

Defence
Safety Authority

Service inquiry

Fatal Accident involving Scimitar Fighting Vehicle on Salisbury Plain Training Area

15 October 2021

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Part 1.1 – Convening note and glossary

DSA/SI/04/21/CVR(T) Fatality SPTA

22 May 2023

DG DSA

Convening order for the service inquiry into the death of a soldier from 1st Battalion, The Yorkshire Regiment in an accident involving a Scimitar fighting vehicle on Salisbury Plain Training Area on 15 October 2021

1.1.1. The service inquiry panel assembled at the Defence Accident Investigation Branch, MOD Boscombe Down on 25 October 2021 by the order of the Director General of the Defence Safety Authority for the purpose of investigating the incident that resulted in the death of Private Jethro Watson-Pickering. His tragic death occurred on 15 October 2021 following an accident whilst driving a Combat Vehicle Reconnaissance (Tracked) on Exercise IRON STORM 2/21. The aim of the service inquiry was to make recommendations to prevent a reoccurrence. The panel has conducted its investigation and submits the service inquiry report for the convening authority's consideration.

1.1.2. The following Inquiry papers are enclosed:

Part 1 - Report		**Part 2 - Records of proceedings**	
Part 1.1	Convening note and glossary	Part 2.1	Diary of events
Part 1.2	Convening orders and terms of reference	Part 2.2	List of witnesses
Part 1.3	Narrative of events	Part 2.3	Witness statements
Part 1.4	Findings	Part 2.4	List of attendees
Part 1.5	Recommendations	Part 2.5	List of exhibits
Part 1.6	Convening authority comments	Part 2.6	Exhibits
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		Part 2.8	Annexes
		Part 2.9	Schedule of matters not germane to the inquiry
		Part 2.10	Master schedule

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President

[Signed electronically]

Wing Commander [redacted]
Royal Air Force
President CVR(T) Fatality SPTA SI

Member 1

[Signed electronically]

Lieutenant [redacted]
Royal Navy
CVR(T) Fatality SPTA SI

Member 2

[Signed electronically]

Staff Sergeant [redacted]
Queen's Royal Hussars
CVR(T) Fatality SPTA SI

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Glossary

1LoDA	1st Line of Defence Assurance
1 YORKS	1st Battalion, The Yorkshire Regiment
2IC	Second-in-command
2LoDA	2nd Line of Defence Assurance
A and I	Audit and Inspection
ACR	Armoured close reconnaissance
ACRCC	Armoured Close Reconnaissance Commanders Course
ACSO	Army command standing order
AESP	Army equipment support publication
AFV	Armoured fighting vehicle
AFVSR	AFV Schools Regiment
AINC	Army Incident Notification Centre
ALARP	As low as reasonably practicable
ARMCEN	Armour Centre
ASCen	Army Safety Centre
ASpec	Assessment specification
AStrat	Assessment strategy
ATGM	Anti-tank guided missile
AV	Armoured vehicle
AVSO	Armoured Vehicle Standing Order
BAIU	Bowman Audio Interface Unit
BCS	Battlecraft syllabus
BG	Battlegroup
C/s	Callsign
CALFEX	Combined arms live firing exercise
CATT	Combined Arms Tactical Trainer
CBA	Combat body armour
CBRN	Chemical, biological, radiological and nuclear
CD	Capability director
CFA	Commander Field Army
CGS	Chief of the General Staff
CIS	Communications and information systems
CMR	Castlemartin Ranges
CO	Commanding officer
Comd	Commander
CP	Crossing point
CPWG	Capability and personnel working group
CPX	Command post exercise
CQMS	Company quartermaster sergeant
CR2	Challenger 2 (main battle tank)

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CRTC	Combat Ready Training Centre
CSM	Company sergeant major
CT	Computerised tomography
CTE	Centralised training establishment
CTG	Collective Training Group
CVR(T)	Combat Vehicle Reconnaissance (Tracked)
D&M	Driving and maintenance
DAIB	Defence Accident Investigation Branch
DCC	Dismounted close combat
DCGS	Deputy Chief of the General Staff
DCoP	Defence code of practice
DDH	Delivery duty holder
DE&S	Defence Equipment and Support
DESA	Defence Equipment Sales Authority
DH	Duty holder
DH21	Duty Holding 21
DIE	Directive for Infantry Employment
DIO	Defence Infrastructure Organisation
DLSR	Defence Land Safety Regulator
DMI	Driving and maintenance instructor
DoC	Duty of care
DSA	Defence Safety Authority
DSAT	Defence Systems Approach to Training
DT	Distributed training
DTC	Distributed training cell
DTE	Defence training estate
DTR	Driver training record
DVLA	Driver and Vehicle Licensing Agency
DWFRS	Dorset and Wiltshire Fire and Rescue Service
EASP	Exercise action and safety plan
ECO	Exercise conducting officer
EMER	Electrical and mechanical engineering regulation
Eqpt	Equipment
Ex IS	Ex IRON STORM 2/21
EXCON	Exercise control
F/MT	Form motor transport
FCIU	Forensic Crash Investigation Unit
FE	Force element
FFLAS	Full Function Local Area Subsystem
FFLAV	Future Family of Light Armoured Vehicles
FFR	Fit for role
FLAV	Family of Light Armoured Vehicles

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FoE	Forecast of events
FPC	Final planning conference
FRES	Future Rapid Effects System
FSp	Fire support
FTU	Field Training Unit
GDHC	Generic Duty Holder Course
GPS	Global Positioning System
GS	General service
GSR	General service requirement
HASWA	Health and Safety at Work etc Act 1974
HEMS	Helicopter emergency medical service
HF	Human factors
HFACS	Human Factors Analysis and Classification System
HoC GM	Head of Capability Ground Manoeuvre
HQ	Headquarters
HSEP	Health, safety & environmental protection
HSE	Health and Safety Executive
INS	Incident Notification System
IP	Injured person
IPC	Initial planning conference
IPCC	Intergovernmental Panel on Climate Change
ISpec	Instructional specification
ISTAR	Intelligence, surveillance, target acquisition and reconnaissance
JAMES	Joint Asset Management and Engineering Solutions
JCCC	Joint Casualty and Compassionate Centre
JPA	Joint Personnel Administration
JSP	Joint service publication
JNCO	Junior non-commissioned officer
KLP	Key learning point
KRH	King's Royal Hussars
L1	Level 1
L2	Level 2
LABG	Lead armoured battlegroup
LAD	Light aid detachment
LAIT	Land Accident Investigation Team
LEA	Land equipment audit
LEES	Land equipment engineering standards
LFE	Learning from experience
LFSO	Land forces standing order
LH	Left hand
LSpec	Learning specification
LSSR	Land Systems Safety Regulator

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LWC	Land Warfare Centre
MACA	Military aid to the civil authorities
MCC	Mounted close combat
MEI	Mandatory equipment inspection
METHANE	Major incident, Exact location, Type of incident, Hazards, Access, Number and severity of casualties, Emergency services required
MFC	Mortar fire control
MOD	Ministry Of Defence
MPC	Main planning conference
Mph	Miles per hour
MRMO	Maintenance, repair, modification and overhaul
MRTC	Mission Ready Training Centre
MTO	Motor transport officer
MTSR	Movement and Transport Safety Regulator
NAS	Naval air squadron
NCO	Non-commissioned officer
NVD	Night vision device
OC	Officer commanding
ODH	Operating duty holder
Offr	Officer
OJT	On-the-job training
OM	Observer mentor
OP	Observation post
Op	Operation
OPFOR	Opposing forces
OSW	Operational staff work
OTIS	Observer's Thermal Imaging System
Pt2	Part two
PAM	Pamphlet
POGO	Proof of good order
PPE	Personal protective equipment
PRT	Permanent range team
PSBC	Platoon Sergeants Battle Course
PT	Project team
Pte	Private
QMS	Quality management system
RAC	Royal Armoured Corps
RACTR	RAC Training Regiment
RARDEN	Royal Armaments Research and Development Establishment Enfield
RBSL	Rheinmetall BAE Systems Land
Recce	Reconnaissance
REME	Royal Electrical and Mechanical Engineers

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RH	Right hand
RIG	Regimental instructor gunnery
RLS	Real life support
RMO	Regimental medical officer
RSO	Range standing order
RST	Requirements setting team
RtL	Risk to life
RTR	Royal Tank Regiment
RV	Rendezvous
SDH	Senior duty holder
SECSR	Safety and environmental case summary report
SEFIT	Serious Equipment Failure Investigation Team
SEMP	Safety and environmental management panel
SEMS	Safety and environmental management system
SEP	Safety and environmental panel
SFS	Soldier First Syllabus
SI	Service inquiry
SITREP	Situation report
Sldr	Soldier
SME	Subject matter expert
SNCO	Senior non-commissioned officer
SNvE	Safety notice via email
SofS	Secretary of State
SOI	Standard operating instruction
SOP	Standard operating procedure
SOR	Statement of requirement
SP-CC	Specialist practitioner in critical care
SPO	Senior planning officer
SPTA	Salisbury Plain Training Area
SPU	Simple platform user
SQEP	Suitably qualified and experienced personnel
SRM	Safety and risk management
SRO	Senior responsible owner
SST	Safe system of training
SSW	Safe system of work
SWAST	South Western Ambulance Service Trust
TAFMIS	Training Administration and Financial Management Information System
TAP	TES activation parade
TDD	Training delivery deficiency
TDT	Training delivery team
TES	Tactical Engagement Simulation

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TESEX	Tactical Engagement Simulation exercise
TF	Task Force
TFH	Task Force HANNIBAL
Tkd Veh	Tracked vehicle
TL	Training level
TLB	Top level budget
TLS	Through life support
TO	Training objective
TP	Training provider
TRA	Training requirements authority
TRACER	Tactical Reconnaissance Armoured Combat Equipment Requirement
TRC	Training Record Card
TRiM	Trauma Risk Management
UECD	Unit Equipment Care Directive
VOSA	Vehicle and Operator Services Agency
VBS	Virtual Battlespace
VM	Vehicle mechanic
Vol	Volume
VS Ops	Vehicle Support Operations Team
WDC	Westdown Camp

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Part 1.2 – Convening Order

Defence Safety Authority

Service Inquiry Convening Order

25 October 2021

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

Copy to:

PS/SofS	MA/CNS	Chief Safety Army
PS/Min(AF)	MA/CGS	DSA-DLSR-Hd
PS/Min(DPV)	PSO/CAS	Head DAIB
PS/Min(DP)	PSO/COMD UKStratCom	DDC Dir
PS/PUS	MA/CFA	DDC Head of News
PS/2PUS	MA/GOC 1XX	DDC PR News SO1 Army
DPSO/CDS	Dir HS&EP	APSG-Pers-Svcs-BAS-SO1
MA/VCDS		

DSA DG/SI/04/21 – CONVENING ORDER FOR THE SERVICE INQUIRY INTO THE DEATH OF A SOLDIER FROM 1ST BATTALION THE YORKSHIRE REGIMENT IN AN ACCIDENT INVOLVING A SCIMITAR FIGHTING VEHICLE ON SALISBURY PLAIN TRAINING AREA ON 15 OCTOBER 2021

1. In accordance with Section 343 of Armed Forces Act 2006 and JSP 832 – Guide to Service Inquiries (Issue 1.0 Oct 08), the Director General of the Defence Safety Authority (DG DSA) has elected to convene a Service Inquiry (SI).

2. The purpose of this SI is to investigate the circumstances surrounding the incident and to make recommendations in order to prevent recurrence.

3. The SI Panel will commence administrative briefing at 1200 on Monday 25 October 2021 at the Defence Accident Investigation Branch (DAIB), B120 MOD Boscombe Down, and will be formally convened by the DG at 1500.

4. The SI Panel comprises:

President:	**Wing Commander** [redacted] **RAF** [redacted]
Members:	**Lieutenant** [redacted] **RN**
	Staff Sergeant [redacted] **QRH** [redacted]

5. The legal advisor to the SI is **Major** [redacted] (DSA-HQ-Legad1) and technical investigation/inquiry support is to be provided by the DAIB. The nominated mentors for this SI

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are **Mr [redacted] (DSA-DAIB-LAND-Ops2)** and **Warrant Officer First Class D [redacted] (DSA-DAIB-LAND-Eng1).**

6. The SI is to investigate and report on the facts relating to the matters specified in its Terms of Reference (TOR) and otherwise to comply with those TOR (at Annex A). It is to record all evidence and express opinions as directed in the TOR. An Initial Report on the commencement of the investigation is to be submitted on 25 November 2021.

7. Attendance at the SI 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 initially undertake induction training at the DAIB facility at MOD Boscombe Down immediately after 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 D0456A.

Original Signed

S C Gray CB OBE FREng
Air Marshal
DG DSA – Convening Authority

Annex:

A. Terms of Reference for the service inquiry into the death of a soldier from the 1st Battalion the Yorkshire Regiment in an accident involving a Scimitar Fighting Vehicle at Salisbury Plain Training Area on 15 October 2021.

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Annex A To
DSA DG/SI/05/21 Convening Order
Dated 25 October 2021

TERMS OF REFERENCE FOR THE SERVICE INQUIRY INTO THE DEATH OF A SOLDIER FROM 1ST BATTALION THE YORKSHIRE REGIMENT IN AN ACCIDENT INVOLVING A SCIMITAR FIGHTING VEHICLE ON SALISBURY PLAIN TRAINING AREA ON 15 OCTOBER 2021

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

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

b. Ascertain whether personnel (Service and civilian) 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. Establish the level of training, relevant competencies, qualifications and currency of the individuals involved in the incident.

e. Identify if the levels of planning and preparation met the activities' objectives.

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

g. Investigate and comment on relevant fatigue implications of an individual's activities prior to the matter under investigation.

h. Determine the state of serviceability of relevant equipment.

i. Determine any equipment deficiencies including any integration or compatibility issues.

j. Determine and comment on any broader organisational and/or resource factors.

k. 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 DG DSA without delay to initiate remedial actions. Consideration should also be given to raising an Urgent Safety Advice note.

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Part 1.3

Narrative of events

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Part 1.3 – Narrative of events

All times local (BST/GMT plus 1 hour).

Synopsis

1.3.1. Between 13 September and 7 November 2021, the 1st Battalion, The Yorkshire Regiment (1 YORKS) was supporting Exercise IRON STORM 2/21 (Ex IS). Ex IS included multiple phases, and 15 October 2021 was the first day of 'Mission Zero' which was being held on the Salisbury Plain Training Area (SPTA).[1] On 15 October 2021 a Scimitar-variant Combat Vehicle Reconnaissance (Tracked) (CVR(T)) armoured fighting vehicle (AFV) (Figure 1.3.1) using the radio callsign (c/s) 62 Alpha, with its crew of three personnel – Soldier A (the vehicle commander), Soldier B (the gunner) and Private (Pte) Watson-Pickering (the driver), were the forward detachment of a reconnaissance force. At approximately 11:37 c/s 62 Alpha turned left on to a single-track byway and almost immediately, the gun barrel of their 30mm calibre cannon hit a tree that was to the north side of the track. The turret rotated clockwise and an equipment storage bin fixed to the rear of the turret collided with Pte Watson-Pickering's head causing injuries incompatible with life. Pte Watson-Pickering was declared dead at the scene at 12:24. Soldier A and Soldier B were treated in hospital for minor injuries.

Witness 01
Witness 02
Witness 03
Exhibit 001
Exhibit 002
Exhibit 003



Figure 1.3.1: FV107 CVR(T) Scimitar.

[1] Mission Zero was part of the test phase of Ex IS and is described in paragraph 1.3.2m.

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Background

Exercise IRON STORM 2/21

1.3.2. Ex IS was a validation exercise held as part of the assurance process for a unit to assume the roles of battlegroup (BG) 1 of the Vanguard Armoured Infantry Brigade and the Lead Armoured Battlegroup (LABG). In this case the King's Royal Hussars (KRH) BG was preparing to hold readiness over the period September 2021 to September 2022. Ex IS involved multiple phases: Exhibit 004

a. Initial planning conference (IPC) (26 February 2021);

b. Main planning conference (MPC) (13 May 2021);

c. Operational staff work (OSW) writing period (14 June 2021 to 25 June 2021);

d. Final planning conference (FPC) (week commencing 5 July 2021);

e. KRH BG took responsibility for the additional vehicles added to their fleet (23 August 2021 to 5 September 2021);

f. Ex IRON MENTOR (6 September 2021 to 12 September 2021). Training for additional safety staff;

g. KRH pre-deployment and preparedness training (known as home bank training) and deployment (6 September 2021 to 12 September 2021);

h. HANNIBAL Threat Tactics Course (13 September 2021 to 16 September 2021). Conceptual training delivered to 1 YORKS to assist them to think and act in a less predictable manner by using tactics that were unfamiliar to the Army in preparation for them to become Task Force HANNIBAL (TFH);[2]

i. Prepare phase (13 September 2021 to 10 October 2021). This phase included live fire tactical training, a command post exercise (CPX) and a combined arms live firing exercise (CALFEX) all at Castlemartin Ranges (CMR) in Pembrokeshire;

j. Ex ACES HIGH (20 September to 10 October 2021). A further CPX and also the battlecraft syllabus (BCS) for 12 Armoured Infantry Brigade who were the superior formation for the KRH and 1 YORKS;

k. TFH took responsibility for the additional vehicles added to their fleet (27 September 2021 to 10 October 2021);

[2] TFH was the designation for the opposing forces (OPFOR) for Ex IS.

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l. Project phase (9 October 2021 to 14 October 2021). This phase included the move to SPTA, the fitment and testing of the Tactical Engagement System (TES) to vehicles and personnel, and fitment of visual modifications to the TFH vehicles to allow them to be distinguished from the KRH BG;[3]

m. Test phase (15 October 2021 to 19 October 2021). One of the main elements of this was Mission Zero, a field training exercise and a basic collective competency check for the unit under validation. The required standards were clear and well promulgated with the activities repeated until the standards were met. This phase was conducted at SPTA;

n. Optimise phase (18 October 2021 to 31 October 2021). Optimisation as directed by 12 Armoured Infantry Brigade which could include the opportunity to innovate, experiment and develop the fundamental will to win. This was to be at SPTA with elements conducted in the Combined Arms Tactical Trainer (CATT) at Warminster to increase the challenge;

o. Recovery window (1 November 2021 to 7 November 2021). All units to return to base; and

p. Post-exercise report (8 December 2021). To be submitted to the Land Warfare Centre.

Infantry

1.3.3. The Army website described infantry as being 'the Army's close combat warriors' and noted that each infantry unit was assigned to a specialisation such as:[4]

a. Light role infantry were trained to fight on foot using the full range of infantry weapons, communications and surveillance equipment;

b. Armoured infantry were delivered very close to their objective by a tracked armoured fighting vehicle from which they dismounted to fight on foot;

c. Light mechanised infantry used a wheeled armoured vehicle to quickly close with the enemy before they dismounted to operate on foot;

d. Mechanised infantry were similar to light mechanised infantry but used a larger wheeled armoured vehicle which provided increased protection;

e. Airborne infantry specialised in rapid deployment either by parachute or helicopter; and

[3] All exercise personnel and vehicles were fitted with Cubic's Tactical Engagement System (TES) to facilitate GPS tracking and to provide a simulation of the effects of the use of weapon systems. This essentially used lasers to simulate firing, and receptors with audible/visible indicators to ensure fair play with units being automatically notified that they have been 'immobilised', or 'destroyed'.
[4] https://www.army.mod.uk/who-we-are/corps-regiments-and-units/infantry/ (accessed 22 August 2022).

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f. Security force assistance infantry who worked with conventional partners in permissive environments to reduce the likelihood of future conflicts.

The Yorkshire Regiment

1.3.4. The Yorkshire Regiment (re-styled as the Royal Yorkshire Regiment since 6 April 2023) was formed on 6 June 2006 from an amalgamation of historic regiments: 1st Battalion, The Prince of Wales's Own Regiment of Yorkshire; 1st Battalion, The Green Howards; 1st Battalion, The Duke of Wellington's Regiment (West Riding) and their associated Territorial Army (now known as Army Reserve) units.[5] A period of reorganisation ensued in 2013 which reduced the regiment from three to two battalions plus an Army Reserve battalion.

1st Battalion, The Yorkshire Regiment

1.3.5. 1st Battalion, The Yorkshire Regiment (1 YORKS) was an armoured infantry unit based at Alma Lines, Munster Barracks, Catterick Garrison and recruited from the three counties of Yorkshire along with the East Riding area. The commanding officer (CO) was a lieutenant colonel and the Battalion comprised the Battalion Headquarters (BHQ), along with HQ Company (Helmand), three rifle companies – A Company (Alma), B Company (Burma) and C Company (Corunna), and Fire Support Company (Quebec). At the time of the accident, the role of the Battalion was to provide armoured infantry to 12 Armoured Infantry Brigade as part of 3 (UK) Division.[6]

[5] https://www.army.mod.uk/who-we-are/corps-regiments-and-units/infantry/yorkshire-regiment/1-2-yorks/ (accessed 22 August 2022).
[6] The infantry were the Army's close combat warriors and each infantry unit was assigned to a specialisation: light role infantry were trained to fight on foot using the full range of infantry weapons, communications and surveillance equipment; armoured infantry were delivered very close to their objective by a tracked armoured fighting vehicle from which they dismounted to fight on foot; light mechanised infantry used a wheeled armoured vehicle to quickly close with the enemy before they dismounted to operate on foot; mechanised infantry were similar to light mechanised infantry but used a larger wheeled armoured vehicle which provided increased protection; airborne infantry specialised in rapid deployment either by parachute or helicopter; and the security force assistance infantry who worked with conventional partners in permissive environments to reduce the likelihood of future conflicts.

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1.3.6. The battalion was equipped with a range of armoured vehicles from the FV510 (Warrior) series, FV430 (Bulldog) series, and FV100 (CVR(T)) series. The main elements of 1 YORKS that were relevant to this SI have been represented in Figure 1.3.2.

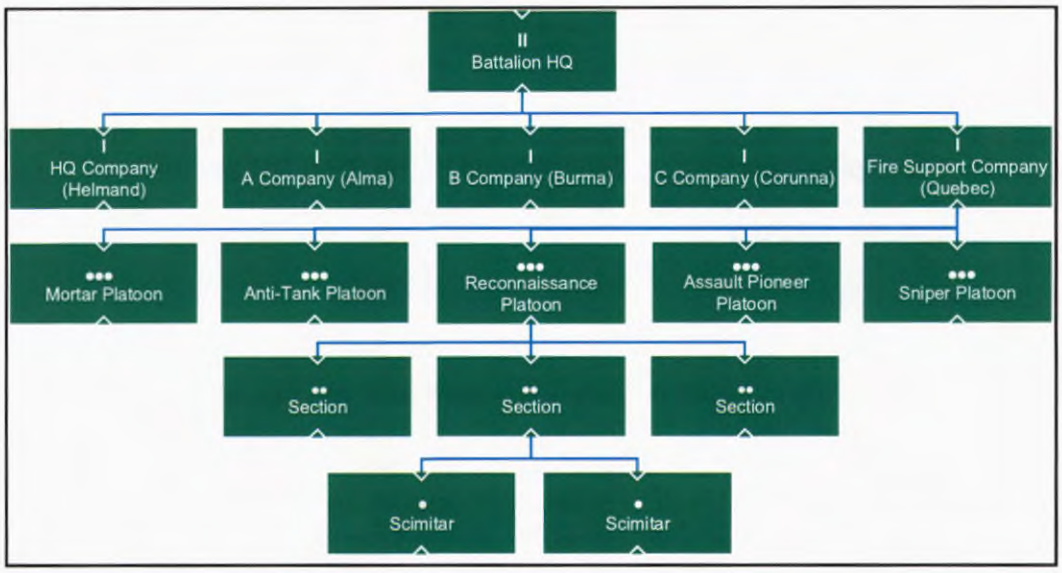


Figure 1.3.2: Representative 1 YORKS organisation chart as at 1 October 2021.

