Defence
Safety Authority

Service inquiry

Death of a Royal Air Force service person at Cadwell Park race circuit

27 May 2022

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PART 1.1

Covering note & glossary

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Part 1.1 – Covering note

DSA/SI/01/22/CADWELL PARK

Jul 23

DG DSA

SERVICE INQUIRY INVESTIGATION INTO DEATH OF SERVICE PERSON WHILST UNDERTAKING REPRESENTATIVE SPORT (MOTORCYCLING) ON 27 MAY 22 AT CADWELL PARK, LINCOLNSHIRE

1. The Service Inquiry Panel assembled at Boscombe Down, on the 05 Jul 22 by order of the DG DSA for the purpose of investigating the accident involving Cpl Farrar who was undertaking representative sport motorcycling on 27 May 22 and to make recommendations in order to prevent reoccurrence. The panel has concluded its inquiries and submits the provisional report for the Convening Authority's consideration.

2. The following inquiry papers are enclosed:

Part 1 REPORT Part 1.1 Covering Note and Glossary Part 1.2 Convening Orders & TORs Part 1.3 Narrative of Events Part 1.4 Findings Part 1.5 Recommendations	Part 2 RECORD OF PROCEEDINGS Part 2.1 Diary of Events Part 2.2 List of Witnesses Part 2.3 Witness Statements Part 2.4 List of Attendees Part 2.5 List of Exhibits Part 2.6 Exhibits Part 2.7 List of Annexes Part 2.8 Annexes Part 2.9 Schedule of Matters Not Germane to the Inquiry Part 2.10 Master Schedule

PRESIDENT

[redacted]

[redacted]

Army

MEMBER 1

[redacted]

[redacted]

Royal Air Force

MEMBER 2

[redacted]

[redacted]

Royal Marines

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Glossary

ACSO	Army Command Standing Order
ACU	Auto-Cycling Union
AGAI	Army General and Administrative Instructions
ALARP	As Low As Reasonably Practicable
AOC	Air Officer Commanding
AOR	Area of responsibility
AP	Air Publication
BAMA	British Army Motor Sports Association
BRA	Basic Riding Assessment
CC	Clerk of Course
CCTV	Closed Circuit Television
CoC	Chain of Command
CPL	Corporal
CTC	Competitor Training Course
CV19	Coronavirus 2019 Chinese origin pandemic
DDH	Delivery Duty Holder
DH	Duty Holding
DIAB	Defence Accident Investigation Branch
DIN	Defence Instructional Notices
DoC	Duty of Care
DROs	Daily routine orders
DRS	Directorate of RAF Sport
DSA	Defence safety Authority
FIM	Federation International de Motorcyclisme
Gp	Group
H&S	Health and Safety
HQ	Headquarters
HS&EP	Health, Safety and Environmental Protection
HSAW	Health and Safety at Work Act 1974
JNCO	Junior Non-Commissioned Officer
JSP	Joint Service Publication
MCRR	Motorcycle Road Racing
MO	Medical Officer
MOD	Ministry of Defence
Moto GP	Grand Prix Motorcycle racing
Mph	Miles per hour
MRRT	Motorcycle Road Racing team
ms	Millisecond
MSV	Motor Sports Vision
NGB	National Governing Body
NOK	Next of Kin
ODH	Operational Duty Holder
RAF	Royal Air Force
RAFMSA	Royal Air Force Motor Sports Association

RM	Royal Marines
RN	Royal Navy
RNRMMSA	Royal Navy and Royal Marines Motorsports Association
RNRMRRT	Royal Navy and Royal Marines Road Racing Team
RP	Responsible Person
RtL	Risk to Life
SB	Sports Board
SDH	Senior Duty Holder
SI	Service Inquiry
SME	Subject Matter Experts
SMP	Safety Management Plan
SMS	Safety Management System
SP	Service Person or Personnel
SQEP	Suitably Qualified and Experienced Personnel
SS	Single Service
STARS	Squadron Training Achievement Recording System
TOR	Terms of Reference
Triage	Defence Accident Investigation Branch team. Deployed ASAP to gather perishable evidence
Tri-Service	Three Services – i.e. All three branches - Navy, Army and Air Force
UKAF	United Kingdom Armed Forces

PART 1.2

Convening order & TORs

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Defence Safety Authority

Service Inquiry Convening Order

5 July 2022

SI President	Hd DAIB	DAIB Mentor
SI Members	DSA HQ Legad	DAIB Office Manager

Copy to:

PS/SofS	MA/VCDS	DIR HS&EP
PS/Min(AF)	MA/CNS	EA/DSA Dep-DG
PS/Min(Lords)	MA/CGS	Air Inspector RAF
PS/Min(DPV)	PSO/CAS	Navy Safety Dir
PS/Min(DP)	PSO/COMD UKStratCom	DDC Dir
PS/PUS	PSO/Air-DCOMOPS	DDC Head of News
PS/2PUS	PSO/AOC 22Gp	DDC PR News Air
DPSO/CDS	22Gp-DRS-Dir	DDC PR Campaigns SO2 RAF

DSA DG/SI/01/22 – SERVICE INQUIRY INTO THE DEATH OF A SERVICE PERSON WHILST UNDERTAKING REPRESENTATIVE SPORT (MOTORCYCLING) ON 27 MAY 2022 AT CADWELL PARK, LINCOLNSHIRE

1. In accordance with Section 343 of the Armed Forces Act 2006 and Joint Service Publication (JSP) 832 – Guide to Service Inquiries[1] and as Director General of the Defence Safety Authority (DG DSA), I have elected to convene a safety Service Inquiry (SI).

2. The purpose of this SI is to investigate the circumstances surrounding the incident, make recommendations to prevent reoccurrence, investigate the boundaries, authorities, and accountabilities of on/off duty status and to clarify the policy and process in respect of representative sport.

3. The SI panel members commenced their administrative briefings at 1000 on Tuesday 5 July 2022 at the Defence Accident Investigation Branch (DAIB), B120 at MOD Boscombe Down and the SI was formally convened by me at 1100.

4. The SI panel comprises 3 members:

President: [redacted]
Members: [redacted]

5. The Legal Advisor to the SI is [redacted] Technical investigation/inquiry support is to be provided by the DAIB and the

[1] Issue 1.0 dated October 2008.

nominated mentor for this SI is [redacted]

6. The SI panel is to investigate and report on the facts relating to the matters specified in its Terms of Reference (TOR) at Annex A. The SI panel is to comply with its TORs and record all evidence and express opinions as directed therein. An initial report is to be submitted to me by **Thursday 11 August 2022**.

7. Attendance at SI activities by advisors/observers, unless extended by the Convening Authority, is limited to the following:

Head DAIB – unrestricted attendance
DAIB investigators in their capacity as advisors to the SI panel – unrestricted attendance
Human Factors specialists in their capacity as advisors to the SI panel – unrestricted attendance

8. The SI panel will undertake its initial induction training at the DAIB facility at MOD Boscombe Down immediately after the SI's convening. Thereafter, permanent working accommodation, equipment, and assistance suitable for the nature and duration of the SI will be requested at a location decided by the SI President in due course.

9. Reasonable costs will be borne by DG DSA under UIN [redacted]

[redacted]

S J Shell CB OBE MA
Air Marshal
DG DSA – Convening Authority

Annex:

A. Terms of Reference for the Service Inquiry into the death of a Service person whilst undertaking representative sport (motorcycling) on 27 May 2022 at Cadwell Park, Lincolnshire.

Record of Changes

Date	Change No.	Detail	Made by

Annex A To
DSA DG/SI/01/22 Convening Order
Dated 5 July 2022

TERMS OF REFERENCE FOR THE SERVICE INQUIRY INTO THE DEATH OF A SERVICE PERSON WHILST UNDERTAKING REPRESENTATIVE SPORT (MOTORCYCLING) ON 27 MAY 2022 AT CADWELL PARK, LINCOLNSHIRE

1. As the nominated panel for the subject Service Inquiry (SI), you are to:

   a. Investigate and, if possible, determine the cause of the accident, together with any contributory, aggravating and other factors and observations.

   b. Ascertain whether Service personnel involved were acting in the course of their duties.

   c. Examine what policies, orders and instructions were applicable and whether they were appropriate and complied with.

   d. Determine the level of delineation between Service representative sport and personal entry, to include the situation where an event / series of events is / are attended by a Service person in both capacities. Review the policy and process for Service personnel undertaking representative sports to determine applicability.

   e. Determine what assurance process exists to regulate Service personnel undertaking representative sports, and review applicability.

   f. Establish the level of training, relevant competencies, qualifications, and currency of the individual involved in the accident.

   g. Identify if the levels of planning and preparation were commensurate with the activities' objectives.

   h. Review the levels of authority and supervision covering the task during which the incident occurred.

   i. Investigate and comment on relevant fatigue implications of individuals' activities prior to the matter under investigation and on any Human Factors that may have played a part in this accident.

   j. Determine the state of serviceability of relevant equipment.

   k. Determine any equipment deficiencies.

   l. Report and make appropriate recommendations to the DG DSA.

2. The investigation should not seek to attribute blame and you should use JSP 832 Guide to Service Inquiries and DSA 03.10 as guidance for the conduct of your inquiry. You are to report immediately to the DG DSA should you have cause to believe a criminal or Service offence has been committed.

3. If at any stage the panel discovers something that they perceive to be a continuing hazard presenting a risk to the safety of personnel or equipment, the President should alert the DG DSA without delay to initiate remedial actions. Consideration should also be given at this time to raising an Urgent Safety[2] notice.

[2] This could be an advice or a recommendation safety note.

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Part 1.3

Narrative of events

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Synopsis

1.3.1. On Friday 27 May 2022 at 12:23 a Royal Air Force (RAF) service person, Corporal (Cpl) [redacted] Farrar, crashed into a tyre wall at Chris Curve, Cadwell Park race circuit. Cpl Farrar was riding the circuit on their personal motorcycle road racing machine whilst representing the RAF Motorcycle Road Racing (MCRR) team at Round 3 of the Thundersport GB Inter-Service Challenge. At the time, the team was taking part in a test session, which provided an opportunity for riders to evaluate their respective machines prior to race day on the Saturday. Cpl [redacted] Farrar was pronounced life extinct at 13:20. No other personnel were injured in the incident.

Exhibit 001

Exhibit 002

Background

Cpl [redacted] Farrar

1.3.2. Cpl Farrar was an RAF technician based at RAF Cosford where they were an instructor within 238 Training Squadron, No1 School of Technical Training. They ran the RAF Cosford motocross club and competed at a service representative level in motorcycling enduro competitions. Having completed the mandatory Auto-Cycle Union[1] (ACU) competitor training course (CTC) and basic rider assessment (BRA), they commenced motorcycle road racing in 2021. Cpl Farrar started as a level one novice and achieved level two clubman status by the end of the season.[2]

Exhibit 003

Exhibit 004

Exhibit 005

RAF Motorsports

1.3.3. **RAF Motorsports Association**. Formed in 1961 the RAF Motorsports Association (RAFMSA) has both encouraged and supported service personnel in motor sport events at local, Inter-Service, national and international level. Public governance of RAFMSA is provided by the Directorate of RAF Sport and non-public assistance in charitable governance is provided by the RAF Sports Federation. RAFMSA members have been active in a wide variety of competitive motorsport and were compliant with the motorsport National Governing Body (NGB) rules and regulations ensuring the safety of its members during competition.

1.3.4. The RAFMSA supported the following disciplines:

a. Motor Racing including car circuit racing, sprinting hill climbing and rally cross.

b. Karting including team and individual competition.

[1] The Auto-Cycle Union is the National Governing Body for motorcycle sports in the UK.
[2] The four levels of racing as stated by the ACU are novice, clubman, national and international. Clubman is sometimes known as pre-national.

c. MCRR including circuit racing and road racing such as the Isle of Man TT.

d. Motocross and Enduro Off-Road motorcycle competition.

e. Rallying including stage and single venue events.

f. Motorcycle Trials competition over obstacle courses.

g. Motorsport e-sports.[3]

MCRR

1.3.5. MCRR was considered a representative sport within the UK Armed Forces;[4] the Royal Navy and Army also had road racing teams. It was carried out with motorcycles on paved surfaces, usually on purpose built closed circuits situated all over the UK, sometimes overseas and also on public roads, such as the well-known Isle of Man TT. Exhibit 006

1.3.6. MCRR is one of seven motorsports that the RAFMSA Chair was responsible for. Appointed as a responsible person via letter of authority from the Head of RAF Sport, the chair was accountable for the safe conduct of motorsports.[5] At the time the chair had served for 32 years in the RAF, with 25 years in RAF Motorsports, initially as a rally driver competing at a national level. The RAFMSA Vice-Chair supported the chair in the delivery of RAF motorsports. Prior to their appointment in 2019, the vice-chairperson had been a competition secretary for car circuit racing for over five years. Exhibit 007 Witness 006 Exhibit 008 Witness 007 Exhibit 009

1.3.7. During the 2022 season, the 16 person RAF MCRR team consisted of a safety manager, 12 competitors and three support crew. The safety manager and competition secretary was a senior non-commissioned officer (SNCO) engineering technician within the RAF. They had ridden motorcycles since the age of 13 and been road racing since 2017. They had been the deputy secretary for the 2021 season and was the competition secretary for the 2022 season. The competition secretary produced the administrative order for the season, detailing fixture dates.[6] It also included the generic risk assessment. The most senior MCCR team member had been racing motorcycles since 2004 and with Thundersport GB since 2014. Witness 2 was an RAF engineering technician. The remainder of the 2022 team consisted of RAF personnel ranging in rank from junior rank to junior officer.[7] The level of motorcycle racing experience within the team ranged between 1 to 18 years. Exhibit 010 Witness 001 Exhibit 011 Exhibit 010 Witness 002 Exhibit 012 Exhibit 010

[3] Online multiplayer video games replicating the motorsport disciplines.
[4] JSP 660 Sport in the UK Armed Forces part 1 Directive (v 2.4 Nov 2021) ch 1 annex D.
[5] Being fulfilled by the individual who's role places them in a risk-owning position.
[6] 20220224-RAF Motorsports Duty Participation AO MCRR-Thundersports GB.
[7] Air Specialist 1 to Flight Lieutenant.

Thundersport GB Race Series

1.3.8. Thundersport GB was an ACU affiliated motorcycle racing club. Thundersport GB had organised races from 2007 and had hosted Inter-Service Challenge races since 2014.[8] During 2022 Thundersport GB ran 15 race days over eight separate weekends: one per month from March to October. Over five of these eight weekends, eight Inter-Service Challenge races were organised.

Cadwell Park

1.3.9. Cadwell Park was located approximately five miles south of Louth, Lincolnshire Figure 1.3.1 and was one of six sites owned and operated by Motorsport Vision (MSV) in the UK. Established in 1934 and predominantly used for motorcycle racing, Cadwell Park had a 2.25-mile race circuit with bespoke facilities for motorsport racing and training events. The circuit, shown in Figure 1.3.2, had 11 named features at different points, which were used as reference markers. Chris Curve, where the accident occurred, was a sweeping right-hand bend on top of a hill.

Figure 1.3.1 Cadwell Park location

[8] Where the Army, Royal Navy and Royal Air Force are participants.

Figure 1.3.2 Cadwell Park layout

Track safety

1.3.10. To enable motorcycle circuit road racing to be held at Cadwell Park, MSV were required to obtain an ACU race licence. The ACU issued MSV their race licence on 25 March 2022 after having completed a track inspection. The inspection identified the additional protection required for motorcycle circuit road racing, which was different from car racing and track days. Thundersport GB, used the track inspection report for their daily track inspections during race weekends. On 27 May 2022, all protective measures had been positioned and the circuit fully complied with the course licence. Exhibit 013 Exhibit 002

Thundersport GB race weekend format

1.3.11. Race weekends would start on Thursday evenings, with the gates opening on that evening to allow competitors to set up. Friday was a test day and racing occurred on Saturday and Sunday, or just Saturday in some instances. The Friday session commenced with riders signing on at race control. For testing, Thundersport GB assigned riders into four separate groups, depending on their motorcycle racing machine and ability level. The groups then rotated through 20-minute test sessions, with each group allowed to have three sessions through the day. In the afternoon and concurrent to these sessions, riders were required to pass through technical control, also known as 'scrutineering'.[9] Whilst not required for test days, it was a mandatory requirement prior to competitors formally racing. It ensured that motorcycles met the technical regulations as set out by the ACU. It was not a safety check, however, with each rider having responsibility for ensuring that any machine used in competition was Exhibit 001 Exhibit 014

[9] ACU Handbook 2021 para 14.24.

structurally and mechanically safe. Each race day consisted of a practice session, qualifying race, and a point scoring race.

Pre-incident events

Cadwell Park race weekend 26 to 28 May 2022

1.3.12. RAF MCRR team personnel started arriving at Cadwell Park at around 14:00 on 26 May 2022. Cpl Farrar, accompanied by their family, had driven to the circuit in their own private motor vehicle. They entered Cadwell Park between 17:00 and 18:00 to begin the set up. The RAF team established an area within the paddock to park their vehicles and erect RAF gazebos. According to those interviewed, routine administration occurred until about 23:00. On 27 May 2022, reveille for the team was around 07:00. Riders signed on at race control between 07:30 and 08:00. Cpl Farrar's signature was on the sign-on sheet for 27 May 2022.

Witness 1
Exhibit 015
Exhibit 016

Cpl Farrar's motorcycle

1.3.13. Road racing motorcycles were based on road registered machines that were fully equipped to UK specifications. The ACU mandated specific alterations to the motorcycle and permitted other optional alterations, all of which were specified in the ACU technical regulations. Thundersport GB provided additional regulations for the different race classes they conducted. For the Thundersport Pre-National 600 series race, in which Cpl Farrar was racing, specific makes and models of motorcycles were stipulated that could race. Their Suzuki GSXR 600 was one. Cpl Farrar's first Thundersport GB race on the Suzuki motorbike was at Oulton Park on 18 September 2021; followed by Cadwell Park on 16 to 17 October 2021 and Brands Hatch, 26 to 27 March 2022.

Exhibit 017
Exhibit 018
Exhibit 019
Exhibit 020

Exhibit 021

Figure 1.3.3 Motorcycle post incident

Personal protective equipment

1.3.14. Riders were required to wear all-in-one leather suits of a specified thickness, boots, gloves, and helmets; no part of the skin was allowed to be exposed. Additional thickness, a double layer of leather or 8mm plastic, was also required on shoulders, elbows, both sides of the torso and hip-joint, the back of the torso and knees. Cpl Farrar was wearing a one-piece leather suit, predominantly black and white in colour with fluorescent yellow flashings. These met the regulations.

Exhibit 022

Exhibit 023

Incident

1.3.15. At 12:20, riding their Suzuki GSXR 600 as rider #46, Cpl Farrar embarked on the third and final practice session of the day as part of 'blue group' (a group title from the race organisers). The weather was dry and cloudy with an average wind speed of 19mph, gusting up to 22mph. During the second lap, they were positioned toward the rear of a 12-rider group. At 12:23, whilst negotiating a right-hand bend called Chris Curve at 85mph, Cpl Farrar exited the track onto the grass 'run off' area, shown in Figure 1.3.4. They remained upright on the motorcycle heading straight, in an easterly direction towards the Type E safety barrier, Figure 1.3.5, on the outer edge of the circuit.[10] Approximately 5m prior to the barrier and travelling at 75mph, Cpl Farrar lost control of the motorcycle, which flipped

Exhibit 024

Exhibit 025

Exhibit 002

Exhibit 026

Exhibit 027

[10] A type E barrier consists of car tyres placed next to a rigid steel triple guardrail. The car tyres are one deep and six high and have a diameter between 15" and 17". This is known as a Type C barrier by the Federation International Motorcyclisme.

(high-sided) onto its left-hand side and they were thrown into the barrier.[11] The motorcycle followed, impacting them on their left side.

Exhibit 028

Exhibit 029

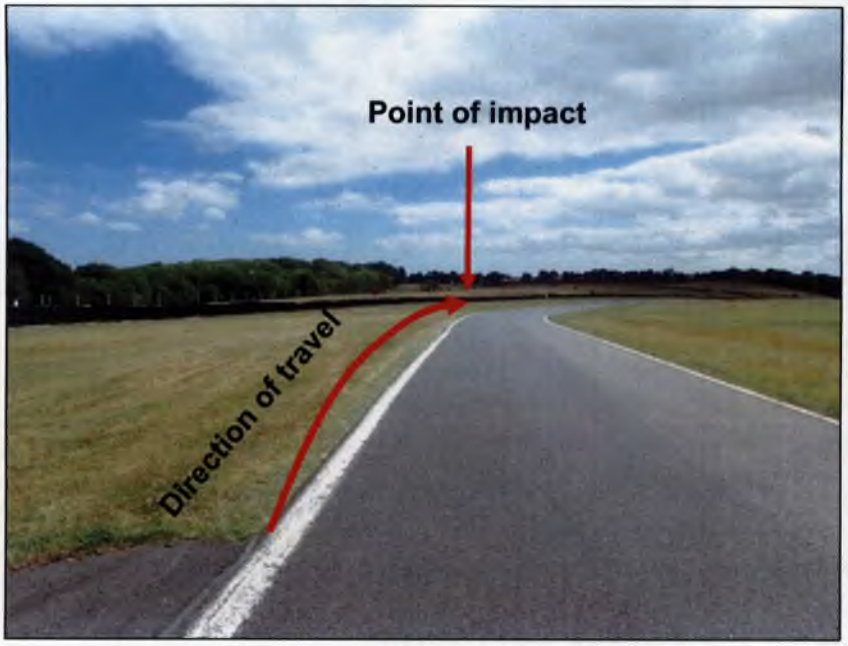

Figure 1.3.4 View from track exit to point of impact

Exhibit 030

Figure 1.3.5 Type E safety barrier

[11] A high-side is caused when the rear wheel loses lateral grip then regains it violently. A high-side crash is often more dangerous because the rider is usually flung over the bike, often in the path of travel of the bike.

Thundersport GB incident management

1.3.16. In the control room, the clerk of the course witnessed the incident on CCTV and instructed circuit marshals to immediately display red flags, whilst they also mobilised the on-site medical teams and an ambulance crew. Both teams arrived within 90 seconds of the incident and began emergency medical treatment. At this point all test racing activities ceased. Thundersport GB administrative staff announced an early lunch for all riders and spectators via the PA system. The clerk of the course arrived on scene at 12:27 with an extra ambulance team. Two other ambulance teams were held in reserve. Evidenced within the race radio log, at 12:36 an air ambulance was called, and on arrival the air ambulance crew assisted the medical teams already at the scene. Cpl Farrar was pronounced life extinct by the doctor in attendance at 13:20. They were subsequently transferred to an ambulance and transported to the front gate to await the coroner's staff. Exhibit 026

Post-incident

RAF MCRR post-incident management

1.3.17. When red flags were raised, RAF team members on the track returned to the paddock. Witness 1 informed Cpl Farrar's next of kin (NOK) that they had been involved in an accident. The NOK then made their way to the race administration area and was then directed to the medical centre. It was here that they were informed that Cpl Farrar was unresponsive and then, shortly afterwards, of their death. Witness 1 comforted the NOK whilst informing Cpl Farrar's line manager and also contacting the RAFMSA Chairperson. A brief period later, a work colleague who was part of 238 Sqn management team, called Witness 1 to inform them that the unit welfare and Joint Personnel Administration Centre protocols had been initiated.[12] The NOK left Cadwell Park later that afternoon, accompanied home by their family whilst the car and caravan were also taken by another family member. The motorcycle was retained by MSV at Cadwell Park. Witness 1 Exhibit 031 Witness 1 Exhibit 032 Witness 1 Exhibit 033

Cessation of RAF MCRR team racing

1.3.18. Between 14:00 and 14:30 that same day, the RAFMSA Chairperson phoned Witness 1 to direct that no one was to continue racing for the remainder of the weekend, as they were not willing to hold an increased risk of further accidents due to the potentially compromised mental state of the team riders. Witness 1 informed the team of the direction not to race. Between 15:30 and 16:00, Witness 2, based on a conversation with the RAFMSA Vice-Chairperson, advised that team members could race on an 'off-duty' basis if RAF insignia was removed from motorcycles and clothing. Witness 1 at this point had decided to return home where, within 15 minutes of arriving, received a phone call Witness 001 Exhibit 034 Witness 002 Exhibit 035

[12] Joint Personnel Administration Centre (JPAC) – Armed services intranet based administration system.

from Witness 3, a member of the team who had remained at Cadwell Park, informing them that they could race. At 18:00 Witness 1 contacted the RAFMSA Chairperson to seek further clarification on continued participation. The chairperson reiterated their earlier position by directly ordering individuals not to race, informing them that if anyone contravened this order, they would be subject to military discipline. Witness 1 passed this information to the team via Witness 3, and consequently, no RAF MCRR team members participated in any event activities for the remainder of the weekend.

Witness 001
Exhibit 034

PART 1.4

Analysis and findings

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Part 1.4 – Analysis and findings

All times local (e.g. Zulu plus 1 hour).

Introduction

Convening of service inquiry

1.4.1. **Accident summary**. On Friday 27 May 2022, Cpl [redacted] Farrar, a member of the Royal Air Force (RAF) Motorcycle Road Racing Team (MCRR) was representing the RAF at a civilian motorcycle series event at the privately owned motor racing circuit at Cadwell Park, Lincolnshire. At 12:23, during the third practice session for their allocated group of 12 riders, Cpl Farrar left the track onto the grassed run-off area whilst negotiating a right-hand bend known as Chris Curve. On leaving the track, they headed towards the safety barrier 129m away. About 5m from the barrier Cpl Farrar lost control of the motorcycle, which then flipped onto its left side throwing them over the top of the motorcycle into the safety barrier. The bike followed the same trajectory, impacting them on their left side. Despite prompt medical intervention by the onsite medical teams and doctor, Cpl Farrar succumbed to their injuries and at 13:20 was pronounced dead at the scene. The post-mortem report determined that the cause of death was a direct result of significant internal injuries consistent with having been struck at speed by a motorcycle. Exhibit 028

1.4.2. **Defence Accident Investigation Branch response**. At 14:40 on 27 May 2022, the Defence Accident Investigation Branch (DAIB) was informed of the accident by the RAF Motorsports Association (RAFMSA) Deputy Chairperson. The DAIB subsequently instructed two investigators to deploy to Cadwell Park to conduct a triage. They arrived at the accident site at 09:00 on 28 May 2022. The DAIB triage team's focus was to secure vulnerable evidence and ascertain the facts of the accident at the earliest possible stage. Their report of initial findings provided the Director General (DG) Defence Safety Authority (DSA) with sufficient detail to determine the appropriate level of further investigation.

1.4.3. **Convening of the service inquiry**. Based on the evidence gathered by the triage team and subsequent report of their findings, a service inquiry (SI) was formally convened by the DG DSA at 11:00 on 5 July 2022. Exhibit 001

Methodology

Analytical methodology

1.4.4. **Accident Investigation Board Norway model**.[1] The Accident Investigation Board Norway (AIBN) analysis model was used to assist the SI panel in identifying accident factors as defined in paragraph 1.4.5. AIBN's analysis process was an amalgamation of the Australian Transport Safety Bureau (ATSB) model and the Sequence Timed Events Plotting (STEP) process. This was a 7-stage iterative process, which provided analysis of evidence gathered to determine the relevant factors that influenced the outcome of the accident. This way the SI panel were able to investigate the individual aspects of the accident and identify any safety factors associated with organisational policy or systemic issues in United Kingdom Armed Forces (UKAF) sport.

