⁰ Witness 12 Q24-28.

⁴¹ Witness 1 Exhibit 1-C; Witness 6 Q124-126; Witness 11 Exhibit 11-B; Witness 12 Q24-30.

⁴² Witness 6 Q129; Witness 7 Q78; Witness 12 Q52.

⁴³ Witness 1 Exhibit 1-C; Witness 2 Q49; Witness 11 Exhibit 11-B.

⁴⁴ Witness 11 Q29

⁴⁵ Witness 1 Q48, Witness 2 Q69-70, Witness 3 Q49, 55-56

⁴⁶ Witness 3 Q166-174, Witness 5 Q168-169, Witness 12 Q53

⁴⁷ Witness 1 Q12

Relevant orders and Procedures

Technical Publications

63. The Court identified a wide range of technical publications relating to parachute maintenance and engineering management. Each parachute system has technical manuals with operating, maintenance and repair instructions. These publications are managed by Technical Support S&S. There are generic publications within the NZAP 6XXX series which contain leaflets relevant to parachute packing and management. Several of these leaflets have transitioned to DFI 47.1 AVENGOS.⁴⁸
64. There are clear inconsistencies between the technical manuals for the various individual parachute systems.⁴⁹ For example, several systems have OEM manuals with an NZAP cover and 'pink page' amendments, while others are NZDF owned and maintained. Evidence from parachute bay personnel suggests that the technical manuals are in regular use. Civilian 1 noted the SOV3-TS manual was particularly difficult to navigate because of its 'pink page' amendments and images from other versions of the parachute that the NZDF does not operate.⁵⁰
65. With respect to the technical publications, the Court considers that the individual parachute manuals are fit for purpose. However, converted OEM manuals are less effective than NZDF owned and maintained manuals. The higher level policy documents are fit for purpose, but there is confusion around which orders are currently 'active'.⁵¹

Operational Publications

66. The Court received a list of operational publications in use by PTSU that ranged from highly relevant to almost obsolete.⁵² PTSU operations hinge around the NZAP 9245 series of publications, which include standard operating procedures, the manual of training, instructor guides, and handbooks. AVOs provide the higher level policy and procedures, with Section H

⁴⁸ Witness 10, Exhibit 10-E.

⁴⁹ Witness 2, Q71-74.

⁵⁰ Witness 9, Q145-160.

⁵¹ Witness 11, Q96-98

⁵² Witness 12, Exhibit 12-A

containing Parachute Orders. Other supporting manuals also exist, including the Parachute Equipment Operating Manual and NZAP 9210 for CAT currencies.

67. The NZAP 9245 series of publications are in regular use but are out of date s. 9(2)(ba)(i) [REDACTED].⁵³ A lack of resourcing within PTSU was identified as a barrier to publication amendments, which has normalised the use of substandard publications.⁵⁴ The Court finds there to be a lack of accountability for the standard of unit level publications, with no publications officer or NCO responsible for their upkeep.
68. The Court's assessment of the operational publications is that AVOs are fit for purpose. However, the PTSU publications require significant attention in order to become fit for purpose.

Recommendations

7. *Publish an NZDF owned and maintained maintenance manual for the SOV3-TS Parachuting System.*
8. *Raise and allocate responsibility for PTSU publication management on unit.*

Technical Airworthiness System

69. The Court heard a wide range of evidence relating to the integrity of the airworthiness system.⁵⁵ It became apparent that understanding of the system and how it is applied to parachuting is poor, particularly in the technical space.⁵⁶
70. The technical airworthiness system has recently transitioned from a bespoke rule-set to DARs. DAR 105 details the rules, acceptable means of compliance, and guidance material for parachuting operations. Initial issue of DAR 105 was 01 April 2020 with one revision release on 02 May 2022.⁵⁷

⁵³ Witness 12, Q81.

⁵⁴ Witness 8, Q313.

⁵⁵ Witness 4, Q10, 12.

⁵⁶ Witness 10, Q4-13, 18-21.

⁵⁷ Witness 4, Exhibit 4-D.

71. The Court found no evidence that the NZDF had formally transitioned to DAR 105. There is no exposition document describing the activities pursuant to the approved rule, or interface control documents with the parachute maintenance organisation.
72. Some technical rules from the legacy Technical Airworthiness Manual have transitioned into DFI 47.1 AVENGOS.⁵⁸ The Court heard evidence of these rules being understood and complied with. However, some orders are published but not 'active' which is likely to cause confusion.⁵⁹
73. To the depth the Court has investigated, activities carried out by the parachute bay and PTSU appear to comply with DAR 105. The Court's view is fortified by that fact PTSU and the parachute bay adhered to the legacy rule-set, which had stricter controls than under DARs for parachuting operations. An in-depth review would likely find minor non-compliance but the Court has not uncovered any significant omissions at the system level that would result in a separate safety case.