1.3.7. For Ex IS, 1 YORKS (less Burma Company which had been assigned to the KRH BG) had been given the task of providing the opposing forces (OPFOR), known as TFH. This required personnel to think and act in a manner less conventional to UK doctrine in order for the KRH BG to fully demonstrate their capabilities during the validation event. Exhibit 004

Quebec Company

1.3.8. Quebec Company was established for 181 personnel with approximately 160 posts filled at the time of the accident. The officer commanding Quebec Company was a major and the Company was comprised of five specialist platoons: mortar platoon, anti-tank platoon, reconnaissance platoon, assault pioneer platoon and sniper platoon. The officer commanding mortar, anti-tank and reconnaissance platoons was a captain who was usually on their second or third tour as an infantry officer, which ensured they had a good grounding in generalist infantry tasks prior to them specialising. A colour sergeant was the senior non-commissioned officer (SNCO) in charge of the sniper platoon and a sergeant was the SNCO in charge of the assault pioneer platoon. Witness 04

1.3.9. For the early stages of the test phase of Ex IS, Quebec Company primarily provided the intelligence, surveillance, target acquisition and reconnaissance (ISTAR) function for TFH. This required the forward positioning of assets to gather information regarding the disposition and movements of the KRH BG and pass this information back to the TFH HQ for processing into intelligence. Witness 04

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Reconnaissance platoon

1.3.10. The main task of an armoured infantry reconnaissance platoon was to conduct armoured close reconnaissance for the BG in support of the CO's manoeuvre intent.[7] This was the only element of an armoured infantry battalion equipped with the Scimitar AFV. Witness 04

1.3.11. For the Mission Zero element of Ex IS, the 1 YORKS Reconnaissance Platoon was part of TFH. Elements of the platoon were positioned forward of the TFH main position to monitor and report the positions of the KRH BG as they moved out to secure their objectives and, using tactics specific to TFH, to engage with leading elements of the KRH. Witness 01 Witness 05 Exhibit 005

Key personalities

1.3.12. **Soldier A.** Soldier A was an experienced junior non-commissioned officer (JNCO) who joined the Army in 2006, initially in the light role, then as airborne (parachute) infantry, before joining 1 YORKS in 2019. They had deployed on multiple operational tours during that time and joined the reconnaissance platoon in August 2020. They passed the CVR(T) gunnery course in September 2020 and the CVR(T) commanders' course in October 2020. At the time of the accident Soldier A was in command of c/s 62 Alpha. Witness 01 Exhibit 006

1.3.13. **Soldier B.** Soldier B was a JNCO who had served with 1 YORKS since joining the regular Army in 2015. They had experience of a variety of support weapons roles and joined the reconnaissance platoon in January 2020. They passed the CVR(T) gunnery course in September 2020 and passed the reconnaissance cadre in March 2021.[8] At the time of the accident, Soldier B was the gunner of c/s 62 Alpha. Witness 02 Exhibit 006

1.3.14. **Soldier C.** Soldier C was an experienced army officer who commissioned into the Duke of Lancaster's Regiment in 2008. They had completed multiple tours of Afghanistan and Iraq in the light role and were assigned to 1 YORKS in July 2020. This was Soldier C's first experience of working in the armoured infantry role. At the time of the accident, Soldier C was acting as the ISTAR commander and was one of the first to arrive at the accident site. Witness 04

1.3.15. **Soldier D.** Soldier D was an experienced officer who commissioned into 1st Battalion, The Royal Welsh in 2007 and had completed two tours of Afghanistan. The majority of their career had been focused in and around the delivery of training in support of operations. At the time of the accident, Soldier D was in control of the Ex IS scenario play and was one of the first to arrive at the accident site. Witness 03

1.3.16. **Pte Watson-Pickering.** Pte Watson-Pickering joined the Army Reserve in Middlesborough in 2016 as an infantry soldier. After successful completion of his Witness 01

[7] The Ground Reconnaissance Tactics Handbook defines ground reconnaissance as 'a mission undertaken to obtain, by visual observation of other detection methods, information about the activities and resources of an enemy or potential enemy, or to secure data concerning the meteorological, hydrographical, or geographic characteristics of a particular area.'
[8] The reconnaissance cadre was the selection course for the reconnaissance platoon.

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basic training, he was assigned to Quebec Company of 4 YORKS.[9] In 2018, he deployed with 1 YORKS on Op CABRIT before joining the regular Army in 2019 and being assigned to 1 YORKS.[10] Pte Watson-Pickering moved to the reconnaissance platoon in September 2020 and passed the reconnaissance cadre in March 2021. This was followed by the Warrior drivers' course in May 2021 and then a CVR(T) drivers' course in July 2021. Pte Watson-Pickering had completed all required communications and information systems (CIS) training and was also a trained Team Medic. At the time of the accident, Pte Watson-Pickering was the driver of c/s 62 Alpha.

Witness 02
Exhibit 006
Exhibit 007

FV107 Scimitar

1.3.17. General Staff Requirement (GSR) 3479 was issued in November 1968 with the aim of replacing the Ferret Mk II and the FV432. The requirement called for the turret and main armament of the FV721 Fox to be mounted on the hull and automotive parts of an FV101 Scorpion and an initial contract was signed with Alvis in 1970 for 288 Scimitars.[11,12] During the design cycle, the requirement for the Fox turret was discontinued in favour of the one already fitted to the Scorpion, but with a 30mm calibre cannon fitted instead of the usual 76mm version. The FV107 Scimitar was accepted into service in 1973.

Exhibit 008
Exhibit 021
Exhibit 023
Exhibit 301
Exhibit 302

[9] https://www.army.mod.uk/who-we-are/corps-regiments-and-units/infantry/yorkshire-regiment/4-yorks/ (accessed 22 August 2022).
[10] Op CABRIT was the UK MOD contribution to NATO's enhanced Forward Presence in the Baltic region.
[11] Nowak, D (Jan 2001), *9033 CVR(T) Scorpion - Scimitar – Sabre,* Tankograd
[12] Dunstan S (Feb 2021), *Scorpion FV101 Combat Vehicle Reconnaissance (Tracked) in British service 1972-2020,* Haynes

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1.3.18. There were many modifications to the vehicle, the most significant of these were: the Observer's Thermal Imaging System (OTIS) in 1988 which included a revised storage bin on the rear of the turret (Figure 1.3.3), the change from petrol to diesel engines in 1999, and the replacement of OTIS with the Battle Group Thermal Imaging system (BGTI) in 2001.



Figure 1.3.3: A Scimitar showing the OTIS Bin.

SPTA

1.3.19. SPTA was the largest military training area in the UK. It was owned by the Ministry Of Defence (MOD) and used to train military personnel in a range of synthetic and live activities. It covered approximately 390 square km between Warminster and Westbury in the west and Tidworth and Perham Down in the east. It was one of few authorised training areas for AFVs to exercise tactically in the UK. SPTA was sub-divided into several smaller areas that could be booked in whole or in part for different activities depending on the task required. Exhibit 022

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1.3.20. Although the land was owned by the MOD, SPTA also had several civilian villages within its borders and was crossed by many public roads and the River Avon. The area covered by SPTA is shown by the yellow-shaded area in Figure 1.3.4.



Figure 1.3.4: The location of Salisbury Plain Training Area.

Pre-accident events

1.3.21. Pte Watson-Pickering and Soldier A had been detailed as augmentees to the support team for the prepare phase of Ex IS and specifically, the Combined Arms Live Firing Exercise (CALFEX) at Castlemartin Ranges (CMR) in Pembrokeshire, over the period 2 September 2021 to 8 October 2021. Whilst there, they found out that they were to form the crew of a CVR(T) with Soldier B for Mission Zero on 8 October 2021. Soldier A and Pte Watson-Pickering travelled 174 miles to Knook Camp, SPTA, on 9 October 2021 and joined Soldier B, who had not been required at CMR and had moved directly from Alma Lines to Knook Camp, with the main party of 1 YORKS, on 2 October 2021.

Witness 01
Witness 04
Witness 06
Exhibit 006

1.3.22. On 10 October 2021, Soldier A was tasked to support weapon handling training and tests whilst the rest of the crew were issued with TFH visual modifications for c/s 62 Alpha, to make it easier to identify it as an 'enemy' vehicle, and TES equipment.[13] On 11 October 2021, Soldier A continued with the weapon handling task whilst Soldier B and Pte Watson-Pickering fitted the visual modifications and TES equipment to c/s 62 Alpha. They then fitted personnel versions of TES equipment to their helmet, webbing, and personal weapons for use whilst dismounted. Soldier A was able to join the remainder of the crew on 12 October 2021 and they completed the TES installation to the vehicle. After dark, Pte Watson-Pickering conducted a short night drive in a Spartan-variant CVR(T) to update his currency for driving whilst wearing a night vision device. A

Witness 01
Witness 02
Exhibit 024

[13] For TES equipment see footnote 3 to paragraph 1.3.2l.

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mandatory drivers' rest day was observed on 13 October 2021 during which the crew ensured that c/s 62 Alpha was ready to depart Knook Camp. Figure 1.3.5 shows the rear visual modifications fitted to c/s 62 Alpha.



Figure 1.3.5: TFH visual modifications fitted to the rear of c/s 62 Alpha.

1.3.23. On 14 October 2021, elements of the reconnaissance platoon were involved in the BG conditions setting activities. These mainly consisted of ground familiarisation training around the Eastern SPTA, from 10:00 to 15:30, using a route consisting of both pre-existing tracks and off-road elements. The GPS tracking function of TES allowed the route that c/s 62 Alpha followed to be accurately tracked and provided timestamps accurate to +/- 1 minute.

Witness 02
Witness 05
Exhibit 010
Exhibit 189

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1.3.24. A representation of the TES recording of c/s 62 Alpha's route on 14 October 2021 is shown at Figure 1.3.6. The route is outlined by a black line with the direction of travel indicated with black arrowheads.

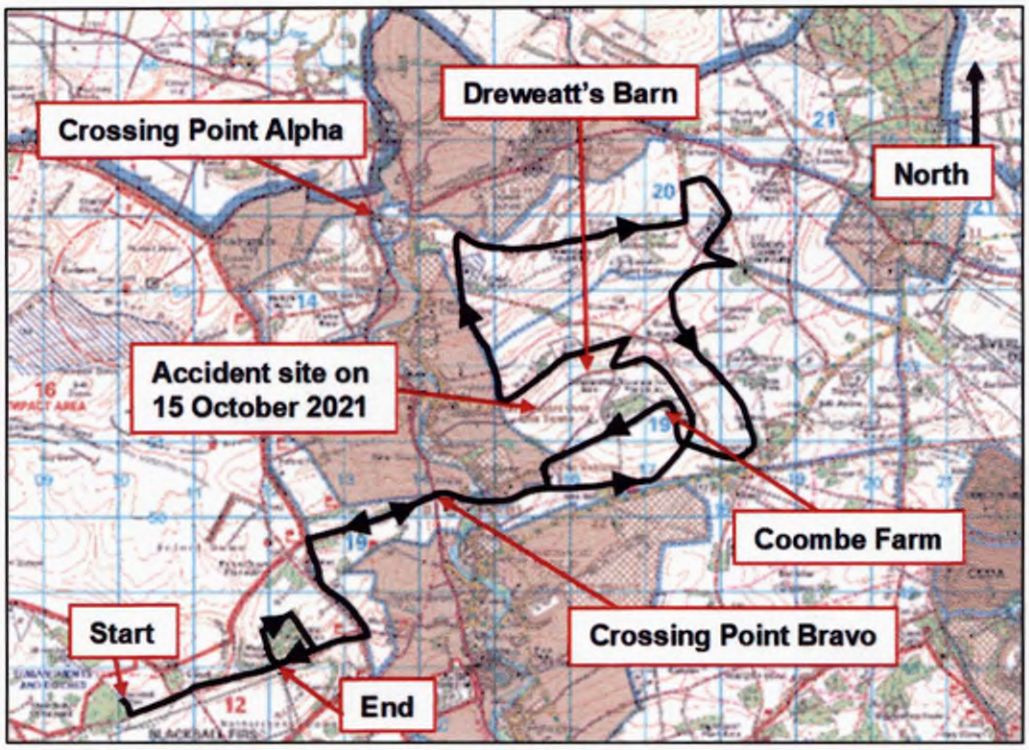


Figure 1.3.6: The ground familiarisation route on 14 October 2021.

1.3.25. Later in the evening, Soldier A was briefed that their crew would be the lead element for the reconnaissance platoon covering the ground between crossing point (CP) Alpha and Bravo. They would depart early the following morning in c/s 62 Alpha and lead a 2-vehicle section which included a mortar fire control (MFC) team in a Spartan-variant CVR(T) using the c/s 53 Bravo. Although no formal record of the orders given was retained, Soldier A's objectives, broadly, were to: Witness 01 Witness 02 Witness 05

a. Deploy to the area of Coombe Farm and find a suitable observation post (OP) from which they could monitor and report the movements of the KRH BG between CP Alpha and CP Bravo to provide early warning to TFH and allow them to reconfigure as necessary to meet the advancing threat; and

b. Engage with forward elements of the KRH BG and, as opportunities arose, to disrupt their plan and force them to be reactive.

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1.3.26. At approximately 18:00 on 14 October 2021, Pte Watson-Pickering went on to a rest period and at approximately 03:15 on 15 October 2021, the crew set off from their position in the vicinity of Blackball Firs. The route they followed is represented in Figure 1.3.7. Noting that the TES did not record all of the GPS data points, the evidence suggests that, having transited through CP Bravo, they set up an OP in the vicinity of Coombe Farm at 03:37. At 04:40, Soldier A determined that their position was compromised, and c/s 62 Alpha moved north-west to a ridgeline with a suitable alternative location for an OP found near Dreweatt's Barn.

Witness 01
Witness 03
Witness 10
Witness 11
Exhibit 002
Exhibit 011

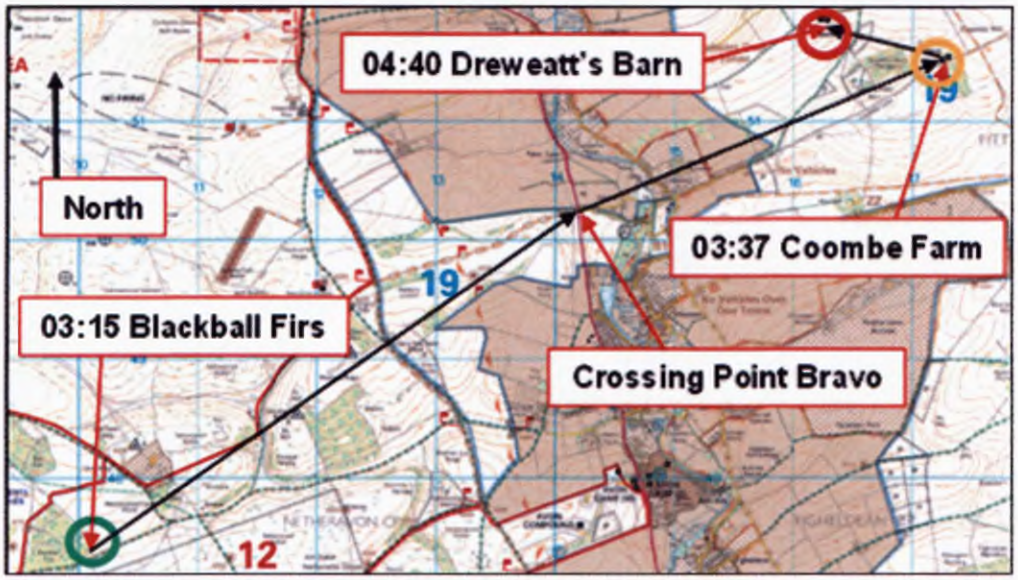


Figure 1.3.7: C/s 62 Alpha moves to the OP.

1.3.27. Mission Zero was scheduled to commence at 06:30 but technical issues forced a delay until approximately 09:30. C/s 62 Alpha returned to the forward position at Coombe Farm at 08:15 and remained broadly static until 11:10 when it moved to Dreweatt's Barn to check for any KRH BG movement north of their position which could be heading towards CP Alpha. Three Challenger 2 (CR2) main battle tanks from the KRH BG, using c/s 31 Alpha, c/s 31 Bravo and c/s 31 Charlie, had been alerted to TFH activity in the area of Coombe Farm and commenced a patrol through it at 11:16. The MFC team had been stationary at Coombe Farm and was involved in a simulated engagement with c/s 31 Charlie during which it was 'destroyed', leaving c/s 62 Alpha as the only TFH asset covering CP Alpha and CP Bravo.

Witness 01
Witness 03
Exhibit 189

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1.3.28. As the KRH CR2s continued to patrol west, c/s 62 Alpha moved south-west along a ridgeline track (Figure 1.3.8) to a junction next to a covered reservoir that had some bushes and trees for camouflage, arriving at 11:24.

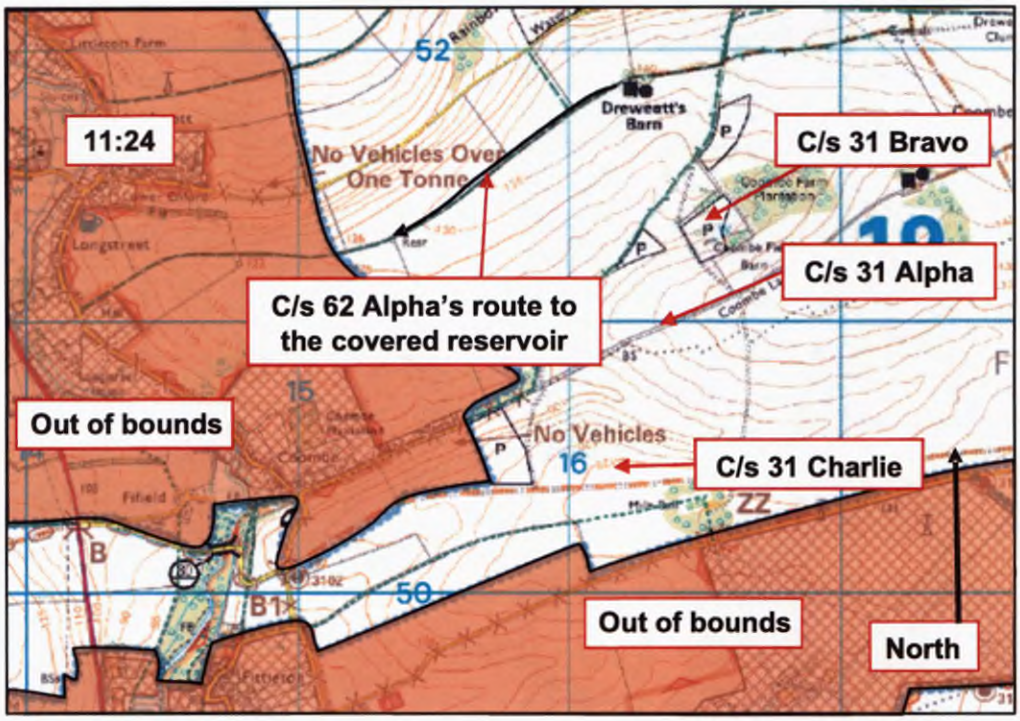


Figure 1.3.8: C/s 62 Alpha withdraws to the covered reservoir at 11:24.

1.3.29. C/s 31 Charlie observed c/s 62 Alpha and engaged, but c/s 62 Alpha's TES equipment was not configured correctly, so they survived the contact. C/s 62 Alpha returned fire and 'immobilised' 31 Charlie, and shortly thereafter, 'destroyed' c/s 31 Alpha.

Witness 01
Witness 02
Witness 11
Witness 13
Exhibit 035

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1.3.30. The evidence suggests that at 11:32, c/s 62 Alpha moved down the south face of the ridgeline following the route from the green circle in Figure 1.3.9. They were exiting the area via CP Bravo and the expectation was that they would follow the remainder of the route denoted by a red-dotted line in Figure 1.3.9. However, at the bottom of the slope and, in the area of the red circle in Figure 1.3.9, Soldier A determined that they were under fire from a further CR2. Soldier A then ordered that c/s 62 Alpha be turned around and they went back up the hill towards their previous position at the covered reservoir (indicated by the green circle on Figure 1.3.9).

Witness 01
Witness 02
Witness 11
Witness 13
Exhibit 035

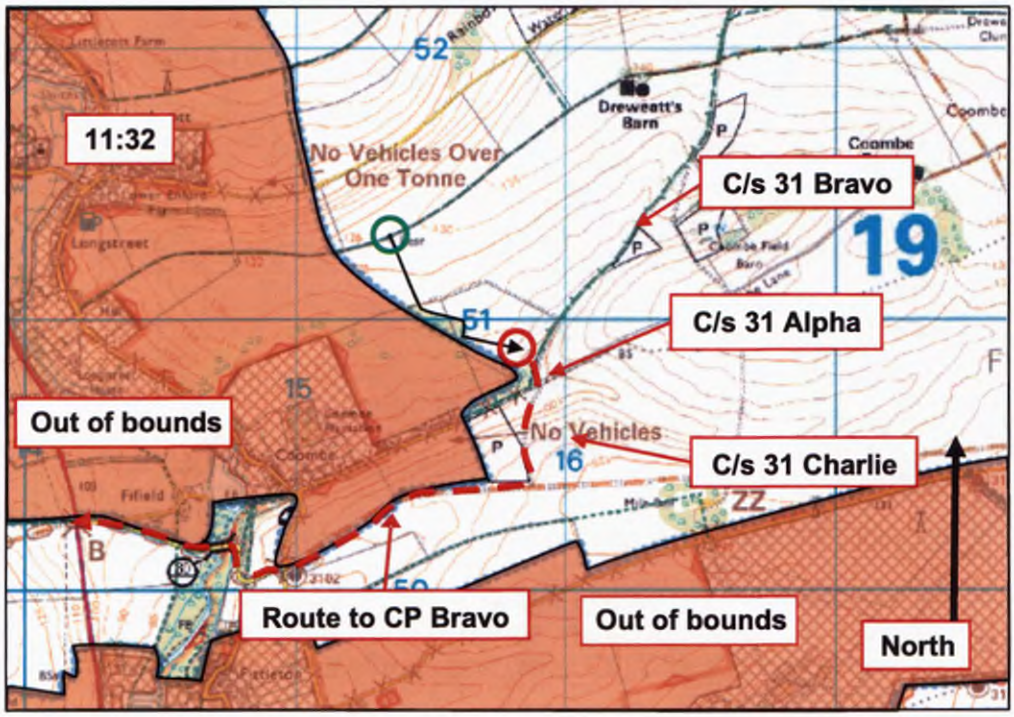


Figure 1.3.9: C/s 62 Alpha moves towards Crossing Point Bravo at 11:32.

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The accident

1.3.31. At 11:37, c/s 62 Alpha turned left behind the covered reservoir. Shortly afterwards c/s 62 Alpha's gun barrel struck a hawthorn tree near to the right-hand-side of the track. C/s 62 Alpha left the track to the north and came to an uncontrolled stop approximately 100m from the tree (Figure 1.3.10) with the engine running.