Accident factors

1.4.5. **Factor categories**. Once a safety factor had been determined it was assigned to one of the following categories:

a. **Causal factor(s)**. Causal factors are those factors that, in isolation or in combination with other factors and contextual details led directly to the accident. Therefore, if a causal factor is removed from the accident sequence, the accident would not have occurred.

b. **Contributory factor(s)**. Contributory factors are those factors that made the accident more likely to happen. They did not directly cause the accident, therefore if a contributory factor is removed from the accident sequence, the accident may still have occurred.

c. **Aggravating factor(s)**. Aggravating factors are those factors that made the final outcome of an accident worse. However, aggravating factors do not cause or contribute to an accident, that is, in the absence of the aggravating factor, the accident would have still occurred.

d. **Other factor(s)**. Other factors are those factors that, whilst they played no part in the accident in question, are noteworthy in that they could contribute to or cause a future accident. Typically, other factors would provide the basis for additional recommendations or observations.

e. **Observation(s)**. Observations are points or issues worthy of note to improve working practices that the SI panel discovered

[1] Framework and Analysis Process for Systematic Safety Investigations 4034.pdf (skybrary.aero).

during their investigation, but that do not relate directly to the accident being investigated.

Probabilistic language

1.4.6. The probability terminology detailed below in Figure 1.4.1 clarifies the terms used to communicate the degree of certainty within the report. It is based on terms published by the Intergovernmental Panel on Climate Change (IPCC) in their guidance note for Consistent Treatment of Uncertainties as well as the ATSB in their paper on Analysis, Causality and Proof in Safety Investigations in their guidance note for Consistent Treatment of Uncertainties.[2,3]

1.4.7. The purpose of introducing probability expressions was to facilitate standardised communication of uncertainty in DSA accident and incident reporting. The choice of expression remained a matter of judgement by the SI panel and provided an indication of meaning based on common usage and understanding. The terminology should therefore be thought of in terms of relative meaning within the report rather than a precise measurement of probability.

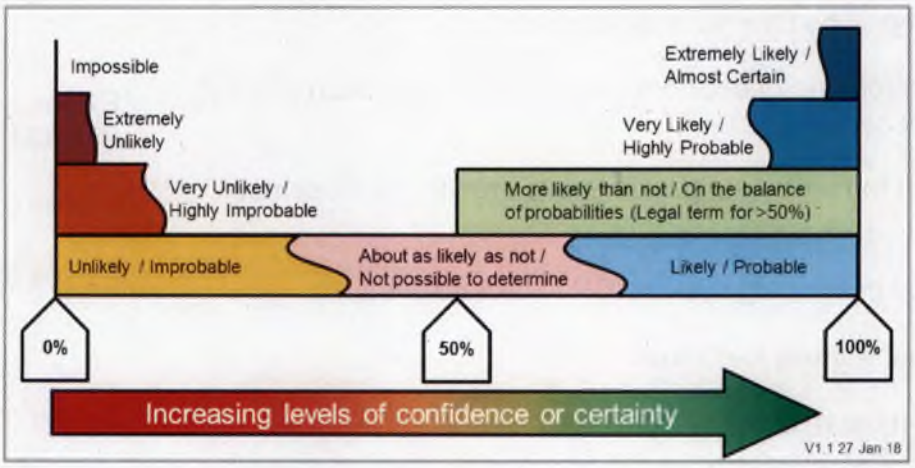

Figure 1.4.1 Probabilistic language

Training

1.4.8. To provide the SI panel with the requisite tools to conduct an effective and robust inquiry, the following training was conducted:

a. Lead-in brief from DAIB triage lead for DAIB/22/018. Current evidence and initial considerations.

[2] https://www.ipcc.ch/pdf/supporting-material/uncertainty-guidance-note.pdf.
[3] https://www.atsb.gov.au/sites/default/files/media/27767/ar2007053.pdf.

b. Consultation with motorcycling subject matter experts (SME) to gain a better understanding of motorcycle circuit racing.

c. Brief from DSA legal division.

d. Brief on effective and accurate report writing delivered by DSA Secretariat.

e. Analysis techniques delivered by DAIB personnel.

f. Interviewing techniques and structure training delivered by Royal Air Force Centre of Aviation Medicine (RAFCAM). This formed the basis of the SI panel's strategy in the effective planning, and execution of subsequent interviews based on individual interviewee requirements.

Available evidence

1.4.9. The SI panel had access to the following evidence:

a. DAIB triage evidence.

b. Photographs from various sources.

c. Video footage of accident (closed circuit television (CCTV) and helmet camera). — Exhibit 036/023

d. Police forensic vehicle examination report, 16 December 2022. — Exhibit 037

e. Global positioning system (GPS) bike tracker. — Exhibit 038

f. Formal witness interviews.

g. Post-mortem report (7 June 2022). — Exhibit 028

h. RAF Motorsports Association (RAFMSA) Chairperson letter of authority. — Exhibit 007

i. Policy documents:

(1) The Queens Regulations (QR) for the Royal Navy (version 6 April 2017).

(2) The QR for the RAF (edition 6 2021).

(3) Joint Service Publications (JSP):

(a) JSP 375 Management of Health and Safety (H&S) in Defence, Directive & Guidance (version 1.2 October 2020).

(b) JSP 375 Management of Health and Safety in Defence Volume 1 Chapter 8, Risk Assessment (version 1.3 January 2022).

(c) JSP 375 Management of Health and Safety in Defence Volume 1 Chapter 40, Military Training for Land Systems (version 1.3 January 2022).

(d) JSP 375 Management of Health and Safety in Defence Volume 1 Chapter 40, Military Training for Land Systems (version 1.4 December 2022).

(e) JSP 419 Adventure Training in the Armed Forces Part 1 (version 4.1 June 2022).

(f) JSP 660 Sport in the UK Armed Forces Part 1 Directive (version 2,4 November 2021).

(g) JSP 752 Tri Service Regulation for Expenses and Allowances (version 50 April 2022).

(h) JSP 800 Defence Movement and Transport Policy volume 5 part 1 (version 9.4 May 2022).

(i) JSP 815 Defence Safety Management System.

(4) Defence Instructional Notices (DIN) (various).

(5) DSA:

(a) DSA 01.1 Defence Policy for Health, Safety and Environmental Protection (version 1.0 August 2016).

(b) DSA 01.2 Implementation of Defence Policy for Health, Safety and Environmental Protection Chapter 1, Health, Safety and Environmental Protection (HS&EP) Requirements for Defence (version 1.1 January 2018).

(c) DSA 01.2 Implementation of Defence Policy for Health, Safety and Environmental Protection Chapter 3, Duty Holding (version 1.1 May 2018).

(d) DSA 01.2 Implementation of Defence Policy for Health, Safety and Environmental Protection Chapter 4, Management of Health, Safety & Environmental Protection Risk (version 1.0 July 2018).

(e) DSA 01.4 Glossary of terms and definitions for Defence Health and Safety.

(f) DSA 03 Movement and Transport Safety Regulations (second edition March 2020).

(6) Books of Reference (BRd):

(a) BRd 10 Navy Command Safety and Environmental Management Systems (version 3.0 March 2021).

(b) BRd 51(4) Physical Development Manual Volume 4 Sport in the Naval Service (version 1.0 July 2017).

(7) Army General and Administrative Instructions (AGAI) Volume 1 Chapter 5 Sport, (AEL 146 March 2022).

(8) Army Command Standing Orders (ACSO):

(a) ACSO 1200 The Army's Safety and Environmental Management System (issued January 2021).

(b) ACSO 1209 Authorisation of Comparable Activities which are Not Categorised as Adventurous Training or Sports (issued June 2022).

(9) Air Publications (AP):

(a) AP8000 Air Top Level Budget (TLB) Safety and Environmental Management System (version 1.9 January 2022).

(b) AP3415 Sport in the RAF (version 3.2 August 2019).

(10) Royal Navy (RN)/Army/RAF Administrative Orders (AO).

(11) RN/Army/RAF Safety Management Plans (SMP).

j. Auto Cycle Union (ACU) Technical and Safety Information 2022.

k. ACU Handbook 2021.

l. Managing Health and Safety at ACU Permitted Events 2021.

Further sources of evidence

1.4.10. To aid in their understanding and to provide greater awareness of how representative sport was conducted and managed across a tri-Service environment, the SI panel researched the following:

a. Sports SMPs.

b. Documents from Royal Navy and Royal Marines Motorsports Association (RNRMMSA) and British Army Motorsports association

(BAMA) as a comparison to RAFMSA regarding duty of care (DoC), risk management structure and policy.

c. SI reports for relatable content.

d. Sporting DINs to gain appreciation of terminology used by MOD when writing instructions for the conduct of Service level sport.

e. Other sports undertaken in the UKAF and their associated documentation. These included kitesurfing, BMX, winter sports, mountain biking, horse racing and other equestrian events.

1.4.11. The SI panel conducted the following online research:

a. Design of safety barriers.

b. Academic papers concerning human factors and injuries influencing and affecting individuals conducting motorcycle track racing.

c. Motorcycle helmets, clothing and personal safety equipment.

1.4.12. The SI panel conducted orientation visits to both Cadwell Park and Oulton Park motor racing circuits. The visits enabled the SI panel to gain an understanding of the motorcycle circuit racing scene. The visit provided first-hand experience of how the single Service teams conducted themselves and linked together within a Thundersport GB facilitated event. It also provided an opportunity to engage with the RN, Army, and RAF teams, to observe their processes, team dynamics and the atmospherics present on test and race days.

Evidence not available to SI panel

1.4.13. All involved parties provided as much support as was requested. However, when considering the findings of this report the following factors should be considered:

a. Cpl Farrar's personal protective equipment worn at Cadwell Park on 27 May 2022 was not available to the SI panel as it was judged to be more appropriate that it remained with the next of kin (NOK).

b. Interviews conducted with persons of interest to the service inquiry commenced on 11 August 2022, 11 weeks after the accident.

Organisation and agencies

1.4.14. The SI panel was assisted by personnel from the following organisations and agencies:

a. DAIB.

b. Motorsport Vision (MSV).

c. Thundersport GB.

d. ACU.

e. RAFMSA.

f. BAMA.

g. RNRMMSA.

h. Defence Statistics Health.

i. 238 Sqn, No 1 School of Technical Training RAF Cosford.

j. RAF Odiham Motorcycle Club.

k. Wiltshire Police Forensic Collision Investigation Unit.

l. Hull and East Yorkshire Hospitals NHS Trust.

m. Headquarters (HQ) Air Command Duty Operations Centre.

n. RAF Brize Norton Physical Education Flight.

o. Royal Navy Sports.

p. Army Sports Control Board.

q. Directorate Royal Air Force Sports.

r. Principal Psychologist, Army Personnel Research & Consultancy.

Analysis of factors

Analysis of factors introduction

1.4.15. **Scope**. The report is divided into three separate elements:

a. **Background information**. This element provides information on sports in the UKAF, motorcycle circuit racing and associated non-MOD organisations involved with running the sport.

b. **Accident analysis**. This element analyses the accident in detail with the purpose of determining the cause of the accident.

c. **Duty of care (DoC) analysis**. This element analyses application of DoC, including the policies and conduct, of the organisations involved.

Background information

United Kingdom Armed Forces (UKAF) sports

1.4.16. **Overview**. The following paragraphs introduce sports in the UKAF by covering policy, aim of sports and mechanisms to permit service personnel (SP) participating in sport whilst at work.

Governing policy documents for sport

1.4.17. The overall governance of UKAF sport was found in JSP 660, Sport in the Armed Forces. This document had primacy over the following single Service policy documentation:

a. AP 3415 (Sport in the RAF).

b. AGAI volume 1 chapter 5 Sport (Army).

c. BRd 51(4) Sport in the Naval Service.

1.4.18. This report references all four policy documents. The JSP had primacy, AP 3415 had relevance to Cpl Farrar's branch of Service, and the RN and Army single Service policy provide comparison.

The aim of sport in the UKAF

1.4.19. JSP 660 stated the following: Exhibit 039

'Competitive sport plays a key role in the development of UK Armed Forces (UKAF) operational capability.'[4]

1.4.20. **Operational capability**. The SI panel reviewed the single Service policy documentation for sport to ascertain the most common benefit of sport within the UKAF. The most common was determined to be operational capability as shown by the following supporting evidence from the RN, Army and RAF respectively:

a. '…helps develop and sustain the Moral Component of Operational Capability (MC of OC).'[5] Exhibit 040

[4] JSP 660 Sport in the UK Armed Forces Part 1 Directive (v 2.4 Nov 2021) ch 1 para 1.
[5] BRd 51(4) Sport in the Naval Service (v 1 Issued July 2017) preface para 1.

b. '…contribution to operational effectiveness, fighting spirit and personal development.'[6] Exhibit 041

c. '…builds operational capability generally and warrior spirit more specifically.'[7] Exhibit 042

Authority to conduct sport

1.4.21. **MOD HQ authority**. At the MOD level, the Chief of Defence People was responsible for UKAF physical development policy, which authorised sport. This responsibility was devolved to the UKAF Sports Board (SB) and beyond as outlined later in this report.

Category of sports

1.4.22. The UKAF sports policy, JSP 660, placed the authorisation of sport into four categories. Category 1 (Cat 1) sports were those with a large number of participants, with sports facilities provided at public expense. These sports received public funding and were common to the RN, Army and RAF; football and rugby union were examples of Cat 1 sports. Cat 2 sports were not common to all three Services and did not have sports facilities provided specifically for their use but did receive public funding for items such as equipment and travel. Basketball was an example of a Cat 2 sport. Authority would have been granted for participation on both Cat 1 and Cat 2 sports. Exhibit 012

1.4.23. Category 3 (Cat 3) sports did not receive public funding and authority for participation could only be given for single Service and inter Service championships. Activity outside these championships was conducted in a service person's own time and at their own risk. Category 4 (Cat 4) sports were purely conducted in a person's own time and at their own risk. Cat 3 and Cat 4 sports are not considered within this report. Weightlifting and hang gliding are examples of Cat 3 and Cat 4 sports respectively.

1.4.24. The sport pertinent to this SI, Motorsport 2-wheel (road), was classed as Cat 2, attracted public funding and was an authorised sport.

Representative sports

1.4.25. JSP 660 outlined the two levels of sport, representative and unit, within the UKAF as follows: Exhibit 013

> '**Representative Sport**. The term 'representative sport' describes sporting activity conducted by individuals and teams representing

[6] AGAI vol 1 ch 5 Sport para 5.002.
[7] AP3415 Sport in the RAF (v 3.2) leaflet 5.

single Services or UKAF; within the single Services, the following additional levels of representation are applicable:

(1) **RN**. Region and Corps (for Royal Marines).

(2) **Army**. Corps.

(3) **RAF**. Region and Branch.

Unit Sport. The term 'unit sport' describes sporting activity conducted by individuals or teams at ship, base, unit and station level or independent sub-units below that level.'[8]

Eligibility to conduct sport

1.4.26. **MOD Policy**. JSP 660 stated: Exhibit 014

'All Service personnel on a regular Service, Full-time Reserve Service (FTRS) or Additional Duties Commitment (ADC) engagement are eligible to participate in authorised Service sport.'[9]

1.4.27. JSP 660 provided additional detail for eligibility at unit and representative levels, as shown in Figure 1.4.2.

Exhibit 046

ANNEX A TO CHAPTER 2

ELIGIBILITY TO PLAY IN SERVICES SPORT

Category of Personnel	Single Service Events (Unit, Corps & Regional)	Represent Single Service (Non-Inter Service Events)	Represent Single Service (Inter Service Events)	UKAF
(a)	(b)	(c)	(d)	(e)
All personnel on a regular engagement[1]	Yes	Yes	Yes	Yes

Figure 1.4.2 MOD policy on eligibility[10]

1.4.28. **Single Service policy**. The single Service documents listed exceptions, which amounted to circumstances, where a participant may become ineligible. Reasons included pregnancy, a medical condition, wounded injured or sick or failing to achieve annual fitness standards. It fell to commanding officers (CO), officers commanding (OC) and medical officers to, at their discretion, limit an individual's participation in sport. For example: Exhibit 047

'Where Service personnel are not categorised as Wounded, Injured or Sick (WIS) (see para 5.074) and therefore participating in sport as part of their Individual Recovery Plan (IRP), then COs/OCs may at

[8] JSP 660 Sport in the UK Armed Forces Part 1 Directive (v 2.4 Nov 2021) ch 1 para 15.
[9] JSP 660 Sport in the UK Armed Forces Part 1 Directive (v 2.4 Nov 2021) ch 2 para 3.
[10] JSP 660 Sport in the UK Armed Forces Part 1 Directive (v 2.4 Nov 2021) ch 2 annex A.

their discretion, limit an individual's participation in sport if the individual is otherwise unable to attempt Service fitness tests or assessments.'[11]

Duty status

1.4.29. **MOD policy**. Duty status was a term used by the UKAF to discriminate between when a service person is working (on duty) as opposed to not working (off duty). When undertaking authorised sport, JSP 660 recognised that individuals were on duty:

> 'Authorised sport is a Condition of Service with duty status and is a core activity that cannot be considered discretionary.'[12]

Exhibit 039

UKAF SB structure and role

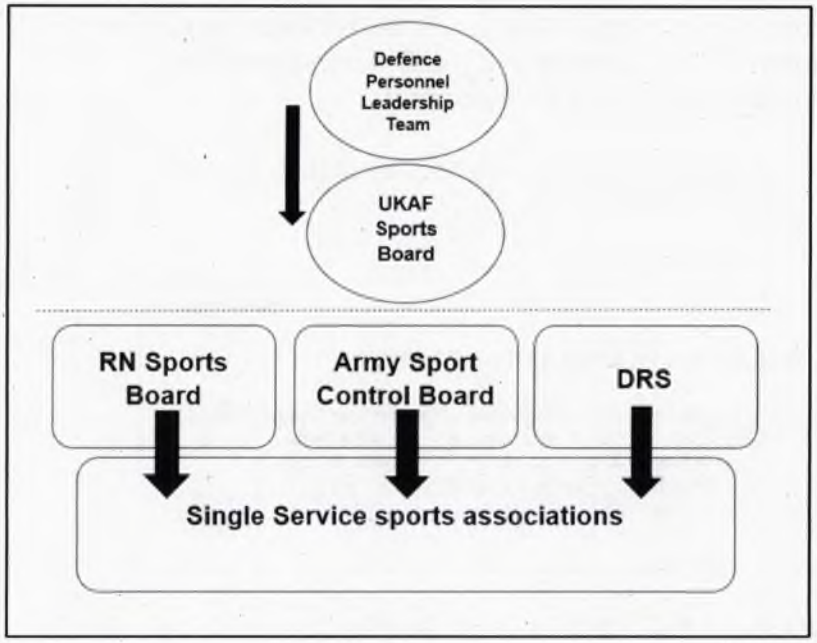

Figure 1.4.3 UKAF sports structure

1.4.30. Figure 1.4.3 pictorially represents the line authority structure of the UKAF SB, single Service SB and sports associations and how they sat within the organisational structure. The UKAF SB was formally constituted as an MOD body under the authority of the Defence Personnel Leadership Team (DPLT) through the Assistant Chief of the Defence Staff (Personnel) Capability.

1.4.31. The UKAF SB was responsible for promoting, developing and providing policy direction on the conduct of representative sport within and

[11] AGAI vol 1 ch 5 Sport para 5.059k.
[12] JSP 660 Sport in the UK Armed Forces Part 1 Directive (v 2.4 Nov 2021) ch 1 para 1.

between the three Services and at UKAF level. It was also responsible for standardising sports policy across the three Services and liaising with national sports bodies.

1.4.32. The members of the UKAF SB were the three single Service directors of sport, with the office of chairperson rotating biennially between the three Services.

1.4.33. The UKAF SB was supported by the SB Deputies Group, which provided the staff support for development of tri-Service sports policy and coherence in the delivery across the three single Services.

RAF sport structure

1.4.34. Policy document AP3415, Sport in the RAF, explained the nature of the structures that governed sport in the RAF in detail. Figure 1.4.4 pictorially represents these structures.

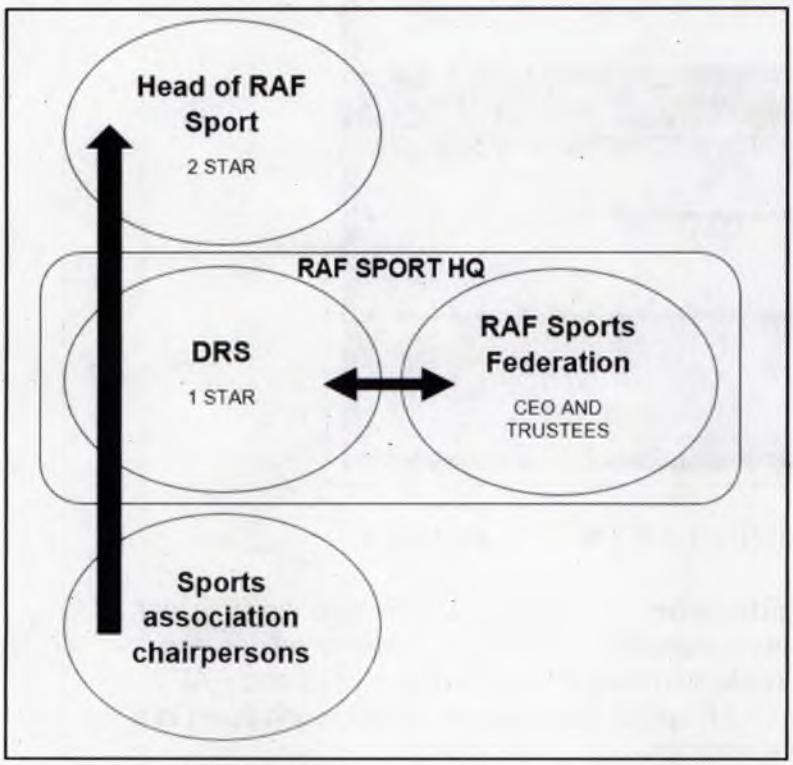

Figure 1.4.4 RAF sports structure

1.4.35. **RAF Sport HQ**. RAF Sport HQ combined the Directorate of RAF Sport (DRS) and RAF Sport Federation (RAFSF) working together to enable and advance RAF association sport. The two organisations were co-located at RAF Halton.

1.4.36. **The Directorate of RAF Sport (DRS)**. A 1* Directorate working directly under Air Officer Commanding (AOC) 22 Gp, (Head of RAF Sport).

The DRS was the controlling authority and was responsible for policy, governance, and assurance of sport. The DRS exercised executive responsibility for the control and conduct of all sport undertaken under the umbrella of the RAF sports associations. Figure 1.4.5 shows pictorially how the DRS fits within the 22 Gp organisational structure and Figure 1.4.6 shows the organisation of sports boards and associations that the DRS was responsible for.

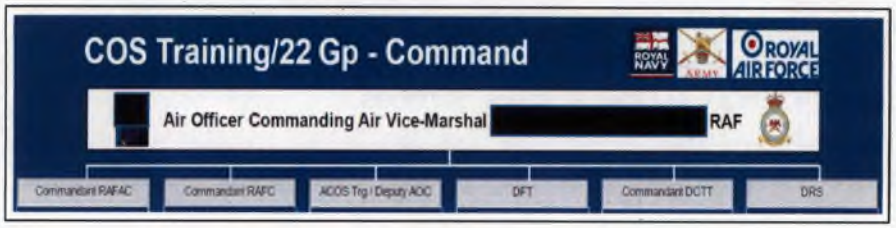

Figure 1.4.5 Position of the DRS within 22 Group

Figure 1.4.6 The DRS structure

1.4.37. **RAF Sports Federation:** The RAF Sports Federation (SF) was a charity that provided sports associations with professional advice and guidance on six core areas. It worked closely with the DRS and RAF Central Fund to support RAF sports associations in delivering sport in a consistent and cohesive manner.

RAF sports associations

1.4.38. There were 54 sports associations, across a variety of sports, including motorsport. Sports associations governed their sport in accordance with:

a. Joint Service policy.

b. Single Service policy.

c. RAF Head of Sports direction.

d. The sport's national governing body (NGB).

e. Charity commission rules and regulations.

1.4.39. Sports associations were headed by chairpersons and staffed by subject matter experts who contributed time and effort to promote their sport. They selected and managed RAF representative teams and provided advice to officers in charge of RAF station sports.

Witness 001

Exhibit 048

1.4.40. The RAF Motorsports Association (RAFMSA) was a recognised sports association with members active in seven forms of motorsport. Under the governance of the DRS, the RAFMSA supported circa 350 service personnel as they competed in their chosen motorsport discipline.

1.4.41. The RAFMSA was mandated to comply with rules and guidance stipulated by the Auto-Cycle Union (ACU).

1.4.42. The RAFMSA also worked with the RAF Central Fund and the RAF Sports Federation to provide non-public financial support through grants for entry fees and equipment costs. The RAFMSA had competition secretaries for each of the following disciplines:

a. Motor racing including car circuit racing.

b. Karting including team and individual competition.

c. Motorcycle road racing including circuit racing and road racing.

d. Motocross and enduro off-road motorcycle competition.

e. Rallying including stage and single venue events.

f. Motorcycle trials competition over obstacle courses.

g. Motorsport e-sports.[13]

1.4.43. The RAFMSA was a single Service sports association. The Royal Navy Royal Marines Motorsports Association (RNRMMSA) and British Army Motorsports Association (BAMA) were the other single Service equivalents.

[13] Online multiplayer video games replicating the motorsport disciplines.

Governing policy documents for RAFMSA

1.4.44. The SI panel determined that the following were the key policy documents governing motorsport 2-wheel (road) at the time of the accident:

a. JSP 660 Sport in the UK Armed Forces Part 1 Directive (version 2.4 November 2021).

b. AP3415 Sport in the RAF (version 3.2 August 2019).

c. RAFMSA SMP 2022.

d. RAF Motorsports duty participation administration order MCRR (Specific to motorsport 2-wheel (road)).

e. ACU Handbook 2021.

Motorcycle circuit racing

1.4.45. **Introduction**. The following paragraphs provide a background into motorcycle circuit racing to enable an understanding of the sport.

1.4.46. **Road racing definition.** The following definition of motorcycle road racing, of which circuit racing is a subset, captured the key components of the sport:

'Road race motorcycling competitions are races, where competitors riding appropriate motorcycles, after an organised collective start procedure, race simultaneously on asphalt-surfaced tracks, and compete to finish a known quantity of laps (time or distance in endurance races) faster than their opponents. With the exception of public road events, races are held on purpose-built circuits where strict safety standards are implemented, and appropriate facilities host a multitude of riders, operators and spectators.'[14]

Exhibit 049

1.4.47. **Motorcycle circuit racing injury rates**. In circuit racing, professional racers could reach speeds of over 200mph. Studies have shown that the overall injury rate was less than in motocross racing and 3.6 times higher than in football, although serious injuries were rare.[15] At the professional level, 12-14% of riders starting a race in dry conditions have a crash and from interviews conducted by the SI panel, RAFMSA riders also experienced regular crashes. Based on the injury rates, crash rates and interviews, the SI panel determined that crashes were an accepted part of motorcycle circuit racing and, considering the speeds, injury rates were not excessive in relation to other sports.

Exhibit 050

Exhibit 051

[14] D'Artibale, PhD, Optimising motor circuit racing rider's performance 2020.
[15] Tomida et al, Injuries in elite motorcycle racing in Japan-British Journal of Sports Medicine, Nov 2004.