Recommendation

9. *Initiate a DAR 105 transition programme including publishing of an exposition with associated duty directives and control documents.*

Risks and Hazards

Risks Associated with Incorrectly Rigged Three-Ring Release

74. The OEM of the SOV3-TS parachute system responded to a request for information about the potential consequences of an incorrectly routed three-ring release.⁶⁰ Based on this response and the testimony of NCO 2 the Court identifies three possible outcomes which create additional risk.⁶¹

⁵⁸ Witness 10, Exhibit 10-E

⁵⁹ Witness 10, Q96-99.

⁶⁰ Witness 12, Exhibit 12-B

⁶¹ Witness 7, Q69-74.

75. Two outcomes may arise in a situation where the white closing loop on the incorrectly routed three-ring release assembly breaks during main canopy deployment, releasing one of the main parachute risers:
- (a) First, releasing the non-reserve static line riser would result in the parachutist remaining attached to the other riser. The parachutist would perform an emergency cutaway procedure, completing their recovery under the reserve.
 - (b) Alternatively, releasing the reserve static line riser would result in the reserve parachute deploying. The danger of entanglement is mitigated by a built in safety device known as the 'Collins Lanyard' which will release the non-reserve static line riser to help facilitate a clean reserve deployment. The parachutist would then complete their recovery under the reserve.
76. The other outcome to consider is where the white loop does not break during main canopy deployment, resulting in a standard recovery under the main. In this case, additional risk to the parachutist is now only present in the event of an unrelated main malfunction. The incorrectly routed three-ring release assembly may have more pressure on the white loop inducing a harder cutaway force.⁶² The Court heard no evidence to suggest that this situation would prevent a cutaway. The parachutist would then complete their recovery under the reserve.
77. What, then, is the risk of all three outcomes when against the DAR 100 risk management framework?⁶³ The risk consequence of recovery under the reserve is MINOR based on a slight reduction in safety margins but no loss of function or safety impact to personnel.⁶⁴ The risk likelihood is different for each outcome, but all are less likely than 'almost certain' resulting in a risk level of LOW.⁶⁵
78. The Court finds, in accordance with DAR 100, that the risk associated with operating a SOV3-TS parachute with an incorrectly rigged three-ring release system is LOW.

⁶² Witness 11, Exhibit 11-B.

⁶³ DAR 100, Table 1.

⁶⁴ DAR 100, Table 3.

⁶⁵ DAR 100, Table 2.

Risk of Undetected Faults

79. The Court was unable to make a quantitative assessment of the likelihood of errors in packing and assembly going undetected. The special maintenance instructions released to inspect all SOV3-TS,⁶⁶ and a percentage check of the MC-6 parachutes,⁶⁷ prove it is possible for packing errors to go undetected. While the consequences of the identified errors vary, all were less significant than the three-ring release faults.
80. The safety critical assemblies, such as the three-ring release, are checked multiple times by riggers and supervisors. The likelihood of fault going undetected during the various checks depends on a number of influences, including human factors.
81. The Court was unable to make a quantitative assessment of the likelihood of errors in the assembly going undetected by the parachutist before use. The Court's finding that SOV3-01 had been jumped with an incorrectly rigged three-ring release demonstrates that it is possible for fault to go undetected. The likelihood of faults going undetected by parachute operators varies significantly depending on a wide range of human factors. The Court considers that tempo, repetition, experience, and system complexity are particularly relevant to parachute operations.⁶⁸

Training

82. The evidence heard supports the view that the current parachute packing training is adequate. However, the Court found there to be a lack of in-depth knowledge around the function and fundamentals of the various parachute systems.⁶⁹
83. Engagement with OEM appears to have positively affected levels of technical understanding beyond the exacting guidance in the RNZAF publications. However, opportunities for OEM training have been sporadic and appear reactive to mistakes being made in the bay.⁷⁰

⁶⁶ Witness 1, Exhibit 1-D.

⁶⁷ Witness 10, Exhibit 10-C.

⁶⁸ Witness 1, Exhibit 1-E.

⁶⁹ Witness 1, Q169; Witness 2, Q97, 102; Witness 3, Q177, 181, 237, 247; Witness 5, Q125-126, 129.

⁷⁰ Witness 5, Q125.