Witness 01
Exhibit 002

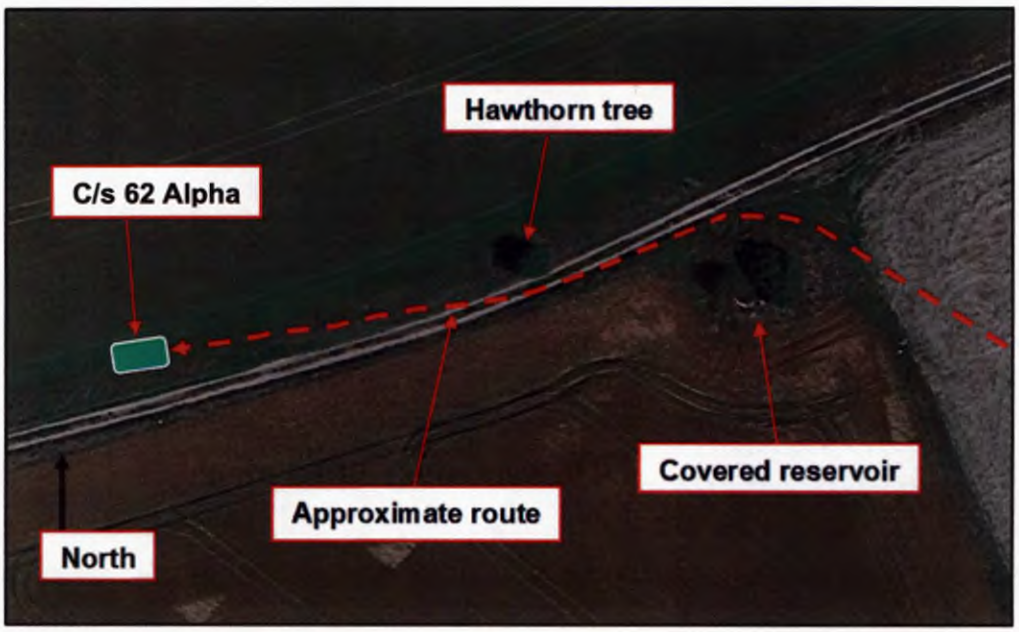


Figure 1.3.10: Aerial view of the accident site.

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1.3.32. The impact of the gun barrel colliding with the tree caused the turret to rotate clockwise trapping Pte Watson-Pickering's head between the OTIS Bin, the rear of the turret and the topside of the hull. The turret was now approximately at the 5 o'clock position to the front of the vehicle (Figure 1.3.11). Witness 04 Exhibit 012



Figure 1.3.11: C/s 62 Alpha with the turret at the 5 o'clock position.

Post-accident events

1.3.33. Soldier A and Soldier B checked that each other were uninjured but were unable to get a response from Pte Watson-Pickering on the intercom. Soldier A told Soldier B to dismount and check on Pte Watson-Pickering. Soldier B did so and, from the extent of his injuries, immediately assessed that Pte Watson-Pickering was fatally wounded and signalled to Soldier A to exit the vehicle. Soldier A agreed that Pte Watson-Pickering had suffered a fatal injury. At 11:41, Soldier A contacted Soldier C by mobile phone and explained what had happened. Whilst on the phone, at 11:42 Soldier C called 'STOP, STOP, STOP'[14] on the ISTAR radio network (which was then rebroadcast over all other exercise radio networks) and concluded the call with Soldier A. Soldier C then contacted their CO and apprised them of the situation. Soldier A contacted Soldier C again at 11:45 and was told to contact the emergency services. At 11:46, Soldier A Witness 01 Witness 02 Witness 04 Exhibit 013 Exhibit 026 Exhibit 027

[14] An emergency radio codeword requiring all exercise personnel and vehicles to stop what they were doing and wait in place for further instructions.

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contacted the emergency services and provided details of the accident to the operator.

1.3.34. Having heard the 'STOP, STOP, STOP' call over the radio, Soldier D called Exercise Control (EXCON) at Westdown Camp to confirm the location of the accident site and then moved to that area. At 11:49 EXCON also called the emergency services with the information they had at that time.

Witness 03
Exhibit 001
Exhibit 014

1.3.35. At 11:53, Soldier C met up with Soldier D and two safety marshals and, after a brief discussion, dispatched the safety marshals to CP Bravo to await the arrival of the emergency services. Soldier C and Soldier D then travelled to the accident site, arriving at 12:01. At 12:02, Soldier D's driver put through a further emergency call to provide a What3Words® location for the accident site and confirmed to the operator that they could see approaching blue flashing lights.[15] At 12:05, the Wiltshire Air Ambulance response car, with a specialist practitioner in critical care, arrived at the accident site.

Witness 03
Witness 04
Exhibit 009
Exhibit 013
Exhibit 016
Exhibit 019

1.3.36. Soldier D established a Bronze Command control position at the accident site.[16] At 12:11, EXCON contacted the emergency services to confirm that paramedics were at the accident site, and to put in a further request for fire brigade support to assist with the extraction of Pte Watson-Pickering from the vehicle. They also requested an air ambulance for aeromedical evacuation. The first Wiltshire Police unit arrived at 12:14 and an air ambulance from the South Central Ambulance Service arrived at 12:16.

Witness 03
Exhibit 018
Exhibit 001
Exhibit 031

1.3.37. Soldier A and Soldier B received treatment for emotional shock before the medical team put them into a civilian ambulance at 14:15 for transport back to Knook Camp. During the journey, the condition of Soldier A deteriorated and, in consultation with the 1 YORKS Regimental Medical Officer, it was decided to take both personnel to the Salisbury District Hospital for assessment and treatment. The ambulance arrived at Salisbury District Hospital at 15:19 and Soldier A was assessed by a Senior Duty House Officer at 15:46 and treated for minor injuries.

Witness 01
Witness 02
Witness 12
Exhibit 020

1.3.38. Once the casualties had received medical attention, Wiltshire Police assumed primacy of the accident site from the ambulance service. 1 YORKS recovered the small arms, ammunition, secure radios and personal effects from c/s 62 Alpha; they also cut the power to the engine rendering the vehicle safe. The air ambulance departed at 12:41. The fire appliances were released but were advised that help would be required later for the extraction of Pte Watson-Pickering from the vehicle. At 14:10 the Joint Casualty and Compassionate Centre (JCCC) was informed and the KINFORM process started.[17]

Witness 08
Witness 12
Exhibit 015
Exhibit 019
Exhibit 028
Exhibit 029

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[15] What3Words® was a free application that divides the surface of the Earth in to 3m x 3m squares and provides each one with a unique reference which, when used from a GPS-equipped mobile device, can pinpoint the device's location. This app was used by most of the emergency services operations rooms in the UK.

[16] A Bronze Command was a control position set up near the scene of an accident to control resources and provide a focal point for each of the responding agencies to work through.

[17] KINFORM was the military term for the JCCC instructing a Casualty Notification Officer (CNO) to inform the closest living relative and/or other nominated emergency contact in any case of serious injury or bereavement.

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1.3.39. At approximately 16:00, the personnel and vehicles not closely involved in the accident were released and returned to their formation's location. Once Wiltshire Police had collected all initial evidence from the accident site, the process of extracting Pte Watson-Pickering began. The OTIS Bin was removed and, with the combined efforts of Dorset and Wiltshire Fire and Rescue Service and the 1 YORKS Light Aid Detachment, at approximately 01:00, Pte Watson-Pickering was extracted from the vehicle and placed into a battlefield ambulance.[18] He was then moved under Wiltshire Police escort to the coroner's team who were waiting in the Enford Village Hall car park. Witness 08 Witness 12

1.3.40. C/s 62 Alpha was physically marked to record the position of the turret for ease of reinstatement at a later date, and the turret was then rotated to the 12 o'clock position for the purposes of transportation. C/s 62 Alpha was then winched on to a low-loader for recovery under Wiltshire Police escort to a secure storage facility at MOD Boscombe Down, arriving at 01:45 on 16 October 2021.

Injuries sustained

1.3.41. Pte Watson-Pickering died at the accident site; the pathologist noted that death would have been instantaneous or near instantaneous. Soldier A and Soldier B were taken to hospital with minor injuries. Exhibit 001 Exhibit 012

Defence Accident Investigation Branch activity

1.3.42. At 12:00 on 15 October 2021, the Defence Accident Investigation Branch (DAIB) was notified of an accident on SPTA and deployed an investigation team. The investigators compiled an initial report (known as a triage report) and Head DAIB recommended that a service inquiry be convened to investigate further. Exhibit 030

Summary of key timings

Serial	Time	Activity
15 October 2021		
1	~09:30	The test phase of Ex IS commenced following a technical delay.
2	~11:28	C/s 62 Alpha had a simulated engagement with KRH BG lead elements.
3	~11:37	The accident occurred.

[18] The Light Aid Detachment was a team of logistical specialists which included vehicle maintenance and recovery capabiliities.

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4	11:41	Soldier A called Soldier C via mobile phone to report the accident.
5	~11:42	Soldier C called 'Stop, Stop, Stop' over the radio net.
6	11:45	Soldier A makes further call to Soldier C who instructed Soldier A to call for an ambulance.
7	11:46	Soldier A called the emergency services.
8	~12:01	Solider C and Soldier D arrived at the accident site.
9	12:05	The first ambulance arrived.
10	12:14	Wiltshire Police arrived.
11	12:16	The Helicopter Emergency Medical Service (HEMS) air ambulance arrived.
12	12:22	The fire & rescue service arrived.
13	12:24	Pte Watson-Pickering declared life extinct by a Wiltshire Air Ambulance Specialist Practitioner in Critical Care.
14	14:10	The JCCC was notified.
15	14:15	Soldier A and Soldier B were taken to Salisbury District Hospital by a civilian ambulance.
16	~16:00	The 'Stop, Stop, Stop' was lifted for wider exercise participants.
17	17:34	KINFORM took place at the Next of Kin's (Mother) address. The Casualty Notification Officer remained with the Next of Kin until 19:22.
18	23:34	Pte Watson-Pickering was extracted from c/s 62 Alpha.
16 October 2021		
19	~01:00	Pte Watson-Pickering was taken by battlefield ambulance to the Enford Village Hall car park under police escort and handed over to the Coroner's team.
20	01:12	C/s 62 Alpha was moved under police escort to MOD Boscombe Down.

Table 1.3.1: Summary of key timings.

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Part 1.4

Analysis and findings

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Part 1.4 - Analysis and findings

All times local (BST/GMT plus 1 hour).

Overview

1.4.1. At 11:37 on 15 October 2021 a soldier from the reconnaissance platoon, 1st Battalion, The Yorkshire Regiment (1 YORKS) was involved in an accident whilst driving a Scimitar-variant Combat Vehicle Reconnaissance (Tracked) (CVR(T)) armoured fighting vehicle (AFV) as part of the opposing forces (OPFOR) for the test phase of Ex IRON STORM 2/21 (Ex IS). The test phase was part of the validation of the King's Royal Hussars (KRH) Battlegroup (BG) and mostly consisted of a series of events collectively known as 'Mission Zero' on the Salisbury Plain Training Area (SPTA).[19] 15 October 2021 was the first day of Mission Zero and a Scimitar using callsign (c/s) 62 Alpha crewed by three personnel from 1 YORKS; a commander (Soldier A), a gunner (Soldier B) and a driver (Private (Pte) Watson-Pickering); were in a reconnaissance position forward of the main OPFOR lines waiting for the exercise to commence.

1.4.2. The exercise began at 09:30 and approximately an hour later c/s 62 Alpha became involved in a series of skirmishes with forward elements of the KRH BG using simulated weapons effects. At 11:37, c/s 62 Alpha turned left on to a single-track byway and almost immediately, the barrel of their 30mm cannon hit a tree that was to the north side of the track. The turret rotated clockwise and an equipment stowage bin fixed to the rear of the turret (known as the Observer's Thermal Imaging System (OTIS) Bin) collided with Pte Watson-Pickering's head causing catastrophic injuries.

1.4.3. This service inquiry (SI) panel (referred to as the panel) was convened on 25 October 2021 to investigate the circumstances surrounding the death of Pte Watson-Pickering. Despite the Scimitar achieving almost 50 years of continuous service with the Army, this was the first known accident of its kind to result in a fatality. Further, there have been few non-combat fatalities of any kind involving the Scimitar and, of these, most were due to accidents in which the vehicle rolled over.

1.4.4. This report will provide an analysis of the factors using the safe system of work (SSW) structure and an analysis of the organisational influences. The panel has drawn conclusions and made recommendations throughout the report; a summary of accident factors has been included at the end of part 1.4 and a summary of recommendations is at part 1.5.

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1.4.5. Safety related incidents were recorded by the Army Safety Centre (ASCen), the Defence Accident Investigation Branch (DAIB), and their predecessor organisations. The panel was given the results of searches of the relevant archives and found that three similar accidents had occurred previously, but none of these had resulted in a fatality.

Methodology

Accident factors

1.4.6. Once an accident factor had been determined to have been present it was then assigned to one of the following categories:

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

b. **Contributory factor(s).** Contributory factors were those factors which **made the accident more likely to happen**. That is, they did not directly cause the accident, therefore, if a contributory factor was removed from the accident sequence, the accident may still have occurred;

c. **Aggravating factor(s).** Aggravating factors were those which **made the final outcome of the accident worse**. However, aggravating factors did not cause or contribute to the accident and, in the absence of the aggravating factor, the accident would still have occurred;

d. **Other factor(s).** Other factors were those factors which, whilst they played no part in the accident in question, were 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. **Observations.** Observations were points or issues identified during the investigation that were **worthy of note to improve working practices or promote best practice but** did not relate directly to the accident.

[19] Mission Zero was the term for a series of set-piece events which were designed to test the validating BG's skill in dealing with a number of challenging situations.

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Probabilistic language

1.4.7. The probabilistic terminology detailed in Figure 1.4.1 clarified the terms used in this report to communicate levels of uncertainty within the report. It was 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 Australian Transport Safety Bureau in their paper on Analysis, Causality and Proof in Safety Investigations.[20,21]

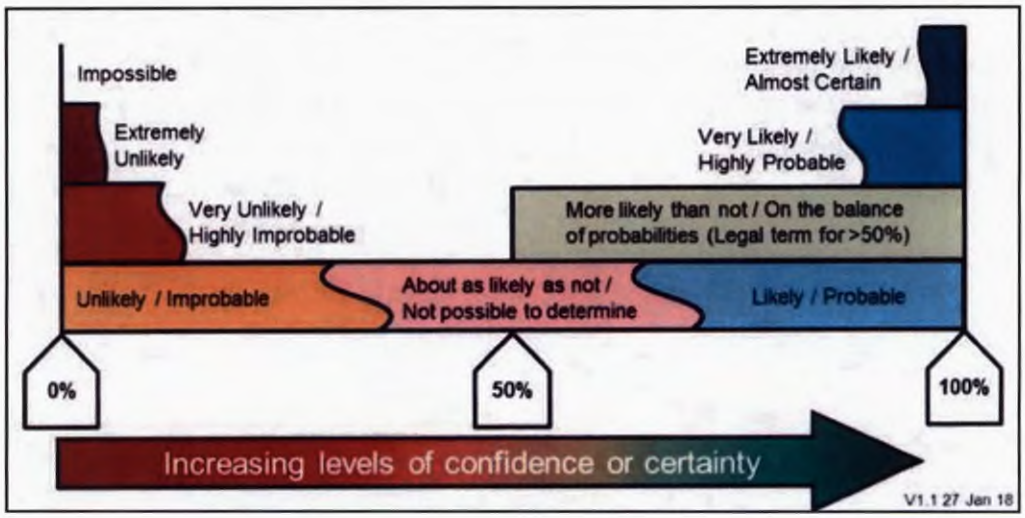


Figure 1.4.1: Probabilistic terminology.

Definition of should

1.4.8. Throughout the report the panel has made a series of recommendations. The panel has used the term 'should' within the recommendations using the definition within DSA03 Land System Safety and Environmental Protection – Defence Codes of Practice: Exhibit 069

> '**Should**. Describes an activity that is considered to be good practice. If the activity is followed then this will be considered sufficient to demonstrate compliance with the Regulation. However, alternative approaches may be utilised where this produces an outcome as good as required by the Regulation.'

Analytical methodology

1.4.9. The panel used the SSW structure, as laid down in Army Command Standing Order (ACSO) 1200 Chapter 3, to analyse the findings of this SI.[22,23] Exhibit 039 Exhibit 315

[20] https://www.ipcc.ch/site/assets/uploads/2018/05/uncertainty-guidance-note.pdf (accessed 6 December 2022).
[21] https://www.atsb.gov.au/publications/2008/ar2007053/ (accessed 6 December 2022).
[22] https://modgovuk.sharepoint.com/sites/defnet/Corp/Army/Publications/ACSO_1200.pdf (accessed 9 December 2022).
[23] The Defence direction and guidance for the SSW is at JSP 375, Volume 1, Chapter 8 - safety risk assessment and safe systems of work.

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The SSW was based upon four fundamental principles, that work was supported at all times by: safe practices, safe persons, safe equipment, and safe places, and this report was organised to make findings on each of these elements in that order. Each 'safe' element was then defined prior to being discussed. In addition to the SSW, the panel added a fifth element to the analysis of this report, organisation. The panel used this fifth element to assess whether organisational behaviours influenced the likelihood or outcome of this accident.

Human factors considerations

1.4.10. Psychologists from the Army Personnel Research and Consultancy at Army Headquarters provided specialist human factors (HF) support to the panel throughout the investigation. They produced a separate report based on the human factors analysis and classification system (HFACS), the main blocks of which are shown in a diagram from their report at Figure 1.4.2. Exhibit 146

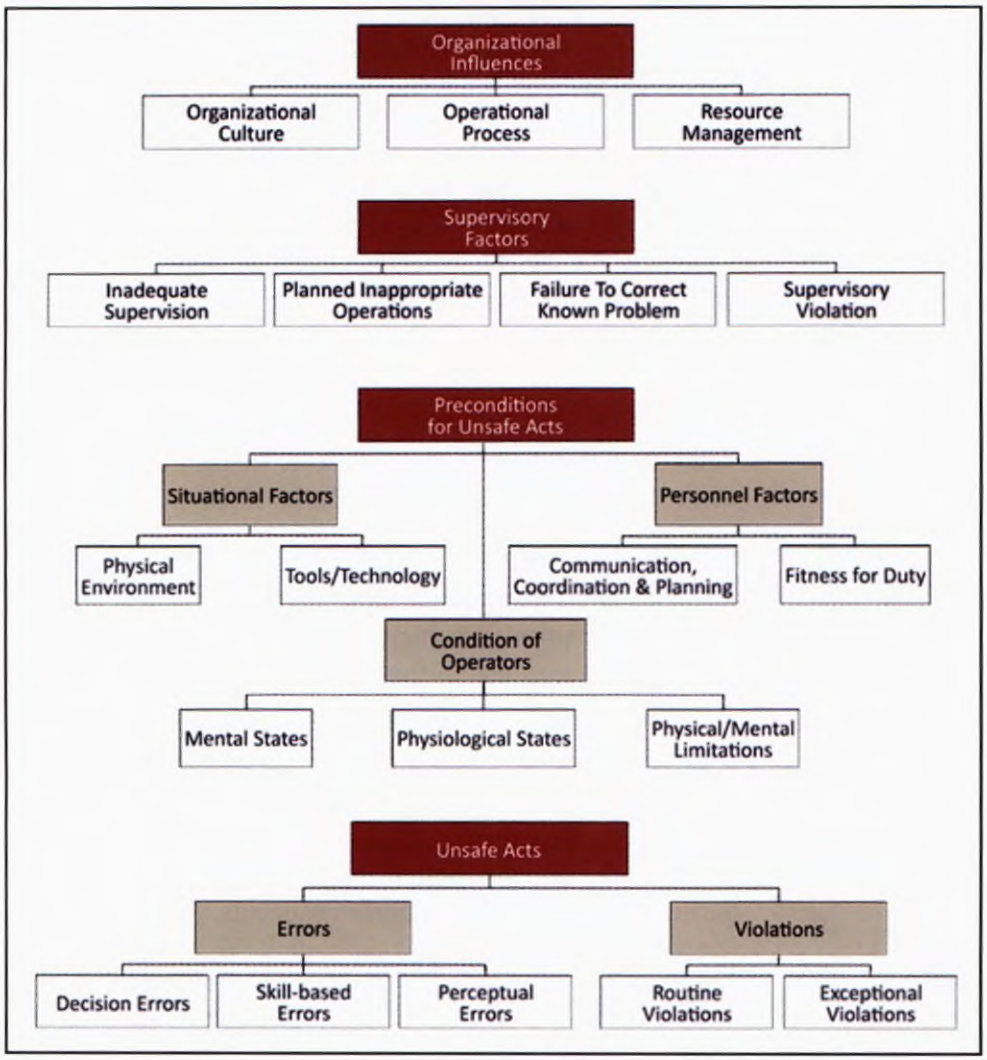


Figure 1.4.2: Human Factors Analysis and Classification System.

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1.4.11. In their report, the HF psychologists grouped the HF elements that they considered as most relevant to this SI into themes. These are summarised in Figure 1.4.3. and have been used throughout this report.

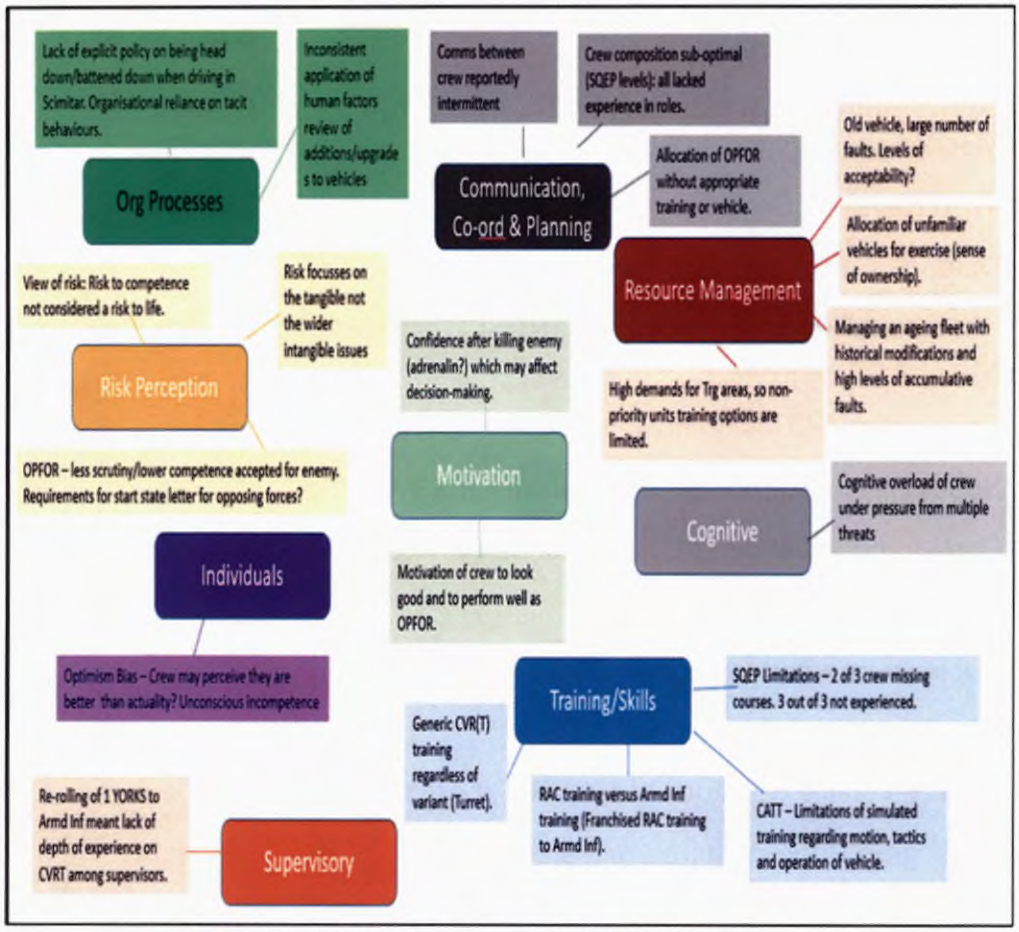


Figure 1.4.3: Scimitar fatality SPTA HF summary.