1.4.48. **Motorcycle circuit racing safety versus public roads**. UK Government data showed that collisions between cars and motorcycles accounted for the greatest number of fatalities and serious injuries on UK public roads. The majority of these collisions occurred at junctions. A European Union report highlighted the increased risk of serious injury and fatality posed by motorcyclist collisions with metal crash barriers. One study reported: Exhibit 052

> '...the risk of fatality per accident against a CB [crash barrier] is five times as great as the national rate for all motorcycle accidents and account for 8% of all motorcycle fatalities and 13% of fatalities on rural roads.'[16] Exhibit 053

1.4.49. The UK Government data and European Union report showed the contribution of cars and metal crash barriers to motorcycle fatalities and injuries on public roads. These hazards were not present in motorcycle circuit racing where riders travelled in the same direction and fixed objects found on public roads were either absent or protected. Exhibit 054

Federation International de Motorcyclisme

1.4.50. **Motorcycle sports**. Road circuit racing was one of seven motorcycle sports that were recognised by the international governing body for the sport, the Federation International de Motorcyclisme (FIM). The other six sports are:

a. Motocross and Supermoto.

b. Trial.

c. Enduro.

d. Cross-country.

e. Track racing.

f. E-bikes.

1.4.51. The FIM provided the health & safety regulations for their internationally organised events, such as the World Superbike Championships and MOTO GP for circuit racing. In the UK, the ACU was the controlling body for the sport of motorcycling throughout the UK. At the amateur level, races were organised by clubs and associations and overseen by the ACU.

[16] European Union, Final report of the Motorcyclists & Crash Barriers Project 2009.

ACU

1.4.52. **ACU responsibilities**. The ACU was responsible for assuring delivery of motorcycle events and licensing of competitors. They were recognised as the NGB by Sport England.

1.4.53. **UK sports councils' recognition**. As an NGB, the ACU was required to demonstrate to the UK sports councils that they had the right governance structures in place, were unique, had an organisational vision for development and a plan to develop the sport. Pertinent to the safety of events, the UK sports councils stipulated the following criteria:

> 'Where a sporting activity presents a risk of injury, the NGB should demonstrate it has taken measures to minimise and control risk to participants and has in place appropriate policies to manage the risk (this may include public liability insurance where appropriate).'[17]

Exhibit 055

1.4.54. The UK sports councils' NGB recognition process provided the assurance to the MOD that sporting regulations and development of those regulations were satisfactory, resulting in the ACU being a recognised NGB within UKAF sport policy.

1.4.55. **ACU scope of activity**. The scope of activity of the ACU is reflected in the following figures:

a. 23,000 licence holders.

b. 3,000 volunteer marshals and officials.

c. 550 members' clubs.

d. 4,000 motorcycle sport permits issued each year.

1.4.56. **ACU courses**. The ACU provided courses to enable the growth of the sport and to ensure safe management of competition events. These courses were delivered by ACU accredited centres. Those courses were:

a. Coaching (club, commercial and project).

b. Clerk of Course (CC).

c. Marshal.

d. Technical officer.

[17] Unknown, Sports Councils' recognition Policy 2017.

1.4.57. **Clerk of course**. The CC was the individual responsible for the management and conduct of a meeting and under their direction, other executive and administrative officials were appointed.

1.4.58. **Marshals**. Marshals were volunteers who supported the CC in preventing, managing and responding to incidents. On test days, the ACU mandated that a minimum of one marshal was required at each corner.[18] Exhibit 056

1.4.59. **Technical officer**. A technical officer was the person who checked that both the riders' machines and safety clothing were in compliance with the ACU technical regulations.

1.4.60. **ACU clubs**. Clubs could be affiliated to the ACU in three ways:

a. Local club.

b. Non-territorial club.

c. Promoter.

1.4.61. **Local clubs**. A local club could be of any size with its membership restricted by geographical location.

1.4.62. **Non-territorial club**. A non-territorial club was a club, association, or other body connected with motorcycle sport having objectives, activities and membership not restricting it to a local centre. They operated at circuits around the country.

1.4.63. **Promoter**. A promoter organised competitions and was registered as a company. Non-territorial clubs and promoters could be similar in name. The organiser of the Cadwell Park event at which the accident occurred was Thundersport GB, a recognised promoter and club.

ACU and venues

1.4.64. **Venues**. Venues were locations at which events, organised by clubs and promoters, took place. For circuit racing, venues were run by promoters, such as Motorsport Vision (MSV). Each of these venues required a course licence permitting ACU sanctioned events. The sanctioned events were practice sessions and racing, each of which required separate permits.

1.4.65. **MSV**. MSV was a UK private company and Europe's largest motor racing circuit operator, with six venues in the UK.[19] MSV was established in 2004, when they initially acquired four motor racing circuits: Brands Hatch, Cadwell Park, Oulton Park and Snetterton. In addition to ownership

[18] ACU Handbook 2021 page.24
[19] Brands Hatch, Bedford Aerodrome, Cadwell Park, Donnington Park, Oulton Park, Snetterton.

of sites, the MSV group ran motorsport events through MSV Racing and track days through MSV Trackdays™.

Accident analysis

1.4.66. **Scope**. The following paragraphs analyse the accident by assessing the circuit characteristics, weather, and the circumstances leading Cpl Farrar to exit the track and collide with the barrier.

Overview

1.4.67. **Cpl Farrar employment and duties**. Cpl Farrar was employed as an instructor at 238 Training Squadron, No 1 School of Technical Training. In addition to instructing, they ran the RAF Cosford Motocross Club, competed in motocross and raced enduro as well as circuit road racing. Prior to the accident Cpl Farrar had been employed on guard duty from Monday 23 May 2022 to Wednesday 25 May 2022, during normal working hours. No information was obtained of activities outside these times. On Wednesday evening at 23:47, Cpl Farrar informed the guard commander that they had [redacted]. Shortly thereafter Cpl Farrar was excused from further guard duty by the guard commander.

Witness 004
Exhibit 057
Exhibit 058
Exhibit 059

1.4.68. **Cpl Farrar travel and activities**. On 26 May 2022 Cpl Farrar travelled to Cadwell Park and met with the RAF MCRR team members, prior to entering the venue. They entered at 17:00 and conducted routine administration for the remainder of the evening. On the day of the accident, Cpl Farrar had signed on at race registration by 08:00. They then partook in two 20-minute practice sessions at 09:39 and 11:00, with no incidents reported in the race radio log or from interviews conducted by the SI panel with RAF MCRR team personnel.

1.4.69. **The accident**. At approximately 12:20, Cpl Farrar embarked on their third and final practice session of the day. At 12:23, whilst negotiating a right-hand bend called Chris Curve, at approximately 85mph, Cpl Farrar exited the track onto the grass run-off area as shown in Figure 1.4.7. They remained upright on the motorcycle heading straight, in an easterly direction towards the Type E safety barrier on the outer edge of the circuit.[20] Video evidence indicated that at approximately 5m from the barrier and travelling at approximately 75mph, Cpl Farrar lost control of the motorcycle, which flipped (high-sided) onto its left-hand side, and was thrown into the barrier.[21] The motorcycle followed, impacting Cpl Farrar on the left side of their abdomen, at which point according to the post-mortem report, Cpl Farrar suffered fatal injuries.

Exhibit 028

[20] Type E barrier consisted of car tyres placed next to a rigid steel triple guardrail. The car tyres were one deep, six high and had a diameter between 15 inches and 17 inches. Known by the FIM as a type C barrier.
[21] A high-side is caused when the rear wheel loses lateral grip then regains it violently. A high-side crash is often more dangerous because the rider is usually flung over the bike, often in the path of travel of the bike.

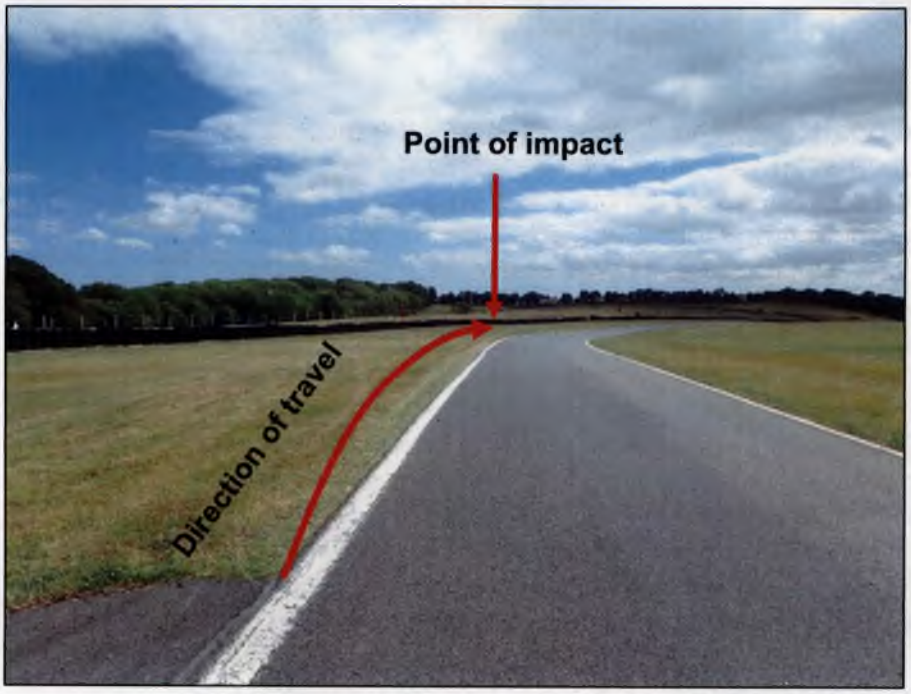

Figure 1.4.7 View of run-off from exit point to Type E barrier

Cadwell Park characteristics

Figure 1.4.8 Cadwell Park overview

1.4.70. **RAFMSA opinions on Cadwell Park**. From interviews, RAF team members described Cadwell Park, Figure 1.4.8, as a technical race circuit,

with a narrower track than other circuits used for similar inter-Service races.

1.4.71. **Circuit comparisons**. The SI panel analysed the race position rankings from Thundersport GB and determined that on 16 October 2021, Cpl Farrar achieved an average speed of 75mph on a dry Cadwell Park circuit, whilst the winner of their race class achieved an 82mph average speed. In comparison, Cpl Farrar's average speed at Brands Hatch on 27 March 2022 was 80mph with the winner in the class achieving an average speed of 84mph. A comparison of the fastest laps at other circuits indicate that Cadwell Park had the slowest average winning speed for the classes Cpl Farrar raced in. From interviews and race results, the SI panel determined that Cadwell Park was a more technically demanding race track, with a narrow track, tight turns and slower average speeds, when compared to other circuits used for inter-Services motorcycle circuit racing.

Exhibit 019

Exhibit 020

1.4.72. **Chris Curve assessment**. Chris Curve, where the accident occurred, was a sweeping right-hand curve at a high point in the circuit. It was preceded by a straight and followed by a technical corner known as Gooseneck Curve. Based on their fastest lap of the day, Cpl Farrar was able to safely transit around Chris Curve at speeds of approximately 90mph, significantly higher than the average lap speed and higher than their speed around Chris Curve during the accident lap. From this evidence, the SI panel determined that Chris Curve did not provide an unduly notable hazard and, therefore, was **not a factor**.

Exhibit 027

Weather

1.4.73. **Weather data**. The closest weather data was for RAF Coningsby, 17 miles north northeast of Cadwell Park racing circuit. There had been no precipitation on 27 May 2022, leaving the track dry. At 12:30, the temperature was 16ºC and the wind speed was a 19 to 22mph from a west north-westerly direction.

Exhibit 025

1.4.74. **Wind**. An experienced member of the MCRR team stated that it was windy on the 27 May 2022, which may have caused the bike to 'become light', which in turn may have required riders to adjust position to compensate for drift.

Witness 002

Exhibit 034

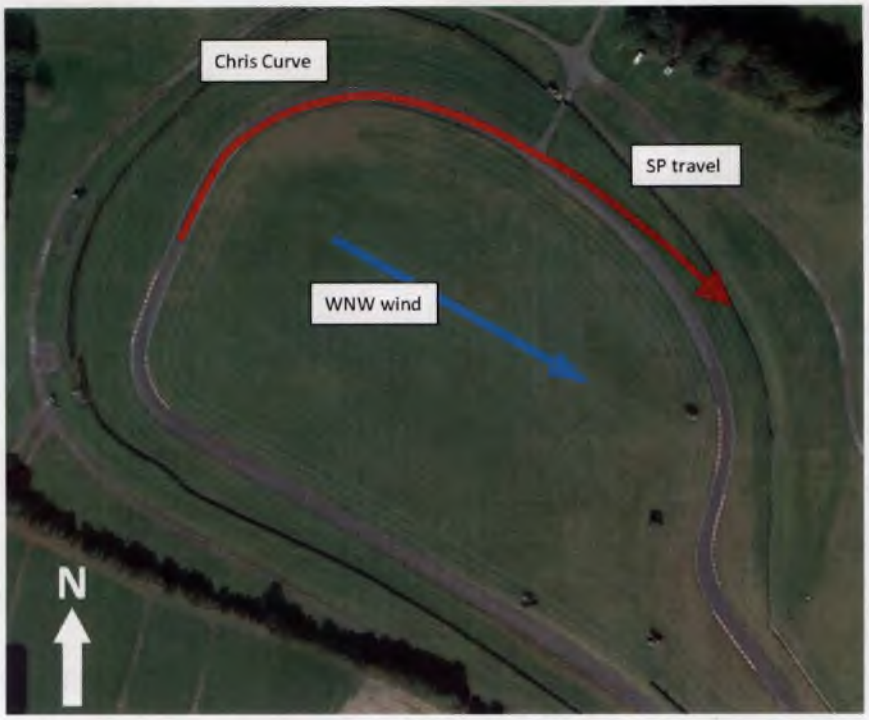

Figure 1.4.9 Wind direction Cadwell Park 27 May 2022

1.4.75. **Effect of wind**. Figure 1.4.9 indicates that the wind was acting perpendicular to Cpl Farrar as they transited around Chris Curve. Based on opinions from interviews, the SI panel determined that wind likely affected Cpl Farrar's handling of the motorcycle whilst transiting Chris Curve as they sought to counteract its effects.

1.4.76. The SI panel determined it likely that wind affected Cpl Farrar's handling of their motorcycle whilst transiting Chris Curve and was, therefore, a **contributory factor**.

1.4.77. **Precipitation**. Precipitation and a subsequent wet surface is a recognised hazard in motorcycle racing, with evidence from interviews supporting this statement. Interviewees commented on how wet weather tyres would be used in wet conditions as a mitigating measure. A study of MOTO Gp, MOTO 1 and MOTO 2 elite motorcycle races over a five year period (2014 to 2018) identified that there was a slight increase in wet weather accidents, 51%, versus dry weather, 49%.[22] The study noted that wet weather incidents tended to be less serious, probably due to riders riding at slower speeds, 15 seconds slower per lap (based on registry data), as a result of the reduced grip afforded by wet weather tyres.

Exhibit 061

1.4.78. As there was no precipitation on the day of the accident the SI panel determined that it was **not a factor**.

[22] Campillo-Recio et al, Journal of Clinical Orthopaedics and Trauma, Accidents and injuries in elite MotoGP motorcycle riders p26. 2021.

Analysis of Cpl Farrar's cornering at Chris Curve

1.4.79. **Data collection**. A GPS lap timer was attached to Cpl Farrar's motorcycle. The data from the lap timer was downloaded and analysed using the manufacturer's software. From this, speed, lean angles, and longitudinal G-forces for their fastest laps were identified in sessions one and two and compared against the lap on which the accident occurred in session three.

Exhibit 027

1.4.80. **Centripetal forces**. When travelling around a curve, the speed of the machine creates an inertia that pushes the machine and rider to the outside of the curve. These are countered by a centripetal acceleration, shown in Figure 1.4.10. The acceleration is a result of a camber thrust force on the tyres, created by the lean angle, and a reactionary force created by the friction of the tyres, known as slip force.

Exhibit 062

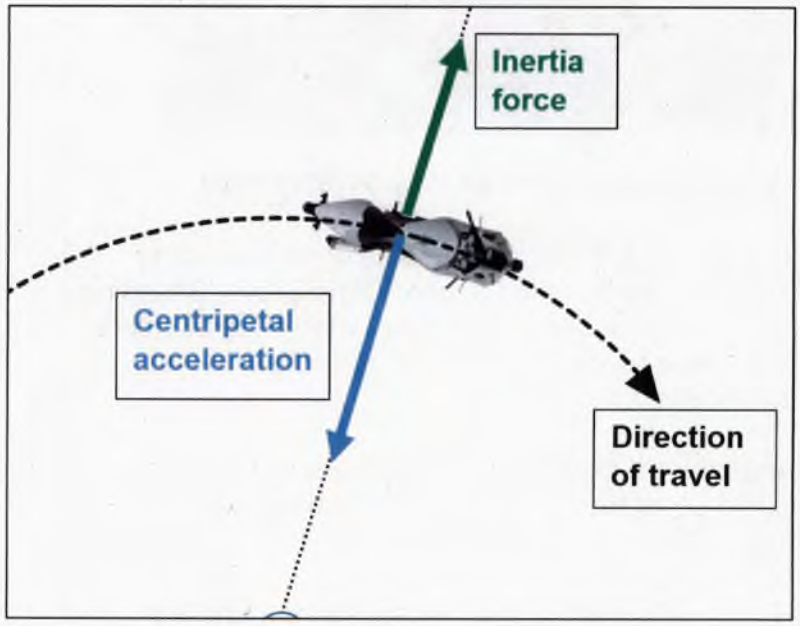

Figure 1.4.10 Forces acting on motorcycle during cornering[23]

1.4.81. **Lean angle and camber thrust force**. Lean angle, also known as camber angle, is the angle at which the motorcycle is leaning away from the centreline, as shown in Figure 1.4.11.

[23] Cairns G, Institute of Advanced Motorists, Corner Force: What it is and how it is generated by car and motorcycle tyres, p 2.

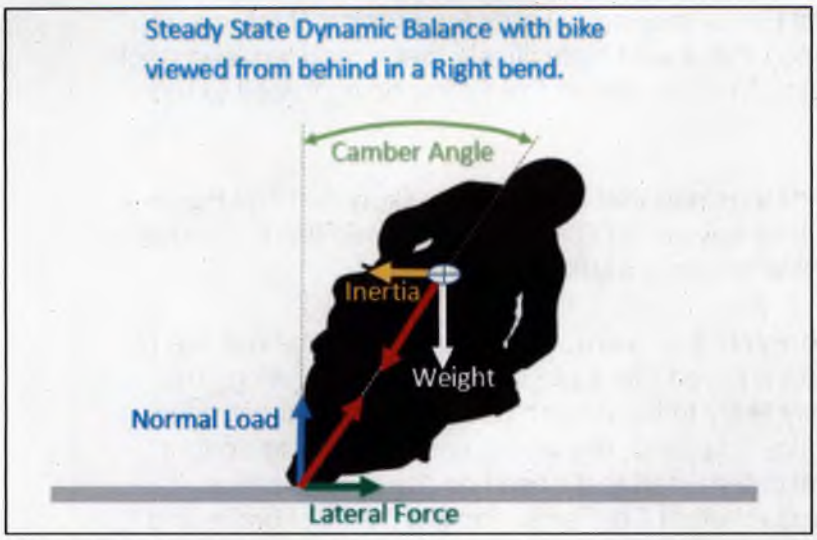

Figure 1.4.11 Camber angle and centripetal force[24]

Exhibit 063

1.4.82. The lean of the motorcycle results in the tyre leaning at the same angle which results in a varying area of tyre contact with the ground. Depending on the weight of the rider, tyre pressures, tyre material and shape of the tyre, this creates a thrust towards the centre of the turn, known as camber thrust force. This thrust force combines with the slip force to create the centripetal force (shown as lateral force in Figure 1.4.11) that contributes to the lateral stability of the motorcycle in relation to the centreline of the curve. The thrust force is the most significant force in relation to lateral stability and increases with lean angle until the tyres lose traction, which is dependent on a number of variables including speed, tyre design, and the configuration of the motorcycle.

Exhibit 063

1.4.83. **Data analysis**. The following were key points from the data:

Exhibit 027

a. At the apex of the curve, Cpl Farrar had a similar speed and line on their accident lap to their fastest lap, 81mph versus 82mph respectively.

b. Their lean angle at the apex of Chris Curve was significantly less on the accident lap compared to their fastest lap; 36° and 44° respectively.

c. Their maximum speed measured on the accident lap was 87mph through Chris Curve, less than their 90mph max speed achieved earlier in the test day.

1.4.84. For the accident lap and their fastest lap, Cpl Farrar had the same speed and line, but differing lean angles. The smaller lean angle would create less camber thrust force. Assuming their body position was similar,

[24] Cairns G, Institute of Advanced Motorists, Corner Force: What it is and how it is generated by car and motorcycle tyres, p 6.

this would result in Cpl Farrar moving towards the outside of the circuit. The SI panel determined that it was highly likely that a reduced lean angle for the speed and racing line, resulted in Cpl Farrar being forced to the outside of the track.

1.4.85. The SI panel determined that it was highly likely that Cpl Farrar's reduced lean angle whilst navigating Chris Curve caused them to move to the outside of the track and was a **causal factor**.

1.4.86. **Moving motorcycle into vertical position**. Near the outside of the curve the GPS data showed that Cpl Farrar was decelerating. This deceleration was highly likely to have been caused by application of the brakes. If the front brake is applied, this would cause a rider to upright themself. The SI panel determined that based on the data showing deceleration it was probable that Cpl Farrar applied the front brake and moved into an upright position.

1.4.87. The SI panel determined it probable that Cpl Farrar applied the front brake resulting in the motorcycle and rider moving into an upright position to leave the track and was a **contributory factor.**

Leaving the track

1.4.88. **Overview of transition through run-off to barrier**. On leaving the track, Cpl Farrar was travelling at 79mph. They remained in an upright position as they transited across the grass run-off area towards the Type E safety barrier that was at a distance of 129m from the exit point. CCTV footage indicated that the uneven grass surface caused Cpl Farrar and the motorcycle to bounce.

Exhibit 027

1.4.89. **Grass run-off**. On grass surfaces there is a lack of traction between the grass surface and the motorcyle racing tyres. An excessive change in direction or excessive application of the brakes may cause the motorcyle to 'low-side'or 'high-side'.[25] The SI panel determined that Cpl Farrar was highly unlikely to have been able to decelerate sufficiently or deviate from their direction of travel towards the Type E barrier, shown in Figure 1.4.12, without detaching themselves from their motorcycle.

1.4.90. The SI panel determined that because of the run-off surface being grass, Cpl Farrar was highly unlikely to have been able to stop or deviate from their path prior to hitting the Type E barrier without detaching from their motorcycle. Therefore, the SI panel determined that the run-off area being grass was an **aggravating factor.**

1.4.91. **Low-siding**. Low-siding can be utilised by riders to separate themselves from the motorcycle. To separate, the rider places the

[25] A low-side crash occurs during cornering, where the thrust force and slip force are less than the centripetal force (tyres lose traction), resulting in the motorcycles front and rear wheels sliding out perpendicular to the direction of travel.

motorcycle down on the grass, through low-siding, and simultaneously pushes the motorcycle away, enabling a different speed and line. Due to risk of damage to machine and risk of injury, the SI panel determined that it was highly unlikely that Cpl Farrar had experienced this manoeuvre prior to the accident.

1.4.92. **Rider injury prevention practise**. The SI panel determined that crash management was developed through experience or discussions in the paddock.[26] This approach was reflected in a survey conducted of 233 professional racers from New Zealand and Italy. The survey identified injury prevention practise was considered the least important type of training, with up to 78% of riders stating that they had never practised the skill. A search of existing literature found no evidence of crash training or professional advice for motorcycle circuit racers. The SI panel determined that it was almost certain that Cpl Farrar had not prepared themself for this scenario.

Exhibit 038

Exhibit 039

Exhibit 030

Figure 1.4.12 Type E barrier with embankment and wire fence

1.4.93. **Startle effect**. When faced with a sudden event that exceeds a person's expectations, they experience an intense moment, which may elicit a feeling of being startled.[27] Muscular activity can be inhibited by startle and a person may stop what they were doing, for example, freeze. This disruption can last from 0.1 seconds to 3.0 seconds for basic tasks and up to 10 seconds for more complex motor tasks. This corresponds with experiments done on car drivers and track day racing motorcyclists.

Exhibit 066

[26] A motorcycle enclosure for maintenance and team administration.
[27] Owton, Cultural Studies Critical Methodologies Vol. 22(5) 513–519, Owton-Startle Effect, 2022.

1.4.94. **Reaction times**. Depending on road conditions, car drivers had an upper-limit response of 1.5 seconds for low-volume roadways to a lower limit of 3.0 seconds for urban freeways.[28] A study of track day racing motorcyclists recorded a mean reaction time of 0.6 seconds.[29] This was in a lab, where participants sat on a racing motorcycle and responded to random LED lights. As the participants in the study were expecting a scenario, the perception response times should be considered the best that could be achieved when an individual was not surprised by a situation.

Exhibit 067

Exhibit 068

1.4.95. **Applying startle effect and perception-response times to accident.** The time from Cpl Farrar being forced into an upright position and then high-siding their motorcycle machine was in the region 2.5 to 3.0 seconds. This corresponds to the reaction time, for basic tasks, of 3.0 seconds disruption to muscular activity caused by being inhibited by startle. The SI panel determined that the startle effect is the most credible reason for Cpl Farrar delaying a decision to separate from their machine before impact.

Exhibit 027

1.4.96. The SI panel determined that it was likely that startle effect influenced the outcome of the accident and was a **contributory factor.**

1.4.97. **'Strong habit intrusion'**. Errors can occur when an individual is conducting a routine task in familiar circumstances, but the actions don't go as planned. These errors can take the form of an absent-minded slip, of which 40% are accounted for by strong habit intrusions.[30] These intrusions are:

Exhibit 069

> '...intact, well-organised sequences that recognisably belong to some activity other than the one that is currently intended. This other activity is judged as being recently and frequently engaged in, and as sharing similar, locations, movements and objects with the intended actions.'[31]

1.4.98. Cpl Farrar had significant off-road motorcycle experience in motocross and enduro, different disciplines of motorcycling that required a different skill set but have similarities to motorcycle road circuit racing. When transiting the bumpy grass surface, the bouncing of the motorcycle would have been similar to riding off-road. The SI panel determined the reason Cpl Farrar did not detach themselves from the motorcycle is likely to be due to a strong habit intrusion resulting from their off-road motorcycling experience. The strong habit intrusion was more likely than not a **contributory factor**.

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[28] Koppa R, Human factors, p 3-3.
[29] Gustavo et al, Comparison of the Reaction Time Between Motorcycle Road Racer and Motorcyclists, p 3, 2021.
[30] Reason J, The Human Contribution, p.38 & 42, 2008.
[31] Reason J, The Human Contribution, p.42, 2008.