84. The parachute packing training of individual parachute types is not controlled by NZDC. Once authorised, the riggers and supervisors in the parachute bay retain currency until they leave the bay, there is no annual currency requirement.⁷¹
85. The ADE parachute instructor Civilian 1 has been employed in this role for ten years.⁷² He delivers training on a regular basis and has received Original Equipment Manufacturer (OEM) training on new parachute systems upon their introduction into service.⁷³ There is, however, no regular training or correspondence between Civilian 1 and the OEM, nor is his training regularly validated.⁷⁴ Civilian 1 is the only person responsible for delivering all parachute packing training, s. 6(a)
86. Whilst knowledgeable, Civilian 1 is currently working reduced hours and his required outputs have increased due to the changes in the S&S trade training.⁷⁵ It became clear that Civilian 1 believes the additional training he is required to provide is a burden because the Corporal position in the training bay is unfilled. Civilian 1 is also occasionally required to provide short-notice support to the parachute bay.⁷⁶
87. The Court found no evidence of succession planning for parachute packing training. Additionally, there is only one SNCO in the parachute bay. This shallow staffing at the supervisor level prevents the development of future SNCOs. Together, the Court finds that these factors present a significant risk to the future of the entire parachuting capability.

Recommendations

10. *Parachute bay technicians should complete compulsory ground training with PTSU.*
11. *Consistent with the unimplemented recommendation from the 2006 COI, post graduate training to senior rigger and master rigger should be formalised.*

⁷¹ Witness 2, Q94-96.

⁷² Witness 9, Q12.

⁷³ Witness 9, Q16.

⁷⁴ Witness 9, Q17, 112.

⁷⁵ Witness 9, Q64, 30.

⁷⁶ Witness 9, Q22, 38, 59.

12. *Succession plans need to be put in place for the SNCO of the parachute bay, parachute packing instructor, and F/S Aerial Delivery Equipment.*

Recommendations

88. The Court's recommendations appear in the body of this report. A full list of recommendations is reproduced in **Annex A**.

Dated at RNZAF Base Whenuapai on 11 August 2023

President

.....

s. 9(2)(a), s. 9(2)(k)

Members

.....

s. 9(2)(a), s. 9(2)(k)

.....

s. 9(2)(a), s. 9(2)(k)

Recommendations

1. *Commanding Officer PTSU should be responsible for forecasting and setting operational demand in terms of the number and type of parachutes to be used each month.*
2. *Flight Commander S&S should be responsible for ensuring that the operational demands and scheduled maintenance activities are commensurate with the resourcing of suitably qualified and experienced riggers and supervisors in the parachute bay.*
3. *Consideration should be given to structuring the parachute bay and PTSU under a single chain of command.*
4. *Consideration should be given to co-location of the parachute bay and PTSU.*
5. *The parachute bay should have two SNCOs to allow concurrent and effective management and supervision of the bay.*
6. *Parachute bay supervisors should be limited to checking six parachute packing activities at one time.*
7. *Publish an NZDF owned and maintained maintenance manual for the SOV3-TS Parachuting System.*
8. *Raise and allocate responsibility for PTSU publication management on unit.*
9. *Initiate a DAR 105 transition programme including publishing of an exposition with associated duty directives and control documents.*
10. *Parachute bay technicians should complete compulsory ground training with PTSU.*
11. *Consistent with the unimplemented recommendation from the 2006 COI, post graduate training to senior rigger and master rigger should be formalised.*
12. *Succession plans need to be put in place for the SNCO of the parachute bay, parachute packing instructor, and F/S Aerial Delivery Equipment.*

COMMENTS BY ASSEMBLING AUTHORITY

Firstly, I commend the Court for conducting a high quality investigation into the circumstances surrounding the parachute rigging errors at the Parachute Training and Support Unit. Safety is a thread that runs through everything we do in the air domain, and it is particularly important in an aviation system with such limited redundancy as parachuting. My comments on the recommendations are as follows:

1. *Commanding Officer PTSU should be responsible for forecasting and setting operational demand in terms of the number and type of parachutes to be used each month.*

Accepted. Fundamentally, this is the reason that parachute packers are placed under pressure. CO PTSU is to develop a forecasting mechanism that allows CO 1NZSASR and OC PTSU to prioritise parachuting outputs in consultation with other key stakeholders, particularly from a maintenance and packing perspective, in order to deliver output while allowing professional development of parachute packing personnel. This is to be similar to platform 'Longcast' meetings. To be implemented immediately.

2. *Flight Commander S&S should be responsible for ensuring that the operational demands and scheduled maintenance activities are commensurate with the resourcing of suitably qualified and experienced riggers and supervisors in the parachute bay.*

Accepted. Given the FLTCDR S&S role is currently vacant, OC PTSU and OC MSS are to manage this in the short-term as part of the Longcast Meeting directed at Recommendation 1. Ultimately the lack of this position is a significant causal factor for the circumstances leading to this Court of Inquiry. CENG should give immediate consideration to this recommendation when determining priorities across the engineering organisation.