Services engaged

1.4.12. The panel was assisted by the following personnel and agencies:

a. The Defence Accident Investigation Branch (DAIB);

b. The Army including the following elements:

(1) The Army Personnel Research and Consultancy;

(2) The Land Warfare Centre (LWC);

(3) The Collective Training Group (CTG);

(4) 3rd (UK) Division;

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(5) 12th Armoured Infantry Brigade;
(6) 1st Battalion, The Yorkshire Regiment (1 YORKS);

(7) The Armour Centre (ARMCEN);

(8) The Combat Ready Training Centre (CRTC);

(9) ASCen;

(10) 4 Armoured Close Support Battalion Royal Electrical and Mechanical Engineers (REME);

c. 1710 Naval Air Squadron (NAS);

d. Defence Equipment and Support (DE&S);

e. Rheinmetall BAE Systems Land (RBSL) (contracted to support the Army);

f. The Forensic Collision Investigation Unit (Wiltshire Police);

g. South Western Ambulance Service Trust (SWAST);

h. Dorset and Wiltshire Fire and Rescue Service (DWFRS);

i. The Met Office;

j. Cubic (contracted to support CTG);

k. SAAB (contracted to support CTG);

l. Military Vehicle Solutions Ltd (CVR(T) SMEs);

m. Tankograd Publishing (reference book);

n. Haynes Group Limited (reference book);

o. Bloomsbury Publishing Plc (reference book); and

p. Military historians.

Available evidence

1.4.13. The panel had access to the following evidence:

a. The DAIB Triage Report;

b. Evidence released to the panel by Wiltshire Police;

c. Formal written witness statements;

d. Witness statements from panel interviews conducted with personnel involved in the accident or the immediate response to it;

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e. Witness statements from panel interviews conducted with personnel involved in previous similar accidents;

f. A technical analysis report prepared by the DAIB with the assistance of 4 Armoured Close Support Battalion REME;

g. A technical analysis report from 1710 NAS;

h. Training documentation from LWC, CTG, 12th Armoured Infantry Brigade and 1 YORKS;

i. Incident reports, radio logs and the learning account from 1 YORKS;

j. Ministry of Defence (MOD) and Army documentation;

k. Relevant standing orders;

l. Relevant unit standard operating procedures (SOPs);

m. Training data and individual course reports;

n. Scimitar engineering data from 1 YORKS;

o. HF report provided by Army Personnel Research and Consultancy;

p. Environmental weather data provided by the Met Office;

q. SWAST and DWFRS logs and audio recordings of emergency (999) calls; and

r. Published works covering the history of the CVR(T).

Law and policy

Health and Safety at Work etc Act 1974

1.4.14. The primary piece of health and safety legislation in the UK at the time of the accident was the Health and Safety at Work etc Act 1974. The MOD was required to comply with all provisions of this piece of legislation unless a specific exemption was granted by the Secretary of State (SofS). The Act broadly stated that all workers had a general duty to ensure, so far as was reasonably practicable, the health, safety, and welfare at work, of their employees. It also stated that employees had a responsibility to take reasonable care of their own and other peoples' health and safety. Exhibit 198

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1.4.15. The Health and Safety Executive (HSE) was the body responsible for regulating and enforcing health and safety legislation in the UK. They provided advice and guidance on how to manage health and safety in the workplace in their guidance leaflet 65 (HSG65).[24] The guidance highlighted the use of a plan, do, check, act cycle (Figure 1.4.4).

Exhibit 186
Exhibit 199

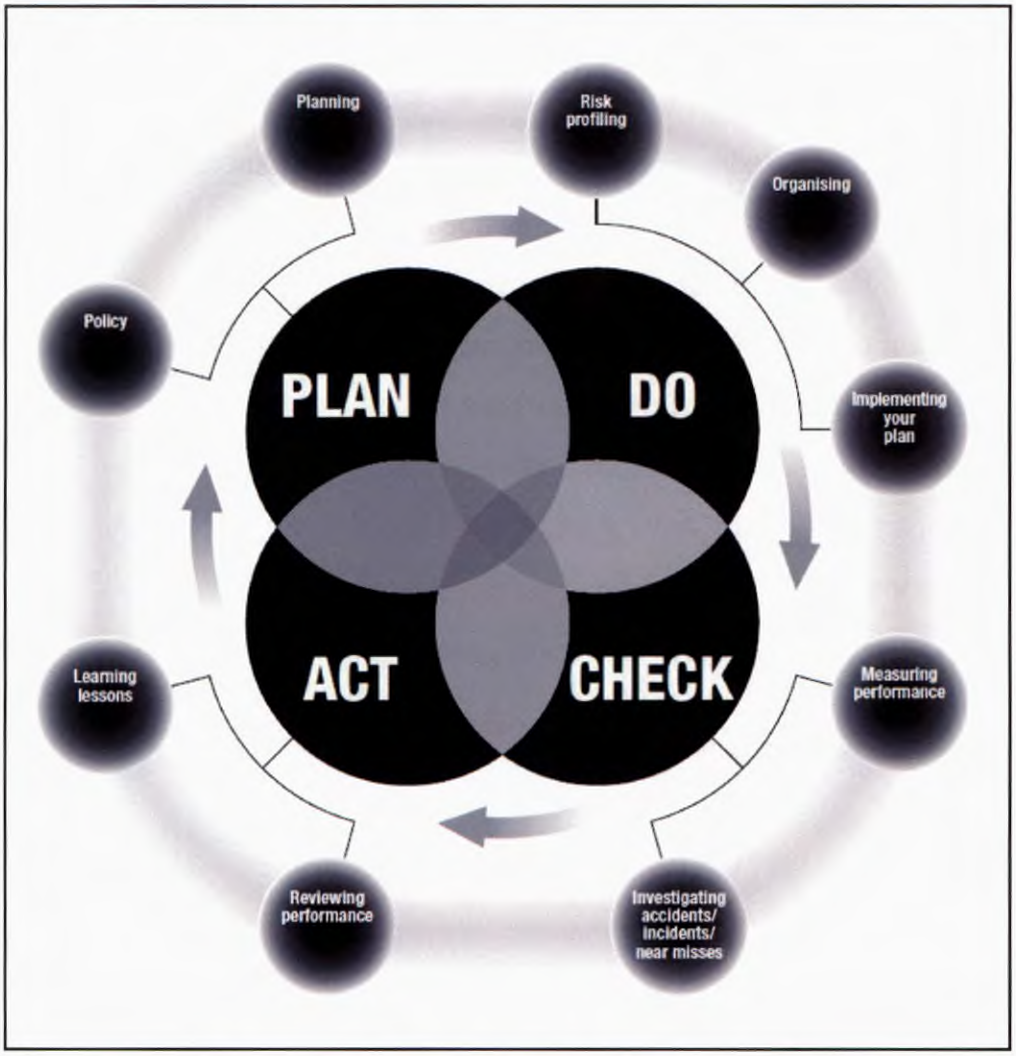


Figure 1.4.4: HSE's plan, do, check, act cycle.

Defence Safety Authority Policy

1.4.16. **The Defence Safety Authority (DSA) 01.1 Defence policy for health, safety and environmental protection.** The DSA was the Defence authority for health, safety, and environmental protection (HSEP). One of the DSA's responsibilities was the regulation and enforcement of internal HSEP regulations, known as Defence Regulations. DSA01.1, Defence Policy for HSEP, highlighted the SofS's Policy Statement for HSEP and described:[25]

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a. The HSEP legislative framework that applied to Defence and how this was addressed by Defence policy;

b. The responsibilities for the management of HSEP across Defence;

c. The requirements and arrangements for managing HSEP risk in Defence;

d. The requirements for checking and reporting HSEP performance;

e. The requirements for ensuring competence and providing information, training, and instruction; and

f. The arrangements for regulation, assurance, and enforcement of HSEP in Defence activities.

1.4.17. **DSA01.2, Implementation of Defence Policy for HSEP.** This defined the specific legal and policy requirements, detailed acceptable means of compliance and offered further guidance material as appropriate.

1.4.18. **DSA03, Movement and Transport Safety Regulations (MTSRs).** The MTSRs provide specific minimum legal and policy requirements for Defence movement and transport activities including training and qualification.

1.4.19. **DSA03, Land System Safety and Environmental Protection and Defence Codes of Practice.** This document sets out, amongst other areas, the basis for creating and maintaining a safety and environmental management system (SEMS), safety and environmental cases and competence for personnel holding safety and environmental responsibilities.

Publications

1.4.20. **Joint Service Publication 375, Management of Health and Safety in Defence.** This was the lead MOD publication for health and safety. This was the corporate publication that provided rules and guidance to Defence in meeting its health and safety obligations. It comprised two parts: part 1 was the directive that had to be followed in accordance with statute or policy mandated by Defence for the management of health and safety. Part 2 provided guidance on specific areas of health and safety in accordance with the policy stated in part 1. It provided policy-compliant business practices which were to be considered best practice in the absence of any overarching instruction.

1.4.21. **JSP 822, Defence Direction and Guidance for Training and Education.** This was the authoritative policy that directed and guided Defence

[24] https://www.hse.gov.uk/pubns/books/hsg65.htm (accessed 23 November 2022).
[25] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/918441/20200325_SofS_HSEP_Policy_Statement__accessible_.pdf (accessed 18 January 2022).

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training and education.[26] The Defence Systems Approach to Training (DSAT) was the system that had to be used by those who were involved in the analysis, design, delivery, assurance, management and governance of Defence training and education. JSP 822 was divided into two parts: part 1 detailed the mandated policy that had to be followed whilst part 2 contained the guidance material to assist in compliance with part 1.

1.4.22. JSP 822 stated that DSAT was designed to generate a training system that allowed trainers to deliver appropriate, effective, efficient, accountable, safe, and risk-focused training to trainees. When new or modified equipment, technology, tactics, techniques, or procedures were developed, or when new or amended policy or legislation was brought in, the requirement for new or modified training had to be examined. Where training was required, DSAT provided a tool to deliver training that met the needs of the training requirements authority (TRA) as well as the DSAT quality management system (QMS), mandated by Defence, and consisted of four elements: analysis, design, delivery, and assurance.

[26] The format of JSP 822 (V5 – September 2022) was revised into 10 separate volumes but (V4 – May 2021) was the version in use in the lead up to, and at the time of, the accident.

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1.4.23. Course documentation, specifically the learning specification (LSpec), assessment specification (ASpec) and assessment strategy (AStrat), was the trainer's crucial link to the DSAT process. It provided the authority to deliver standardised training and formed the basis for the production of course programmes, lesson plans and assessments (see Table 1.4.1).

DSAT management of the training system JSP 822	
Documentation	**Description**
Training objective (TO)	TOs ensured that the training activity had a definite focus linked to a Defence need. They helped to ensure that the associated trainers, support staff and trainees, had a clear understanding of what the trainees were required to learn, and be able to do at the end of the learning event.
Instructional specification (ISpec)	ISpecs were used to identify learning outcomes and were linked to specific key learning points (KLPs).
Learning specification (LSpec)	LSpecs contained the information the trainer needed to deliver training, including the structure and sequence of the training. The main purpose of the LSpec was to control what was taught and how it was taught.
Assessment strategy (AStrat)	AStrat articulated the summative and formative the 'how', 'when' and 'in what manner', training was to be assessed. This generated an ASpec which contained the detail.
Assessment specification (ASpec)	ASpec gave guidance on the assessment of enabling objective(s). ASpecs generated lessons or event plans and assessments suitable to the training environment.

Table 1.4.1: DSAT management of the training system.

1.4.24. JSP 822 defined methods of training delivery as collective training and individual training. Collective training was used to improve a team's ability and function as a cohesive entity. Individual training was delivered to individuals to

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improve their knowledge, skills, and attitudes. JSP 822 mandated that training delivery should be properly programmed, and planned, and that training deficiencies should be managed appropriately.

1.4.25. JSP 822 mandated that assurance activity was conducted for all training activity. Mandated assurance comprised of an evaluation strategy including internal and external validation, first party audit and inspection (A and I), second party A and I, and third party A and I.[27, 28,29] It also mandated that the DSAT process should be iterative, and that the assurance activity should take place regularly and as part of all elements. Management of the training system and assurance is shown at Figure 1.4.5.

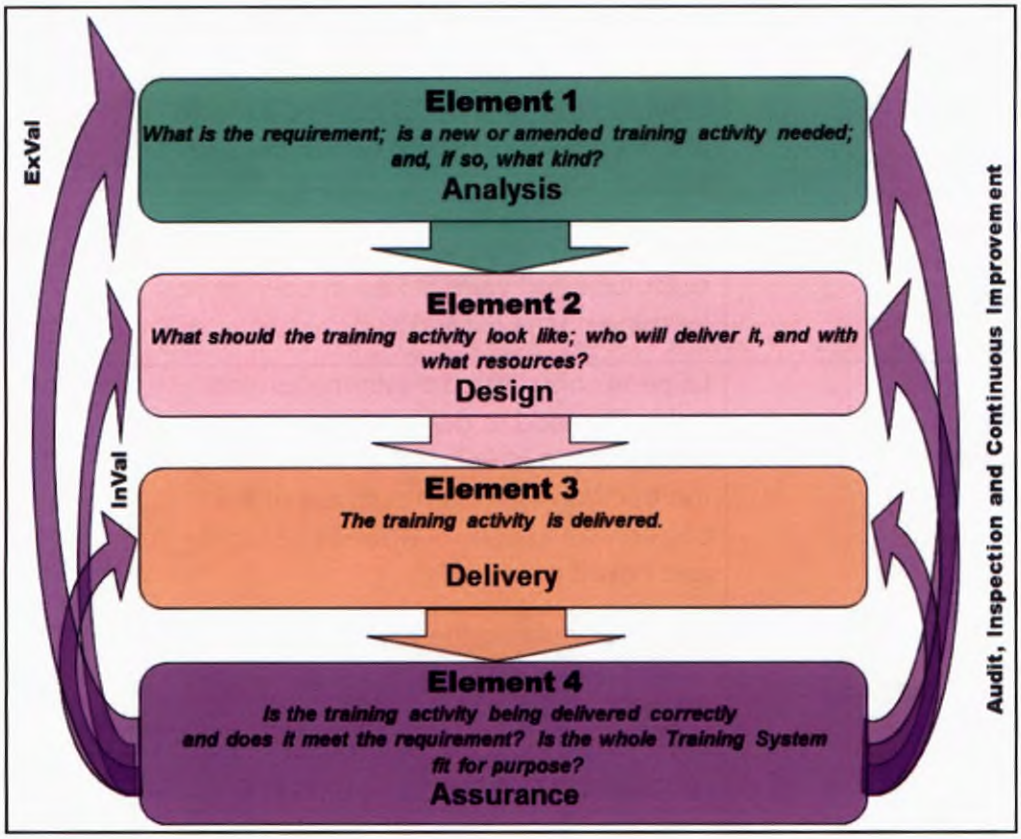


Figure 1.4.5: Management of the training system and assurance.

1.4.26. **Army Command Staff Order (ACSO) 1200, the Army's Safety and Environmental Management System (SEMS).** The overarching aim of ACSO

[27] First Party A and I activities were conducted for internal purposes to assure the Commanding Officer that the training activities conducted were being undertaken in accordance with the DSAT QMS elements of JSP 822 and that any improvements identified were implemented (conducted for phase 1,2 and 3 training).
[28] Second Party A and I was conducted by an external body but still within Defence. Second Party A and I provided higher level assurance to stakeholders that Training Providers were complying with the DSAT QMS (conducted for phase one, two and three training).
[29] Third Party A and I was only conducted for phase one and two training and was often conducted by the Office for Standards in Education.

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1200 was to underpin the Chief of the General Staff's safety and environmental protection statement of intent:

> 'As a responsible employer, the Army needs a strong safety culture; causing unnecessary harm to our people and our environment is both wasteful and negligent and a failure of leadership.'

1.4.27. ACSO 1200 applied to all areas of the Army, and it did not dispense with the need to comply with the law or HSEP regulation and policy issued by the DSA. The policy described the Army's SEMS, which was the enduring HSEP system, and how to meet the requirements within, by directing: how the Army ensured that it complied with legislation, regulation, and policy; how to assure good practice, compliance, and continuous improvement; and how to operate beyond minimum compliance to exploit HSEP resilience as a direct enabler to Army capability.

1.4.28. ACSO 1200 described a hierarchy of accountable persons who were charged with ensuring that effective HSEP related plans, orders and processes existed within their area of responsibility. Critically, those arrangements must have matched HSEP requirements to specific operating or operational conditions so that there was a good fit between what should have been done, and what was done, in the workplace every day.

1.4.29. **Pamphlet 21, Training Regulations for Armoured Fighting Vehicles, Infantry Weapon Systems and Pyrotechnics (PAM 21).** PAM 21 covered the planning, conduct and supervision of training with infantry weapon systems, armoured fighting vehicles (AFVs) and pyrotechnics. The application of the regulations was mandatory; they incorporated best practice, enabled realistic and demanding training, and ensured that risks were reduced to as low as reasonably practicable (ALARP).[30]

1.4.30. **Field Army Training Directive 2021**. This provided the context for training, the policy (who trained and where) and direction (what training was to be conducted), along with what was required to make training happen (planning and design etc).

1.4.31. **Field Training Unit (FTU) Green Book.** This was a handbook which included the rationale for, and the preparation and conduct of, Ex IS, run by the Combat Ready Training Centre (CRTC). There was a separate section within the handbook for the OPFOR who were known as Task Force HANNIBAL (TFH).

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[30]ACSO 1200 defined reasonably practicable as involving weighing a risk against the trouble, time and money needed to control it. When these are judged to exceed any further control of the risk, then ALARP has been achieved.' The HSE state the Court of Appeal (Edwards v. National Coal Board, 1949) ruling in that "reasonably practicable' was a narrower term than 'physically possible' … a computation must be made by the owner in which the quantum of risk is placed on one scale and the sacrifice involved in the measures necessary for averting the risk (whether in money, time or trouble) is placed in the other, and that, if it be shown that there is a gross disproportion between them — the risk being insignificant in relation to the sacrifice — the defendants discharge the onus on them.'

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1.4.32. **Back to Basics Soldier First Syllabus (SFS).** As part of the Back to Basics programme directed by Commander Field Army (CFA), the Soldier First Syllabus was a codified set of annual training for all units to aid in restoring battlecraft skills.

1.4.33. **Mounted Close Combat (MCC) Battlecraft Syllabus (BCS), Armoured Close Reconnaissance (ACR).** The MCC BCS provided the training objectives (TOs) designed to develop capabilities in preparation for combat ready training. The ACR version of MCC BCS was focussed at armoured and armoured infantry close reconnaissance troops and platoons.

1.4.34. **Armoured Vehicle Standing Orders (AVSOs)**. AVSOs were the foundation for all AV and AFV operations and covered the training, operation, and maintenance of all wheeled and tracked versions of AVs and AFVs. The application of the orders was mandatory, and they set out the basis on which the chain of command could objectively judge the competence of personnel that were required to operate on, in or from all forms of AVs/AFVs. AVSOs mandated the minimum qualifications, experience, currency, and rank for every crew position as well as specifying their individual and collective responsibilities.

1.4.35. The version of AVSOs provided to the panel by 1 YORKS was AVSO 2017 Amendment 10, dated November 2020.[31] At the time of the accident, AVSO 2021 Amendment 3 was the authoritative version. 1 YORKS stated that it had been unaware of the update. The panel concluded through cross-reference of both documents at the indicated amendment states, that whilst out of date documents were being used, there were no safety concerns.

1.4.36. Using out-of-date publications meant that 1 YORKS was not aware of, or using, the latest regulation, direction, guidance, and best practice which may have included safety-critical information. Fortunately, in this instance, the variances between the documents were more administrative in nature.

1.4.37. The panel concluded that 1 YORKS had been using out-of-date publications. The panel finds this to be an **other factor**.

[31] The archivist for combat publications at Army HQ only had records up to Amendment 6 to AVSO 2017 and could not account for any further changes to that document.

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Organisational hierarchy

1.4.38. Figure 1.4.6 provides a representation of the functional hierarchy of elements of the Army that were relevant to this SI on 15 October 2021.

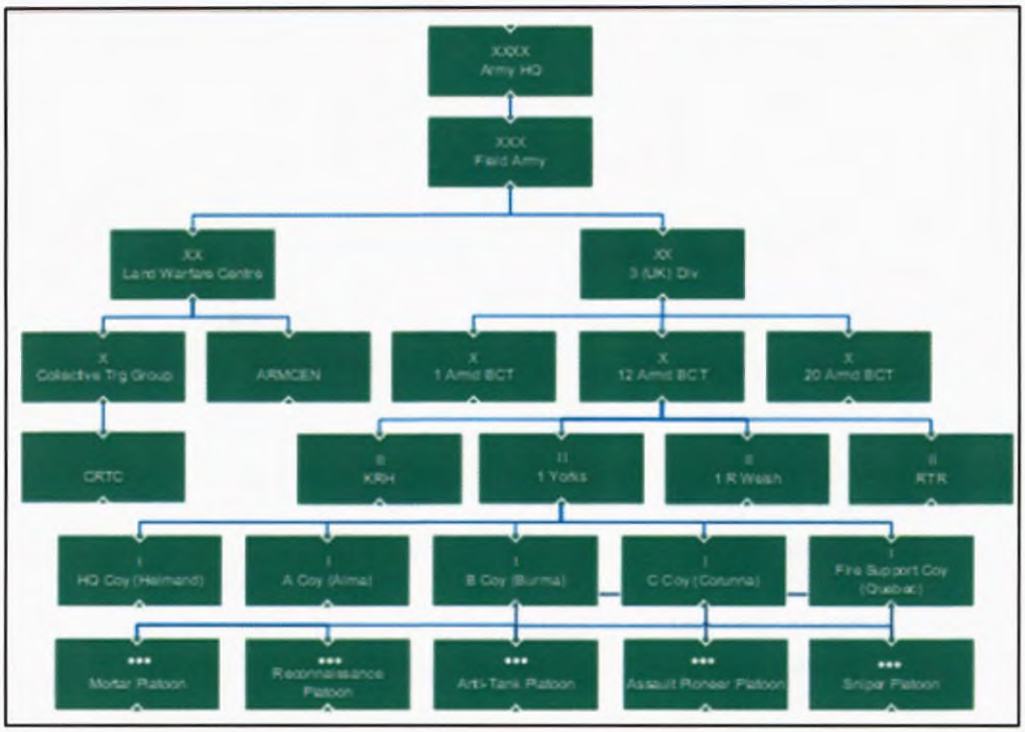


Figure 1.4.6: Relevant Army hierarchy on 15 October 2021.

1.4.39. **Army HQ**. This was the executive element of the Army comprising seven Directorates and other strategic entities. It provided strategic direction, policy, and a holistic view of Army activity. It planned, delivered, and updated the Army's capabilities across the Defence Lines of Development. It was based at Andover and was commanded by a general.