Thundersport GB response

1.4.99. **Introduction**. According to the accident report produced by the marshal, the accident occurred at 12:23 and at the same time the CC requested that the race testing was stopped. The race radio log recorded the accident at 12:23 with testing being stopped at 12:24. Exhibit 026 Exhibit 070

1.4.100. **Dispatching of medical support**. According to the CC accident report, three medical units, including an ambulance, were dispatched by the CC, with the first resources arriving within 90 seconds. The CC then proceeded with the doctor to the accident site, arriving at 12:27. On arrival, the CC requested an extra ambulance crew from the medical centre to assist. Within seven minutes of the accident there was a doctor, a medic and three ambulance crews attending to Cpl Farrar. According to the Nuffield Health Trust, the NHS target for an ambulance attending a life-threatening injury was seven minutes.[32] The SI panel determined that Cpl Farrar received medical care above that which would be expected on a public road. Therefore, the SI panel determined that the provision of medical support by the event organiser was **not a factor**. Exhibit 002 Exhibit 071

Post-accident RAFMSA actions

1.4.101. **Support to next of kin (NOK)**. Cpl Farrar's NOK was present at Cadwell Park. Immediately after the accident occurred, a team member (Witness 1) informed the NOK that Cpl Farrar had been involved in an accident. During the period that Cpl Farrar was being attended to by the medical support, and up to when the NOK was informed by one of the race doctors that Cpl Farrar had passed away, the same team member provided support to the NOK. Witness 001 Exhibit 072

1.4.102. **Decision to stop racing**. After a period providing support to the NOK, the team member informed the RAFMSA Chairperson of the accident via telephone. The chairperson informed them that no individuals were to race for the remainder of the weekend. This message was passed on verbally to the remainder of the team. Witness 001 Exhibit 073

1.4.103. **Motivations to continue racing**. During the interviews, it became clear to the SI panel that the direction not to race created mixed reactions. One individual stated that they wished to continue racing for mental solace, whilst another wished to continue for competitive reasons in order to maintain their position in the rankings.

1.4.104. **Seeking clarification on racing in a personal capacity**. The motivation to continue racing resulted in another team member (Witness 2) contacting the deputy-chairperson to clarify the options available to continue racing. The deputy-chairperson expressed the opinion that it was Witness 002

[32] Nuffield Trust, Ambulance Response Times, p 3, 2023.

feasible to continue racing as a private individual, with RAF insignia being removed from the motorcycle and personal safety equipment. Witness 2 relayed this information to other members of the team, this created confusion as it appeared to be contrary to the chairperson's original direction. One further team member (Witness 3) sought final clarification from Witness 1 via a telephone call. Witness 1 conferred again, via telephone to the chairperson, who then gave a direct order not to race. This was conveyed back to the team via telephone and the order was obeyed. The delineation between representative sport and participating in sport in a private capacity is discussed in paragraphs 1.4.264 to 1.4.271 when analysing how the MOD applied duty of care (DoC).

Exhibit 035

Witness 007

Exhibit 074

Duty of Care analysis

DoC introduction

1.4.105. **UK Legislation**. DoC was a principle based on the Health and Safety at Work Act etc 1974 (HSAW) and common law. Within the HSAW, sections two and three were relevant to the SI. Section two covered the general duties of employers to their employees, with paragraph one stating:

> 'It shall be the duty of every employer to ensure, so far as is reasonably practicable, the health, safety and welfare at work of all his employees.'[33]

Exhibit 075

1.4.106. Employees were also owed a non-delegable DoC by their employers under common law.[34]

1.4.107. **Relevance to the accident**. Cpl Farrar was an employee of the MOD, their employer. The SI panel determined that they were on duty and subject to the relevant DoC owed to an employee by their employer, whilst participating in a civilian sport event (the event was delivered by three non-MOD organisations).[35] The complexity of this arrangement, along with the high-risk nature of the sport, led the SI panel to address which organisation(s) or individuals had the duty to ensure, so far as is reasonably practicable, the health, safety and welfare of the service personnel.

1.4.108. The SI panel achieved this by assessing how DoC was firstly applied by the ACU and Thundersport GB. It then assessed the effectiveness of MOD policies and how these were used by RAFMSA. Finally, Cpl Farrar's responsibilities and those of their line management were analysed.

[33] UK Govt, Health & Safety at Work Act etc 1974 Sect 2 para 1.
[34] Not capable or permitted to be transferred.
[35] Autocycle Union, Thundersport GB and Motorsport Vision.

DoC application by the ACU and Thundersport GB

1.4.109. NGBs help fulfil the DoC owed to participants through the application of rules and regulations to minimise risk.[36] This was reflected in RAF sports policy, which stated: Exhibit 076

> 'Sport Safety will be managed in accordance with NGB safety standards or more stringent where service orders so dictate.' [37] Exhibit 077

1.4.110. RAF sports policy also required sports safety management plans (SSMP) to link with NGB safety management and assurance processes:

> 'SSMPs are to detail linkages with NGB safety management and assurance processes where appropriate.' [38] Exhibit 078

Pertinent ACU Regulations

1.4.111. **Principle ACU H&S document**. The overarching ACU document pertaining to DoC was 'Managing Health and Safety at ACU Permitted Events'. The document provided guidance to all motorcycle sports and covered aspects such as safety management, course design and event layout.[39] Exhibit 079

1.4.112. The document was applicable to all motorcycle sports, not just road circuit racing.[40] Of importance to the application of DoC, it required event organisers to manage risk:

> 'Event Organisers, through their process of risk assessment, risk management and inspections on the day of the event, ensure that safety is maintained and the likelihood of someone being harmed is 'As Low as Reasonably Practicable' (ALARP).'[41] Exhibit 080

1.4.113. **Technical regulations**. In addition to the H&S guidance document, there were the ACU Technical and Safety Information 2022 and the ACU Road Racing Standing Regulations 2021.

1.4.114. **Technical and safety information.** The ACU Technical and Safety Information 2022 covered the following areas:

a. Timekeepers and timing equipment.

b. Sound level control.

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[36] JSP 660 Sport in the UK Armed Forces Part 1 Directive (v 2.4 Nov 2021) ch 1 annex C para 7.
[37] AP 3415 Sport in the RAF (v 3.2) leaflet 14 para 1.
[38] AP 3415 Sport in the RAF (v 3.2) leaflet 14 para 12.
[39] Managing Health & Safety at ACU Permitted Events, p.2, Jun 2021.
[40] ACU provides for all forms of motorcycle sport ranging from Road Racing, which includes circuit racing, to all disciplines of off-road activity (Motocross, Trials, Enduro, Grass Track and Speedway).
[41] Managing Health & Safety at ACU Permitted Events, para 5, Jun 2021.

c. Fuel regulations – ACU.

d. ACU approved protective helmet and visors.

e. Recommended provision of sanitary facilities.

f. Recommended safety precautions at all events held under and ACU permit.

1.4.115. **Road racing regulations**. The ACU Road Racing Standing Regulations 2021 covered the following areas:

a. Format and conduct of meetings (events).

b. Licencing process for competitors and officials.

c. Conduct of race and practice sessions including grid positions, safety flags, start processes, managing race interruptions, finishes and race results.

d. Safety considerations including medical service provision, track safety, fire safety, warning and prohibition signs, admissions and passes and signing on.

e. General technical specifications covering protective clothing, engine and frame numbers, fuel, number plates, exhaust sound levels, motorcycle component specifications and specifications pertinent to each type of motorcycle road racing class.

Rider competency

1.4.116. **Representative sport licence requirements**. To motorcycle race at a representative level, an individual needed to have achieved a novice race licence through the ACU. The novice licence is one of six different grades of licence which are progressive, i.e., the level of experience for each licence increases.[42] The six licence types were:

Exhibit 005

a. Parade.

b. Novice.

c. Clubman (also known as pre-national).

d. National.

e. International.

[42] ACU handbook, Section 2.2, Apr 2021.

f. International championship.

1.4.117. **Novice licencing process**. To obtain a novice licence, they would have required a current Full Class A DVLA licence, to have successfully completed an ACU competitor training course (CTC) and basic rider assessment (BRA). Cpl Farrar had obtained their novice licence in 2021 and at the time of the accident was racing as a clubman.[43] Exhibit 005

1.4.118. **Competitor training course**. CTCs were run by affiliated ACU clubs at venues around the country. The courses were theory based and delivered by an experienced CC and covered the basic safety and organisation requirements to complete in racing. Knowledge was confirmed through a multiple-choice test.[44] Exhibit 081

1.4.119. **Basic rider assessment**. The BRA could only be done on completion of the CTC. For a rider to pass the BRA, they needed to have demonstrated the following on a race circuit: Exhibit 081

a. Safe utilisation of the circuit.

b. Appropriate pace and machine control as a potential competitor.

c. Appropriate racing lines.

d. Awareness of other competitors/participants/trackside personnel and flag signals.

e. Must successfully complete a practice race start procedure.

1.4.120. **Variance in experience**. The ACU assessors were required to have passed an ACU Coach Training Certification Programme which was linked to UK National coaching standards.[45] This provided a minimum standard of coaching that was comparable with other UK sports. There is, therefore, an accepted standard of coaching that all novice riders receive. However, as the BRA was done on circuits with varying characteristics, the SI panel determined that novice riders commenced their racing with slightly differing levels of experience, due to the inherent variability of UK race venues and conditions. Exhibit 082

Event assurance overview

1.4.121. For a circuit road race event to take place, the following must have occurred and were analysed as part of the SI:[46] Exhibit 083

[43] A clubman has satisfactorily completed 10 races as a novice at three different circuits.
[44] NEMCRC-2022-CTC-Supplementary-Regulations.
[45] https://www.acu.org.uk/Organiser/CoachingTraining.aspx, accessed 24 Mar 2022.
[46] ACU Handbook 2021, para 1.9.

a. The ACU Road Race Committee must approve the organiser.

b. The venue must hold a current track licence or track certificate issued by the ACU Road Race Committee.

c. The ACU Secretariat must approve the supplementary regulations for the event and issue an ACU permit prior to publication and circulation.

Organiser Approval

1.4.122. **Cadwell Park permits**. Organiser approval was confirmed through issuing of permits, which could only be done where the race organiser had an appropriately qualified CC. Two separate permits were issued to Thundersport GB, the race organiser, for their Cadwell Park event that ran during the period 27 to 29 May 2022. Permit number ACU 62251, dated 1 February 2022 was issued for the test day on 27 May 2022. Permit number ACU 62552 was issued on the same day and was for European Open racing on 27 and 28 May 2022. The event discipline was specified as road race. Exhibit 084 Exhibit 085

1.4.123. **CC competency and experience**. To obtain an organising permit for a national event such as the Cadwell Park Thundersport GB event, the organiser had to be a qualified National Grade A CC.[47] There were four grades of CC, which in order of progression went from probationary to National Grades C, B and A. Progression from probationary to National Grade B involved being initially nominated by a race organiser and then acting in appropriate roles for their level at a minimum of 10 race days for each level. Progression from each level required the individual to have a CC recommendation for each of the races they officiated at. To upgrade to National A, a National B licence holder must have officiated at 5 events and been deputy to a National A coach at 5 events, receiving recommendations from each event. Additionally, the Road Race Committee may have appointed a senior official to observe them. Their first appointment must have been approved by the Road Race Committee. On qualification, they were able to officiate at any event held under an ACU permit and as a deputy or assistant at any FIM (non-championship event). Exhibit 086

1.4.124. The SI panel determined that the ACU CC licensing process almost certainly provided sufficient assurance to ensure that the CC had the necessary experience to fulfil their role and, therefore, was **not a factor**.

1.4.125. The CC for Thundersport GB had been a Grade A licence holder for 27 years. They had also been an ACU track inspector, during this time and would have been required to attend annual seminars and have their licence reviewed at least every three years. The competency and Witness 008 Exhibit 087

[47] ACU Handbook, p 12, Apr 2021.

experience of the CC was reflected in the positive opinions of RAF, RN and Royal Marines Road Race Team (RNRMRRT) members. From the evidence provided, the SI panel determined that the CC had all of the appropriate approvals and licenses, was almost certainly experienced and competent, and, therefore, was **not a factor** in the accident. Witness 009 Exhibit 088 Witness 002 Exhibit 089

Venue and track assurance

1.4.126. **Cadwell Park course licence**. For Cadwell Park to have obtained a course licence, it required a track inspection. Cadwell Park had three course licences that were valid at the time of the event, reflecting the three different configurations of circuit that could be used for motorcycle circuit road racing. The course licence (licence number 12) relevant to the Thundersport GB event had been issued on 24 March 2022 and was valid until 31 December 2022. The course licence was based on a track inspection report dated 12 March 2021. The course licence stipulated a number of conditions, of which the SI panel determined the most relevant being: Exhibit 013

a. The course licence was only for the days that an ACU permit has been issued to an organiser for an event.

b. The CC must verify that the course fully complies with all the conditions – safety barriers, protective devices etc as per the most recent track inspection report.

1.4.127. **Permit**. An ACU permit was issued to Thundersport GB on 1 February 2022. Whilst this preceded the course licence approval, dated 24 March 2022, ACU policy did not specify a sequence they had to be obtained. At the time of the incident, both the permit and course licence were in place for the event and were **not factors**.

1.4.128. **CC verification of course**. The CC was required to use the most recent track inspection report; this was the track inspection report dated 25 March 2022. However, the course licence for the event was based on a track inspection report dated 12 March 2021 and the permit did not make it clear which track inspection report should be used. The SI panel determined that the track inspection report dated 25 March 2022 was used by the CC and was **not a factor**. Exhibit 084 Exhibit 085 Exhibit 002

Event risk assessment

1.4.129. **Overview**. ACU H&S guidance stated that event organisers must conduct a risk assessment and brief employees of the potential risks.[48] The guidance stated that event organisers may also provide Exhibit 090

[48] Managing Health & Safety at ACU Permitted Events, para 41.

relevant H&S information to competitors; no specific mention was made of track hazards.[49]

1.4.130. **Risk assessment content**. The Thundersport GB CC conducted a risk assessment on 1 March 2022 for the test day and racing weekend, linked to ACU permits 62251 and 62252 respectively. The risk assessment was in a tabular format as recommended by the ACU.[50] The risk assessment contained 15 hazard lines related to Covid 19, one related to the paddock area and one related to track activities. For track activities, the five hazards identified were: Exhibit 091 Exhibit 092

a. Collisions between motorcycles.

b. Collisions between motorcycles and circuit infrastructure.

c. Riders sliding along track surface.

d. Motorcycle fires.

e. Motorcycles leaving confines of circuit.

1.4.131. **Mitigation measures**. Mitigation measures were specified for each of the hazards. For circuit infrastructure, the risk assessment recognised that circuits have limited space to extend run-off areas in certain places. Mitigation measure 17 stated:

> 'ACU track inspections identify high risk areas and mandate soft protection for impacts where required.'[51] Exhibit 091

1.4.132. **Cadwell Park ACU risk assessment.** The two ACU risk assessments and track inspection reports were dated 12 March 2021 and 25 March 2022. The purpose of an ACU inspection was to identify if there were any alterations required to issue a circuit licence and what alterations were required to permit ACU events. The Thundersport GB risk assessment did not reference which ACU risk assessment was used. Exhibit 013 Exhibit 093

1.4.133. The Cadwell Park risk assessment conducted on 25 March 2022 was set out in a narrative format with the following headings:

a. Hazards.

b. Existing controls.

c. Acceptability.

d. Works to be carried out to obtain a licence.

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[49] Managing Health & Safety at ACU Permitted Events, para 42.
[50] Managing Health & Safety at ACU Permitted Events, p 37.
[51] What constituted soft protection was not specified. From reviewing the Type A to E barriers, the SI panel concluded that soft protection consisted of Type A, B or C barriers.

e. Works to be carried out either proposed or recommended by the circuit.

1.4.134. **Hazard identification**. To enable the ACU inspectors to identify hazards, the 25 March 2022 report paragraph 5.1 stated: Exhibit 085

> '…accidents and near misses were noted and consultation took place with the ACU and the circuit statistics.'

1.4.135. The SI panel was unable to obtain evidence of accidents, near misses and circuit statistics being used in the risk assessment process.

1.4.136. **Clarity of inspection report**. The track inspection report dated 25 March 2022 did not provide details of the existing controls but did provide details of the additional protection required. As the SI panel did not have evidence of data relating to accidents and near misses as stated in the inspection report, the SI panel **observed** that the assessment for 2022 was likely based on the cumulative experience of the ACU and MSV personnel conducting the track inspection.

1.4.137. **Existing controls and additional protection**. The SI panel was unable to find evidence clearly defining the existing controls. At Cadwell Park, the SI panel determined that the existing controls were the run-off areas, and permanent barriers.[52] Exhibit 94

1.4.138. **Run-off areas**. In order to slow down prior to a barrier, a sufficient run-off is required, as recognised by the ACU guidance, who cite the effectiveness of gravel traps.[53] The importance of run-offs was evident in the design of safety barriers on public roads. From academic research, a study of 418 motorcyclist accidents against crash barriers between 1993 and 1995 concluded the following: Exhibit 086 Exhibit 053

> '…curves as specifically dangerous areas, with accidents on the external radius. It recommends creation of an obstacle-free zone between the road and the barrier. This would allow deceleration before impact with the crash barrier and, as a secondary effect, would benefit other categories of road users as well. The report also shows that the use of a screen on barriers is a way to halve the number of motorcyclist fatalities against metal barriers.' [54]

1.4.139. Academic research highlighted the importance of creating run-off zones between track and barrier. The surface of a run-off zone was not specified in any ACU or FIM guidance. The run-off zone at Cadwell Park was grass and had been extended at Chris Curve by 20m in 2012. At the time of the accident, there was a straight line distance of 130m from Cpl

[52] Run-off areas can consist of grass or gravel.
[53] Managing Health & Safety at ACU Permitted Events, p 16.
[54] European Union, Final report of the Motorcyclists & Crash Barriers Project, p 6, 2009.

Farrar's track exit point to the Type E barrier. The SI panel **observed** that the run-off was a recognised control measure. Exhibit 095

1.4.140. **Additional protection**. Additional protection comprised of temporary or permanent devices installed by circuit owners and race organisers to enable the running of circuit road racing events. Based on the track inspection report, these devices had to be one of the five types that the ACU permitted and that were approved by the FIM. These ranged from Airfence[55] variants, synthetic and straw bales, to car tyres with and without conveyer belt coverings.

1.4.141. **Type E barrier**. The ACU organising permit identified that the Type E barrier was one of five protective devices recognised by the ACU and approved by the FIM. The barrier consisted of car tyres placed next to a rigid steel triple guardrail. The car tyres were one deep, six high and had a diameter between 15 inches and 17 inches. The tyres at Chris Curve, Figure 1.4.13, were not connected to the barrier. Their purpose was to absorb the kinetic energy of the rider and machine. For the rider, this protected them against impact with hard structures whilst the spectators were protected against the machine. The SI panel **observed** that the Type E barrier at Cadwell Park was permanent and a recognised ACU protective device. Exhibit 085 Exhibit 096

Figure 1.4.13 Type E barrier at Chris Curve

[55] Inflatable energy-absorbing system placed in front of anything hard that might be hit by a crashing road racer.

Medical services

1.4.142. **Event organiser medical cover**. As shown in Table 1.4.1 Thundersport GB's medical cover at the test session on Friday 27 May 22 exceeded ACU requirements.[56] At the scene of the accident, there were two ambulances and a doctor. Another doctor was positioned at the medical centre.

Exhibit 097

	PERSONNEL			VEHICLES	
	Doctor	Paramedic	First Aid Personnel	Ambulance	Fast Intervention Vehicle
ACU road race test day requirements	1	1	2	1	1
Thundersport GB	3	1	2	4	1

Table 1.4.1 Comparison of Thundersport GB medical provision versus ACU

1.4.143. The ACU specified that the doctor needed to be a medical practitioner registered with the GMC. During a visit to Oulton Park, the CC informed the SI panel that Thundersport GB ensured that the doctors were qualified surgeons, surpassing the ACU requirements. From witness interviews, the medical cover provision was identified by RAF MCRR team members as a significant reason why they felt safe racing with Thundersport GB.

Witness 008

Exhibit 098

Track inspection

1.4.144. **Cadwell Park CC morning track inspection**. The ACU required the CC to conduct an inspection of the circuit on the morning of test and race days. This was completed by the CC at 06:55 on Friday 27 May 2022. The purpose of the track inspection was to ensure that all the additional protective measures, requested in the ACU circuit licence track inspection report, were in place. For this, the CC utilised the most recent track inspection report, dated 25 March 2022.

Exhibit 024

Exhibit 002

1.4.145. In addition to the protective measures, the start of the day inspection was used by the CC to check the following:

Exhibit 002

a. Grass verge was level with edge of the track (to prevent a sliding rider damaging their pelvis).

[56] ACU Handbook 2021, para 13.1.

b. Signage and lights.

c. No debris on circuit.

d. Condition of tyre walls and straw bales.

e. Marshal posts and equipment.

1.4.146. **Track inspection conclusion**. The SI panel determined that the morning inspection of the circuit by the CC was a thorough process that ensured competitors were participating in a safe environment and was **not a factor**.

Technical control

1.4.147. **Overview**. The purpose of technical control, also known as scrutineering, was to enable race organisers to check that both the motorcycle and the rider's personal safety equipment complied with the technical specifications. The technical specifications made it clear that it was the rider's responsibility to ensure 'that a machine used in competition is mechanically and structurally in a safe condition'.[57] This was aligned with the RAF SMP for motorcycle circuit racing. Exhibit 014

1.4.148. **Technical control process**. An example technical control check list is shown in Figure 1.4.14. Exhibit 099

[57] ACU Handbook, section 14.24, Apr 21.

SCRUTINEERING CHECKLIST – KIT & VEHICLE

Rider must present themselves to scrutineering wearing ALL protective clothing.

Bikes will be given a general check over by the scrutineer for faults, leaks, loose parts & wiring.
Should there be anything, the scrutineer will advise on any problems that need attention.

Riders Equipment	Rules / Advice
Leathers & condition	Compulsory One-Piece & In good condition - All stitching intact – No tape
Boots & condition	Good condition – Covers above ankle bone – (* No metal studs)
Gloves & condition	All leather with armour – Over the wrist – must be good condition
Chest & Back Protectors	Compulsory
Helmet (No Dark Visors)	ACU Double gold band – Good condition – Clean clear undamaged Visor
Identification	ID Tags - Novice Tabards (if Required)

Motorcycle	Rules / Advice
Front wheel bearing	Good Condition
Front tyre	Check condition – Must be well above legal limit
Metal valves and caps	Must be present
Forks	Check for oil leaks
Rear wheel bearing	Good condition
Rear tyre	Check condition – Must be well above legal limit
Metal valve and cap	Must be metal and present
Rear Wheel spindle	Secure
Rear Sprocket Assembly	Secure
Swingarm Bearing	Good condition
Spokes & Tension	Good Condition
Steering Damper	Not to be used as 'Lock Stop' (Compulsory)
Headstock bearing	Good Condition
Steering stops – left and right	20mm Clearance for hands – No trapped cables
Handlebars	Levers and switches secure and (** working correctly)
Self-closing throttle	Working correctly
Electrical isolation – engine cut-off	Working correctly
Wrist lanyard	Strongly advised – Necessary on modified / special build machines
Front fender	Secured correctly
Fairing security, additional supports	For high speed specials / modified machines
Rider seat	Secured
Tank - Fuel	Secured
Fuel filler cap	Must be secure
Exhaust System	Secured
Brakes on both wheels	Must be in good condition – clean – working correctly
Footrests – Brake & Gear lever	Must all be secured
Suspension Front & Rear	Smooth and in good condition
Chain tension	Checked (regularly)
Chain adjusters	Must be secured
Safety guard – chain and sprockets	Chain guard compulsory
Safety guard – turbocharger	Good Condition
Safety guard – clutch & transmission	Good Condition
Battery	Must be secured & covered
Sump drain plug	Safety wired
Oil Filter	Safety wired
Other fluid drain plugs & filters	As advised safety wired

* Exception for Mono Wheel Riders
** As per rider – Please specify any special modifications

Figure 1.4.14 Scrutineering checklist

1.4.149. **Technical control training**. Technical control was managed by a chief technical officer and a team of technical officers. Technical officers did not require formal training but underwent training with the chief technical officer. [58] Chief technical officers were required to have completed a national technical official seminar and have had three years' experience as a chief regional technical officer.

Exhibit 100

[58] ACU Handbook, section 3.4, Apr 2021.

1.4.150. **Consequences for RAFMSA**. The SI panel determined that on test days, when the accident occurred, checking of personal safety equipment and motorcycles for technical compliance was not required by the event organiser and, therefore, was not done on the day of the accident. Additionally, for the whole weekend the safety of the motorcycle was the responsibility of the rider. A review of the RAFMSA SMP identified that these were not covered. The SI panel determined that as MCRR team members were on duty, RAFMSA should have considered this in their SMP. This was an **other factor**.

1.4.151. **RECOMMENDATION. The Director People, Training and Naval Secretary should update the Royal Navy Royal Marine Motorcycle Road Racing Team's risk assessment so that it includes an analysis of potential gaps in MOD duty of care that may result from the Auto-Cycle Union technical control process in order to improve safety of service personnel participating in motorcycle circuit road racing.**

1.4.152. **RECOMMENDATION. The Deputy Chief of the General Staff should update the Army Motorcycle Road Racing Team's risk assessment so that it includes an analysis of potential gaps in MOD duty of care that may result from the Auto-Cycle Union technical control process in order to improve safety of service personnel participating in motorcycle circuit road racing.**

1.4.153. **RECOMMENDATION. The Air Officer Commanding 22 Group should update the RAF Motorcycle Road Racing Team's risk assessment so that it includes an analysis of potential gaps in MOD duty of care that may result from the Auto-Cycle Union technical control process in order to improve safety of service personnel participating in motorcycle circuit road racing.**

DoC application by MOD sports organisations

1.4.154. The following paragraphs analyse how the MOD applied DoC for individuals partaking in representative sport at events run by an NGB or its affiliates. The report introduces MOD H&S policy prior to analysing how it manages risk in these circumstances. Funding, duty status, assurance, policy fatigue and management of sole participation are then analysed.

MOD H&S policy

1.4.155. **Overview**. As an employer, the MOD was required to meet the legal obligations set out in the HSWA. The Secretary of State for Defence's Health Safety and Environmental Protection (HS&EP) policy statement, dated 2 April 2020, stipulated the general duties and governance of HS&EP in the MOD. From this, there were separate policy documents for guiding MOD personnel on HS&EP, which at the time of the accident were:

a. JSP 375 Management of Health and Safety (H&S) in Defence Directive & Guidance (version 1.2 October 2020).

b. DSA 01.1 Defence Policy for Health, Safety and Environmental Protection (version 1.0 August 2016).

1.4.156. **JSP 375**. As stated in the policy's foreword: Exhibit 101

'JSP 375 provides the MOD organisation and arrangements required primarily by the Health & Safety at Work Act etc.1974 (HSAW).'[59]

1.4.157. The contents of JSP 375 enabled MOD personnel to deliver defence activities in accordance with H&S policy, including discharging of duties of care. It provided good practice, working procedures and local policies for the full spectrum of defence activities. The spectrum of activities was broad and was a consideration of the SI panel when analysing the challenges of applying H&S in sport.

1.4.158. **DSA 01.1**. DSA 01.1 was the amplification of the Secretary of State's policy statement for HS&EP. It was supported by three other documents:

a. DSA 01.2 Implementation of Defence Policy for Health, Safety and Environmental Protection Chapter 3 Duty Holding (issue 1.1 May 2018).

b. DSA 03. Movement and Transport Safety Regulations (second edition March 2020).

c. DSA 01.4: Glossary of terms and definitions for Defence Health and Safety.

1.4.159. This suite of documents provided the means by which defence personnel should deliver safety; known as safety management systems (SMS). An SMS can be considered as the 'how' safety was applied. During the inquiry, DSA01 was in the process of being replaced by JSP 815, Defence Safety Management System.

1.4.160. JSP 375 and DSA 01 respectively provided the 'what' and 'how' the MOD met its legal obligations towards H&S. They complemented each other.