3. *Consideration should be given to structuring the parachute bay and PTSU under a single chain of command.*

Accepted. As this sits within LC (A)'s command, the task should be conducted by CO MWG in consultation with CO PTSU, with options to be presented to me for consideration. Task to be completed NLT 30 Nov 23.

4. *Consideration should be given to co-location of the parachute bay and PTSU.*

Accepted. However, this is unrealistic in the short term. I will write to DE&I Strategy to ask for this to be included within the Whenuapai Precinct Block Plan and to request presentation of options to Base Command. Until then the status quo will remain and OC PTSU is to introduce a regular parachuting coordination meeting that includes PTSU and PADE Bay personnel and should also implement weekly 'squadron briefings'. To be implemented immediately.

5. *The parachute bay should have two SNCOs to allow concurrent and effective management and supervision of the bay.*

Rejected. The alternative recommendation that I will accept is “The establishment of the PADE bay should have at least two supervisors to sustain current operational demand and ensure sufficient supervision is provided of parachute packing activities.” I note the FTTC S&S Trade Decision document has determined the future state of PADE Bay is one SNCO, and under DARs, supervision authorisations will not be rank dependent. FTTC should review this decision in light of this COI and report back to me by 8 Jan 24.

6. *Parachute bay supervisors should be limited to checking six parachute packing activities at one time.*

Rejected. The alternative recommendation that I will accept is “Parachute bay supervisors are to be limited to checking no more than six parachute packing activities at one time.” I believe the recommendation points toward limiting the number of supervisory activities for an individual supervisor. The number of activities should be limited to an amount of packing commensurate with the complexities of the system being supervised and rate of effort. OC MSS is to determine supervisory limits for each specific parachuting system, and include these in the parachute rigging supervisor authorisation standard. This is to be completed NLT 8 Jan 24.

7. *Publish an NZDF owned and maintained maintenance manual for the SOV3-TS Parachuting System.*

Accepted. We must ensure the manual is suitable, effective and understood by the personnel using it. The right answer may be somewhere between publishing our own manual and enhancing the OEM publication. However, in the short term taking ownership of the manual may be the most effective way to reduce the risk with this publication. This is to be completed by Desk Officer ARM/S&S NLT 8 Jan 24.

8. *Raise and allocate responsibility for PTSU publication management on unit.*

Accepted. OC PTSU should nominate an FMMO as required by AVOs and issue a directive for this position. To be implemented immediately.

9. *Initiate a DAR 105 transition programme including publishing of an exposition with associated duty directives and control documents.*

Rejected. Before a decision is made, I need to establish from DAA how the MAO is currently considered to comply with DAR 105 across both technical and operating areas. DDAA is requested to conduct an MAO compliance review against DAR 105. Given the tempo for DAR transition within DAA, it is requested this is completed ASAP but NLT 8 Jan 24.

10. *Parachute bay technicians should complete compulsory ground training with PTSU.*

Accepted. My understanding of this recommendation is that the riggers often fail to understand the ‘why’ of PTSU and how their actions can have consequences on the operation of the system. Hence this recommendation is more about cross pollination between operational and technical personnel in order to better understand their outputs. This should be implemented by OC PTSU as part of routine activity scheduling.

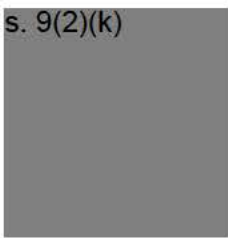
11. *Consistent with the unimplemented recommendation from the 2006 COI, post graduate training to senior rigger and master rigger should be formalised.*

Accepted. Although the RNZAF does not currently employ master riggers, there are OEM training courses available for senior and master riggers that are applicable to parachute supervisors and instructors respectively. This will provide a means to ensure parachute packing excellence and is directly related to recommendation 12. CO PTSU is to ensure ICP bids are raised to ensure PADE Bay personnel are planned to attend these courses.

12. *Succession plans need to be put in place for the SNCO of the parachute bay, parachute packing instructor, and F/S Aerial Delivery Equipment.*

Rejected. By implementing the competency framework for parachute supervisors and instructors as accepted in recommendation 11, the intent of this will be achieved. Succession planning is considered BAU for all trade groups, not just S&S.

In closing, the role of operational parachuting in the NZDF remains critically important to outputs. Hence we must ensure that a necessary level of rigour is being applied to airworthiness oversight in the same way that it would to platform aviation systems. I require personnel at all levels to critically assess their involvement in the parachuting enterprise and ensure that they are raising issues as they present themselves.

s. 9(2)(k)


MJ Cannon
GPCAPT
MAO (R) AK

DATED ATRNZAF BASE AUCKLAND..... ON 12 SEP 23