1.4.40. **HQ Field Army**. This organisation exercised day-to-day control over most formations within the Army including 1st (UK) Division, 3rd (UK) Division, 6th (UK) Division, 16th Air Assault Brigade and the LWC. HQ Field Army also had control over the Through Life Support (TLS) for in-Service equipment programmes, including AVs/AFVs. HQ Field Army was commanded by a lieutenant general, was based at Andover and its mission statement was to:

> 'Provide properly trained Land Force Elements (FEs) for operations, including wider support to the Joint Force. Provide properly trained FEs for standing

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military commitments. Provide properly trained FEs to deliver the Army's specified contribution to contingent operations.'

1.4.41. **3rd (UK) Division.** This was the main division in the Army operating tracked AVs, and the HQ was based at Bulford Camp. It comprised three armoured infantry brigades (1st, 12th, and 20th Armoured Infantry Brigades), plus 101st Logistic Brigade, 1st Artillery Brigade, 11th Signal Brigade, 7th Air Defence Group, 25 (Close Support) Engineer Group, the Pre-Hospital Care Group, and the Royal Wessex Yeomanry. 3rd (UK) Division was commanded by a major general.

1.4.42. **12th Armoured Infantry Brigade**. The Brigade comprised two armoured regiments (the KRH and the Royal Tank Regiment (RTR)), plus three armoured infantry battalions (1 YORKS; 1st Battalion, The Mercian Regiment and 1st Battalion, The Royal Welsh) along with two Army Reserve armoured infantry battalions (4th Battalion, The Mercian Regiment and 3rd Battalion, The Royal Welsh). The Brigade HQ was based at Bulford Camp and all regular Army elements were based at Bulford or Tidworth Camps (apart from 1 YORKS). The Brigade was commanded by a brigadier. Witness 21

1.4.43. **1 YORKS.** This was an armoured infantry unit comprising the battalion HQ, HQ Company (Helmand Company), 3 rifle companies (Alma, Burma, and Corunna Companies), and Quebec Company (fire support company). The majority of the approximately 560 personnel would be mounted in an AV either as part of its crew (those who operate the AV), or as a 'dismount' (those who operate from the AV but are not crew).[32] The battalion was based at Catterick, North Yorkshire and the commanding officer (CO) was a lieutenant colonel who had last served in an armoured infantry unit over six years before. At the time of the accident, Burma Company was detached to reinforce the KRH BG and, because of their heightened readiness profile, it's resource requirements for personnel and training were being prioritised above all other companies. Corunna Company was providing the bulk of the personnel for Ex IS, Quebec Company was providing the fire support tasks, and Alma Company was tasked to backfill workforce to support each of the other companies. Witness 06 Exhibit 044

1.4.44. **Quebec Company (Fire Support Company).** Quebec Company consisted of a company HQ and reconnaissance, mortar, assault pioneer, and sniper platoons. These were mounted in a variety of AVs but only the reconnaissance platoon used Scimitars. The second-in-command (2IC) of the company had been permanently detached to the King's Division Training Team leaving the company sergeant major (CSM) to cover some of the responsibilities of the 2IC. The company was established for 181 personnel and the officer commanding (OC) was a major. Neither the OC nor the CSM had a background in Witness 04

[32] These were a combination of Bulldog which originally entered service in 1963 as the FV 432, the CVR(T) series from 1973 and Warrior series which entered service in 1987.

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armoured infantry. The OC had a secondary role within the battalion as the intelligence, surveillance, target acquisition and reconnaissance (ISTAR) commander (comd) which meant that they were committed to supporting battalion HQ training events as well as those for Quebec Company. At the time of the accident Quebec Company held approximately 160 personnel.

1.4.45. **Reconnaissance platoon.** In armoured infantry units, a reconnaissance platoon referred to a grouping of eight Scimitars for a total of 24 personnel who were focussed on the conduct of ACR.[33] A reconnaissance platoon was normally commanded by a captain. Unlike most other platoons within 1 YORKS, reconnaissance platoon personnel were able to conduct most of their job whilst 'mounted', in that the vehicle provided their working environment, whilst conducting dismounted activities on foot would be seen as the exception. Therefore, all members of the reconnaissance platoon were nominated against a crew position in a Scimitar as either a comd, a gunner, or a driver and each of these positions required mandatory special-to-arm training. The reconnaissance platoon did not use permanently formed crews but constituted them as required. At the time of the accident there were only 19 personnel in the platoon. It was being commanded by a colour sergeant due to the absence of their officer on a training course. The colour sergeant had previous experience of armoured infantry but not in a reconnaissance role.

Witness 01
Witness 04
Exhibit 044

1.4.46. **Section**. Within armoured infantry reconnaissance platoons, a section referred to a grouping of two Scimitars commanded by a senior corporal with a total of six personnel. At the time of the accident, Soldier A was a Scimitar comd in a crew with Soldier B and Pte Watson-Pickering and was also a section comd. An anomaly for this exercise was that the second vehicle in their section was not a Scimitar from the reconnaissance platoon, but a Spartan crewed by a team from the mortar platoon.[34]

Witness 01

Other organisations of note

1.4.47. **Defence Equipment and Support (DE&S), Vehicle Support Team**. Located within Land Equipment, DE&S, this team provided the interface between industry and Army HQ for specialist military vehicles, including armoured and tracked variants. Along with a variety of other roles they provided management and ownership of safety panels, safety cases, hazard logs and risk registers to maintain the ALARP status of platforms. At the time of the accident the Assistant Head of VS Ops was a co-signatory to the CVR(T) Safety and Environmental Case Summary Report. VS Ops was based at MOD Abbey Wood and was run by a B2-grade civil servant who had previously been the CVR(T) Operations Manager.

Witness 24

[33] Armoured close reconnaissance, see paragraph 1.4.33.
[34] The Spartan was the armoured personnel carrier variant of CVR(T) and did not have a turret.

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1.4.48. **The Defence Infrastructure Organisation (DIO).**[35] The DIO was responsible for building, servicing, and maintaining Defence infrastructure including the Defence Training Estate (DTE). In this role it was required to maintain a safe, secure, and sustainable training estate. The training estate managed by the DIO was vast and its usage was extremely varied. From heavily regulated live fire ranges to open fields, the DIO was expected to comply with civilian legislation and MOD regulation. The SPTA was managed by the UK Training Estates team.

1.4.49. **The Futures Directorate.**[36] Created as part of the Army Operating Model, the Futures Directorate within Army HQ was structured to support the Army's innovation and exploitation, future force development and capability planning. At the time of the accident, the Futures Directorate was a co-signatory to the CVR(T) Safety Case. This Directorate was based at Andover and was led by a major general.

1.4.50. **Army Safety Centre (ASCen).** This was the Army's safety, environmental protection and fire community focal point and reported directly to the Deputy Chief of the General Staff (DCGS). An element of the ASCen was the Army Reporting Cell (formerly the Army Incident Notification Centre (AINC)) where all accidents, incidents and near misses involving Army personnel were reported. The ASCen was based at Andover and was led by a colonel.

1.4.51. **Collective Training Group (CTG)**. This was the element of the Land Warfare Centre (LWC) that was responsible for planning and executing collective training from unit (e.g. 1 YORKS) to formation level (brigade and above). HQ CTG was based at Warminster and was commanded by a brigadier.

1.4.52. **Armour Centre (ARMCEN)**. ARMCEN, a department within the LWC, was the AV training delivery authority for both centralised and distributed Mounted Close Combat (MCC) trade training across Defence.[37] At the time of the accident, ARMCEN was the training delivery authority for CVR(T) training. HQ ARMCEN was based at Bovington Camp and was commanded by a colonel.

1.4.53. **Field Army Equipment Through Life Support (Eqpt TLS)**. This was the department within HQ Field Army that was responsible for the in-Service support of all land-based equipment. At the time of the accident, the Eqpt TLS provided the management of availability for CVR(T). This department was based at Andover and was led by a colonel.

1.4.54. **Land Systems Safety Regulator (LSSR)**. This was an element of the Defence Land Safety Regulator which is one of eight regulators within the Defence

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[35] Description taken from the DIO Home page on the MOD Intranet.
[36] Formerly Capability (Ground Manoeuvre).
[37] Centralised training was conducted at formal training establishments (Schools), whereas distributed training was conducted at unit level using the unit's organic facilities and instructors.

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Safety Authority. The LSSR provided safety regulation and assurance across all manner of land-based systems used across MOD including vehicles and weapon systems. At the time of the accident the LSSR was responsible for providing third party assurance of the CVR(T) Safety and Environmental Case. The LSSR was based at MOD Abbey Wood and was led by a B2-grade civil servant.

Key roles

1.4.55. The following key roles and their relevance to the Mission Zero element of Ex IS were as follows:

a. **Chief of the General Staff (CGS).** This post was the designated functional head of the Army and was appointed as the Senior Duty Holder (SDH) for all Army activities involving a credible and foreseeable risk to life (RtL) that could not be managed within the SSW. For Ex IS, CGS was the SDH. Exhibit 039 Exhibit 046

b. **DCGS.** This post worked directly to the CGS and was nominated as the Army's 'Safety Champion'. This involved monitoring Army safety health, environment and fire management and ensured that the CGS's direction and guidance was being applied. DCGS directed the Army's SEMS within which, all activities were carried out. DCGS did not have any specific responsibilities for Ex IS other than to ensure that all personnel were aware of, and complied with, their responsibilities under the SEMS. Exhibit 039

c. **Activity (risk) owner.** The activity owner was accountable and responsible for directing that an activity took place and had the final decision for authorising that activity. For Ex IS, the activity owner was shared between Commander (Comd) CTG and Comd 12th Armoured Infantry Brigade who were responsible for different phases. For Mission Zero, the activity owner was Comd CTG. Exhibit 039 Exhibit 046 Exhibit 056

d. **Activity deliverer.** This role was the person responsible for the safe planning and delivery of an activity on behalf of the activity owner. For Mission Zero, the activity deliverer was Comd Combat Ready Training Centre (CRTC). Exhibit 039 Exhibit 046 Exhibit 056

e. **Activity lead.** The activity leads were the persons responsible for the safe conduct of elements of the task on behalf of the activity owner/deliverer. For Mission Zero, the activity lead was the CRTC's SO2[38] Training Operations. Exhibit 039 Exhibit 046 Exhibit 056

[38] The Staff Officer grading system provides a generic equivalence for the rank of military person that would normally be expected to deliver work at that level. SO2 equivalent rank of major.

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AVs and AFVs

1.4.56. AV has been used as the generic term to describe a combat vehicle protected by armour. Therefore, when referring generically or collectively to the series of CVR(T), Bulldog or Warrior, the term AVs might be used. An AFV was an AV with an offensive capability. Specific variants of AVs within the CVR(T) or Warrior series, such as the Scimitar and variants of Warrior relevant to this service inquiry, were types of AFV.[39]

Duty of care

1.4.57. Duty of care (DoC) was a common law legal concept, that required individuals to ensure that they and others did not suffer any unnecessary and foreseeable harm. The duty existed in many relationships, between an employer and employee, and from one employee to another. In addition to the common law duty of care, in respect of health and safety legislation, statute also provided additional 'duties' that were owned by specific individuals (e.g. the employer, a person who had control over premises, or the employee themselves). The Health and Safety at Work etc Act 1974 specified 'General Duties' for, amongst others, the employer, and the employee to ensure, so far as was reasonably practicable, the health, safety and welfare of employees and anyone else affected by the activity or who had access to those premises. More commonly, in Defence, as low as reasonably practicable (ALARP) was used instead of 'so far as is reasonably practicable' and the HSE considered that the two terms meant essentially the same thing and, at their core, was the concept of 'reasonably practicable'. Exhibit 200

1.4.58. DoC placed responsibility for ensuring health and safety at every level but highlighted the increased responsibility for those with management functions. ACSO 1200 noted that commanders at all ranks who directed and supervised activity would be expected to manage the risks that they created and/or would be confronted by. This was to be done by understanding the risks, making a judgement on whether the risk (a potential adverse outcome) was worth the potential benefit, and putting controls in place to reduce the risks to ALARP. The SSW was a useful framework and would, in most cases, reduce the risk to ALARP and ensure duty of care obligations were being met.

1.4.59. Where the activity was deemed necessary, but available mitigations could not reduce the residual risk to ALARP, it was required that the issue must be raised to the appropriate 'duty holder', as described in next section, for review and approval in advance of the activity taking place.

[39] The FV510 Warrior infantry fighting vehicle and the FV511 Warrior infantry command vehicle are both AFVs and the term Warrior AFV could be used to mean either as no further discrimination was required by this report.

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Duty holding

1.4.60. In 2009, following the loss of a Nimrod aircraft in Afghanistan, Sir Charles Haddon-Cave QC recommended the introduction of a three-tiered duty holding construct to clearly identify those with both the authority and legal responsibility with respect to the operation of military equipment. The Defence Safety Policy stated that: Exhibit 035 Exhibit 045

> 'Duty Holders (DHs) shall be suitably qualified for their appointment and complete all necessary training within three months of taking up post, to include successful completion of a DSA approved DH Course.'[40]

1.4.61. MOD policy for duty holding required the appointment of DHs where it had been assessed that there was a credible and reasonably foreseeable RtL from a Defence activity. The fundamental elements of duty holding management arrangements were three descending levels of accountability from the senior duty holder (SDH) through the operating duty holder (ODH), to the delivery duty holder (DDH), and that any RtL activities were mitigated to ALARP and to a level that was tolerable. Where this was not possible, the duty holding arrangements allowed the risk to be elevated to the next level of DH where it was likely that additional mitigating controls would be available. Importantly, the Defence policy statement made provision for the SDH ultimately to elevate risks to the SofS, who held the underlying legal responsibility. The LWC directed through the force preparation order that the duty holding construct for Ex IS was to be: Exhibit 046 Exhibit 047 Exhibit 048 Exhibit 049

a. SDH: CGS (general);

b. ODH: Commander Field Army (lieutenant general);

c. DDH: There were two DDHs for this activity:

(1) Commander (Comd) CTG (brigadier) for CTG delivered activities; and

(2) Comd 12th Armoured Infantry Brigade (brigadier) for unit delivered training.

1.4.62. Where appointed, a DH was accountable for mitigating the RtL to ALARP and to a level that was tolerable for those involved in the activity and anyone affected by it, including the public. Importantly, a DH's legal responsibility for health and safety was no different to those of any person who had responsibilities for managing or directing the safety of their activities. However, DHs could be held formally to account for their actions. All Army DDHs in the land environment were required by ACSO 1200 to undertake the Generic Duty Holder Course (GDHC), Exhibit 035 Exhibit 039

[40] The Nimrod Review, An independent review into the broader issues surrounding the loss of the RAF Nimrod MR2 Aircraft XV230 in Afghanistan in 2006, Charles Haddon-Cave QC, 28th October 2009.

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followed by the Army Duty Holding 21 (DH21) DDH brief, within three-months of taking up a DH position. Once the training was completed, the ASCen would issue a certificate and a Joint Personnel Administration (JPA) competency would be awarded.[41] There was also a requirement for all Army DDHs to be trained in safety risk management (SRM) up to the SRM Training for Safety Leaders level, as per ACSO 1200.

1.4.63. The CRTC stated that the duty holding format directed by the LWC was outdated and that a different approach to delivery duty holding was followed on Ex IS. This revised construct was for each personnel-contributing DDH to retain responsibility for their own personnel instead of temporarily ceding it to the Ex IS chain of command. No confirmation of LWC acceptance of this change was seen by the panel, but it was noted that the only dispensations to operate outside of the SSW on Ex IS were granted by Comd CTG. The ASCen stated that the LWC's understanding of duty holding was correct. Exhibit 252 Exhibit 264 Exhibit 265

1.4.64. Comd CTG had:

a. Completed their GDHC in September 2021; Exhibit 077

b. Received a letter of authority as a DDH from their ODH (CFA) in September 2021; Exhibit 039 Exhibit 077

c. Not received the DH21 brief nor had they undertaken SRM training. Comd CTG stated that they were not aware of the requirement for further training after completing the online GDHC; and Exhibit 077 Exhibit 142

d. Replied to the letter from CFA stating that all DH training had been completed. This was correct to the best of their knowledge. Comd CTG stated that they were only aware of the GDHC and they would have done any other mandated training had they known about it. The reply did not require any proof that all DH training had been completed. Exhibit 039 Exhibit 077 Exhibit 142

1.4.65. Comd CTG remained unaware of and, therefore, non-compliant with, the full requirements of the Army DDH training pathway for over 16 months. Comd CTG's actions and decisions as a DDH had no bearing on the likelihood or severity of the accident investigated by this panel and this issue has only been raised to highlight a safety process deficiency.

1.4.66. The ACSO 1200 policy was approximately eight-months old when Comd CTG was appointed and, although the ASCen stated it was 'dated', it had not been amended to meet the current requirements. Without an endorsed and functioning process, including oversight, for training Army DDHs, it was difficult for any DDH to comply with the ACSO 1200 requirements or for that lack of compliance to be

[41] At the time of writing there was no authorised brief provided by the Army Safety Centre to fulfil this requirement.

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identified. Although the ASCen stated that all aspects of the DH21 training were now incorporated into the GDHC, the panel determined that as a minimum, all DDHs appointed between January 2021 (when ACSO 1200 was published) and September 2022 (when the GDHC was updated) were unlikely to be compliant with the policy in ACSO 1200.

1.4.67. Although ACSO 1200 required the ASCen to issue a certificate of training completion to all Army DHs (which allowed their units to upload the JPA competency), the ASCen confirmed that they were neither assuring the training of individual DDHs, nor issuing certificates. The only form of assurance in current practice was self-certification. This relied almost entirely on the individual to understand what training was required, and where they could receive it, and for the ODH to trust that they would complete it. The panel determined that on or before 15 October 2021, the GDHC had not been modified, there was no DH21 training package for Comd CTG to complete, they hadn't completed SRM training to the requisite level, and had not been awarded any of the three JPA competences. Therefore, it was almost certain that Comd CTG was not 'technically' qualified, current, or authorised to hold the position of DDH for any training that required a DDH decision to be made.[42]

1.4.68. ACSO 1200 did not provide sufficient distinction between duty holding and SRM and the circumstances for which either would apply. This led to different understandings between CRTC, LWC and ASCen regarding how and when duty holding responsibilities would be transferred and how risks to life were to be managed.

1.4.69. The panel concluded that if a partially trained DDH granted dispensation to conduct an activity outside of the boundaries of the SSW, which was later linked to an accident or injury, the DHs may find themselves in a difficult legal position as they would not have been authorised to make that decision. Comd CTG was not fully trained, fully qualified, or properly authorised to act as a DDH during Ex IS and the panel finds this was an **other factor**.

1.4.70. The panel further concluded that the lack of clarity and distinction regarding duty holding and SRM in ACSO 1200 could lead to conflicts of understanding affecting the safe system of work and risk to life activities. The panel finds this to be an **other factor**.

1.4.71. **Recommendation. The Deputy Chief of the General Staff should request that the Army Senior Duty Holder review the authorisation of all Army duty holders trained between January 2021 and September 2022 until it**

[42] Although a letter of authority was received from the ODH, PAM 21 paragraph 1-10d(2) made it clear that a person who was not fully trained could not be considered as properly authorised.

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is confirmed that they have completed all the required training in order to ensure that only trained duty holders make duty holding decisions.

1.4.72. **Recommendation. The Chief Safety (Army) should amend Army Command Standing Order 1200 as necessary to provide appropriate governance for duty holding and safety risk management in order to ensure that sufficient distinction and clarity is provided for the safe system of work and risk to life activities.**

1.4.73. **Recommendation. The Chief Safety (Army) should amend Army Command Standing Order 1200 as necessary to ensure the training and assurance requirements for duty holders is unequivocal in order to ensure that all future duty holders are appropriately qualified before being authorised to make duty holding decisions.**

1.4.74. Comd 12th Armoured Infantry Brigade had:

a. Completed their GDHC in June 2021; Exhibit 050

b. Received their letter of authority as a DDH from their ODH (CFA) in July 2021 on assumption of their post; and Exhibit 051

c. Received a DH21 and SRM brief at 3 Div in August 2021, but the appropriate JPA competencies had not been recorded. Exhibit 204 Exhibit 205

1.4.75. Comd 12th Armoured Infantry Brigade had fully completed the training requirements to be an Army DDH as set out in ACSO 1200. The DH21 and SRM brief were bespoke to 3rd (UK) Division and had original material supplied by the ASCen. The lack of recording of JPA competences was considered to be an administrative oversight.

1.4.76. The panel concluded that Comd 12th Armoured Infantry Brigade was appropriately trained, qualified, and authorised to act as a DDH during Ex IS and finds that this was **not a factor**; and:

1.4.77. The panel **observed** that Comd 12th Armoured Infantry Brigade did not have the correct JPA competencies recorded for their role as a DDH.

1 YORKS timeline (January 2021 to October 2021)

1.4.78. This report will outline many issues with the preparedness of 1 YORKS to undertake the role of TFH on Ex IS. The battalion had not been able to train with their AVs during lockdown and, with the additional workforce turnover during that period, it would have been required to train many personnel almost from scratch. Individual training to become AFV crew takes between 6 weeks and 15 weeks to complete, depending on the role. The aim of this section of the report is to outline the workload of 1 YORKS during that time which might help provide some insights into why its preparations fell short.

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1.4.79. The third national lockdown began on 4 January 2021, with a new CO arriving in post not long after. Approximately 40 personnel were tasked to support Strategic Command's training in Wales for two weeks, and Alma Company deployed to Germany for two months to provide opposing forces (OPFOR) support for Ex TALLINN DAWN 2-20.[43,44] In February 2021, a further two companies were directed to support Op RESCRIPT at NHS hospitals in Birmingham, which some of the soldiers found to be a harrowing experience.[45]

1.4.80. In compliance with legislation and MOD directives, 1 YORKS personnel not involved in Op RESCRIPT were experiencing a period of remote working and restricted training. In March 2021, approximately (including the requirement to self-isolate for 2 weeks on the outbound and return journeys).[46] Fifty personnel (including the battalion HQ and Soldier C) were tasked to support Ex WARFIGHTER 21-4 at Fort Hood in Texas, USA attended Ex WARFIGHTER from 12 March 2021 to 17 May 2021 (including mandated isolation periods and annual leave) and were dislocated from 1 YORKS throughout. In May 2021 approximately 120 personnel were sent to Germany for two months to support Ex TALLINN DAWN 1-21.

Witness 05
Witness 06
Witness 07
Exhibit 228

1.4.81. Between March and June 2021, the sub-units of 1 YORKS were able to conduct their own preparation training. The reconnaissance platoon carried out training for new members between 1 March 2021 and 19 March 2021 (including Soldier B and Pte Watson-Pickering). A large proportion of the 1 YORKS vehicle maintenance team were sent to Germany to assist in maintaining the Stored Equipment Fleet from May to September 2021; elements of the battalion deployed to SPTA over the period 19 July 2021 to 1 August 2021 for a collective training event (BCS); and synthetic training was provided to members of the reconnaissance platoon that could not attend BCS due to the pandemic. AV driver training was concentrated between May 2021 to July 2021 although the demand from all activities exceeded the number of vehicles available.