Safety management systems

1.4.161. **Defence policy**. DSA 01.1 Defence Policy for Health, Safety and Environmental Protection, introduced the concept of an SMS as a means for an organisation to manage H&S; it could also incorporate

[59] JSP 375 Management of Health and Safety in Defence Directive & Guidance (v 1.2 Oct 2020), p 2.

environmental protection to become a safety and environment management system (SEMS). DSA 01.2, Implementation of Defence Policy for Health, Safety and Environmental Protection, provided the defence regulation requiring organisations to have in place internal management procedures to ensure compliance with HS&EP legal requirements, and defence policy and regulations for their areas of responsibility or accountability. Exhibit 102 Exhibit 103

1.4.162. **Single Service policy**. As a result of this requirement, each of the single Services had a policy document outlining their safety and environmental management procedures:

a. ACSO 1200, The Army's Safety and Environmental Management System (issued January 2021).

b. Air Publication 8000, Air TLB Safety and Environmental Management System (version 1.9 January 2022).

c. BRd 10, Navy Command Safety and Environmental Management System (version 3.0 March 2021).

1.4.163. The structure of these documents differed, and this report does not provide a comparative analysis between the three. This report uses these documents to analyse the application of H&S within each of the single Service sports.

RAF sports SMP

1.4.164. **Historic driver for a sports SMP**. In 2013 an SI was convened to investigate the death of two RAF officers on an authorised RAF Mountaineering Association meet in the UK. Following on from that SI, the RAF conducted a review of sports safety. Direction was subsequently given for sport conducted in the RAF to have an SMS that assisted in fulfilling the DoC. Exhibit 104 Exhibit 105

1.4.165. **Policy requirement**. AP8000, Air TLB Safety and Environmental Management System, outlined the requirement for an RAF sports chairperson to have an SMP for their sport. As shown in Figure 1.4.15, AP 3415 further detailed the requirement for an SMP and the SMP was a check item within the self-assessment questionnaire. Exhibit 106

		AP 3415 Leaflet 1
AP7004	Information Management Policy.	Section 2 Chapter 12 deals with Social Media Policy.
AP7001	Leadership in the RAF.	Paras 7 & 9 - Generic Education & Training Requirement.
AP8000	RAF Safety and Environmental Management System.	AP8000 describes the organisation, processes and procedures of the RAF's Safety and Environmental Management System (SEMS) and makes reference to associated Safety Policy contained across Defence. In particular Leaflet 8012 covers sport.
AP9012	RAF Stress Management and Resilience Policy.	Chapter 4 Annex E Appendix 1 - Off-loading' opportunity, Cumulative Stress, releasers. Minimise Boredom and Isolation.

Exhibit 106

Figure 1.4.15 Leaflet 8012 in AP3415

1.4.166. **SMP guidance**. Leaflet 8012, Management of Safety in Sports in the RAF, outlined the following requirements for a sports SMP: Exhibit 105

'The Chairperson of an RAF Sport should have a safety management plan that includes the following information:

a. Scope of sporting activity as well as where and how the SMP interfaces with other areas/key documents.

b. A statement that all risks are at least Tolerable and As Low As Reasonably Practicable (ALARP). Note: If the risk is not at least Tolerable and ALARP then the activity is not to take place.

c. Evidence of compliance with health and safety regulations as mandated through DSA01 and JSP 375, where National Governing Body (NGB) regulations do not meet the principles of DSA01. JSP 419 should also be considered when an activity might also be conducted as Adventurous Training.

d. Evidence of compliance to NGB rules and regulations.

e. Details and records of how participants prove they are 'fit to participate' in the sporting activity (Safe persons).

f. Details of safety/protective equipment maintenance (where applicable) including policy statement for equipment procurement, equipment list and maintenance log (Safe equipment).

g. Names, qualifications and/or experience and other details, including currency, of personnel responsible for the maintenance of safety/protective equipment, where applicable (Safe equipment).

h. Names, qualifications and/or experience and other details, including currency and training records, of all instructors/coaching staff (Safe practice).

i. Demonstrate an appropriate level of supervision for all activities (Safe practice).

j. Evidence of application of a risk-based approach when conducting sporting activity (Safe place).

k. Evidence of NGB insurance/liability (if available) and personal/3rd party liability.'[60]

1.4.167. The SI panel determined that Leaflet 8012 provided a comprehensive checklist of information that should be included in a sports SMP and this guidance was **not a factor** in the accident.

1.4.168. **Information management.** AP3415 directed individuals to AP 8000, AIR TLB Safety and Environmental Management System, to obtain Leaflet 8012. AP 8000 listed Leaflet 8012 as 'In-Form' reporting, Figure 1.4.16. The SI panel determined that Leaflet 8012, Management of Safety in Sports was not within AP8000. This was an **other factor**.

Exhibit 107

Leaflet 8010 – United States Visiting Forces Safety Management (Under Review)
Leaflet 8011 – Safety Promotion
Leaflet 8012 – In-Form Reporting
Leaflet 8013 – Conduct and Management of RAF Service Inquiries
Leaflet 8014 – Occurrence Review Group Terms of Reference

Figure 1.4.16 Leaflet 8012 in AP8000

1.4.169. **RECOMMENDATION. The Air Officer Commanding 22 Group, should ensure that Leaflet 8012 is correctly referenced in AP3415 Sport in the RAF in order to enable RAF sports associations to access the information easily.**

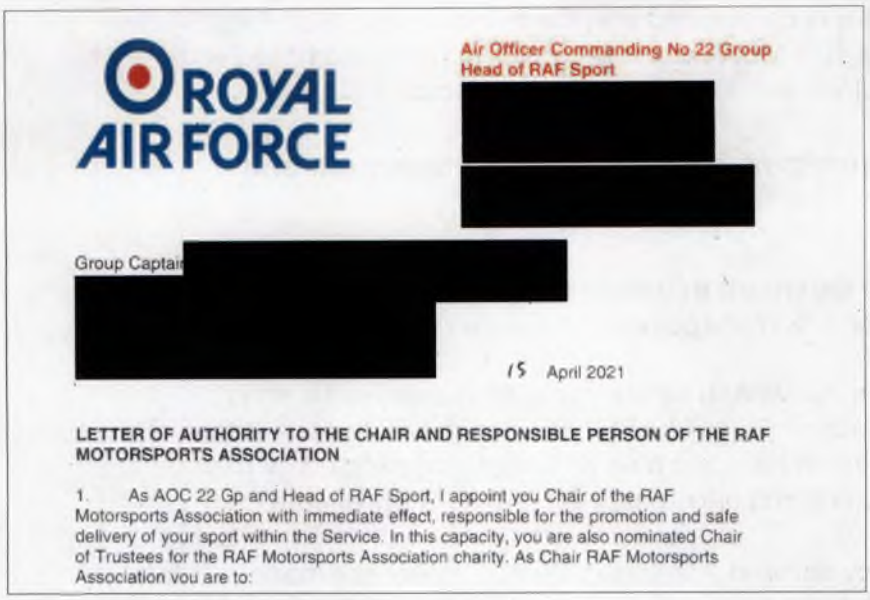
RAF sports association chairperson

1.4.170. The chairperson of an RAF sports association was appointed by the 2* Head of RAF Sport. AP3415 provided direction on the roles and responsibilities incumbent on sports association chairpersons in the RAF. The RAFMSA Chairperson was appointed as the responsible person through a letter, the introduction of which is shown in Figure 1.4.17.

Exhibit 090

[60] AP8000 Air TLB Safety and Environmental Management System (v 1.9 Jan 2022) Leaflet 8012.

Exhibit 007



ROYAL AIR FORCE

Air Officer Commanding No 22 Group
Head of RAF Sport

[redacted]

Group Captain [redacted]

15 April 2021

LETTER OF AUTHORITY TO THE CHAIR AND RESPONSIBLE PERSON OF THE RAF MOTORSPORTS ASSOCIATION

1. As AOC 22 Gp and Head of RAF Sport, I appoint you Chair of the RAF Motorsports Association with immediate effect, responsible for the promotion and safe delivery of your sport within the Service. In this capacity, you are also nominated Chair of Trustees for the RAF Motorsports Association charity. As Chair RAF Motorsports Association you are to:

Figure 1.4.17 Letter of authority

1.4.171. **Duties of responsible person**. The letter outlined the duties of the responsible person (RP), the extract of which is shown in Figure 1.4.18.

Exhibit 007

2. In addition, as Operating Duty Holder (ODH) for RAF Sport, I appoint you as the Responsible Person for the RAF Motorsports Association (for all sport activities conducted under the auspices of JSP 660 or AP 3415 or in the association's name). As such, I require you to: uphold your responsibilities under Common Law, the Health and Safety at Work Act 1974 and the Environmental Protection Act 1990; conduct activity in line with JSPs 375, 660 and AP 8000; and ensure that these orders, instructions and procedures allow personnel involved in your sport the maximum freedom without prejudicing safety, good order and discipline. Specifically, you are to comply with my and the Inspector Sport Safety (RAF)'s direction within the Sport Safety Management System and implement an association Sport Safety Management Plan (SSMP) that will enable you to:

Figure 1.4.18 Appointment of responsible person

1.4.172. The SI panel determined that the letter of appointment clearly articulated that the responsible person was required to ensure that their sport was delivered in a safe manner, with the safety management plan being the document that articulated how this was done.

1.4.173. The RAFMSA Chairperson had been in the role since 2019 and had previously held deputy chairperson and public relations roles within RAFMSA. They actively competed in motorsport 4-wheel (car).

Witness 006

Exhibit 109

1.4.174. The SI panel determined that the role and responsibilities incumbent upon the RAFMSA were clear, fit for purpose, complied with JSP 660 and, therefore, were considered **not a factor**.[61]

The MOD relationship with NGBs - risk management and ownership

1.4.175. **Risk management policy overview**. DSA 01.1 outlined the MOD policy for using risk management for the reduction of H&S risks:

> 'Specifically for health and safety this is to ensure, so far as is reasonably practicable (or ALARP), the health safety and welfare of their employees and anyone else who might be affected by their activities. This is commonly referred to as the "duty of care".'[62]

Exhibit 110

1.4.176. The policy showed a linkage between safety risk management (SRM) and DoC. The risk management process involved the use of risk assessments to discharge this DoC.

1.4.177. **Risk assessment applicability for sport**. The SI panel determined that sport was a recognised defence activity. Therefore, personnel who control, lead, or conduct representative sport in the UKAF were required to meet the following criteria, as defined in DSA 01.2:

> 'Defence personnel who control, lead, or conduct a Defence activity must be able to demonstrate that:
>
> ...they understand the legislation that applies and the importance of the risk assessment in context of the activity being undertaken.
>
> ...risk assessment of hazardous activities has been carried out and effective mitigation measures implemented before commencement of the activity.
>
> ...any person conducting or assisting in the risk assessment is competent to do so, practiced and familiar with the activities being undertaken;'[63]

Exhibit 111

1.4.178. **MOD integration with NGBs**. JSP 660, Sport in the Armed Forces, acknowledged the importance of NGBs and how NGB rules and regulations interact with MOD policy with the following:

> 'National Governing Bodies (NGBs). The majority of sports have well established NGBs which have comprehensive rules for the conduct of their sporting activities. NGBs are registered with the Sports Councils

[61] JSP 660 Sport in the UK Armed Forces Part 1 Directive (v 2.4 Nov 2021) ch 1 para 8.
[62] DSA 01.1 Defence Policy for Health, Safety and Environmental Protection (version 1.0 August 2016), ch 4 para 1.
[63] DSA01.2 Implementation of Defence Policy for Health, Safety and Environmental Protection, Chapter 4: Management of Health, Safety & Environmental Protection Risk (issue 1.0 Jul 2018) para 7a.

(UK/GB or England, Wales, Scotland and Northern Ireland). For a particular sport to exist within the UKAF, its NGB must be recognised by one of these Sports Councils'

Exhibit 112

'The sports associations are to administer their sport in accordance with the directives of their sport's NGBs and Defence, Joint Service and single Service publications and instructions.'[64]

1.4.179. An area of provided direction is risk management, where JSP 660 required sports associations to adhere to the following requirement:

'Where NGB rules fail to mitigate the risk to life adequately or to the standard required by MOD regulation, they are to establish risk management systems that ensure any risk is as low as reasonably practicable.'[65]

Exhibit 113

1.4.180. **RAF sports policy**. The relationship with NGBs is further detailed in AP3415, Sports in the RAF, which stated:

'Sport Safety will be managed in accordance with NGB safety standards or more stringent where service orders so dictate.'[66]

Exhibit 114

1.4.181. RAF sports policy also required an SMP to link with NGB safety management and assurance processes:

Exhibit 078

'SSMPs are to detail linkages with NGB safety management and assurance processes where appropriate.'[67]

1.4.182. **MOD recognition of NGBs**. For RAFMSA activity, JSP 660 Sport in the Armed Forces, noted its associated NGB as shown in Figure 1.4.19.

Exhibit 115

Motor Sports:	Auto-Cycle Union
a. 2 Wheel Road	Auto-Cycle Union
b. 2 Wheel Trial	Auto-Cycle Union
c. 2 Wheel Enduro	Amateur Motorcycle Association7/Auto Cycle Union
d. 2 Wheel Motocross	Motorsports UK
e. 4 Wheel Car Racing (Sprint & Circuit)	Motorsports UK
f. 4 Wheel Navigation	Motorsports UK
g. Rally	Motorsports UK
h. Karting	

Figure 1.4.19 Affiliated NGB[68]

[64] JSP 660 Sport in the UK Armed Forces Part 1 Directive (v 2.4 Nov 2021) ch 1 para 7 p 1-2.
[65] JSP 660 Sport in the UK Armed Forces Part 1 Directive (v 2.4 Nov 2021) ch 1 annex c para 7.
[66] AP3415 Sport in the RAF (v 3.2) Leaflet 14 para 1.
[67] AP3415 Sport in the RAF (v 3.2) Leaflet 14 para 12.
[68] JSP 660 Sport in the UK Armed Forces Part 1 Directive (v 2.4 Nov 2021) ch 1 annex B.

1.4.183. During interviews, the RAFMSA Chairperson took the view that the association was more closely coupled to their NGB than most other representative sports, such as football. The RAFMSA needed the ACU and the event organiser, Thundersport GB, to provide, amongst other things, governance, track venue, event organisation and medical resources. This differed from more common Category 1 sports where resources were often co-located on MOD property, such as football pitches or squash courts. Witness 006 Exhibit 116

1.4.184. **Meeting RAF and MOD policy**. To meet their terms of reference, the RAFMSA were required to scrutinise the risk management structure of the NGB linked to their sport, to decide if risks had been adequately covered to MOD standards, and take action to mitigate risks to ALARP and tolerable if not.[69] This required: Exhibit 007

a. Adding absent hazards, if there were any, to an MOD generic risk assessment.

b. Additional mitigation for hazards identified by the NGB, enhancing where it was appropriate to do so, added to an MOD generic risk assessment.

c. Producing a specific risk assessment.

1.4.185. This was not to be an exercise where risks identified by the NGB were duplicated, but a study of where the 'gaps' in risk mitigation lie, then ameliorating risk to the standard required by MOD regulation.[70] Exhibit 117

1.4.186. **Directorate of RAF Sport**. The Directorate of RAF Sport was clear that a sports association chairperson/responsible person and their safety managers needed to be current with the NGB rules and regulation, to include identifying risks, and assuring themselves that risks associated with an activity were ALARP and tolerable, and within the bounds of the association SMS. If they were not, they were to withdraw from any activity and elevate the risks identified for resolution. Exhibit 118

1.4.187. **RAFMSA Chairperson**. During interview, the RAFMSA Chairperson, who held authorisation for service personnel to attend, informed the SI panel that events were only authorised if required standards were met, and provided examples of events that had been refused. This highlighted to the SI panel that the RAFMSA Chairperson had the authority, and used it, to meet Director RAF Sports direction regards withdrawing from an activity. Witness 006 Exhibit 119

1.4.188. At the time of the incident, MOD and RAF sports policy, JSP 600 and AP3415, provided clear guidance that sports associations safety management plans had to compare MOD regulations against the NGB regulations that govern their sport and identify hazards where NGB

[69] ALARP - As low as reasonably practicable.
[70] JSP 660 Sport in the UK Armed Forces Part 1 Directive (v 2.4 Nov 2021) ch 1 annex C para 7.

regulations do not mitigate to the standard required by the MOD. These hazards were to be covered within a sports association SMP to ensure MOD standards had been met. This was understood by the RAFMSA Chairperson and was considered by the panel as **not a factor**.

1.4.189. **MOD risk ownership policy**. JSP 660 described who owns the risk for MOD personnel when they partake in MCRR as authorised sport:

> 'The risk owners for Service personnel participating in UKAF representational sport are the respective single Service 2 Star heads of sport. They manage the risk through the of [sic] their single Service sports associations. Thus the Chair of the single Service sports association must satisfy himself/herself on behalf of their head of sport that the UKAF sport association activity is appropriately managed from a safety and risk perspective before their association personnel participate.'[71]

Exhibit 120

1.4.190. **Risk ownership applicability to RAF MCRR team**. As it relates to this inquiry, the risk owner was the Air Officer Commanding 22 Group, who, via a letter of authority, appointed the RAFMSA Chairperson as the 'Responsible Person' as detailed in Figure 1.4.18.

Exhibit 007

1.4.191. **RAFMSA personnel perspective on risk**. During interviews and from evidence gathered, differing perspectives were offered by RAFMSA personnel on the risk ownership between RAFMSA and the NGB. These perspectives were as follows:

a. From email:

> '...at no point does RAF Motorsport 'own' any of the risks associated with delivery of motorsport.'

Exhibit 121

b. From interviews:

(1) 'The military hold no responsibility or accountability, just a duty of care.'

Witness 001

(2) 'RAF motorsport and RAF sport own that risk, we are putting them on duty to do that.'

Exhibit 122

(3) 'They will be prosecuted if they do not deliver a risk mitigated environment... they are licenced to operate therefore they are acting within a risk framework.'[72]

Witness 006
Exhibit 123

1.4.192. MOD policy did not cover risk ownership when an event was being delivered by an NGB or an affiliated organisation. This could account for some of the confusion from personnel interviewed. An interviewee

[71] JSP 660 Sport in the UK Armed Forces Part 1 Directive (v 2.4 Nov 2021) ch 1 annex C para 9.
[72] Thundersport GB.

espoused the view that once the event was running, they were unable to influence it and, therefore, did not hold the risk. However, as they had the authority to prevent or withdraw service personnel from an NGB event, it could be argued that they held the risk for the service personnel. As risk management and ownership was linked to DoC, the SI panel determined that a lack of clarity on risk ownership could also result in lack of clarity on DoC ownership. The SI panel determined that there was no clear MOD guidance regarding how risks were owned by the single Service sports 2* heads when representative sport is authorised for NGB or NGB affiliated organisation run events. This could result in poor management of DoC and was an **other factor**.

Witness 007

Exhibit 124

1.4.193. **RECOMMENDATION. The Assistant Chief of the Defence Staff (People Capability) should provide guidance on what risks are owned by sports associations, when representative sport is authorised for national governing body or national governing body affiliated organisation run events, in order to ensure appropriate duty of care is provided to participants.**

MOD risk assessment process for sports

1.4.194. **Policy at time of accident**. The policy applicable to safety risk assessments for RAF sport at the time of the accident were:

a. JSP 375 Volume 1 (version 1.3 January 2022): Management of Health and Safety in Defence.

(1) Chapter 8 (Risk Assessment). This chapter set out the following:

Exhibit 125

(a) Defence procedures, guidance and methodology for the risk assessment of activities and hazards otherwise inherent on or introduced to Defence.

(2) Chapter 40 (Military Training for Land Systems). This chapter was concerned with the following:

(a) Assisting the commander with managing the balance between the risks faced and the benefits that may accrue and indicates how the commander should integrate risk management into their planning and estimates.

Exhibit 126

1.4.195. **Policy implemented during the SI**. During the inquiry, JSP 375 was updated from version 1.3 to version 1.4 (December 2022). The new version incorporated chapters 8 and 40 into a single chapter, Chapter 8 - Safety Risk Assessment and Safe Systems of Work.

1.4.196. Version 1.4 is referenced in the following analysis as it provides supporting evidence of how risk assessment policy was ambiguous at the time of the accident.

1.4.197. **As low as reasonably practicable**. As low as reasonably practicable (ALARP) is in relation to employers being required to manage the DoC of their employees, this is defined by the Health and Safety Executive (HSE) as:

> '"ALARP" is short for "as low as reasonably practicable". "SFAIRP" is short for "so far as is reasonably practicable". The two terms mean essentially the same thing and at their core is the concept of "reasonably practicable"; this involves weighing a risk against the trouble, time and money needed to control it. Thus, ALARP describes the level to which we expect to see workplace risks controlled.'[73]

Exhibit 127

1.4.198. The legal definition acknowledges that there will always be residual risk. During interview, the RAFMSA Chairperson demonstrated their understanding of ALARP and how it related to motorsports, expressing the view that the entire risk could not be eliminated. The SI panel determined that the principle of making risks ALARP and tolerable was understood by the RAFMSA Chairperson.

Witness 006

Exhibit 128

Risk assessment levels

1.4.199. **Generic, specific and dynamic**. JSP 375 provided guidance on the three levels of risk assessment: generic, specific and dynamic. At the time of the accident, how these risk assessments were applied was shown in a flowchart within JSP 375 version 1.3, Figure 1.4.20.[74] The updated version of this flowchart, version 1.4 at Figure 1.4.21 shows how the policy was amended to make the definition and placement of a dynamic risk assessment clearer. [75]

Exhibit 129

Exhibit 130

[73] https://www.hse.gov.uk/enforce/expert/alarpglance.htm (Accessed 18 May 2023).
[74] JSP 375 Management of Health and Safety in Defence, Vol 1 ch 8 (v 1.3 Jan 22) extant at the time of the accident.
[75] JSP 375 Management of Health and Safety in Defence, Vol 1 ch 8 (v 1.4 Dec 22).

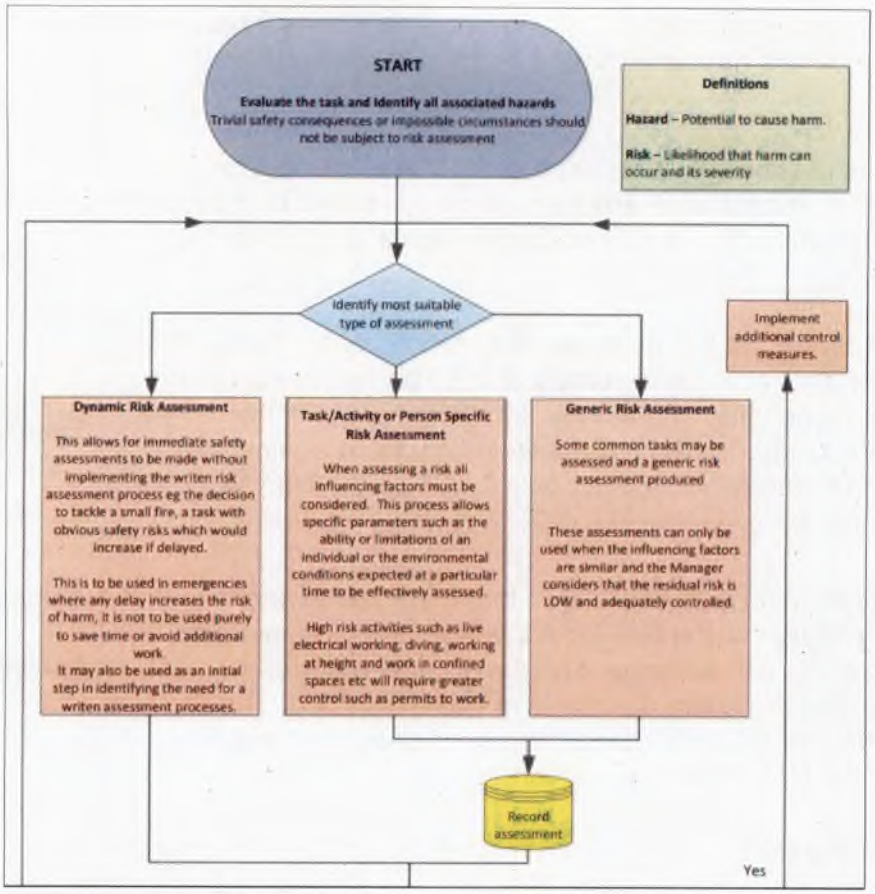


Figure 1.4.20 Version 1.3 risk assessment flow chart

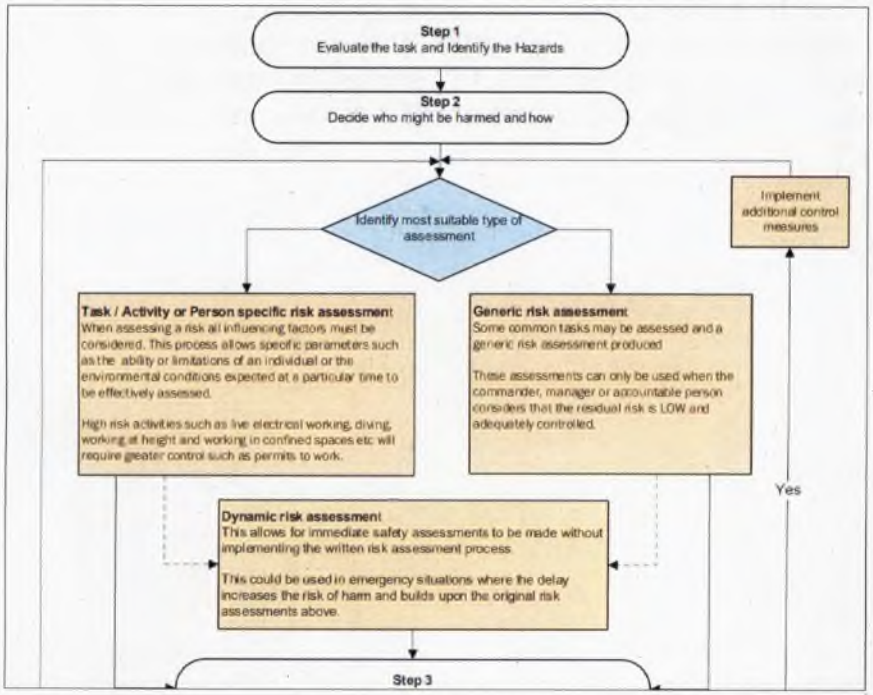


Figure 1.4.21 Version 1.4 risk assessment flow chart

1.4.200. Both flow charts specified that there were three types of risk assessment: generic, specific and dynamic. These charts showed that a dynamic risk assessment was an unwritten task, but newer policy places the dynamic risk assessment after, and not alongside, generic and specific risk assessments. The SI panel determined that the older flow chart could have been interpreted by an individual as having a choice between the three risk assessment processes, and that they could simply follow the dynamic risk assessment route, producing no written risk assessment at all.

1.4.201. **Generic risk assessments**. JSP 375 provided the following definition of generic risk assessments:

> 'Generic Risk Assessments (GRAs) are employed where similar activities are undertaken or repeated. These assessments describe the hazards involved and direct a standard set of control measures that are to be employed to reduce the associated risks.'[76] Exhibit 131

> 'Some common activities (that share the same hazards and controls e.g. routine maintenance or cleaning) can be assessed and a generic risk assessment, Standing Orders, Safe Systems of Work, etc produced…'[77] Exhibit 132

1.4.202. **Applying generic risk assessment to RAF motorsports.** For motorcycle circuit racing, these generic risks had been covered by the NGB through the production of an ACU Handbook. The RAFMSA SMP referred to the handbook with the following statement:

> 'The RAFMSA SMP does not include risks that are mitigated by the regulation of motorsport under the NGBs, where the activity takes place at an established and licenced venue, under the oversight of SQEP personnel and where the RAFMSA cannot reasonably provide additional mitigation.' Exhibit 133

1.4.203. **RAFMSA MCRR generic risk assessment**. Within the RAFMSA there were six disciplines and the SMP listed the generic risks for each one. Figure 1.4.22 constituted the entirety of the risks captured by the RAFMSA MCRR generic risk assessment:

[76] JSP 375 Management of Health and Safety in Defence vol 1 Chapter 40: Military Training for Land Systems (v 1.3 Jan 22) para 37.
[77] JSP 375 Management of Health and Safety in Defence vol 1 Chapter 8: Risk Assessment (v1.3 Jan 22) para 14.