Witness 05
Witness 06
Witness 07
Exhibit 228

1.4.82. August 2021 saw the majority of 1 YORKS taking summer leave during which several of the officers were assigned to different units as part of the routine, two-year, Army assignment cycle. This included all junior officers in Quebec Company. On 24 August 2021, a company was put on five days' notice-to-move for a month to support the recovery of UK nationals from Afghanistan. On 6 September 2021, 1 YORKS formed a team of 67 personnel, including Soldier A and Pte Watson-Pickering, to assist the CRTC with the prepare phase of Ex IS at Castlemartin Ranges (CMR). In mid-September 2021, YORKS Battalion HQ

Witness 05
Witness 06
Witness 07
Exhibit 228

[43] Strategic Command provides the delivery and co-ordination of Joint and Enabling capabilities to develop and generate an integrated Joint Force optimised for warfare in the information age.
[44] This was preparing troops deploying to Op CABRIT in Estonia.
[45] Op RESCRIPT was the MOD's support to the national resilience efforts over the COVID-19 pandemic. The limited medical capabilities of the soldiers meant that a large proportion of their duties involved manually handling the deceased patients.
[46] This was a synthetic exercise where HQ 1 YORKS acted as a brigade HQ for a US Army division that was being exercised and evaluated.

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deployed to SPTA to begin the HANNIBAL Threat Tactics Course before moving to Ex ACES HIGH, the BCS event for 12th Armoured Infantry Brigade, on 20 September 2021.

1.4.83. There were numerous smaller taskings, many of which came in at short notice, affecting 1 YORKS planned activities. Whilst the battalion's strength was approximately 650 personnel, in February 2021 it was only able to deploy about 70% of those due to workforce gaps and other limitations. Approximately 20% of the remainder worked in support roles which, if removed, would mean that routine administration tasks would cease. Due to the relative low priority of 1 YORKS compared to the other battalions in the Brigade, who were on rotation for deployments on operations, 1 YORKS assessed that they were taking a large share of the Brigade's tasks over that period. A witness recalled a sense of palpable frustration within the unit understanding that personnel did not know what they were going to do from one point to the next. Personnel who had been held at five days' notice to move were being mobilised with only two days' notice or less. Families were unsettled over an extended duration. Overall, the Unit felt that it had been working at near maximum capacity since approximately 2019 and the strain on the Unit was significant. 1 YORKS had many examples of their attempts to create space to conduct their own training but, as shown in Figure 1.4.7, BCS for institutional resilience was one of the lowest priorities within Field Army over that period and their request for Avs to train with was only partially fulfilled.

Witness 06
Witness 07
Exhibit 228

Ser	Defence priorities	Fd Army priorities	Expanded priorities
1	Sovereign Integrity	Permanent Tasks	Including support to PJOBs Maintenance of @R1(48) and below
2		FPrep of @	FPrep for future @R1 and @R2 FEs assuming @R before 1 Dec 2021
3	COVID 19 Resilience	Residual C-19 facing activity	UK Resilience 21
4	Projected Activity	Deployed Ops FGen	Deployed Ops FGen for units deploying before 1 Jul 2021 Priority based on order of deployment This includes stand-off support in the UK
5	Capability Generation	Individual Training	Basic Training Initial Trade Training Subsequent Trade Training
6		FPrep of @R3	FPrep of FEs assuming @R3 before 1 Dec 2021
7		LOC directed support to experimentation, trials, fielding	Fielding (acceptance and unit transition) Trials Experiments Transformation
8		Critical Institutional Resilience and S	SCPD
9		HR FPrep (FEs @R4 – R5 only	BCS for institutional resilience FPrep for future HR before 1 Dec 2021
10		Land Component contribution to Def Strat Plans Strat Frameworks reset.	LOC directed overseas DAOTO (inc SCPD, OTXs, major exercises, STTTs, STETs)
11		Maintenance of FE@R @R3	FE@R3 may be spent on higher pri activity with LOC authorisation.
12		Maintenance of FE@R @R4-5	As above
13		Maintenance of FE@R @R6-8	As above
14		Maintenance of FE@R @R7-10	As above
15		Discretionary Institutional Resilience	Other DAOTO (visits, sports tours, AT, etc)
			Community Engagement

Ex IS

BCS

Figure 1.4.7: Field Army priorities (week commencing 1 April 2021).

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1.4.84. The panel **observed** that:

a. More recognition was needed of the cumulative impact of multiple concurrent taskings, extended standby periods and an acceptance at all levels regarding relative priorities.

b. Whilst the accepted prioritisation was for national resilience activities over the extended period, by requiring armoured units to also resume their primary role, the Army was reliant on units trying to resolve prioritisation issues independently.

Assurance

1.4.85. The HF Report noted that, within 1 YORKS, trust had become a byword for a lack of assurance and checks. A more rigorous process of assurance was required to mitigate any oversights and improve a culture of support. An example of this was that many of the senior elements of the hierachy within 1 YORKS were not fully qualified to operate AVs, or had become partially trained several years ago. As such, they relied heavily on their in-unit subject matter experts (SMEs) for understanding of the qualifications and currency requirements of the AV training pathway for their subordinates. Several personnel in positions requiring expertise lacked competency in AV operations, many having not worked with AVs before. Notwithstanding these deficiencies, the senior elements trusted the SMEs to 'get the job done'. Through their Capability and Personnel Working Group (CPWG), 1 YORKS was tracking the qualifications of their personnel. The panel found that the information for the CPWG was only being provided by the sub-unit comds and that there was no validation of this data from any other source. The Training Wing was required by AVSOs to maintain an independent record of all of 1 YORKS qualification and currency details and should have been able to verify both the requirement and confirm the training details that the company comds were providing. Additionally, the Unit second-in-command (2IC) and operations officer provided much of the 1 YORKS focus for the Unit's readiness profile, and could also have provided more information to the CPWG.

Witness 04
Witness 06
Exhibit 044
Exhibit 086
Exhibit 146
Exhibit 210

1.4.86. Prior to the exercise, 1 YORKS was required to produce a signed start state letter, which was to confirm that all personnel deploying on Ex IS were qualified, current and competent for the roles in which they were required to perform. Each layer of the chain of command was required to confirm this to the next level up. This resulted in the 1 YORKS Start State Letter being signed and submitted to CRTC. It confirmed that all personnel deploying on Ex IS were qualified, current and competent for the roles in which they were deployed. It went on to state that each soldier had a signed an in-date driver training record and that the driver training records and F/MT 600 (MOD Motor Transport Driver's Permit) were up-to-date for each individual's specified role and equipment. The panel found evidence to the contrary which is laid out in full in the safe person section of

Exhibit 053
Exhibit 185
Exhibit 253
Exhibit 255

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this report at paragraph 1.4.305 and paragraph 1.4.309, but this section examines why that happened. The CRTC stated that they did no more than a cursory check of the start state letter and accepted in full what 1 YORKS presented without further questions, even though 1 YORKS had noted that one of their acting platoon comds was not qualified in armoured reconnaissance. The 1 YORKS deployment instruction for the permanent range team did not include any pre-deployment checks of qualifications or records, neither did the 1 YORKS exercise instruction.

1.4.87. Between the Brigade HQ annual planning exercise, Ex WARFIGHTER, the battalion HQ conceptual planning week, the TFH Threat Tactics Course and Ex ACES HIGH, the battalion HQ spent a significant amount of time dislocated from the rest of the unit and saw them largely invested in training that mostly benefitted their higher formation whilst providing little value to the battalion. OC Quebec Company's secondary role as the ISTAR comd saw them attached to much of this training which meant they had to trust the individual platoons to organise much of their own training as their 2IC position was permanently gapped. The HF Report noted that:

Witness 04
Witness 06
Witness 07
Exhibit 254

> 'An organisation's culture sets expectations and practices regarding how people behave and work together, and how well they function as a team. These expectations and practices can become widespread in an organisation or teams and become cultural norms. Within 1 YORKS, and personnel within its chain of command (12 [Armoured Infantry] Brigade/3 [UK] Division), there appeared to be a lack of awareness among senior staff regarding required armoured vehicle training for individuals and the requirements for remaining current. Many in the regiment, including the [CO] and [Company Commander] having not completed the requisite training to operate in their current roles.'

1.4.88. The panel considered that the problem of working solely on the basis of trust, necessitated by a lack of armoured experience, was that once inaccurate information entered the system, it was almost impossible to remove as there were insufficient mechanisms to identify it. Once introduced during the preparation for each CPWG, inaccurate information then progressed up the chain of command becoming more validated and less challengeable at each point until finally accepted by CRTC as undisputable fact in the start state letter. The integrity of the data presented to the CPWG was taken on trust and critical errors were only highlighted after the accident. Many organic and remote SMEs could have provided a more or less independent assurance service but were either not consulted or did not dispute the evidence provided to the CPWG.

1.4.89. Contrary to the information in the start state letter, very few actual checks of information and records had taken place. Instead, personnel in command positions were taking it on trust that the information being provided to them was correct and then passing that off as a check. At the lowest level, a basic pre-

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deployment check of key documents by SMEs from human resources, motor transport and training wing would have picked up many of the essentially administrative compliance issues and they could have been immediately addressed. This process was not built into the pre-deployment plan.

1.4.90. The dislocation of the battalion HQ to largely focus on supporting their higher formation may have improved their ability to perform tactically on exercise, but that training was only integrated with the remainder of the battalion for one week of the year (during the second week of the BCS event). This took key personnel away from their leadership roles for extended durations and, whilst it increased their personal competence in tactical training, it reduced their oversight of their subordinates technical training. This meant that, instead of asking searching questions which ensured they became professionally aware, such as, 'where does it state what my personnel are required to achieve in order to be qualified for their role?', they would trust others who they thought knew the answers already. In the HF Report, a lack of AV qualifications in the leadership cadre was noted. The extended dislocation of the battalion HQ and lack of AV qualifications amongst the leadership were likely to have diminished trust and reduced AV competence within 1 YORKS personnel.

1.4.91. The panel concluded that 1 YORKS lack of technical AV competence at all levels and largely trust based assurance process meant that few understood the training requirement and fewer still checked that it had been complied with. If the senior elements of armoured infantry units were suitably qualified and experienced in role, they would be better placed to provide the required level of oversight and have a better understanding of the AV training pathway. In this way they would ensure that they had a better foundation from which trust could be developed. The panel finds this to be a **contributory factor**.

1.4.92. **Recommendation. The Deputy Chief of the General Staff should ensure that it is mandatory for personnel appointed to command and executive positions to be suitably qualified and experienced in the unit role in order to provide effective oversight and assurance of their subordinates training requirements.**

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Section 2 - Safe practice

1.4.93. ACSO 1200 defines safe practice as: Exhibit 039

> 'The safe conduct of any activity, including those arising from the use of equipment, in a specific location, by competent Persons. Safe practices are conducted in accordance with drills and instructions laid down by the Service authorities and normally contained in documentation.'

Introduction

1.4.94. Ex IS was to consist of the KRH battlegroup (BG) conducting a series of tests and assessments in a phased exercise with one of the final elements competing against TFH. It was TFH's role to provide a realistic and credible adversary for the KRH BG to overcome, through demonstration of a range of skills and capabilities via set piece tests collectively known as 'Mission Zero' over the period 15 October 2021 to 19 October 2021. Witness 01 Witness 19 Exhibit 003 Exhibit 005

1.4.95. 1 YORKS was tasked to provide TFH for Ex IS and was to operate in an unconventional way rather than using UK doctrine. It would also simulate vehicles with capabilities similar to former Eastern European forces. This meant that, although 1 YORKS Reconnaissance Platoon would be using Scimitars, they would be using the tactical engagement simulation (TES) suite to simulate a BMP-2 fitted with six AT-5 Spandrel anti-tank guided missiles (ATGMs) to give them an offensive capability.[47,48] The vehicles would also be fitted with visual modifications to make them distinguishable from the Scimitars used by the KRH BG, and personnel would wear dyed blue, UK-style uniforms. The UK approach to reconnaissance was that it should be conducted by stealth, whereas the TFH approach was that reconnaissance should be conducted with strength (known as reconnaissance attack), and all were briefed that an offensive spirit was key.[49] Exhibit 005 Exhibit 182

1.4.96. At the start of Mission Zero, elements of 1 YORKS had been on Ex IS continuously since 1 September 2021. Personnel from 1 YORKS provided support to the prepare phase of the exercise by contributing to the permanent range team at CMR. This was where the KRH BG was being put through a series of tests using Exhibit 183 Exhibit 184

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[47] TES was a modular suite of capabilities provided to the MOD by Cubic and SAAB for simulating combat effects. For c/s 62 Alpha this consisted of the Attack Weapons Effects Simulator (ATWES) which used a laser to simulate the capabilities of the weapon being fired, Target Weapons Effects Simulator (TAGWES) which used a series of receptors to accurately record and interpret the effects of any ATWES fired at it, and the Area Weapons Effects Simulator (AWES) which provides GPS for accurate location and positioning information and communicates information from all sub-systems back to the control room at Exercise Control (EXCON) at Westdown Camp. It is possible to set up Obstacles in TES (such as minefields etc) and TES provides a warning if they are approached or a 'cheat kill' if the entity gets too close.

[48] The Mark 2 variant of the Boyevaya Mashina Pekhoty (which translated as Infantry Combat Vehicle), was known as the BMP-2. This was a Soviet-era AFV and was broadly similar to the Warrior AFV. The 9M113 Konkurs ATGM was known by NATO as the AT-5 Spandrel. The AT-5 was a Soviet-era weapon fitted to the BMP-2 [redacted].

[49] TFH Reconnaissance Attack was defined as a combined arms tactical offensive action representing all measures associated with organising, collecting and studying information on the enemy and operational environment in the assigned area of responsibility. This includes the requirement to fight for that information using offensive tactics and techniques.

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live ammunition, organised into a live fire tactical training exercise, and a combined arms live firing exercise (CALFEX). Pte Watson-Pickering and Soldier A were both part of the permanent range team.

1.4.97. The permanent range team was released on 9 October 2021 and the 1 YORKS contingent required for the next phase (which included Soldier A and Pte Watson-Pickering) moved from CMR to Knook Camp on SPTA. There, Pte Watson-Pickering and Soldier A met up with the final member of their crew, Soldier B. They spent the remainder of their time before Mission Zero supporting 1 YORKS pre-exercise training tasks, being briefed on the scenario and safety considerations, and preparing their vehicle. Exhibit 185

The day before the accident

1.4.98. Pte Watson-Pickering, Soldier A and Soldier B met up at the vehicle park within Knook Camp at 06:30 on 14 October 2021. They drove c/s 62 Alpha to a field at the back of the camp where the remainder of the Company was gathering for a final safety briefing from their Company Comd. Following the brief there was a TES Activation Parade (TAP) to check that their TES equipment was working. TES tended to drop out when a vehicle was switched off, so the reconnaissance platoon was issued with a TES Control Gun to allow them to reset it when starting up the vehicle. This would avoid a 'battery tamper' 'cheat alert' being recorded on the TES system. Witness 01 Witness 03 Witness 05 Exhibit 187

1.4.99. The TES equipment fitted to the vehicle was checked and aligned during the TAP. This process started with the equipment in 'gunnery mode' for system checks and concluded with the system being changed to 'combat mode' ready to start the exercise. The TES control panel indicated that c/s 62 Alpha's ATWES was in 'gunnery mode' at the time of the accident.[50] This meant that the vehicle had unlimited simulated ammunition and, although still vulnerable to enemy fires would self-generate 15 seconds after being 'destroyed'. This was commonly referred to as 'God mode'. Soldier B stated that they were aware that they were in 'God mode', however, Soldier A said they were unaware of the existence of a 'God mode' until after the accident. Witness 01 Witness 02 Exhibit 152 Exhibit 187

[50] ATWES, TAGWES and AWES are explained in further detail at footnote 47 to paragraph 1.4.95.

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1.4.100. An image of the TES control panel recovered from c/s 62 Alpha following the accident is at Figure 1.4.8.

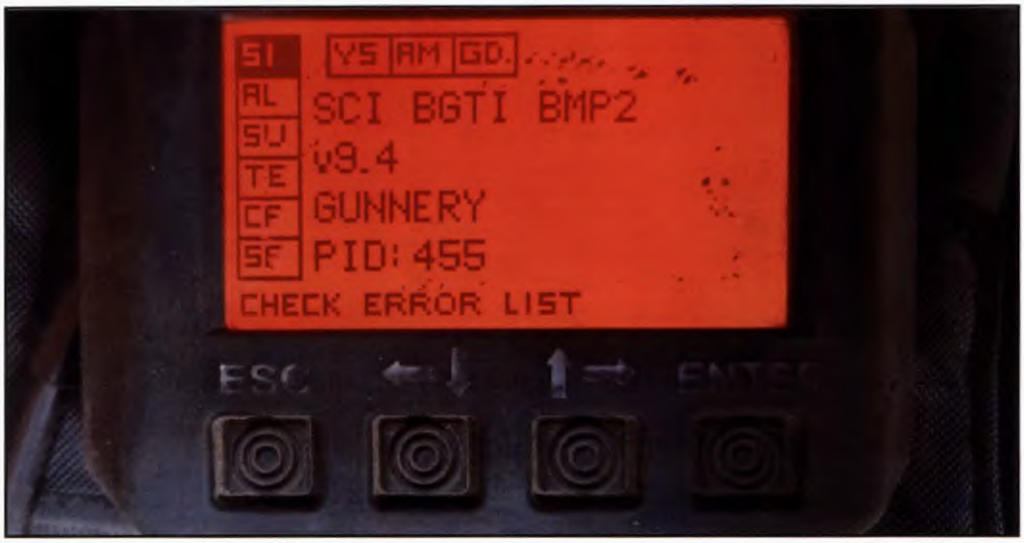


Figure 1.4.8: C/s 62 Alpha's TES control panel.

1.4.101. Table 1.4.2 provides a description of the main components of each of the TES modes. Exhibit 191

Mode	Description
GUNNERY	Unlimited Ammunition
	System resets when killed after 15s
	No Tamper Kill if power interrupted or cables disconnected
	Fire result pop up information in the CP
COMBAT	Limited ammunition
	Loading Time delays
	No auto reset when killed
	Tamper Kill if power interrupted or cables disconnected

Table 1.4.2: ATWES modes as shown in TES system manual.

1.4.102. For c/s 62 Alpha, the ATWES and TAGWES were working meaning that they could 'fire' their weapon systems and detect any incoming 'fires', but AWES was not. Therefore, no information from the vehicle was transmitted back to EXCON. The only information received by EXCON was from the Area Weapons Exhibit 010

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Effects Simulator Instrumented Man-worn System (AIMS) equipment that was fitted to Pte Watson-Pickering's equipment.[51] From this, it was possible to recreate the full route that the vehicle took on 14 October 2021 (Figure 1.4.9).

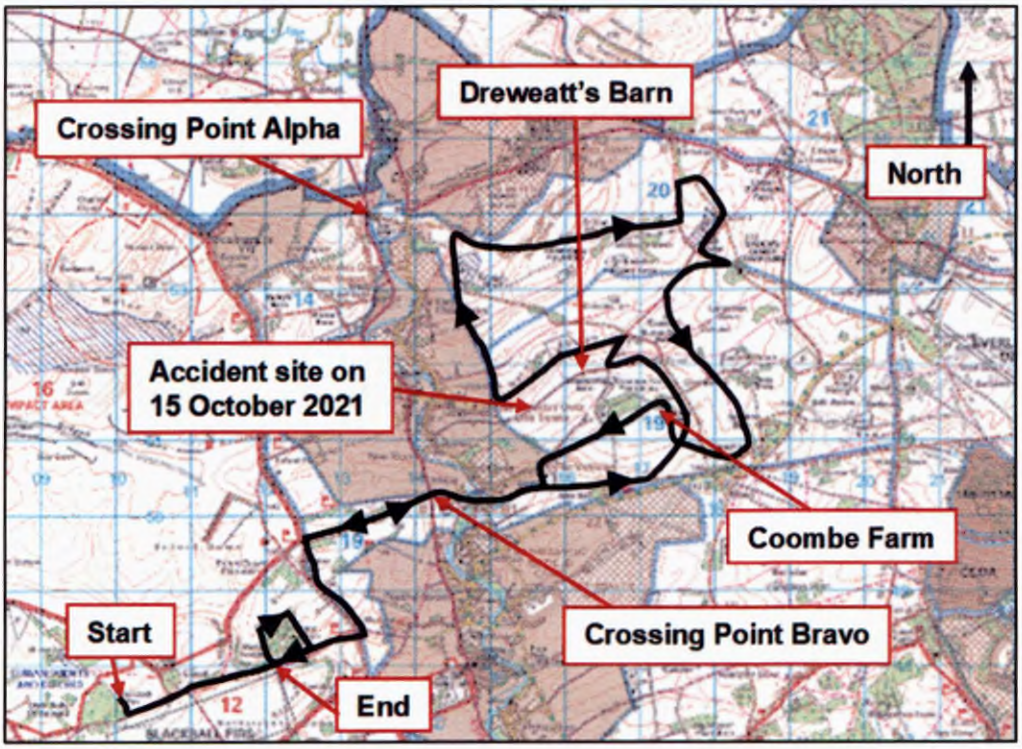


Figure 1.4.9: Route taken by c/s 62 Alpha on 14 October 2021.

1.4.103. The evidence shows that at 09:00, c/s 62 Alpha moved out in convoy formation behind the platoon comd's vehicle and transited to the eastern part of SPTA to become familiar with the area that they would be operating in the next day. This familiarisation day, known as the battlegroup conditions setting day, was in place for both BGs (KRH and TFH) to use, and was designated as non-firing (in that no engagements between the two sides were allowed). At 10:45, the reconnaissance platoon comd split the convoy down into pairs of vehicles and gave them specific areas in which to conduct reconnaissance. This was to identify sites that they could use as OPs the next day, and to note the locations that the KRH BG's reconnaissance screen were planning to use. Normally, the reconnaissance platoon would operate in pairs of Scimitars but, to use less conventional tactics in line with TFH doctrine, c/s 62 Alpha was paired with c/s 53 Bravo – a mortar fire control team in a Spartan.[52,53] This pairing was to allow a range of direct and indirect fires to be brought to bear against identified targets during the exercise. C/s 62 Alpha led c/s 53 Bravo around the north-eastern sector

Witness 01
Witness 05
Exhibit 189

[51] AIMS was the version of TES worn by personnel on their helmets, rifles and personal equipment.
[52] The armoured reconnaissance variant of the Combat Vehicle Reconnaissance (Tracked) (CVR(T)) series of vehicles.
[53] The armoured personnel carrier (APC) variant of the CVR(T) series of vehicles.

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of SPTA for some hours, but they did not practice any tactical skills such as targeting, moving in and out of OPs or withdrawing from contact. The evidence indicates that this concluded at 16:30 with TFH elements moving into overnight 'leaguer' positions in the area of Blackball Firs.[54] The crew then serviced their vehicle and Pte Watson-Pickering was put on compulsory rest at 18:30 in preparation for an early start the next morning.

1.4.104. Evidence indicates, that at 20:00, Soldier A was briefed by the reconnaissance platoon comd about the plan for the next day. The KRH BG was in an assembly point in the east of SPTA by Tidworth Camp, with TFH towards the centre of the area. At the designated start time, the KRH BG would head west until they were blocked by the River Avon. There were only three places where the KRH BG could cross the river: crossing point (CP) Alpha to the north, CP Bravo in the centre of axis, and CP Charlie to the south. Soldier A was to lead c/s 62 Alpha and c/s 53 Bravo and set off as soon as possible to form the northern element of the eastern screening force, observing the ground between CP Alpha and CP Bravo. A further pair of vehicles would cover the southern ground between CP Bravo and CP Charlie. Understanding which CP the KRH BG planned to use would gain TFH a tactical advantage in preparing their response. EXCON had directed a no-move-before time on 15 October 2021 of 05:00 for TFH and 06:00 for the KRH. The exercise was planned to start at 06:30.