Hazard	Risk	Who is at Risk? (See Note 7)	Control Measures (See Note 6)	Risk Rating (L X S =) (See Note 3)	Additional Controls (See Note 6)	Residual Risk Rating (L X S =) (See Note 3+4)	Remarks
Road traffic incident	Incident whilst travelling to or from an event	Competitor & support personnel	- Sufficient travel time allocated before and after each event. - Towers hold requisite licence/ FMT600 for towing.	3x3	- Private vehicles not regulated, but spirit of MT Regs applied.	3x3	
Crash/accident during racing	Injury to competitors	Competitor	-Strict NGB and venue control measures in place	3x3	-Inflatable air vests not mandated by NGB but available at personal expense to potentially reduce the risk of neck/spine injury.	3x3	

Exhibit 133

Figure 1.4.22 RAFMSA risk assessment

1.4.204. A Witness at interview expressed the view that the contents of the generic risk assessment should not just be a 'cut and paste' of work produced by the ACU. The second row of the risk assessment identifies that there is a combination of NGB and venue control measures in place to protect riders, but does not demonstrate an analysis of NGB policy in order to fulfil the requirements of JSP 660 and AP 3415. The RNRMRRT and British Army Motorsports Association (BAMA) motorcycle race teams' risk assessments provided greater depth of information regarding what the key NGB control measures were. The panel found this beneficial, especially for those with less understanding of the sport. All three service teams' risk assessments demonstrate that NGB rules and regulations had been considered to varying degrees

Witness 001

Exhibit 134

Exhibit 113

Exhibit 114

1.4.205. The SI panel agreed with the Witness that it was not reasonable to simply duplicate the work done by the ACU without further granularity. The panel understands and accepts the principle, by which the RAFMSA does not wish to include hazards that are mitigated by the regulation of motorsport under the NGB. The panel determined through the inquiry that there are additional hazards that could be included in the RAFMSA generic risk assessment, such as lack of scrutineering on test days or how competence is defined for personal bike maintenance. This was an **other factor.**

Witness 001

Exhibit 134

1.4.206. **RECOMMENDATION. The Air Officer Commanding 22 Group should review generic risk assessments across the RAF Motorsports Association in order to ensure that they adequately mitigate hazards that are within the association's control, and which are not covered by the NGB risk assessment.**

RAFMSA application of specific risk assessments

1.4.207. The specific risk assessment was an additional assessment, conducted when the generic risk assessment was considered too broad in its scope, the author of a generic risk assessment being unaware of any number of variables during an activity. Examples may include:

a. Experience and competence of attending SP.

b. Location of venue.

c. Expected environmental conditions.

An author of a specific risk assessment did not need to duplicate hazards identified on the generic risk assessment for the activity, but instead focus on the variables unknown at the time of writing the generic risk assessment.

1.4.208. The RAFMSA, in its SMP, detailed the requirement for a specific risk assessment to occur, and suggested the forms on which it could be completed. During interviews, there were differing views on the requirement to have a specific risk assessment. Some believed it should be done, whilst others expressed the view that they were less convinced of the necessity for a specific risk assessment, hoping participants would apply common sense, but recognised their value for occasions where a person may lack experience.

Witness 001

Exhibit 135

1.4.209. Key figures within the RAFMSA acknowledged that specific risk assessments had not occurred, not just for motorcycling, but in other disciplines across the RAFMSA. The evidence assessed by the SI panel pointed to confusion with application of specific and dynamic risk assessments, with neither BAMA nor RNRMRRT having conducted specific risk assessments.

Witness 009
Exhibit 136
Witness 008
Exhibit 137
Exhibit 121
Witness 006
Exhibit 138

1.4.210. The SI panel recognised that a specific risk assessment, in the instance of motorsport, may be of less value because the event was run and controlled by the Thundersport GB (or another ACU affiliated body) who produced their own risk assessment. The SI panel noted that:

a. All three Services mandated a specific risk assessment in their SMP or charter.

b. All three Service MCRR teams had not completed a specific risk assessment.

c. RAFMSA activity occurred with variable conditions, such as location of venue, environmental conditions and circuit characteristics.

d. A generic risk assessment alone cannot be sufficient to capture hazards when the activity has such variable conditions.

e. Thundersport GB adequately mitigated variable conditions during the event.

1.4.211. The SI panel determined that despite hazards being managed by the NGB provider, sufficient variables existed to warrant the production of a specific risk assessment. This was not to duplicate the work conducted by the NGB, but to identify gaps in SRM that sports associations needed to provide mitigation for. Uniform production of a specific risk assessment would also moderate any variability in NGB safety management. This was most applicable to representative sport events delivered by an NGB. If a decision to not produce a specific risk assessment is made, the requirement for one should be removed from the SMP, and this should be articulated as a tolerated risk in the generic risk assessment.

1.4.212. Due to the nature of the accident, the SI panel determined that the production of a specific risk assessment, completed or not, was unlikely to have had any bearing on the outcome of the accident and is considered an **other factor.**

1.4.213. **RECOMMENDATION. The Assistant Chief of Defence Staff (People Capability) should review sports associations specific risk assessments where non-MOD organisations control the associations' representative sports events, ensuring that hazards are adequately captured.**

Application of the dynamic risk assessment

1.4.214. **Definition**. The JSP 375 description of a dynamic risk assessment was:

> 'When a risk assessment is required for an activity that may be subject to rapid change (e.g. during operations) and a delay would increase the risk of harm, a dynamic (qualitative) risk assessment should be carried out. A dynamic assessment may also be appropriate to evaluate the suitability of a pre-prepared generic risk assessment based on specific set of circumstances. It is good practice to record dynamic risk assessments retrospectively.'[78]

Exhibit 139

[78] JSP 375 Management of Health and Safety in Defence vol 1 Chapter 8: Risk Assessment (v1.3 Jan 22) para 18.

1.4.215. **RAF sport policy.** The AP3415 described the three levels of risk assessment as follows:

> **'Generic.** This should include generic sporting activities as well as manual handling and COSHH assessments, as appropriate to each sport.
>
> **Site Specific.** These could be amalgamated with the Generic risk assessments for sport conducted at a Home for Sport. Changing facilities should be considered in these risk assessments.
>
> **Dynamic.** Sometimes termed 'daily risk assessment' this is arguably the most important level of risk assessment. The assessment is often completed by the event organiser and should provide a direct linkage to the RP in terms of accountability who will have briefed the event organiser on the levels of risk that have been deemed Tolerable and ALARP. Under no circumstances should an event be allowed to take place where the levels of risk assessed on the Dynamic Risk Assessment exceed those levels from the Generic and Site-Specific Assessments accepted by the RP' Clarity of MOD guidance.'

Exhibit 140

1.4.216. The SI panel determined that the AP3415 definition of dynamic risk is different to that of JSP 375, this affected the RAFMSA interpretation of how risk was managed.

1.4.217. **RAFMSA direction for dynamic risk assessments**. The RAFMSA SMP mandated the following:

> 'A Dynamic Risk Assessment is to be undertaken for all competition, training or related activity. This can be taken from JSP 419 or the above RAF Sport Risk Assessment. The Dynamic Risk Assessment is to consider how the environment/weather affects the activity for each day of the activity.'

Witness 006

Exhibit 141

Exhibit 133

1.4.218. **JSP 419 risk assessment**. The RAFMSA SMP recommended the use of the risk assessment from JSP 419, Part 1, Adventurous Training Policy. The risk assessment included: instructor ability, instructor familiarity, student ability, environmental conditions, local weather, activity choice and risk factors. The SI panel determined that this was a specific risk assessment, not dynamic, consistent with the definition provided by JSP 375.

Exhibit 142

1.4.219. Key personnel within RAFMSA, were not able to accurately describe the difference between dynamic risk and specific risk. The SI panel determined that use of dynamic and specific risk assessments had been conflated by the RAFMSA. The SI panel found evidence of other sports associations within the RAF that made the same error, taking their definitions of dynamic risk from AP3415.

Witness 006

Exhibit 141

Exhibit 143

1.4.220. The SI panel determined that the RAFMSA's ability to produce coherent risk assessments had been hampered. They may have been guided by the AP3415 definition of dynamic risk which was contrary to JSP 375. Incorrect application of the dynamic risk assessment was seen in sports association SMPs across all three Services. The SI panel considered this to be an **other factor**. Exhibit 140 Exhibit 129

1.4.221. **RECOMMENDATION. The Assistant Chief of the Defence Staff (People Capability) should review sports associations safety management plans in order to ensure risk management processes are aligned with JSP 375, Management of Health and Safety in Defence.**

1.4.222. **Risk assessment across MOD sport**. During a review of SMPs and supporting policy relating to sports similar in event delivery to motorcycle road racing, the SI panel found evidence of good risk analysis covering hazards such as heat and cold injuries, drivers' hours and differing participants ability. Exhibit 144 Exhibit 145

1.4.223. According to JSP 660, a UKAF sports association chairperson was required to use best practice from within single Service sports boards (SB) to ensure that any risk is ALARP. The SI panel identified that motorsports, with the exception of rallying, had no representation at UKAF level and, therefore, there was no mechanism in place to ensure best practice was sought from across the single Services. This could have contributed to the variability of risk assessments within motorsports across the three Services and this was considered to be an **other factor**. Exhibit 117

1.4.224. **RECOMMENDATION. The Assistant Chief of the Defence Staff (People Capability) should identify sports with no association chairperson at UK Armed Forces sports board level, and determine means to share best practice in application of duty of care.**

Ranking of sports by degree of risk

1.4.225. **Overview**. Recognised sports within the UKAF, dependent upon the publication, attracted differing levels of risk. These were low risk, high risk and risk to life (RtL).

1.4.226. **Risk to life.** AP3415 described RtL as: Exhibit 146

> 'Risk to Life (RtL) addresses fatality and injury but excludes damage to assets or the environment where no harm results. People should only be exposed to risk of harm where some defined benefit is expected and where the risks are adequately controlled.' [79]

[79] AP3415 Sport in the RAF (v 3.2) Leaflet 14 annex A.

Exhibit 147

1.4.227. **Low and high risk**. AP3415 featured a list, detailing which sports were low and high. The rationale for this distinction was that Sport England defined sports as either higher or lower risk sports. This ranking did not appear in other single Service documentation or JSP 660. From reviewing the evidence and interviews, it was not clear to the SI panel what analysis, and therefore justification there was, to categorising the sports as shown below in Figure 1.4.23.

1. Higher Risk Sports.	2. Lower Risk Sports.
Biathlon and Nordic Skiing Assn	Athletics Assn
Bobsleigh, Luge, Skeleton (inc Natural Luge) Assn	Badminton Assn
Boxing Assn	Basketball Assn
Canoeing Assn	Cricket Assn
Competitive Angling Assn (inc Game, Sea and Course)	Football Assn
Cresta Assn	Golf Assn
Cycling Assn	Hockey Assn
Equitation Assn	Ice Hockey Assn
Fencing Assn	Lacrosse Assn
Flying Club Assn	Lawn Tennis Assn
Gliding and Soaring Assn	Netball Assn
Paragliding Assn	Orienteering Assn
Judo Assn	Powerlifting Assn
Martial Arts Assn	Rugby League Assn
	Rugby Union Assn
	Squash Racquets Assn

Figure 1.4.23 Sports by risk[80]

1.4.228. The single Service directors of sport for the RAF and RN explained that this risk rating determined the periodicity of 2nd party assurance inspections by the single Service SB, with sports that were deemed higher risk undergoing assurance more often.

1.4.229. The SI panel determined that categorising sports by various risk prefixes did not inherently add a layer of safety or change the procedure of risk assessment. Different sports will naturally vary in risk, the rationale of how they are ranked by Sport England, and if it would matter, (in terms of the application of a functional safety construct) remains unclear. The SI panel determined that this was an **other factor**.

1.4.230. **RECOMMENDATION. The Air Officer Commanding 22 Group should review the efficacy of using Sport England's ranking of sports in AP3415, Sport in the RAF, as a primary determining factor for periodicity of assurance. This is to ensure individual sports risks are objectively assessed from an MOD perspective.**

[80] AP3415 Sport in the RAF (v 3.2) Leaflet 15 annex A.

Duty Holding

1.4.231. **Risk to life and Duty Holding**. The RAFMSA Chairperson described motorsport events as a RtL. As RtL had meaning within DSA01.1 Defence Policy for Health, Safety and Environmental Protection, regarding how a defence activity becomes eligible for formal Duty Holding (DH), it did cause confusion on applicability of DH to risk management with motorcycle sports. DH terminology was also found by the SI panel in documentation relating to delivery of other representative sports and as a result was investigated further. Exhibit 148

1.4.232. **Duty Holding overview**. DH was an SMS that was used for unique Rtl military activities. This system complemented other SEMS. Defence policy for DH stated:

> 'Duty Holding shall be applied by Service Chiefs, Top Level Budget Holders (TLBH) and Chief Executives (CEs) of Executive Agencies to military activities undertaken within their Areas of Responsibility:
>
> (1) which present a justified, credible and reasonably foreseeable Risk to Life (RtL); and Exhibit 149
>
> (2) where the Duty of Care and other statutory arrangements are considered inadequate for managing the risk; or
>
> (3) where the Department has mandated its application through regulation.'[81]

1.4.233. **DH key roles**. Each of the single Service's SEMS policies provided direction on the application of a DH construct within their respective command. Common to all three was the three-layered construct of DH, consisting of the following: Exhibit 150

a. A senior duty holder (SDH) was the top-level budget holder or chief executive who had the overall budgetary control and was accountable for an organisation that undertakes RtL activities.

b. An operating duty holder (ODH). An ODH sits below the SDH and had formal delegation from them for the delivery of RtL activities within defined boundaries.

c. A delivery duty holder (DDH). The DDH sits below the ODH and also had formal delegation from the SDH for the delivery of RtL activities within defined boundaries.

[81] DSA 01.2 Implementation of Defence Policy for Health, Safety and Environmental Protection Chapter 3: Duty Holding (Issue 1.1 May 2018) para 2.

1.4.234. The SDH, ODH and DDH were to be suitably qualified and experienced persons (SQEP). The ODH and DDH were to have direct and ready access to their superior duty holder. For each DH construct pertaining to a particular activity, the SDH provided clear risk escalation processes to the ODH and DDH.

Applicability to sport

1.4.235. **RAF policy**. The RAF SEMS stated that DH did not apply to RAF sport:

> 'The Stn/Unit Cdr, in their capacity as a CO, is to appoint an Officer in Charge for each active Sports Club at unit-level, including parented RAF personnel.
>
> Note: there is no requirement for a Duty Holder Construct. Please see the Governance model in Guidance Material.'[82]

Exhibit 151

1.4.236. **Army policy**. The Army sports policy advocated the use of DH. AGAI Vol 1 Chapter 5 stated:

> 'Duty Holding. To further strengthen safety when undertaking Risk to Life (RtL) activities, CGS has directed the implementation of Duty Holding (DH) across the Army. Those sports which are categorised as high risk and may require a comprehensive risk management process are required to develop a robust safety culture which underpins the duty of care responsibilities that may be required to ensure the sport is delivered safely. Guidance on Duty Holder responsibilities is available in ACSO 1200.'[83]

Exhibit 152

1.4.237. At the time of the accident, it was only army policy that stated that DH could be used for sport. However, this policy was contradicted by the Army Motorcycle Road Race Team administrative instruction which stated:

Exhibit 153

> 'Duty Holding no longer applies to Army Sport, as National Governing Bodies (NGBs) set the safety standards required for their sport. It remains a chain of command responsibility to adhere to their legal DoC obligations when their soldiers participate in sport.'

1.4.238. During the investigation, the Army Sports Control Board confirmed that DH no longer applied to army sport, contrary to what was stated in AGAI volume 1 chapter 5. The SI panel **observed** that there was confusion on whether DH was applicable to army sports.

Exhibit 154

[82] AP8000 Air TLB Safety and Environmental Management System (v 1.9 Jan 2022) para 17.3.2.
[83] AGAI volume 1 Chapter 5: Sport para 5.057.

1.4.239. **RN policy**. The RN SEMS[84] and RN sports policy[85] made no mention of DH applicability to sport.

DH confusion in RAF sports policy and documentation

1.4.240. **Influence of previous SI**. The application of DH terminology in RAF Sport was consistent and used from higher-level policy, AP3415, down to stations' sports policies. The consistent use of terminology can be accredited to the Chalamain Gap SI (2013), where the following recommendation was made:[86]

> 'The panel recommend an ODH (likely to be the Chairperson of the RAF Sports Board) is appointed for RAF Sports Association activities, and that in turn the ODH appoints DDHs (likely to be the Association Chairmen) and clearly outlines their responsibilities for the safe conduct of RAF sports.'[87]

Exhibit 155

1.4.241. **RAF implementation of recommendation**. After obtaining legal advice and in response to the recommendation, the RAF determined that the term 'Responsible Person' was given to sports association chairpersons. This allowed the appointment of individual responsibility without using DH terminology, which was considered emotive in the RAF response to the recommendation.

Exhibit 156

1.4.242. The recommendation was completed with the following action:

Exhibit 156

> 'The Head of RAF Sport (AOC 22 (Trg) Gp) has issued a Letter of Authority to all RAF Sports Association Chairmen on 1 June 2015. He appointed them as the Responsible Person and detailed their legal health and safety responsibilities. Association Chairmen are expected to formally acknowledge these responsibilities.'

1.4.243. The key element of the letter was as follows:

Exhibit 007

> 'In addition, as Operating Duty Holder (ODH) for RAF Sport, I appoint you as the Responsible Person for RAFMSA (for all sport activities conducted under the auspices of JSP660).'

1.4.244. **Responsible Person**. The term 'Responsible Person' was defined in AP8000 Chapter 2 as:

Exhibit 157

> '...the role being fulfilled by whomever is in the risk-owning position.'[88]

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[84] BRd 10 Navy Command Safety and Environmental Management System (v 3.0 Mar 2021).
[85] BRd 51(4) Physical Development Manual Volume 4 Sport in the Naval Service (v 1.0 July 2017).
[86] Request copy of Service Inquiry into Chalamain Gap avalanche 14 February 2013 (publishing.service.gov.uk).
[87] Chalamain Gap SI (2013) para 44.
[88] AP8000 Air TLB Safety and Environmental Management System (v 1.9 Jan 2022) ch 2 para 2.

1.4.245. **Participants understanding**. From interviews, there was sufficient evidence for the SI panel to determine that RAFMSA personnel had an unclear understanding on whether DH was applicable in the delivery of RAF representative sport. The SI panel determined this was due to a combination of DH terminology being used in RAF sports documentation and RAF service persons being accustomed to using DH terminology as part of their daily air SRM, The SI panel **observed** that the inconsistent use of DH terminology in RAF sports documentation contributed to confusion as to whether DH was applicable in RAF representative sport.

Witness 001
Exhibit 158
Witness 006
Exhibit 159
Witness 007
Exhibit 160

Analysis of DH benefit to RAF sport

1.4.246. **DH benefits**. The benefit of DH was that it provided a clear risk escalation process through accountable personnel who could make decisions.[89] In contrast, JSP 375 was less clear about accountability and risk escalation, as evidenced in the following extracts:

Exhibit 160
Exhibit 142

> 'Policy Statement 3 (step 3 – Evaluate the risks and identify suitable and sufficient control measures) The commander, manager or accountable person must make sure that the risks associated with the activity are evaluated and identify suitable and sufficient control measures, which must be put in place and maintained. [90]

Exhibit 162

1.4.247. **Single Service policy**. Within the Army and the RAF this ambiguity was resolved in single Service documentation, specifically ACSO 1200, the Army's Safety and Environmental Management System, and AP8000, Air TLB Safety and Environmental Management System. The SI panel could find no reference to DH within RN documentation at the time of the inquiry.

1.4.248. **Army policy.** ACSO 1200, stated that the responsibility and accountability for the management of risk remained with the activity owner.

> 'Safety Risk escalation is a tool to facilitate DoC, managerial oversight, assurance of risk decision making and risk management by the chain of command (CoC). The responsibility and accountability for the management of risk remains with the Activity Owner directing that the activity takes place, unless there is an agreement by the higher CoC to accept a transfer of the risk.'[91]

Exhibit 163

1.4.249. An activity owner was defined as:

Exhibit 164

[89] DSA01.1 Defence Policy for Health, Safety and Environmental Protection (V1.0) Aug 16, Chapter 3 paragraph 19.
[90] JSP 375 Management of Health and Safety in Defence vol 1 Chapter 8: Risk Assessment (v1.3 Jan 22) para 25.
[91] ACSO 1200 The Army's Safety and Environmental Management System (Issue Jan 2021) ch 4 para 23.

'The Activity Owner is accountable and responsible for directing that an activity takes place and has the final decision on authorising that activity.' [92]

1.4.250. The SI panel determined that the escalation process specified in ACSO 1200 was linked to the CoC. The panel further determined that within the Army, sport sat outside the CoC and ACSO 1200 recognised this by allowing bespoke SRM processes:

'Bespoke SRM C2. Where deemed appropriate due to the nature of the activity, a bespoke SRM / DH chain may be authorised by CoC (ODH) advised by chief of staff army. This should be clearly articulated in any joining/administrative instructions and a bespoke letter of authority provided (where this is mandated in policy) for the specified task or activity.'[93] Exhibit 165

1.4.251. With an accompanying footnote: Exhibit 165

'For example: Representative Sport. The Army Sport Control Board (ASCB), Directors of representative sport and appointed coaches etc may be better placed as the SRM chain for these activities rather than linked to the OPCOM CoC.'[94]

1.4.252. **RAF policy**. AP8000 stated:

a. 'Safety risk escalation is the upward notification of a specific risk due to: Exhibit 166

(1) Its significance.

(2) A change in its status (identified through risk monitoring).

(3) An action to manage it.

b. Risk escalation does not always transfer risk ownership. Safety Risk Owners shall establish a process for the escalation of risks to the right level within their area of responsibility, including defined thresholds and process for risk escalation.

c. Safety Risk Owners shall ensure that all risks have a nominated Safety Risk Owner, and this must be recorded in the Safety Risk Register.

d. Safety Risk Owners can delegate the management of risks to other SQEP individuals as and when appropriate. However, as the

[92] ACSO 1200 The Army's Safety and Environmental Management System (Issue Jan 2021) ch 4 para 9a.
[93] ACSO 1200 The Army's Safety and Environmental Management System (Issue Jan 2021) ch 4 para 14.
[94] Operational Command.

risk owners, the Safety Risk Owners must always remain accountable for safety risk within their AoR [area of responsibility].

e. Safety Risk Owners shall communicate risk and associated mitigation strategies to other interested parties to maximise awareness of the risk.' [95]

1.4.253. A safety risk owner was defined as: Exhibit 167

'…a single point of accountability for the effective management of safety risks.'[96]

1.4.254. DH provided a clear risk escalation process and clear identification of risk owners. From the evidence reviewed there were other processes available to enable RAFMSA to detail how risk was escalated and owned. The SI panel **observed** that DH in RAF sports was not required to enable risk escalation and ownership. However, it provided a mechanism for management of RtL activity. This is evident in AP3415 Leaflet 14, Risk Management:

'It involves the identification of hazards, analysis with an assessment of the Risk to Life (RtL) and the development of a resulting level of risk. Analysis will identify those threats that require management at Sport ODH and RP level in order to keep the resultant RtL tolerable and ALARP.'[97] Exhibit 146

1.4.255. **DH direction provided by United Kingdom Strategic Command**. United Kingdom Strategic Command Standard Operating Procedure (SOP) 0013, Duty Holding Policy, stated the following, which provided a differing view on the applicability of DH to sport:

'It should be emphasized that the focus of the Duty Holder policy is for justified, credible and reasonably foreseeable military 'risks to life' activities and no attempt should be made to apply it to wider HS&EP risks i.e. sport, driving on the public highway, working at height, etc'[98] Exhibit 168

1.4.256. **Summary of DH applicability to sports.** It was clear to the SI panel that there was confusion regarding the applicability of DH to sport across Defence. Specific to the RAF, DH had been applied in a manner not consistent with the requirements of DSA 01.2, Chapter 3, Duty Holding, in areas such as training, and the lack of a three-tiered DH construct.

1.4.257. **RECOMMENDATION. The Assistant Chief of the Defence Staff (People Capability) should provide direction on the applicability of Duty Holding for sport and ensure that sports safety risk**

[95] AP8000 Air TLB Safety and Environmental Management System (v 1.9 Jan 2022) Sect 8 para 1-5.
[96] AP8000 Air TLB Safety and Environmental Management System (v 1.9 Jan 2022) Leaflet 8007 (Reviewed May 22) sect 3 para 1.
[97] AP3415 Sport in the RAF (v 3.2 Aug 2019) Leaflet 14 Annex A.
[98] United Kingdom Strategic Command SOP 0013 Duty Holding Policy (v 1.5 Nov 2022).

management and escalation is uniformly managed across sport within defence.

Funding for representative sport

1.4.258. **Overview**. The following paragraphs analyse the mechanisms of funding representative sport and how it contributes to DoC and SRM. The voluntary aspect of sport is covered, followed by financial support, personal contributions and RAFMSA MCRR contribution.

1.4.259. **Funding policy**. MCRR authorised by the Service is optional, no service personnel were mandated to do it. MCRR did not appear on 'terms of reference' (job description) as part of a service person's routine duties. Chief of Defence People, in the foreword to JSP 660 stated: Exhibit 169

> 'I am therefore most eager to encourage the active participation of all ranks at all levels of sport. I am aware that the majority of sport is organised by Service personnel on a voluntary basis.' [99]

1.4.260. **Financial support.** MCRR was an expensive sport conducted by personnel on a voluntary basis. The RAF Central Fund, a registered charity, supported MCRR financially, focusing on personal safety equipment (race leathers, helmet, gloves, boots) and operational costs (ACU membership and event entry fees). Exhibit 170 Exhibit 171

1.4.261. **Personal contribution**. In addition to the RAF Central Fund financial support, RAFMSA members were required to spend their own money on motorbikes, leathers, helmet and tyres, entry fees and other associated costs. This was evidenced in interviews, where it was clear that participants in motorsport activities spent their personal money to support RAFMSA activity. Most competitors received approximately 15% to 20% of their expenditure as non-public financial support, in the form of grants, from RAF Motorsport through the central fund. The SI panel **observed** that the RAF Central Fund provided 15% to 20% non-public financial support to the RAF MCRR team undertaking representative sport on a voluntary basis, with the financial contribution biased towards safety thus demonstrating a DoC to participants. Witness 001 Exhibit 172 Witness 007 Exhibit 173

1.4.262. **Personal safety equipment**. There are practical reasons why individuals own their equipment. At a sport's novice level, basic and rudimentary equipment can be used. When one becomes more competent at a sport the equipment improves. This is true of RAFMSA activity. The expense of equipment, coupled with being bespoke and personal to a rider meant that it was practical for members to buy their own, albeit supported by the RAFMSA.

[99] JSP 660 Sports in the UK Armed Forces Pt 1 Directive (v2.4 Nov 21), p i.