Witness 01
Witness 04
Witness 05
Witness 06
Exhibit 024
Exhibit 240
Exhibit 297

1.4.105. The no-move-before time ensured that all drivers received the required amount of rest and that the required medical cover could be maintained. The Ex IS Medical Plan stated that, 'In order to minimise death and disability following trauma…immediate life saving measures will be provided by buddy-buddy first aid/Team Medic trained personnel within 10 minutes of injury.' It also stated that, within one hour, skilled medical aid would be provided by a Battlefield Advanced Trauma Life Support trained medical officer, a general duties medical officer, or class 1 combat medical technician.[55] However, without notifying EXCON of their intent, TFH ordered c/s 62 Alpha and c/s 53 Bravo to set off at 03:15 to allow them to move under cover of darkness and be in position for the start time.

1.4.106. From the TES data provided by SAAB, the panel assessed that it was almost certain that the TAP was not conducted correctly as the c/s 62 Alpha TES was not changed to 'combat mode' before they set off for the battlegroup conditions setting day. It was also very likely that the crew knew that the TES was in gunnery mode from the outset as the control panel's home page showed the mode setting (Figure 1.4.8).

[54] A leaguer was a defensive position created by groups of AVs and most often used overnight.
[55] Battlefield Advanced Trauma Life Support (BATLS). BMJ Military Health 2000;146:110-114. https://militaryhealth.bmj.com/content/146/2/110 (accessed 15 December 2022).

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1.4.107. The battlegroup conditions setting day (14 October 2021) was the first time any of the crew had the opportunity to practice their individual skills in a 'fully crewed' environment, either with each other, or indeed, at all. Up to this point, Pte Watson-Pickering had only driven a Scimitar from the tank park at Knook Camp to a hill at the back of the camp, for TES to be fitted to the vehicle, and for a short night drive on the evening on 12 October 2021. Apart from the TES fitting, Soldier A, Soldier B and Soldier F[56] had never been in a moving Scimitar before.

1.4.108. Although the activities of 14 October 2021 were straightforward and in keeping with what would be expected of a UK reconnaissance element before the start of an exercise, they did not necessarily practice the skills that would be expected of them as TFH reconnaissance. The focus of UK reconnaissance was normally information gathering, with fighting as a defensive act of last resort, so practicing offensive acts wasn't prioritised on 14 October 2021. The crews were given no specific tasks other than to become familiar with the area they would be using for the next few days. TFH reconnaissance vehicles were armed with simulated offensive weaponry (six AT-5 Spandrel ATGMs), that the crew had not practiced the associated tactics for. The change of emphasis from 'reconnaissance by stealth' to 'reconnaissance with strength' was also unfamiliar to the crew. The panel opined that the level of experience and practical knowledge within the crew of c/s 62 Alpha could have been improved if they had been instructed to take advantage of the opportunity to rehearse their crew skills and drills. By the end of 14 October 2021, they had not practiced 'fighting the vehicle', using any of its weaponry, nor had they traversed the turret as part of their crew drills. The next day was mostly about offensively 'fighting the vehicle', not reconnaissance, so it was the panel's opinion that all the required skills had not been practised.

1.4.109. On the morning of 15 October 2021, c/s 62 Alpha departed from the leaguer almost two hours before the directed no-move-before time. TFH wanted to be in position before the KRH BG started to move out from their overnight positions. To do this, they decided that they would move elements of the reconnaissance platoon forward as soon as driving hours would allow and had sent some of their drivers to bed early to comply with the regulations. Not expecting any of the Ex IS personnel to move in advance of the no-move-before time, EXCON did not have any overnight safety cover on the training area. TFH did not contact EXCON to request an early move so there is no record of how 1 YORKS planned to ensure that the mandatory medical cover would be provided if needed. Although the unauthorised movement of c/s 62 Alpha would have been automatically notified to EXCON via Pte Watson-Pickering's AIMS equipment, the

[56] Soldier F was an experienced soldier who enlisted into the 1st Battalion, The Green Howards (Alexandra, Princess of Wales's Own Yorkshire Regiment) in 2002 in the light role. The battalion was amalgamated into 2nd Battalion, The Yorkshire Regiment (Green Howards) in 2006 and then further amalgamated into 1st Battalion, The Yorkshire Regiment in 2013. They completed multiple operational tours including Northern Ireland, Afghanistan and Kosovo. They converted armoured infantry for a tour in 2013 before moving to the Infantry Training Centre followed by a tour as a company quartermaster sergeant. During Ex IS, Soldier F was the acting commander of reconnaissance platoon.

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overnight watchkeeper did not question the early movement with the TFH Liaison Officer in EXCON or use any other means of communication to query it directly with HQ TFH.

1.4.110. The panel **observed** that:

a. TFH did not request permission to move in advance of the directed no-move-before time and did not assure EXCON that it could provide the required medical cover for all personnel moving early; and

b. EXCON did not address or control the unauthorised movement by TFH.

1.4.111. The panel concluded that rehearsals of reconnaissance by strength drills were not conducted and the battlegroup conditions setting day was not utilised to practice the full range of skills that would be required for Mission Zero. The panel further concluded that the TES equipment was left in an inappropriate mode at the conclusion of the TAP. The panel finds that these were **contributory factors**.

1.4.112. **Recommendation. The Director Land Warfare should ensure that exercises involving opposing forces have specific live training serials included in order to ensure that tactics, techniques, and procedures are practiced in advance.**

1.4.113. **Recommendation. The Director Land Warfare should ensure that the Tactical Engagement System (TES) operating mode is visible to EXCON and/or that a visual alarm highlights when a crew 'tamper' with their TES equipment to inappropriately switch mode.**

The morning of the accident

1.4.114. On the morning of 15 October 2021, the AWES on c/s 62 Alpha was still not working. Pte Watson-Pickering's AIMS was functioning, so it was possible to recreate the movements of the vehicle to a high level of accuracy.

Witness 01
Witness 05
Witness 10
Exhibit 083
Exhibit 093
Exhibit 189
Exhibit 190
Exhibit 241

1.4.115. Due to the rules concerning driving hours, Pte Watson-Pickering required a minimum of 8 hours rest taken from 18:30 the night before. Therefore, reveille for c/s 62 Alpha was at 02:30. At 03:15 on 15 October 2021, they set off with c/s 53 Bravo following. Although there was no record of the specific orders given to the crew, their objectives were understood to be:

a. Deploy to the area of Coombe Farm and find a suitable OP from which to monitor and report movements of the KRH BG to provide early warning to TFH, and allow them to reconfigure as necessary to meet the threat; and

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b. Engage with forward elements of the KRH BG as opportunities allowed in order to disrupt their plan and force them to be reactive.

1.4.116. Since arriving at SPTA, Pte Watson-Pickering had passed a night driving assessment using night vision googles. Therefore, no difficulties with the night move were anticipated. The exercise was expected to start at 06:30 but, due to technical difficulties with the KRH BG TES, EXCON pushed the start back to 09:30. Witness 03 Witness 15

1.4.117. TFH had become aware that the KRH BG was massing to the east in an area known as Bake Barn. It was not obvious to the TFH which CP the KRH BG would choose so, noting the risk that the KRH BG could be planning to use an area of dead ground to tactically head north-west towards Crossing Point Alpha, at 11:16, c/s 62 Alpha was dispatched to move to the high ground near Dreweatt's Barn to investigate. C/s 53 Bravo was left at Coombe Farm. Soldier B stated that, although they could not see him, they believed that Pte Watson-Pickering was driving in the 'head down' position from this point on. This was because they felt there was no reason for Pte Watson-Pickering to raise his seat and move to the 'head up' position whilst they were in and out of contact with the enemy.[57] Witness 01 Witness 02 Witness 05 Witness 10 Exhibit 010 Exhibit 097 Exhibit 188

[57] The CVR(T) Scimitar had two possible positions for the driver's seat, upper and lower. Individuals within an AV crew could operate in one of two positions, either 'head up' or 'head down'. Head up was when their hatch was open and their head and neck would be above the armoured protection of the vehicle. This position provided better visibility which enhanced situational awareness and was the generally preferred position unless circumstances, or orders, dictated otherwise. For a Scimitar driver, head up involved raising their seat to the 'upper' position; for the remainder of the crew this was achieved by standing on their seat. 'Head down' was where the individual was fully enclosed within the vehicle with their hatch closed. This position afforded maximum protection at the loss of some situational awareness. At times this position could also feel hot and claustrophobic and was avoided unless necessary. For a Scimitar driver, head down involved lowering their seat to the 'lower' position; for the remainder of the crew this was achieved by sitting on their seat.

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1.4.118. A KRH BG patrol had been alerted to TFH activity in the area of Coombe Farm. They advanced and entered into a simulated engagement with c/s 53 Bravo, 'destroying' it at 11:19. The positions of c/s 62 Alpha and attacking elements of the KRH BG are shown in the screenshot of TES in Figure 1.4.10. Witness 13 Witness 20 Exhibit 010 Exhibit 011

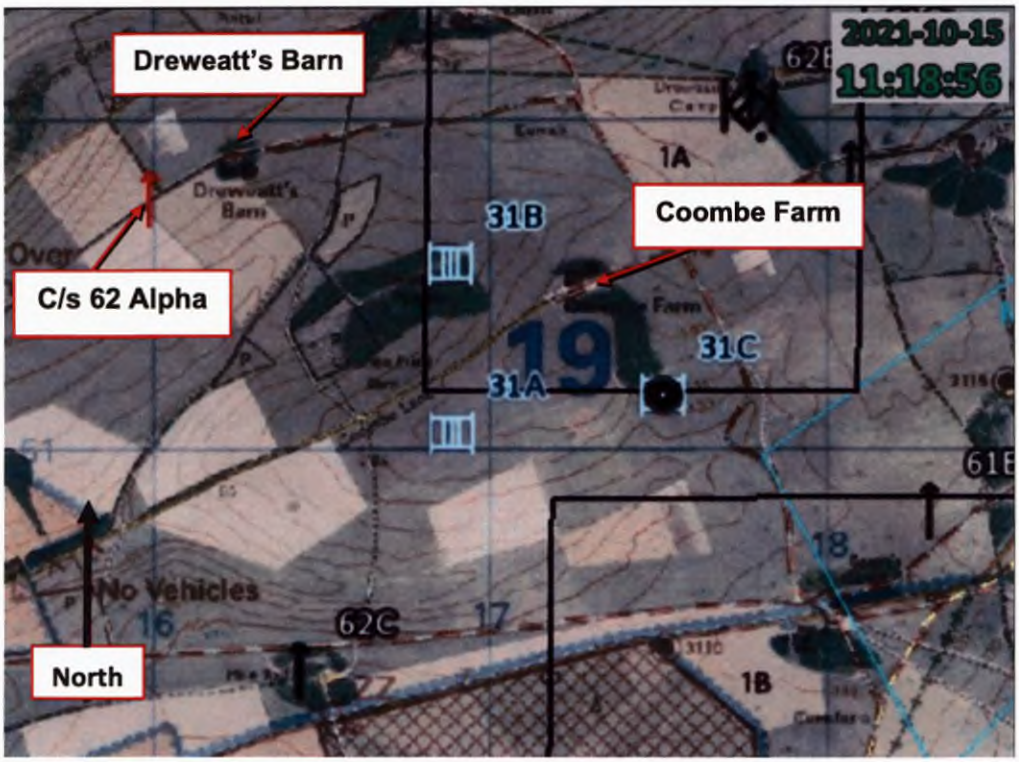


Figure 1.4.10: C/s 62 Alpha and relevant KRH BG positions at 11:19.



Figure 1.4.11: Key for TES mapping.

1.4.119. Within Figure 1.4.10 the red upward facing arrow symbol (Figure 1.4.11) has been confirmed as representing the signal received from Pte Watson-Pickering's AIMS. As he did not dismount from the vehicle at any time after this point, the panel considers this symbol to represent the vehicle's position from here on. The KRH BG Challenger 2 (CR2) main battle tanks are symbolised in light blue, and each has their c/s displayed nearby. Exhibit 010 Exhibit 189

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1.4.120. In Figure 1.4.10, the symbol for c/s 31 Charlie has black circles over it which denotes that they were firing their weapon system. In this case, it was very likely that c/s 53 Bravo (not shown as its AWES wasn't functioning) was being engaged and 'destroyed' (the time was close to when it was reported as being 'destroyed' in the 1 YORKS Radio Log) and there were no other TFH callsigns in the area.

1.4.121. Soldier A noticed the KRH BG CR2s near Coombe Farm and decided that c/s 62 Alpha would engage them using it's AT-5 ATGMs. This was the first time they had stood in the turret whilst it was traversing. ATWES did not record any shots from c/s 62 Alpha at that point as, before it could fire, the comd of c/s 31 Bravo had sighted it, engaged, and then reversed back into a woodblock. C/s 31 Bravo then moved to flank c/s 62 Alpha but, when it emerged from the woodblock, c/s 62 Alpha had moved. The comd of c/s 31 Bravo stated that they had audio indications that they had hit c/s 62 Alpha. They considered that the crew of c/s 62 Alpha was aware that they had been hit because, as they went into the woodblock, they saw Soldier A orientate themselves towards c/s 31 Bravo and start to traverse the turret in their direction.

Witness 01
Witness 11
Exhibit 152
Exhibit 188
Exhibit 191
Exhibit 192

1.4.122. The TAGWES recorded two simulated 120mm rounds hitting and 'destroying' c/s 62 Alpha. This meant that it should not have been able to fire its weapon systems, and that it should have taken no further part in the exercise. This was also approximately the same time and location that Pte Watson-Pickering's AIMS equipment was reset (Figure 1.4.12).

Witness 01
Witness 11
Exhibit 083
Exhibit 152
Exhibit 188

Event List: Opfor Dismount

	From	To	Type	Message
2021-10-15 11:20:28	Opfor Dismount		Adm. ...	Reset at SU1560851467.
2021-10-15 11:18:28	Opfor Dismount		Adm. ...	Reset at SU1599051759.
2021-10-15 10:32:28	Opfor Dismount		Adm. ...	Reset at SU1735751482.
2021-10-15 09:56:28	Opfor Dismount		Adm. ...	Resurrect at SU173715147
2021-10-15 05:52:52	Opfor Dismount		Cheat	Player cheat (Battery tam
2021-10-14 15:05:28	Opfor Dismount		Adm. ...	Reset at SU1723651458.
2021-10-14 08:17:18	Opfor Dismount		Adm. ...	Reset at SU0069946263.
2021-10-14 08:12:24	dhughes	Opfor ...	Player ...	Status: Reset Opfor Dism
2021-10-14 07:24:55	Opfor Dismount		Cheat	Player cheat (Battery tam
2021-10-11 14:52:06	Opfor Dismount		Adm. ...	Reset at ST9522444239.

Figure 1.4.12: TES screenshot of Pte Watson-Pickering's AIMS resets.

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1.4.123. Figure 1.4.13 shows those positions and highlights the mandatory out-of-bounds area for all military users of SPTA. For safety reasons, EXCON implemented an additional 'break contact line' (shown as a dotted line running broadly north to south) to prevent units firing across or chasing/being chased across the River Avon and the A345. West of this line was designated a non-contact zone, although vehicles were able to position and/or transit through it whilst remaining clear of the out-of-bounds area.

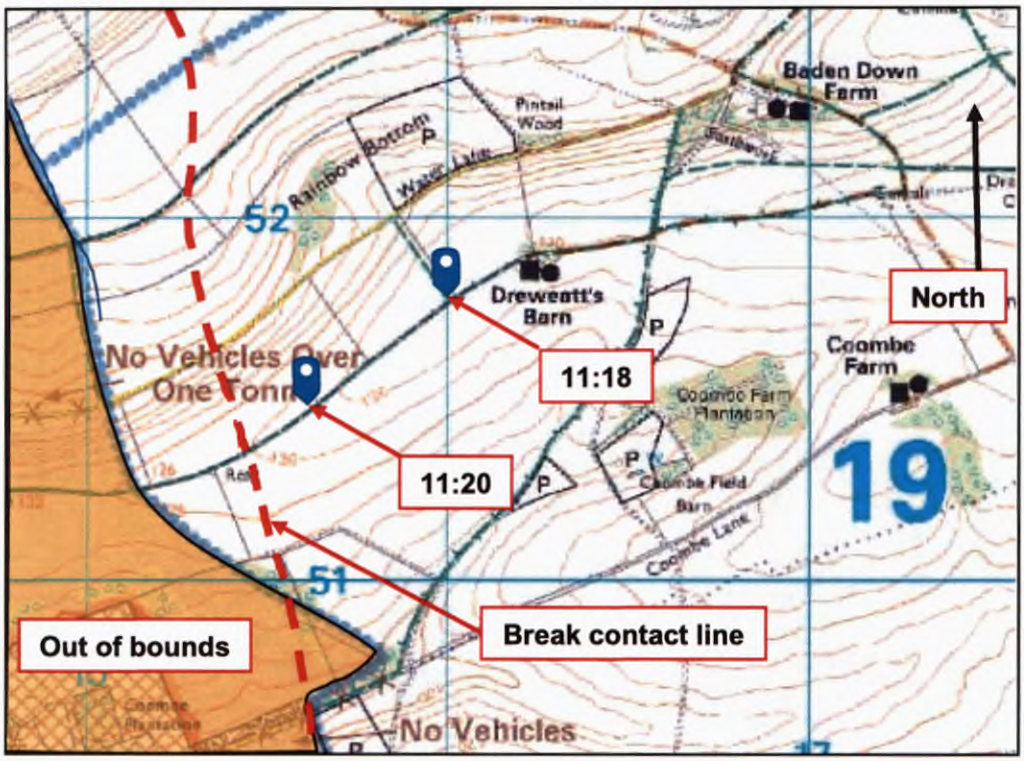


Figure 1.4.13: Location of Pte Watson-Pickering's final AIMS resets.

1.4.124. Although c/s 62 Alpha should have been 'destroyed' by its engagement with c/s 31 Bravo, because it was in gunnery mode, an automatic system reset was recorded 15 seconds later, and c/s 62 Alpha continued in the exercise. Having been instructed by Soldier C to exit the area via CP Bravo, Soldier A moved c/s 62 Alpha further west, crossed the break contact line, and stopped in an area beside a covered reservoir. This had a group of trees which provided camouflage, from the KRH BG, and cover, from their TES. This area was almost at the edge of the out-of-bounds area and within the non-contact zone denoted by the break contact line. C/s 62 Alpha fired four simulated AT-5 ATGMs at c/s 31 Charlie, which returned fire with five simulated 120mm rounds. This resulted in both vehicles being 'immobilised'.

Witness 01
Exhibit 005
Exhibit 010
Exhibit 152
Exhibit 192

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1.4.125. The white diagonal line across c/s 31 Charlie in Figure 1.4.14 denotes that they were immobilised, with the red flashes showing them being hit twice more in quick succession.

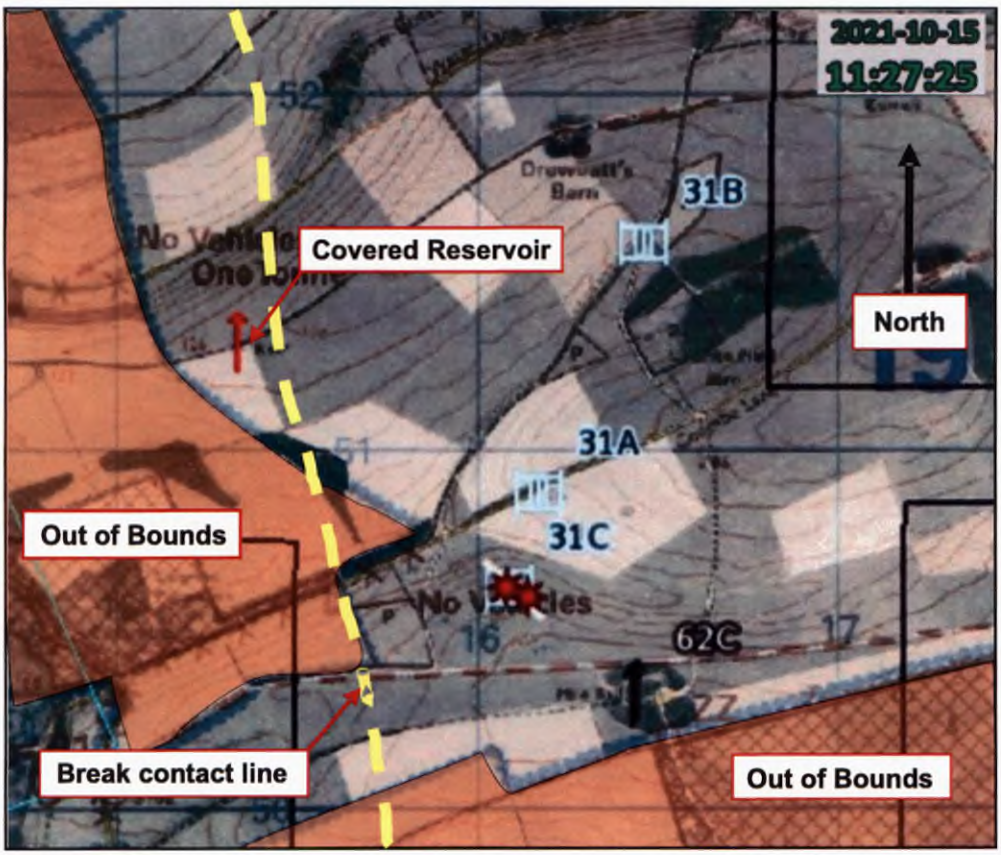


Figure 1.4.14: C/s 62 Alpha attacking c/s 31 Charlie from the covered reservoir.

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1.4.126. Instead of acting as an immobilised vehicle, c/s 31 Charlie kept moving and TAGWES degraded their situation to 'destroyed' as a penalty for cheating (the diagonal line across the c/s 31 Charlie symbol changed to black in Figure 1.4.15), which meant they could no longer fire their weapon systems. C/s 62 Alpha automatically reset (as they were in gunnery mode). C/s 31 Alpha had not positively identified where c/s 62 Alpha was shooting from and moved into the line of fire. C/s 62 Alpha fired four AT-5 ATGMs and c/s 31 Alpha was also 'destroyed'. Witness 13 Witness 20 Exhibit 010 Exhibit 189

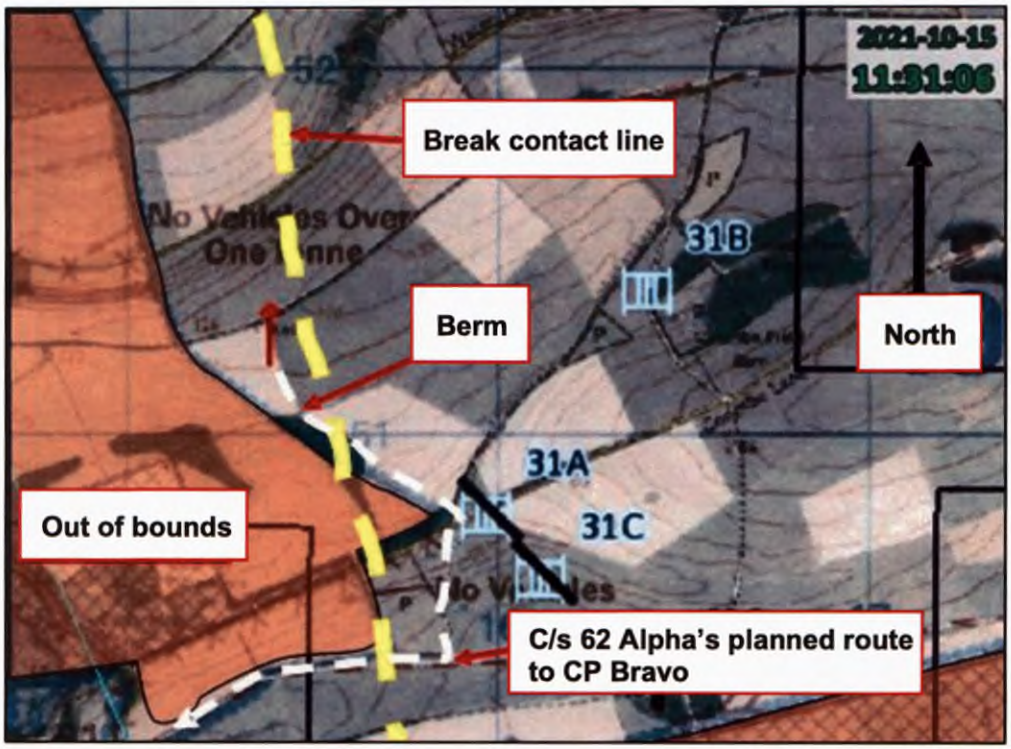


Figure 1.4.15: C/s 62 Alpha's planned route to CP Bravo.