Witness 001

Exhibit 174

1.4.263. **RAFMSA MCRR team support**. Support for safety equipment was provided by the RAFMSA competition secretary, who sought bulk deals from suppliers and further subsidised with RAF central fund money. The alternative would have been for the RAFMSA to buy personal equipment for its current membership. Expense aside, this may have been very complex, and eventually redundant due to the transient nature of any membership as people moved on. The SI panel did not encounter any evidence to suggest that racers used safety equipment that did not meet regulation standards. The reality was that most equipment exceeded NGB standards, due in part to the funding provided. Therefore, the SI panel determined that funding was **not a factor**.

Cessation of participation during a representative sporting event

1.4.264. **Overview**. As discussed in the accident analysis, the RAFMSA chairperson ordered the team members to stop racing post-accident. The order to stop racing was obeyed after some confusion. The following paragraphs analyse whether the chairperson as the responsible person acted within their authority.

1.4.265. **Analysis of the order**. The SI panel compiled arguments for and against the chairperson's order to stop racing and these are presented in Table 1.4.2.

Supportive of decision to stop	Against decision to stop
Participants attended Cadwell Park with duty status in the first instance.	The participants had spent a substantial amount of their private money in pursuit of their sport.
Should a participant be able to declare themselves off duty, swapping back and forth to suit?	For occasions when a service person has duty status removed, can the CoC influence what activities they conduct?
Participants are at work until they are stood-down, as such they obey orders.	Civilians are using the track, there is a full safety set up, removing duty status does not remove the safety construct.
	Participants own their bike and all associated equipment.
	Participants have paid a private company for the benefit of racing.

Table 1.4.2 SI panel analysis of RAFMSA Chairperson's order

1.4.266. **Order to stop**. The SI panel concluded that the order to stop was rational, appropriate, and given with good intentions, notwithstanding that some individuals wished to continue in a personal capacity and believed they should have been allowed to do so. The SI panel determined that it would have not been practicable to dynamically change between duty and off-duty status during a representative sport event.

Witness 007

Exhibit 074

Witness 007
Exhibit 175

1.4.267. **Responsible person duties**. AP3415 and the chairperson's letter of responsibility placed the following responsibilities on the RAFMSA Chairperson:

> 'The RP is required to uphold the responsibilities under Common Law; the Health and Safety at Work Act 1974 and the Environment Protection Act 1990; conduct activity in line with JSPs 375, and ensure that the orders, instructions, procedures and other promulgated instruments allow personnel involved in the sport the maximum freedom to pursue it without prejudicing safety, good order and discipline.'[100]

Exhibit 176

1.4.268. The responsible person was the chairperson. The SI panel determined that it was not reasonable to expect a chairperson to have responsibility of the law, but not have functional ability to stop the activity, if dissatisfied for it to continue. Therefore, the chairperson acted in accordance with policy.

1.4.269. **Example processes**. The RNRMRRT had processes in place in their safety management plan to enable individuals to be put on duty at an event. This required the following:

a. The individual becoming a member of the association.

b. Agreement with the RNRMRRT Chairperson.

c. The administrative instruction nominal roll being amended.

d. The RN sports calendar being updated.

1.4.270. If it was possible to detail processes to achieve duty status during an event, then the SI panel determined that it was also plausible that mechanisms can be stipulated to remove the duty status or stop participants from continued participation. As this situation occurred post incident the SI panel determined that a lack of process for removing duty status was an **other factor.**

1.4.271. **RECOMMENDATION. The Assistant Chief of the Defence Staff (People Capability) should update sports associations safety management plans to include processes for stopping participants**

[100] AP3415 Sport in the RAF (v 3.2) Leaflet 9 (May 19) para 6.

from competing in events in order to provide clarity to participants on when and how they can be removed from an authorised event.

Assurance

1.4.272. **Overview**. AP3415 described how an organisation monitored and checked its activities in order to meet the assurance objectives:

> 'The Sports Assurance Audit Objectives have been agreed between the RAF Safety Centre and 22 Gp. They are designed to provide a top-level guidance for auditing Sports Associations and sport at Unit level. The aims of conducting sports assurance are to: Exhibit 177
>
> a. Check compliance with:
>
> (1) The principles of DSA 01 and JSP 375, in particular 'duty of care', including safeguarding (see leaflet 30).
>
> (2) NGB rules and regulations.
>
> (3) AP 8000 Leaflet 8012.
>
> b. Review the residual Risk to Life assessment of that sport.
>
> c. Promote an Engaged Safety Culture.'[101]

1.4.273. **Assurance levels.** To meet with the RAF sports assurance objectives, three levels of assurance occurred:

> 'Assurance within RAF sports largely revolves around the requirement for 1st and 2nd party internal audits; with 3rd party external audits being conducted on a risk basis only. Sports are categorised by Sports England as Higher or Lower risk sports (see Annex A).[102] Exhibit 177
> Higher risk sports are to have an assurance visit every 18 months and lower risk sports within a 3-year backstop.'[103]

1.4.274. **1st party assurance** was characterised as self-checking and occurred at the level of delivery. The RAFMSA Chairperson was responsible for assurance of their sport.

1.4.275. **2nd party assurance** was also internal assurance as described above; this occurred at the Directorate of RAF Sport (DRS) level as the controlling authority for assurance of sport.

1.4.276. **RAFMSA application of assurance process.** At the time of the accident there was evidence of only 1st party assurance activity having been completed, which was an RAF sports association assurance self-

[101] AP3415 Sport in the RAF (v 3.2 Aug 2019) Leaflet 15 (May 2019) para 4.
[102] See figure 1.4.24.
[103] AP3415 Sport in the RAF (v 3.2 Aug 2019) Leaflet 15 (May 2019) para 3.

assessment questionnaire dated 15 April 2022. This questionnaire indicated that all three levels of risk assessment formed part of RAF motorsport delivery.[104] SI panel analysis determined that only generic risk assessments had been completed and that the terminology used for the levels of risk assessment differed from that stipulated by the questionnaire.[105] The SI panel **observed** that the RAFMSA SMP 1st party assurance report was not completed accurately as the terminology differences were not identified and there was only evidence of one level of risk assessment, the generic.

Exhibit 178

Exhibit 179

1.4.277. **2nd party assurance**. Based on the evidence provided to the SI panel, no 2nd party assurance had been done for the RAFMSA SMP prior to the accident. A 2nd party assurance was subsequently completed and dated 22 September 2022, after the accident occurred. Other examples of 2nd party assurances were obtained by the SI panel for RAF sports, as well as RN and Army sports. The SI panel **observed** that 2nd party assurances were conducted by the DRS on RAF sports. The lack of 2nd party assurance of the RAFMSA SMP prior to the accident was **not a factor**.

Exhibit 180

Policy fatigue

1.4.278. **Overview**. During the course of the inquiry, the SI panel recognised the quantity of policy faced by the volunteers who ran the sports associations. The following assesses the quantity of policy and its relative contribution to safety, along with the competency of volunteers.

1.4.279. **Policies**. Below is a non-exhaustive list of the policies that had been referenced in sports association documentation and that one would expect RAFMSA personnel may need to have a passing familiarity (with varying degrees depending on the document), to do a competent job, and comply with policy. The list does not include ACU and Thundersport GB documentation:

a. JSP 375 Management of Health and Safety (H&S) in Defence, Directive & Guidance (version 1.2 October 2020).

b. JSP 375 Management of Health and Safety in Defence Volume 1 Chapter 8, Risk Assessment (version 1.3 January 2022).

c. JSP 375 Management of Health and Safety in Defence Volume 1 Chapter 40, Military Training for Land Systems (version 1.3 January 2022).

d. JSP 660 Sport in the UK Armed Forces Part 1 Directive (version 2,4 November 2021).

[104] Generic, specific and dynamic.
[105] Generic, dynamic and bespoke.

e. JSP 752 Tri Service Regulation for Expenses and Allowances (version 50 April 2022).

f. JSP 765 Armed Forces Compensation Scheme Statement of Policy (version 9.0 July 2022).

g. JSP 800 Defence Movement and Transport Policy volume 5 part 1 (version 9.4 May 2022).

h. DSA 01.1 Defence Policy for Health, Safety and Environmental Protection (version 1.0 August 2016).

i. DSA 01.2 Implementation of Defence Policy for Health, Safety and Environmental Protection Chapter 1, Health, Safety and Environmental Protection (HS&EP) Requirements for Defence (version 1.1 January 2018).

j. DSA 01.2 Implementation of Defence Policy for Health, Safety and Environmental Protection Chapter 4, Management of Health, Safety & Environmental Protection Risk (version 1.0 July 2018).

k. DSA 01.4 Glossary of terms and definitions for Defence Health and Safety.

l. DSA 03 Movement and Transport Safety Regulations (second edition March 2020).

m. AP8000 Air Top Level Budget (TLB) Safety and Environmental Management System (version 1.9 January 2022).

n. AP3415 Sport in the RAF (version 3.2 August 2019).

o. RAF Safety Management Plan (2022).

1.4.280. **Specific issues**. Based on the evidence obtained, the SI panel determined the following on policy pertaining to safe delivery of sport:

a. **Volume**. From interviews, the SI panel noted that due to the amount of policy, RAFMSA members were not always aware of policy structures by which they should comply.

b. **Repetition**. Each single Service had their own sport policy, drawn down in part from joint Service policy, with a resultant repetition of content.

c. **Iterative referencing**. Any JSP, within its content, referred to several other JSPs and other references. Researching a topic such as duty status required the SI panel to read several references.

d. **Staying extant**. Regular review of policy results in policy being continually updated, including restructuring. The SI panel determined that this resulted in a number of referencing errors, such as how dynamic risk assessment is described.

1.4.281. **Policy and competency**. The SI panel determined that the competency and dedication of RAFMSA personnel was as important as adherence to supporting policy, in the delivery of a safe and enjoyable sport. The SI panel **observed** that the quantity and ambiguity of the policy pertaining to risk management in sport made compliance challenging.

Sole-participation at representative sport event

1.4.282. **Background**. Through the course of interviews, the SI panel was made aware that singleton riders had been authorised to attend events alone. These events were organised by ACU affiliated event organisers, though they were not Thundersport GB. Examples of other providers include:

Witness 010

Exhibit 181

a. North Gloucester Road Racing Club.

b. Isle of Man TT.

c. The Manx GP.

1.4.283. **RAFMSA position**. The RAFMSA position was that the essential criteria to allow sole participation was ACU affiliation of the event. This afforded event organisers the credibility required to be recognised by UKAF sport.

Witness 007

Exhibit 182

1.4.284. **Army position**. Examples of riders wishing to attend events alone were provided to the SI panel. These individuals often did not need or want support in terms of travel or financial help but wanted the cover of duty status. Evidence provided to the SI panel indicated that these requests were denied by the Army competition secretary.

Witness 009

Exhibit 183

1.4.285. **RNRM position**. The RNRMRRT manager had no issue with sending away a singleton, so long as they were an RNRMRRT member, and appeared on the associated admin order and the Navy Sports Calendar.

Witness 008

Exhibit 184

1.4.286. **Issues with singleton representative sport**. The RAFMSA Deputy Chairperson and the MCRR Competition Secretary were both aware of some of the issues pertaining to a singleton at an event, and mitigated accordingly. The following were assessed by the SI panel as issues with singleton attendance at RAFMSA events:

Witness 007

Exhibit 185

Witness 001

Exhibit 186

a. **Completion of risk assessments**. From evidence provided to the SI panel, no specific risk assessments had been done for RAF personnel attending motorcycle events as individuals.

b. **Joint Casualty and Compassionate Centre (JCCC) action**. JCCC provided a means by which a service persons NOK and military CoC could be informed of serious injury or death of a Service person. Contacting JCCC also started a number of actions aimed at supporting the individual and their family. When at an event as a singleton, there are no military personnel to instigate this, apart from the individual, although this can be mitigated against. The RAFMSA Deputy Chairperson explained how, at a race event, the race registration form collected next of kin details. Service persons that attended on their own, needed to make their NOK aware of the wider requirement to contact their line manager in case of injury, hospitalisation etc. Witness 007 Exhibit 185

1.4.287. The SI panel determined that the practice of singleton riders attending an event was being managed by the three single Service teams. The SI panel was unable to find evidence of how this was managed within their SMP. This was an **other factor**.

1.4.288. **RECOMMENDATION**. **The Assistant Chief of the Defence Staff (People Capability) is to ensure sports associations include processes in their safety management plans for individuals to compete as singletons at authorised events.**

Unit and individual DoC responsibilities

1.4.289. **Overview**. The following paragraphs analyse the DoC responsibilities of Cpl Farrar and their line management. It firstly covers the authorisation process and management of individual and unit priorities, specifically duty travel and guard duty. It concludes with analysing individual responsibilities of being fit to participate and maintenance of personal safety equipment and motorcycle.

Unit authorisation for representative sport

1.4.290. **MOD policy**. As described earlier in the report and in reference to JSP 660, an individual was considered to be on duty or having duty status when participating in authorised sports. JSP 660 recognised that the CO had a duty of care to the individual and was to be aware of the potential impact on operational capability. Exhibit 187

1.4.291. Single Service documents all invoked duty status and, therefore, highlighted the responsibility to exact a DoC. This DoC was reflected in AP3415:

> 'When participating in authorised sport, SP are acting in the course of their duty and are in effect 'at work'. Consequently, the MOD owes a Exhibit 188

statutory duty of care to UKAF where the Health and Safety at Work Act 1974 (HASAW) applies territorially (i.e., in the UK) and owes a duty of care to UKAF under common law principles of negligence.' [106]

1.4.292. **RAFMSA Administrative Order**. Cpl Farrar was employed within 238 Sqn, No 1 School of Technical Training RAF Cosford. To enable Cpl Farrar to participate in the Cadwell Park event, the authorisation process required their inclusion in the administrative order for the event, as per AP3415, and approval from their CoC, as required by JSP 660.

1.4.293. The RAFMSA Chairperson sought authorisation for all motorcycle circuit racing activities via the Director of RAF Sport and once granted, detailed the RAFMSA Deputy Chairperson to produce a suitable SMP and administrative order specific to each event. Exhibit 133

1.4.294. The RAF Motorsports administrative order for the event was dated 9 February 2022. This authorised all those featured on the events list to attend the Thundersport (GB) event at Cadwell Park 27 to 30 May 2022. It was this document that Cpl Farrar submitted to their line management team to gain permission to take part in the representative sport event at Cadwell Park. Exhibit 10 Witness 004 Exhibit 189

1.4.295. **Commanding officer (CO) responsibilities**. Policy within JSP 660 directed the following:

'COs' responsibilities for sport are detailed in Queen's Regulations, Training Directives and as directed by objectives in Command Management Plans, all of which encourage participation in sport, along with the provision of time, facilities and sports travel.'[107] Exhibit 190

1.4.296. COs responsibilities were also articulated in AP3415:

'Commanding Officers' (COs') responsibilities for sport are detailed in QRs, APs, Command Management Plans, Training Directives and as directed by objectives in AOC 22 Gp's Total Safety Directive, all of which encourage participation in sport, along with the provision of time, facilities and sports travel. The CO will manage their Unit sporting activity under the terms of the letter of delegation as Duty Holder for Functional Safety.' [108] Exhibit 191

1.4.297. The RAF Cosford sports policy supported JSP 660 and AP3415 by stating:

'If selected to represent the RAF, CS [combined Services] or Stn [station] at sport, personnel are to be released from their duties whenever possible to allow them to meet the commitment detailed Exhibit 192

[106] AP3415 Sport in the RAF (v 3.2 Aug 2019), Leaflet 12 (Aug 2017) para 1.
[107] JSP 660 Sport in the UK Armed Forces Part 1 Directive (v 2.4 Nov 2021) ch 1 para 9.
[108] AP3415 Sport in the RAF (v 3.2 Aug 2019), Leaflet 11 (Aug 2017) para 1.

by the relevant Sports Association or unit. Any decision not to allow an individual to be released should be made by an officer holding the rank of Wg Cdr or above.'[109]

1.4.298. The decision to effectively discharge an individual from their daily duties and give permission to attend representative sport rested with the CoC and ultimately Cpl Farrar's immediate line management team. This was recorded via the Squadron Training Achievement Recording System (STARS).

1.4.299. **RAF Cosford authorising mechanisms**. STARS was a tool utilised within 238 Squadron for recording absences such as annual leave, courses, and sport. Based on evidenced copies of the STARS schedule printout, and the submission entry for Cadwell Park, the SI panel determined that Cpl Farrar was on duty. RAF Cosford had processes in place to manage participation in representative sport that fulfilled the requirements of JSP 660 and AP3415. RAF Cosford processes were **not a factor**. Exhibit 003 Exhibit 193

Managing unit and individual priorities

Duty travel and drivers' hours

1.4.300. **Eligibility**. Eligibility for duty travel was detailed JSP 660 part 2 and JSP 752 respectively:

'Travel. The regulations for travel at public expense for sporting activity are detailed in JSP 752, Chapter 6, Section 1.'[110] Exhibit 194

'When travel by private motor vehicle is authorised, MMA [motor mileage allowance] may be claimed together with the appropriate rate of passenger allowance for each eligible passenger.'[111] Exhibit 195

1.4.301. Further indicative of duty travel, the RAFMSA SMP also listed travel within the generic risk assessment: Exhibit 133

'Incident whilst travelling to or from an event.'

1.4.302. During interviews, the SI panel were informed that RAF MCRR team members abided by their station motor transport orders, and participants were given the day either side of a race event for travel to and from their routine place of duty. Witness 001 Exhibit 196

1.4.303. **Drivers' hours**. DSA 03, Movement and Transport Safety Regulations applied the spirit of UK and European Commission drivers' hours regulations to include all personnel that drive MOD provided vehicles

[109] RAF Cosford Station Sports Policy (July 2021) para 10.
[110] JSP 660 Sport in the UK Armed Forces Part 2 Guidance (v 2.4 Nov 2021) ch 2 para 4.
[111] JSP 752 Tri Service Regulation for Expenses and Allowances (v 50 Apr 2022) para 06.0105.e.

to ensure their safety and as a DoC. Regulation 15 detailed the following for maximum daily driving time:

> 'Max Daily Driving Time 9 hrs Actual time 'behind the wheel'. This may be increased to 10 hrs on two occasions within a week.'[112]

Exhibit 180

1.4.304. Figure 1.4.24 shows the journey time from RAF Cosford to Cadwell Park. The journey time detailed was within the permitted nine hours.

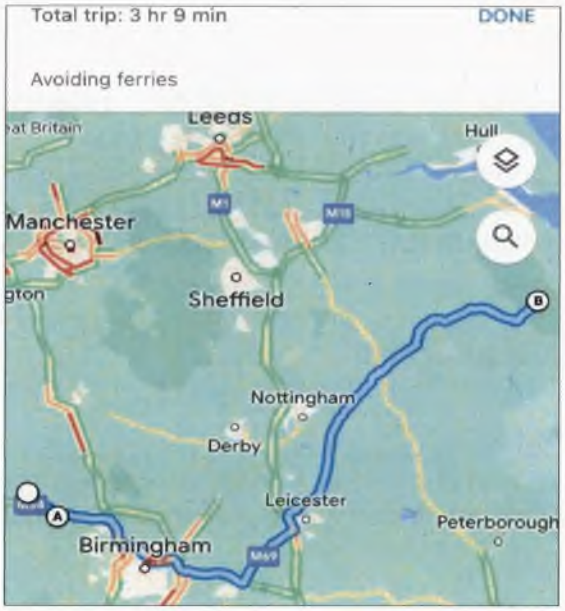

Figure 1.4.24 RAF Cosford to Cadwell Park

1.4.305. The SI panel determined that Cpl Farrar was driving a private vehicle within drivers' hours regulations and in line with the spirit of drivers' hours as noted above. Their journey time to the event was **not a factor**.

1.4.306. In line with JSP 660, COs were encouraged to provide time, facilities and sports travel to individuals selected for representive sport. In addition to DSA 03, Movement and Transport Safety Regulations, RAFMSA and RAF Cosford station policies concerning duty travel are discussed in the following paragraphs.

1.4.307. **RAFMSA travel policy**. The RAFMSA administrative participation order for the event also stated:

> 'Personnel are to adhere by Local MT orders. Military and private transport may be utilised, with the authorisation from local MT.'[113]

Exhibit 198

[112] DSA 03 Movement and Transport Safety Regulations (Second edition Mar 2020) table 2.

[113] Mechanical transport.

1.4.308. **Unit travel policy**. RAF Cosford sports policy detailed that persons who were authorised to conduct representative sport were entitled to duty status and also travel at public expense:

> 'Duty Status and Travel to RAF or CS Representative Sport. Personnel, via their Association, will receive a letter of authority from the RAF or CS SB for the relevant fixture which will entitle them to Duty Status… MT is always to be used in the first instance, the use of private motor vehicles should only be considered if MT is unavailable and authority has been given to use a private motor vehicle.' [114]

Exhibit 199

1.4.309. The SI panel determined that Cpl Farrar's journey met RAF Cosford station sports policy, based on them being in possession of an appropriate administrative order. The administrative order had been approved by their line management, and they had been excused from their primary duties to attend.

1.4.310. No evidence was available to ascertain whether Cpl Farrar had followed direction set out in the RAF Cosford Sports policy with regards to gaining authorisation to travel at public expense, or indeed, whether they had gained authorisation to utilise their own vehicle. However, that they were entitled to do so is clear as they met the criteria as described. The SI panel **observed** that UKAF policy does not provide guidance for the carriage of civilian passengers when using a private vehicle for a duty journey.

1.4.311. **Clarifying authority to travel**. The RAFMSA SMP stated:

> 'The RAFMSA SMP applies to the duty period related to the motorsport event including all associated activities.'

Exhibit 133

1.4.312. The SI panel determined that it was highly likely that Cpl Farrar's journey to Cadwell Park from RAF Cosford on 26 May 2022 was authorised and would have constituted a RAFMSA associated activity. The SI panel also believed that the RAFMSA Chairperson owed a DoC to Cpl Farrar from this point. Therefore, whilst under the chairpersons DoC, Cpl Farrar arrived at the event mid-afternoon and in reasonable time before the test day at Cadwell Park on 27 May 2022.

1.4.313. **Travel time allowance**. The Army MRRT and RNRMMRRT both included provision for travel either side of an event detailed within their administration orders. Through interviews the SI panel determined that the allowance of sufficient travel time to get to a race meeting was considered and granted to RAF MCRR personnel. Cpl Farrar's line management recognised the need to release them from their primary duties to allow sufficient time to travel to Cadwell Park. The SI panel **observed** that the requirement to permit travel to a representative sport

Exhibit 153

Exhibit 200

Witness 011
Exhibit 201

[114] RAF Cosford station Sports Policy July 2021 para 11.

event was not specifically articulated within the RAFMSA SMP or the RAF MCRR administrative order. Exhibit 133

Impact of guard duty

1.4.314. Evidence gathered established that Cpl Farrar was rostered for being on guard duty at the same time as their granted travel time for the event at Cadwell Park. This clash of activity was not identified within the CoC. Exhibit 003 Exhibit 058 Exhibit 193

1.4.315. The SI panel was unable to ascertain if Cpl Farrar discussed the fact that their allocated travel day to Cadwell Park clashed with them being rostered for guard duty.

1.4.316. **Non-application of RAF sports policy**. The submission for attendance at Cadwell Park was submitted before the nomination for station guard duty, both of which were put on STARS. Noting that, in accordance with RAF Cosford sports policy, refusal of request to conduct representative sport required sign off by a wing commander, it was likely that early engagement regarding the clash of activities would have deconflicted Cpl Farrar's attendance at Cadwell Park and their station guard force commitment. The SI panel **observed** that Cpl Farrar and their CoC did not utilise the RAF Cosford station sports policy to deconflict Cpl Farrar's guard duty commitment and representative sporting activity. Exhibit 202

1.4.317. **Cpl Farrar reported sickness**. At 23:47 on 25 May 2022 Cpl Farrar contacted RAF Cosford station guard force commander and informed them that they were sick. The guard commander relayed this detail via email to the general duties administration clerk, informing them that Cpl Farrar would not be reporting for guard the following day. The email also directed that Cpl Farrar's line manager be informed, but there was no evidence that this occurred. Exhibit 059

1.4.318. Cpl Farrar travelled to Cadwell Park on 26 May 2022 to rendezvous with the other RAF MCRR team personnel mid-afternoon. According to others in the group, Cpl Farrar did not mention having been sick the day before and did not show any signs that they were suffering with an illness whilst at Cadwell Park. There was no record of Cpl Farrar informing the RAF Cosford Medical Centre of their sickness. The post-mortem did not indicate any medication related to their reported sickness. Cpl Farrar had also completed the event signing on form, effectively declaring themselves mentally and physically fit to participate. Exhibit 203 Witness 001 Exhibit 015 Exhibit 188 Exhibit 028 Exhibit 016

1.4.319. Based on the above evidence, the SI panel determined that it was highly unlikely that any sickness Cpl Farrar may have been suffering from before test day had any bearing on the accident sequence and was deemed **not a factor**.

1.4.320. **Lack of awareness**. Evidence gathered by the SI panel indicated that individuals at RAF Cosford did not know that Cpl Farrar had travelled to Cadwell Park and assumed that they had reported for guard duty. It was only when news of the accident reached them that they became aware that Cpl Farrar was not at RAF Cosford. The SI panel **observed** that there was a lack of clarity within RAF Cosford policy on how an individual formally detached themselves from the station when working between units.

Exhibit 205
Exhibit 206
Witness 004
Exhibit 207

Fitness to participate

1.4.321. To ascertain if Cpl Farrar was physically and medically fit to participate in service level motorcycle circuit road racing. The requirements of the RAF and RAFMSA were analysed, as was Cpl Farrar's physical fitness.

MOD and RAFMSA requirements

1.4.322. MOD policy required individuals to be medically fit:

> 'To minimise the risk of injury, Service personnel have a personal responsibility to ensure they are medically fit to undertake sporting activity.' [115]

Exhibit 208

1.4.323. RAF sports policy placed responsibility on sports associations to set the fitness standards for their respective sports, with the standards being stated in the association's SMPs:

> 'In line with the individual Sport Safety Management Plans (SSMP), the RP needs to be assured that personal [sic] are fit to participate. During the risk assessment process fitness is to be considered and any pertinent mitigation put in place. Such mitigation is to include a declaration form signed by the individual.' [116]

Exhibit 209

1.4.324. To comply with RAF policy, the RAFMSA SMP stated the following regarding fitness to participate:

> 'SP are to be 'fit to participate' in line with the SMP, risk assessment, current service policies (including medical standards) and any NGB guidance to take part in the event. Participants are reminded that failure to abide by these requirements, risk not being covered by insurance or compensation in the event of an incident.'

Exhibit 133

1.4.325. From the SMP, the SI panel determined that the RAFMSA had identified that medical conditions, epilepsy and seizures would prevent an individual participating. Beyond these conditions, the SMP relied on an

Exhibit 210

[115] JSP 660 Sport in the UK Armed Forces Part 1 Directive (v 2.4 Nov 2021) ch 2 para 14.
[116] AP3415 Sport in the RAF (v 3.2 Aug 2019) Leaflet 16 (Aug 2019) para 2.

individual adhering to existing policy and the NGB guidance. There was no evidence of a risk assessment regarding specific fitness standards for motorcycle circuit road racing. The SI panel **observed** that the medical standards referred to in the RAFMSA SMP, contained no reference to sporting activity.[117]

1.4.326. The Thundersport GB registration form and signing on form required riders to confirm that they were: Exhibit 211 Exhibit 016

> '...physically and mentally able to participate and competent to do so.'

1.4.327. On the morning of 27 May 2022, Cpl Farrar had 'signed on' at race control by completing the Thundersport GB signing on form, effectively declaring themselves fit to participate.

1.4.328. **Annex H to the RAFMSA SMP**. If there was no signing on form, paragraph 19 of the SMP required the following:

> 'Where an event does not have a signing on process that covers fitness to participate then competitors are required to sign a declaration as at Annex H.' Exhibit 133

1.4.329. Annex H of the SMP also contained the following declaration: Exhibit 133

> 'I have the consent of my Line Manager to attend this event.'

1.4.330. The SI panel determined that the completion of annex H to the RAFMSA SMP was only required if there was not a signing on process in-situ at an event. As Thundersport GB had a signing on process, the annex H was not completed, resulting in the 'consent of my line manager' element being lost. This was an **other factor**.

1.4.331. **RECOMMENDATION. The Air Officer Commanding 22 Group should review the mechanisms within the RAF Motorsports Association safety management plan by which an individual signals their fitness to participate and permission to attend in order to provide separate assurance processes for each requirement.**

Cpl Farrar's fitness to participate

1.4.332. **Medical conditions**. The post-mortem report identified that Cpl Farrar had hay fever medication in their system at the time of the accident. The report stated that the medication did not cause drowsiness and was not considered to affect their driving or riding ability. The SI panel Exhibit 028

[117] JSP 950 Volume 1: Medical Administration Leaflet 1-2-12: Assessment of Medical Suitability to Attend Courses and Training (v 2.1 Mar 2022).

determined that hay fever and the presence of medication in Cpl Farrar's system to counter the effects was **not a factor**.

1.4.333. **Physical fitness standard**. From evidence reviewed by the SI panel, specifically MOD and NGB policies, there was no defined standard of physical fitness identified.

1.4.334. **Academic research**. Emanuele D'Artibale's PhD thesis, based on collated research from various scholarly articles, identified that there was little knowledge on the influence of physiological factors on race outcome.[118] A study of machine data from three seasons of the FIM Road Racing Grand Prix World Championships identified that due to the volume and intensity of actions generated by cornering and changes in speed: Exhibit 212

> 'Muscular demands of professional riders during top-level competitions are considerable in volume and intensity.'

> 'Riders performing at a high level should possess pre-requisite levels of cardiovascular and muscular endurance as well as muscular strength.'[119] Exhibit 213

1.4.335. **RAF fitness standards.** In practical terms, there was a requirement for individuals to have fitness levels to a specified degree; although there was no evidence available to the SI panel as to what that specified degree might be. Some individuals who participated in representative sport were of the opinion that passing the mandatory single Service fitness test was sufficient. For an RAF person up to the age of 54, the test consisted of the following:[120] Exhibit 205

a. Multistage fitness test.

b. Press ups.

c. Sit ups.

1.4.336. Cpl Farrar had a background in motocross and enduro racing. The former were motorcycle events which took place on short, closed circuits that had been purpose-built for machines designed for off road terrain. In contrast, enduro events took place in the open countryside, on existing trails or sections of land that have been cordoned off for the race. Instead of completing multiple short laps, riders would race point-to-point or complete fewer, longer laps. They were often required to travel between stages on the public roads. The SI panel was made aware that Cpl Farrar had competed in at least two enduro races in 2022. Witness 004

Exhibit 052

Exhibit 193

[118] D'Artibale PhD, Motorcycle Circuit Racing Rider Performance, p 49, 2020.
[119] D'Artibale PhD, Motorcycle Circuit Racing Rider Performance p 63, 2020.
[120] https://recruitment.raf.mod.uk/fitness-in-the-raf.

1.4.337. Similar to other RAF MCRR team members and a percentage of professional racers, it was likely that Cpl Farrar used motocross and enduro to develop and maintain a particular type of fitness which may have been beneficial to road racing. A study showed that regular motocross riders had an enhanced muscular endurance comparable to physically active persons who participated in three hours of physical training per week.[121] The SI panel **observed** that Cpl Farrar's participation in motocross and enduro racing was likely to have benefitted them physiologically to prepare them for the stresses endured during motorcycle road racing. Exhibit 214

1.4.338. **Cpl Farrar fitness standards**. Cpl Farrar had passed an RAF fitness assessment to the required standard for their age on 27 July 2021 and was still in-date. Civilian participants were not required to establish their fitness to a specified degree. The SI panel determined that Cpl Farrar was of appropriate fitness to take part in the motorcycle circuit racing event and, therefore, their fitness was **not a factor**. Exhibit 215 Exhibit 003

Maintenance of personal safety equipment

1.4.339. To participate in an ACU affiliated event, riders were to conform to specific protective clothing guidelines.[122] Personal safety equipment consisted of helmet, gloves, racing suit and boots. Paragraph 19b of the RAFMSA SMP stipulated: Exhibit 022

> 'All equipment and clothing worn by RAFMSA competitors is classed as personal equipment regardless of whether the association supplied it originally or not. Personnel are responsible for ensuring that personal equipment (including their vehicles) are fit for purpose.' Exhibit 133

1.4.340. **Personal safety equipment requirements**. In accordance with guidance in the ACU handbook 2021, during practice and racing, a rider must wear a one-piece leather suit of at least 1.2mm thickness in all parts as a minimum. The suit must be non-flammable and resistant to abrasion. There must be double padding or 8mm plastic on the shoulders, elbows, both sides of the torso and hip joint, the back of the torso and knees. Undergarments were required if the suit was not lined, and the undergarments were not to be of synthetic material to avoid melting. The boots and gloves were to be of such length to avoid exposure of skin.[123] Additionally, helmets were to bear the ACU gold stamp, as shown in Figure 1.4.25, signifying it was certified for motorcycle racing. Exhibit 022

[121] Anthropometric Characteristics and Performance Capabilities, The Journal of Strength & Conditioning Research (lww.com).
[122] ACU handbook section 14, Apr 2021.
[123] ACU Handbook 2021, section 14.

Figure 1.4.25 ACU gold stamp example

1.4.341. **Racing suit**. Based on photographs, CCTV and headcam footage obtained on the day of the accident, it was almost certain that Cpl Farrar was wearing an Oxford Stradale one piece leather suit as shown in Figure 1.4.26. This suit complied with ACU regulations. Exhibit 023

Figure 1.4.26 Oxford Stradale suit

1.4.342. **Helmet**. The make and model of Cpl Farrar's boots or gloves could not be determined through interview or via footage pre or post-accident. However, through analysis of the headcam footage on leaving the paddock to commence practice session three, they were highly likely to be wearing an Arai rx-7v evo motorcycle helmet as shown in Figure 1.4.27. This conformed to NGB regulations.

Figure 1.4.27 Helmet type worn by Cpl Farrar

1.4.343. Based on analysis of media footage of the accident the SI panel determined that it was highly likely Cpl Farrar was wearing ACU approved personal safety equipment at the time of the accident and that the personal responsibility incumbent on them to attire themself in correct personal equipment was fulfilled. No additional evidence suggested that the personal safety equipment worn by Cpl Farrar influenced the outcome of the accident and as such, was **not a factor**.

Maintenance of motorcycle

1.4.344. **ACU equipment guidelines**. The ACU Handbook 2021 contained technical specifications with which an individual competitor's motorcycle was to adhere and be considered regulatory compliant. During scrutineering motorcycles were checked for engine and frame serial numbers to ensure they had not been tampered with and were visible. Noise levels were also checked. Correct protrusion length of handlebars, brake and gear levers, footrests and exhausts were checked to ensure that during an accident, the risk of a rider being impaled was reduced. Exhibit 017

1.4.345. Another key consideration of the motorcycle inspection was ensuring all oil and fuel caps, or plugs were adequately tied to the machine, known as lock wiring, to prevent oil or fuel from leaking onto the circuit and causing a hazard for other racers. Oil catch tanks were also required. The SI panel determined that the motorcycle checks were predominantly related to reducing hazards to other competitors.

1.4.346. **Cpl Farrar mechanical competency**. Whilst Cpl Farrar did not have any formal qualifications in motorcycle mechanics, the following paragraphs evidence their ability to maintain their motorcycle to the standards required to race as a member of the RAFMSA at ACU affiliated events.

1.4.347. The Health and Safety Executive, described competence as follows: Exhibit 216

> 'Competence can be described as the combination of training, skills, experience, and knowledge that a person has and their ability to apply them to perform a task safely. Other factors, such as attitude and physical ability, can also affect someone's competence.'[124]

1.4.348. Cpl Farrar was the officer in charge of the RAF Cosford Motocross Club and, due to positions being vacated and not refilled, conducted the majority of other duties associated with running the club. Their active participation with the club did not end with administration as they also conducted mechanical servicing on the many vehicles owned by the club. These included motocross bikes and quadbikes. Other RAF Cosford Motocross Club members who carried out mechanical servicing assessed Cpl Farrar as being a very good mechanic. Witness 004 Exhibit 004 Witness 001 Exhibit 217

1.4.349. The SI panel determined that a motorcycle repair centre local to RAF Cosford had conducted dynamometer or 'dyno' tuning on Cpl Farrar's Suzuki GSXR600 motorcycle prior to the race weekend at Cadwell Park. Dyno tuning allowed a technician to make real time adjustments to the motorcycle to improve various aspects of its performance. These may have included optimising fuel to air ratio to improve horsepower, fuel efficiency, throttle response, torque, and power delivery. The repair centre confirmed that Cpl Farrar also conducted their own servicing, and on occasion assisted in the motorcycle repair centre workshop under the staff's supervision. Exhibit 218

1.4.350. **Forensic inspection of motorcycle**. To ascertain the condition of Cpl Farrar's motorcycle, a forensic vehicle examination was conducted by Wiltshire Police. The forensic vehicle examiner made the following comments in their report: Exhibit 037

[124] https://www.hse.gov.uk/competence/what-is-competence.

'10.2 The vehicle was subject of an annual MOT test pass on 9th May 2022 at a mileage of 4,568.'

'11.1 The Suzuki displayed evidence of routine general maintenance to a good standard.'

1.4.351. The inspection concluded that there was:

'...no mechanical defect likely to cause the motorcycle to deviate from its naturally braked, steered or driven path.'

1.4.352. The forensic vehicle examination report also made reference to the motorcycle being privately recovered and several actions being conducted prior to inspection. The report does not mention if this interaction had a detrimental effect on the evidence trail.

1.4.353. The SI panel determined that it was almost certain Cpl Farrar's motorcycle conformed to ACU regulatory requirements, and that the responsibility and DoC incumbent on them to ensure their equipment was fit for purpose was fulfilled.

1.4.354. The SI panel determined that as all evidence pointed to Cpl Farrar's motorcycle being maintained to a good standard, the condition of their motorcycle was **not a factor**.

1.4.355. Whilst Cpl Farrar did not have any formal motorcycle mechanic qualifications, the SI panel determined it was highly likely that Cpl Farrar was a competent motorcycle mechanic who had conducted the majority of servicing on their privately owned motorcycle. It was also not uncommon for Cpl Farrar to be employed within the MCRR team in the racing paddock should some mechanical assistance be required from less experienced team members.

1.4.356. Whilst the SI panel deemed Cpl Farrar to have been competent at motorcycle servicing, it determined that varying degrees of expertise existed within the team. No guidance was identified within the RAFMSA SMP or MCRR administrative order that provided direction as to how a less experienced rider would ensure that their motorcycle and associated equipment was fit for purpose, merely that the responsibility rested with the individual.

1.4.357. Evidenced through interview and correspondence from the RNRMRRT, novice riders were assigned a mentor to assist and provide guidance over race weekends. This would normally be an individual who rode a similar category of motorcycle, and often one that would be on track at the same time.

Witness 008

Exhibit 219

Exhibit 220

1.4.358. The SI panel determined that there was no documented mechanism within the RAF MCRR team for managing differing mechanical competencies of riders. This was an **other factor**.

1.4.359. **RECOMMENDATION. The Air Officer Commanding 22 Group should include within the RAF Motorsports Association safety management plan, a statement on how less mechanically experienced riders within the RAF Motorcycle Road Race Team should be managed**.

Summary of Findings

1.4.360. **Causal factor(s).** Causal factors are those factors that. in isolation or in combination with other factors and contextual details led directly to the accident. Therefore, if a causal factor is removed from the accident sequence, the accident would not have occurred.

a. The SI panel determined that it was highly likely that Cpl Farrar's reduced lean angle whilst navigating Chris Curve causing them to move to the outside of the track was a **causal factor**. 1.4.85

1.4.361. **Contributory factor(s).** Contributory factors are those factors that made the accident more likely to happen. They did not directly cause the accident, therefore if a contributory factor is removed from the accident sequence, the accident may still have occurred.

a. The SI panel determined it likely that wind affected Cpl Farrar's handling of their motorcycle whilst transiting Chris Curve. 1.4.76

b. The SI panel determined it probable that Cpl Farrar applied the front brake resulting in the motorcycle and rider moving into an upright position to leave the track. 1.4.87

c. The SI panel determined that it was likely that startle effect influenced the outcome of the accident. 1.4.96

d. The SI panel determined the reason Cpl Farrar did not detach themselves from the motorcycle is likely to be due to a strong habit intrusion resulting from their off-road motorcycling experience. 1.4.98

1.4.362. **Aggravating factor(s).** Aggravating factors are those factors that made the final outcome of an accident worse. However, aggravating factors do not cause or contribute to an accident, that is, in the absence of the aggravating factor. the accident would have still occurred.

a. The SI panel determined that the because of the run-off surface being grass, Cpl Farrar was highly unlikely to have been 1.4.90

able to stop or deviate from their path prior to hitting the Type E barrier without detaching from their motorcycle.

1.4.363. **Other factor(s).** Other factors are those factors that, whilst they played no part in the accident in question, are noteworthy in that they could contribute to or cause a future accident. Typically, other factors would provide the basis for additional recommendations or observations.

a. The SI panel determined that on test days, when the accident occurred, checking of personal safety equipment and motorcycles for technical compliance was not required by the event organiser and, therefore, was not done on the day of the accident. Additionally, for the whole weekend the safety of the motorcycle was the responsibility of the rider. A review of the RAFMSA SMP identified that these were not covered. The SI panel determined that as MCRR team members were on duty, RAFMSA should have considered this in their SMP. 1.4.150

b. AP3415 directed individuals to AP 8000, AIR TLB Safety and Environmental Management System, to obtain Leaflet 8012. AP 8000 listed Leaflet 8012 as 'In-Form' reporting. The SI panel determined that Leaflet 8012, Management of Safety in Sports was not within AP8000. 1.4.168

c. The SI panel determined that there was no clear MOD guidance regarding how risks were owned by the single Service sports 2* heads when representative sport is authorised for NGB or NGB affiliated organisation run events. This could result in poor management of DoC. 1.4.192

d. The panel determined through the inquiry that there are additional hazards that could be included in the RAFMSA generic risk assessment, such as lack of scrutineering on test days or how competence is defined for personal bike maintenance. 1.4.205

e. Due to the nature of the accident, the SI panel determined that the production of a specific risk assessment, completed or not, was unlikely to have had any bearing on the outcome of the accident 1.4.212

f. The SI panel determined that the RAFMSA's ability to produce coherent risk assessments had been hampered. They may have been guided by the AP3415 definition of dynamic risk which was contrary to JSP 375. Incorrect application of the dynamic risk assessment was seen in sports association SMPs across all three Services. 1.4.220

g. According to JSP 660, a UKAF sports association chairperson was required to use best practice from within single Service sports boards (SB) to ensure that any risk is ALARP. The 1.4.223

SI panel identified that motorsports, with the exception of rallying, had no representation at UKAF level and, therefore, there was no mechanism in place to ensure best practice was sought from across the single Services. This could have contributed to the variability of risk assessments within motorsports across the three Services.

h. The SI panel determined that categorising sports by various risk prefixes did not inherently add a layer of safety or change the procedure of risk assessment. Different sports will naturally vary in risk, the rationale of how they are ranked by Sport England, and if it would matter, (in terms of the application of a functional safety construct) remains unclear. 1.4.229

i. If it was possible to detail processes to achieve duty status during an event, then the SI panel determined that it was also plausible that mechanisms can be stipulated to remove the duty status or stop participants from continued participation. 1.4.270

j. The SI panel determined that the practice of singleton riders attending an event was being managed by the three single Service teams. The SI panel was unable to find evidence of how this was managed within their SMP. 1.4.287

k. The SI panel determined that the completion of annex H to the RAFMSA SMP was only required if there was not a signing on process in-situ at an event. As Thundersport GB had a signing on process, the annex H was not completed, resulting in the 'consent of my line manager' element being lost. 1.4.330

l. The SI panel determined that there was no documented mechanism within the RAF MCRR team for managing differing mechanical competencies of riders. 1.4.358

1.4.364. **Observation(s).** Observations are points or issues worthy of note to improve working practices that the SI panel discovered during their investigation, but that do not relate directly to the accident being investigated.

a. The track inspection report dated 25 March 2022 did not provide details of the existing controls but did provide details of the additional protection required. As the SI panel did not have evidence of data relating to accidents and near misses as stated in the inspection report, the SI panel **observed** that the assessment for 2022 was likely based on the cumulative experience of the ACU and MSV personnel conducting the track inspection. 1.4.136

b. Academic research highlighted the importance of creating run-off zones between track and barrier. The surface of a run-off zone was not specified in any ACU or FIM guidance. The run-off 1.4.139

zone at Cadwell Park was grass and had been extended at Chris Curve by 20m in 2012. At the time of the accident, there was a straight line distance of 130m from Cpl Farrar's track exit point to the Type E barrier. The SI panel **observed** that the run-off was a recognised control measure.	
c. The SI panel **observed** that the Type E barrier at Cadwell Park was permanent and a recognised ACU protective device	1.4.141
d. During the investigation, the Army Sports Control Board confirmed that DH no longer applied to army sport, contrary to what was stated in AGAI volume 1 chapter 5. The SI panel **observed** that there was confusion on whether DH was applicable to army sports.	1.4.238
e. The SI panel **observed** that the inconsistent use of DH terminology in RAF sports documentation contributed to confusion as to whether DH was applicable in RAF representative sport.	1.4.245
f. The SI panel **observed** that DH in RAF sports was not required to enable risk escalation and ownership. However, it provided a mechanism for management of RtL activity.	1.4.254
g. The SI panel **observed** that the RAF Central Fund provided 15% to 20% financial support to the RAF MCRR team undertaking representative sport on a voluntary basis, with the financial contribution biased towards safety thus demonstrating a DoC to participants.	1.4.261
h. The SI panel **observed** that the RAFMSA SMP 1st party assurance report was not completed accurately as the terminology differences were not identified and there was only evidence of one level of risk assessment, the generic.	1.4.276
i. The SI panel **observed** that 2nd party assurances were conducted by the DRS on RAF sports and the lack of 2nd party assurance of the RAFMSA SMP prior to the accident was **not a factor**.	1.4.277
j. The SI panel **observed** that the quantity and ambiguity of the policy pertaining to risk management in sport made compliance challenging.	1.4.281
k. The SI panel **observed** that UKAF policy does not provide guidance for the carriage of civilian passengers when using a private vehicle for a duty journey.	1.4.310

l. The SI panel **observed** that the requirement to permit travel to a representative sport event was not specifically articulated within the RAFMSA SMP or the RAF MCRR administrative order.	1.4.313
m. The SI panel **observed** that Cpl Farrar and their CoC did not utilise the RAF Cosford station sports policy to deconflict Cpl Farrar's guard duty commitment and representative sporting activity.	1.4.316
n. The SI panel **observed** that there was a lack of clarity within RAF Cosford policy on how an individual formally detached themselves from the station when working between units.	1.4.320
o. There was no evidence of a risk assessment regarding specific fitness standards for motorcycle circuit road racing. The SI panel **observed** that the medical standards referred to in the RAFMSA SMP,[125] contained no reference to sporting activity.	1.4.325
p. The SI panel **observed** that Cpl Farrar's participation in motocross and enduro racing was likely to have benefitted them physiologically to prepare them for the stresses endured during motorcycle road racing.	1.4.337

[125] JSP 950 Volume 1: Medical Administration Leaflet 1-2-12: Assessment of Medical Suitability to Attend Courses and Training (v 2.1 Mar 2022).

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PART 1.5

Recommendations

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PART 1.5 – RECOMMENDATIONS

1.5.1. **Introduction.** The following recommendations are made in order to enhance Defence Safety:

1.5.2. **Assistant Chief of Defence Staff (People Capability) should:**

a. **provide guidance on what risks are owned by sports associations, when representative sport is authorised for national governing body or national governing body affiliated organisation run events, in order to ensure appropriate duty of care is provided to participants.** 1.4.193

b. **review sports associations specific risk assessments where non-MOD organisations control the associations' representative sports events, ensuring that hazards are adequately captured.** 1.4.213

c. **should review sports associations safety management plans in order to ensure risk management processes are aligned with JSP 375, Management of Health and Safety in Defence** 1.4.221

d. **identify sports with no association chairperson at UK Armed Forces sports board level, and determine means to share best practice in application of duty of care.** 1.4.224

e. **provide direction on the applicability of Duty Holding for sport and ensure that sports safety risk management and escalation is uniformly managed across sport within defence.** 1.4.257

f. **update sports associations safety management plans to include processes for stopping participants from competing in events in order to provide clarity to participants on when and how they can be removed from an authorised event.** 1.4.271

g. **ensure sports associations include processes in their safety management plans for individuals to compete as singletons at authorised events.** 1.4.288

1.5.3. **Director People, Training and Naval Secretary should:**

a. **update the Royal Navy Royal Marine Motorcycle Road Racing Team's risk assessment so that it includes an analysis of potential gaps in MOD duty of care that may result from the Auto-Cycle Union technical control process in order to improve safety of service personnel participating in motorcycle circuit road racing.** 1.4.151

1.5.4.	**The Deputy Chief of the General Staff should:**	
	a. **update the Army Motorcycle Road Racing Team's risk assessment so that it includes an analysis of potential gaps in MOD duty of care that may result from the Auto-Cycle Union technical control process in order to improve safety of service personnel participating in motorcycle circuit road racing.**	1.4.152
1.5.5.	**Air Officer Commanding 22 Group should:**	
	a. **update the RAF Motorcycle Road Racing Team's risk assessment so that it includes an analysis of potential gaps in MOD duty of care that may result from the Auto-Cycle Union technical control process in order to improve safety of service personnel participating in motorcycle circuit road racing.**	1.4.153
	b. **ensure that Leaflet 8012 is correctly referenced in AP3415 Sport in the RAF in order to enable RAF sports associations to access the information easily.**	1.4.169
	c. **review generic risk assessments across the RAF Motorsports Association in order to ensure that they adequately mitigate hazards that are within the association's control, and which are not covered by the NGB risk assessment.**	1.4.206
	d. **review the efficacy of using Sport England's ranking of sports in AP3415, Sport in the RAF, as a primary determining factor for periodicity of assurance. This is to ensure individual sports risks are objectively assessed from an MOD perspective.**	1.4.230
	e. **review the mechanisms within the RAF Motorsports Association safety management plan by which an individual signals their fitness to participate and permission to attend in order to provide separate assurance processes for each requirement.**	1.4.331
	f. **include within the RAF Motorsports Association safety management plan, a statement on how less mechanically experienced riders within the RAF Motorcycle Road Race Team should be managed.**	1.4.359

PART 1.6

Convening authority comments

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Part 1.6 Convening authority comments

Introduction

1.6.1. This service inquiry (SI) was convened on 5 July 2022 to investigate the circumstances surrounding the death of Corporal (Cpl) [redacted] Farrar RAF, who was representing the RAF Motorcycle Road Racing Team at a civilian organised road track racing event at Cadwell Park, Lincolnshire.

1.6.2. The SI panel has submitted its report to me after 14 months of detailed evidence gathering, interviews and analysis. The panel investigated thoroughly the sequence of events that led Cpl Farrar to leave the racetrack onto the grass and head towards the crash barrier where the fatal accident occurred. The panel determined that the cause of the accident was due to Cpl Farrar not completing the turn, resulting in them riding onto the grass run-off, then crashing into the barrier with the motorcycle hitting them shortly thereafter. The potential combination of wind and application of front brake, coupled with them remaining on the bike until near the barrier, were identified as contributory factors.

1.6.3. Cpl Farrar, an employee of the Ministry of Defence (MOD), was on duty and, therefore, subject to the relevant Duty of Care owed to an employee by their employer, whilst participating at the civilian sport event. The SI panel analysed how organisations involved in planning and delivering the event had, as far as is reasonably practicable, minimised the risks to Cpl Farrar. The panel has made fifteen recommendations that seek to improve safety in representative sport, particularly those delivered by civilian organisations. Having reviewed the report, I agree with the panel's findings and recommendations and offer the following observations.

Duty of care by Auto-Cycle Union and Thundersport GB

1.6.4. The inquiry determined that Auto-Cycle Union and Thundersport GB had put in place the necessary processes to ensure that the race was as safe as reasonably practicable for competitors. The venue and track had been inspected and any recommended improvements to protective measures were implemented by Thundersport GB. The clerk of the course, who was responsible for safe delivery of the event, had twenty-seven years of race management experience and was well respected by all three single service motorcycle road racing teams.

Duty of care application by MOD sports organisations

1.6.5. MOD and RAF sports policy provided clear guidance to sports associations of their obligations to review National Governing Body (NGB) regulations to determine if they met MOD standards. This was understood by the Royal Air Force Motor Sports Association Chair but not fully conveyed in their sports safety management plan. Across the three service teams there was confusion on risk ownership where events were organised by an NGB affiliated organisation, with no clear MOD guidance to refer to.

1.6.6. The report identified that the three levels of risk assessment required by the overarching MOD Health and Safety policy was not fully understood by the volunteers organising and participating in motorcycle road racing. This led to specific risk assessments not being completed as per associations' own safety management plans and incorrect use of specific and daily risk assessments.

1.6.7. Despite sport being a tri-service activity, the safety risk management of sport across the three services differs. The RAF uses Duty Holding (DH) terminology in its safety management systems, whilst the Royal Navy and Army are guided by their service's overarching safety policy. In addition to a variance in safety management, there is no mechanism for sharing best practice in certain sports across the three services, with motorsport being one of these.

1.6.8. There was confusion post-incident as to whether service personnel could continue participating in the event in a personal capacity and off-duty. The SI panel found no policy guidance on whether duty status could be changed during a representative sports event, especially one delivered by a civilian organisation.

Unit and individual duty of care responsibilities

1.6.9. The report highlighted that the transition of duty of care occurs at the point at which an individual leaves their unit to start travelling to an event. This transition of responsibility was not always clearly articulated in representative sport administrative instructions reviewed by the inquiry. The report identified the challenges faced by individuals as they balanced their routine work commitments against participation in representative sport. It noted that, in this instance, Cpl Farrar's line management had approved their participation at the event but had not fully deconflicted against other duties.

1.6.10. The report assessed the individual responsibilities of motorcycle road track racing competitors and determined that Cpl Farrar was fit to participate, was wearing the appropriate personal safety equipment, and was competent in maintaining motorcycles. There was no mechanical fault with the motorcycle that was involved in the incident.

Conclusion

1.6.11. Having read the report, I am content that this tragic accident has been investigated, analysed, and reported thoroughly, accurately, and rigorously. I encourage all sports association chairs to read the recommendations and reflect upon any improvements that could be made to the delivery of their representative sport for which they are responsible for.

1.6.12. On behalf of the Defence Safety Authority, I offer my condolences to Cpl Farrar's family, friends and loved ones.

SJ Shell CB OBE MA
Air Marshal
Director General Defence Safety Authority