1.4.127. Evidence indicates that at 11:31, having communicated their 'victories' to Soldier C, Soldier A was directed by Soldier C to leave the area via CP Bravo as CP Alpha hadn't been secured. They were then to join up with other elements of TFH, west of the River Avon. To get to CP Bravo, c/s 62 Alpha was required to take the route marked with a white dotted line on Figure 1.4.15. Witness 01 Exhibit 010 Exhibit 011

1.4.128. During this part of the journey, Soldier A stated that they were driving slowly and that the turret and weapon systems were used to scan the ground to the east between Dreweatt's Barn and Coombe Farm. This was approximately from the 7 o'clock position to the 9 o'clock position relative to the vehicle. Whilst looking for a suitable opening from the field onto the track that would take them up to CP Bravo, Soldier A realised that they were being engaged by what they thought was a further CR2 from the KRH BG. This was confirmed by the comd of c/s 31 Bravo who stated that they had seen c/s 62 Alpha near the bottom edge of the field Witness 01 Witness 11 Exhibit 010 Exhibit 152 Exhibit 192

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and fired several rounds into it but had not seen c/s 62 Alpha act as a 'destroyed' vehicle as they would have expected. Over a period of six minutes, TES recorded c/s 62 Alpha as being 'destroyed' seven times, 'immobilised' three times, being hit twice more by 120mm rounds and a further 41 hits and near misses from c/s 31 Bravo's coaxial 7.62mm machine gun. C/s 62 Alpha's TES was automatically reset five times during the encounter.

1.4.129. Figure 1.4.16 shows that c/s 62 Alpha was approximately 600m from the break contact line on their route to CP Bravo when Soldier A ordered c/s 62 Alpha to be turned around. They then moved out of the 'killing area' back the way they had come and towards the covered reservoir. Witness 01 Exhibit 010

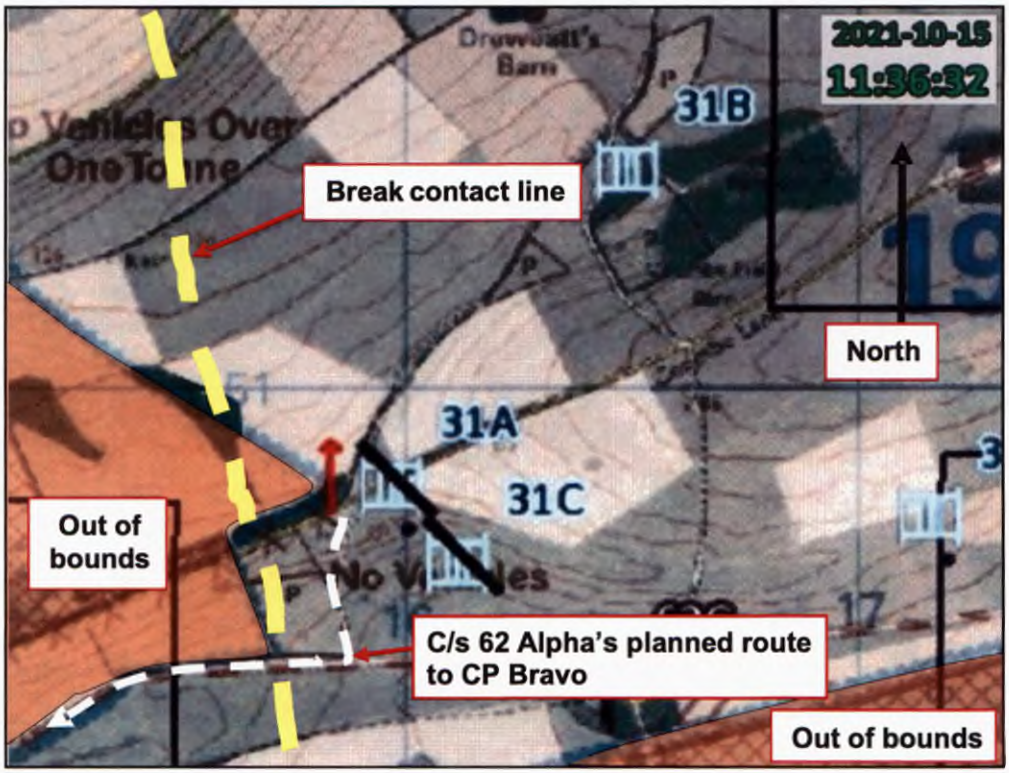


Figure 1.4.16: C/s 62 Alpha's route to CP Bravo.

1.4.130. There were conflicting accounts of the reasons why Soldier A turned c/s 62 Alpha around and headed north instead of continuing to CP Bravo: Witness 01 Witness 02 Exhibit 187

a. Soldier A stated that it was because the remaining route to CP Bravo was exposed and would have left them vulnerable to further attacks from the CR2 that they had not yet located, therefore, they were going to attempt to extract via CP Alpha instead; and

b. Soldier B stated that as they were extracting to CP Bravo they encountered three CR2s. They destroyed two of them but the last was hidden just behind some trees out of view. Soldier B knew they were in

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'God mode' because their TES kept indicating that they had been 'destroyed' and then regenerated shortly thereafter, so they thought they'd carry on 'destroying' CR2s.

1.4.131. The panel opined that it was extremely likely that the crew of c/s 62 Alpha knew that they had been 'destroyed' several times during this series of engagements and that they should have taken no further part in that phase of the exercise. This was due to the audible warnings that TES emits, and the statement from Soldier B confirming that they were in 'God mode'. The panel was not able to identify how Pte Watson-Pickering's AIMS was reset on multiple occasions. Cubic have confirmed that AIMS could only be reset via a TES control gun, carried by Observer Mentors (OMs) and selected personnel within participating units.[58] No TES control guns were identified in the area of c/s 62 Alpha at that time. It was unlikely that the crew had managed to obtain a control gun as the reconnaissance platoon was only issued with one, and it had not been loaned to the crew of c/s 62 Alpha. Another method of resetting AIMS was to take the battery out, but this would have been registered as 'tampering' by the system and this was not evidenced at 11:18 or 11:20 (Figure 1.4.12).

1.4.132. TFH was aware that c/s 62 Alpha had reported 'destroying' two CR2s which was surprising and not in keeping with their training or experience, however it was not doctrinally impossible and did not raise any alarm. Whilst TFH would not have been aware that the crew were exploiting the TES system to their advantage, it was the panel's opinion that they should have been suspicious and should have intervened. The HF Report stated that it was possible that the combination of having the TES equipment in gunnery mode and the repeated opportunity to engage (and defeat) the KRH CR2s served to create a sense of 'bravado' and excitement within the crew, with 'winning' unconsciously becoming the priority over safe conduct.

1.4.133. The panel concluded that the incorrect TES mode changed the emphasis for the crew of c/s 62 Alpha from safety to 'gameplay', and this may have created a feeling of over-confidence or 'bravado'. The panel finds that the incorrect TES setting of gunnery mode in c/s 62 Alpha was a **contributory factor**.

1.4.134. The panel opined that the decision to turn c/s 62 Alpha away from the closest exit and head back towards the exercise area was likely to have been an attempt to continue with the gameplay. The TFH chain of command did not actively address this decision or query this change of direction. The panel consider this lack of challenge to be a **contributory factor**.

[58] Dual-Purpose Long-Range Control Gun was mainly used by an OM to 'destroy' or reset vehicle TES at up to 1km or personnel TES up to 100m away.

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1.4.135. **Recommendation. The Director Land Warfare should ensure that simulated engagement systems software/equipment can be remotely configured or disabled to allow EXCON more effective control.**

1.4.136. Soldier A stated that as c/s 62 Alpha had turned to the left at the bottom of the hill, the gun had been traversed across the front of the vehicle from the 9 o'clock position to the 3 o'clock position. C/s 62 Alpha then followed its route back up the hill towards the covered reservoir. Soldier A told Soldier B to scan their arcs towards the threat (the KRH BG) which would have been broadly to the east. The comd of c/s 31 Bravo stated that they saw c/s 62 Alpha manoeuvring away from the area and noticed that its turret was facing to the right-hand-side of the vehicle (to the east). Soldier B stated that the turret was over the rear deck by the time the vehicle had reached the edge of the woodblock (approximately 500m away). Soldier A realised they had broken contact with the KRH BG CR2 that had been firing at them and ordered c/s 62 Alpha to stop and reset. Soldier B stated that the reason for this stop was because Soldier A wanted to scan the area of Coombe Farm to attempt to locate and 'destroy' c/s 31 Bravo. Witness 01 Witness 02

1.4.137. Soldier A stated that they told Soldier B to move the gun to the 6 o'clock position and then told Pte Watson-Pickering to line up an approach to the berm (Figure 1.4.17). This was the entrance into open fields with no cover and little camouflage until they reached the covered reservoir. At this point Soldier A had effective communications (intercom) with the whole crew, the vehicle was working as expected, and they had no concerns about the way things were progressing.[59] Witness 01 Witness 02



Figure 1.4.17: Looking west along the berm.

[59] See Section 4 – Safe Equipment for details regarding the intercom.

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1.4.138. If the turret was traversed to the 6 o'clock position, a large stowage container on the rear of the turret, known as the OTIS Bin, would have completely covered the area over the driver's hatch and the driver's head would be below it (Figure 1.4.18). The normal procedure for this would be to move the driver's seat to the 'lower' setting and adopt the head down position where the driver would be completely enclosed by the vehicle with the hatch closed above their head. They would then use the periscope (known as the Vision Block) to see in a forward direction (Figure 1.4.18).

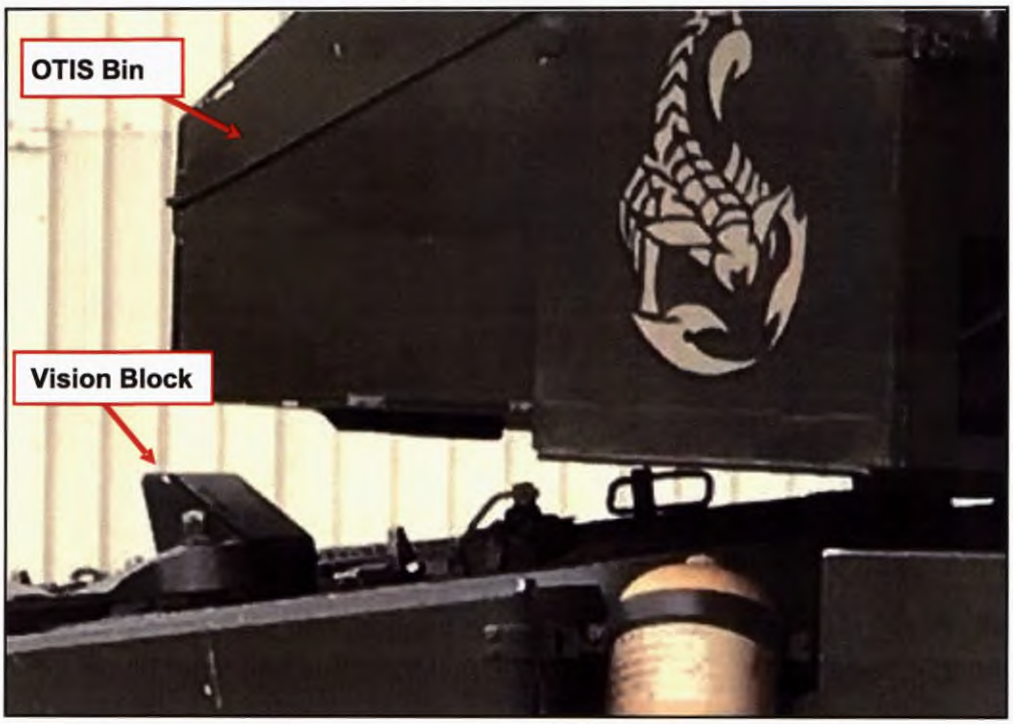


Figure 1.4.18: Driving 'head down' with the turret at the 6 o'clock position.

1.4.139. As the vehicle had stopped, the panel believe it likely that Pte Watson-Pickering would have had sufficient time to move the seat to the 'lower' setting (a process completed in a few seconds), if he hadn't already done so. The seat was found to be in the 'upper' setting at the accident site which, with the testimony from the comd of c/s 31B, leads the panel to opine that it was likely that the crew did not traverse the turret to 6 o'clock at any point.

1.4.140. The panel concluded that Soldier A and Soldier B were attempting to locate c/s 31 Bravo as they set off from the woodblock and proceeded up the hill toward the ridge line. C/s 62 Alpha was about to enter open ground with no obvious obstructions that could foul or strike the gun barrel at any angle of traverse. The panel opined that it was more likely than not that the turret was traversed to the 3 to 4 o'clock position following the stop at the woodblock and that Pte Watson-Pickering maintained his seat in the 'upper' position. The panel finds

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that Pte Watson-Pickering's seat position with the turret unlocked was an **aggravating factor.**

1.4.141. **Recommendation. The Assistant Chief of Staff Equipment (Field Army) should update Combat Vehicle Reconnaissance (Tracked) Scimitar operating instructions, relevant instructional documentation and learning specifications, so that the driver is head down whenever it is possible for the turret to rotate in order to ensure driver safety.**[60]

1.4.142. Although from Figure 1.4.17 the berm appeared innocuous and insignificant, for a Scimitar it had a pronounced effect on the attitude of the vehicle when crossing it, and any attempt to do so at speed would have caused an uncomfortable ride for the crew. Soldier B stated that they were sat down at the time but not wearing their harness as the vehicle hit what they described as a 'large bump'. Witness 01 Witness 02

1.4.143. Soldier A was standing in the turret during the crossing. At this point the accounts from Soldier A and Soldier B differ. Soldier A stated that they told Soldier B to 'scan their arcs' for the KRH BG (approximately the 3 o'clock position). Soldier B disputed that they traversed the turret at any point whilst the vehicle was moving and that it was fixed at approximately the 5 o'clock position as they knew that traversing the turret whilst the vehicle was moving would be dangerous. Witness 01 Witness 02

1.4.144. Soldier A stated that after the berm, Pte Watson-Pickering accelerated excessively towards the top of the hill (a relatively shallow gradient with a convex ridge) and did not respond to their repeated orders to slow down; Soldier B broadly agreed with this account. Soldier A stated that they could look down and see the top of Pte Watson-Pickering's helmet and that he appeared to be sitting normally (not slumped or otherwise visibly in distress), but that it was impossible to see Pte Watson-Pickering's face from their elevated position. They also said that the vehicle was moving too quickly for it to be safe for them to climb out of the turret and physically check on Pte Watson-Pickering from the front deck of the vehicle. Witness 01 Witness 02

1.4.145. There was no evidence to suggest that Pte Watson-Pickering would wilfully disobey repeated orders to slow down. As excessive speeding was raised by both Soldier A and Soldier B, the potential theories for this are considered below:

a. **The orders were not heard.** Pte Watson-Pickering had been following all orders to that point and had stopped the vehicle under direction from Soldier A just minutes previously. Although there were issues with the intercom in the vehicle, there was no evidence that it materially impeded the flow of communication to and from Pte Watson-

[60] This recommendation may be overtaken by events due to the forecast out-of-service date of March 2023 for CVR(T).

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Pickering. There was no technical reason why repeated orders would have gone unheard. Pte Watson-Pickering had a known hearing impediment in his right ear (see Section 3 – safe person). This hearing loss was insufficient to cause him to be medically downgraded and he had been following orders without cause for concern. There was no medical reason why repeated orders would have gone unheard. This theory was discounted from further consideration.

b. **Loss of control.** If Pte Watson-Pickering was incapacitated whilst crossing the berm and was unable to control the vehicle, it would be unlikely that he was able to continue to press the accelerator pedal with sufficient force to accelerate c/s 62 Alpha up the hill. Similarly, it is unlikely that he would have been able to change gears after the berm which required a definite input at the correct part of the engine power band to continue to accelerate c/s 62 Alpha. If Pte Watson-Pickering had not been able to change gears after crossing the berm, it was most likely that the vehicle would have been found in 3rd gear (the most likely gear for crossing the berm). However, following the extraction of Pte Watson-Pickering, the vehicle was found to be in 5th gear. It was the opinion of the panel that the maximum speed of the vehicle in 3rd gear would have been approximately 10 mph. This would have meant that it would have taken approximately 63 seconds to drive the 280m from the berm to the covered reservoir. At this speed it would have been possible for Soldier A or Soldier B to climb on to the front deck of the vehicle and check on Pte Watson-Pickering. This theory was discounted from further consideration.

c. **Mechanical issues.** If the accelerator pedal or mechanism had become stuck, effectively causing the engine to over-rev, then Pte Watson-Pickering would have been able to activate the Fuel Cut-Off Control by his right shoulder. If this hadn't worked, then they were in an open field where they could have driven in circles whilst they worked out a better plan. Ultimately, the panel assesses that the vehicle would have been found over-revving after the accident. This was not the case so was discounted from further consideration.

1.4.146. With all probable causes for excessive speeding being discounted, the panel opined that it was unlikely that the vehicle was speeding excessively as they approached the top of the hill. The panel finds that the speed of approach towards the top of the hill was **not a factor**.

1.4.147. Soldier B stated that whilst c/s 62 Alpha was travelling up the hill it hit a large bump and the turret rotated anticlockwise from the 6 o'clock to the 2 o'clock or 3 o'clock position without warning, and without their input via the traverse handle. This un-demanded anticlockwise turret rotation was disputed by Soldier A. Witness 01 Witness 02 Exhibit 103

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1.4.148. This un-demanded turret rotation could not be replicated during two separate re-enactments, nor could a bump, or other significant change in topography, be identified that could have unsettled the vehicle. Further, no technical reason for an un-demanded turret rotation could be identified.

1.4.149. The panel concluded that an un-demanded turret rotation on the way up the hill was extremely unlikely. Therefore, the panel finds that this was **not a factor**.

The accident

1.4.150. At 11:37 c/s 62 Alpha exited the field and turned left (west) onto a single-lane byway by the covered reservoir (Figure 1.4.19) at a speed estimated by the Wiltshire Police Forensic Crash Investigation Unit (FCIU) to be between 19 mph and 21 mph. The speed limit for SPTA and c/s 62 Alpha was 30 mph.[61]

Exhibit 010
Exhibit 193



Figure 1.4.19: View of overgrown covered reservoir and indication of c/s 62 Alpha's direction of travel on to the byway.

[61] C/s 62 Alpha had been modified so was not subject to the SNvE restricting CVR(T) vehicles to a maximum speed of 20mph.

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1.4.151. The FCIU stated that the turret was traversed to the right, at approximately the 2 o'clock position. At this angle, the gun barrel projected over the right-hand-side of the vehicle by approximately 1 metre. A mature hawthorn tree was very close to the right side of the track (Figure 1.4.20) and the gun barrel collided with this as the vehicle passed. Exhibit 013 Exhibit 193



Figure 1.4.20: Looking west towards the hawthorn tree with which c/s 62 Alpha collided.

1.4.152. The collision caused the turret to rotate in a clockwise direction, the OTIS Bin on the back of the turret struck Pte Watson-Pickering on the head just below his helmet and the Forensic Pathologist noted that this caused fatal injuries to him either instantaneously, or near instantaneously. Exhibit 012

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1.4.153. The vehicle then veered off the track to the north and came to an uncontrolled stop in a field at the approximate location shown in Figure 1.4.21. Despite the rural location, an ambulance arrived within 19 minutes of the first emergency phone call.

Exhibit 009
Exhibit 013
Exhibit 014
Exhibit 017
Exhibit 018
Exhibit 019
Exhibit 028
Exhibit 030
Exhibit 194
Exhibit 195
Exhibit 196

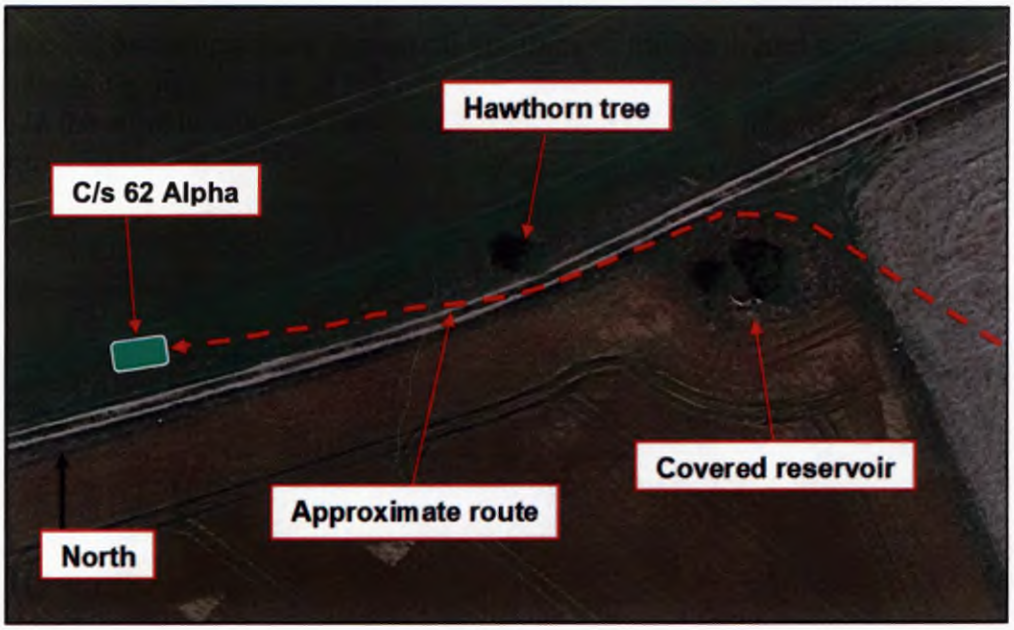


Figure 1.4.21: Aerial view of the accident site.

1.4.154. The FCIU estimated the position of the gun barrel from scuff marks on the hawthorn tree and witness marks evident on the gun barrel. There was no reason for the gun barrel to be in the 2 o'clock position so it was highly likely that the turret was in the process of traversing anticlockwise to the 12 o'clock position. The panel was not able to conclusively establish the reason why the turret was being rotated and it remained possible that c/s 62 Alpha was either leaving the area and preparing for the long drive to regroup with TFH via CP Alpha, or they were preparing to attack c/s 31 Bravo. As Soldier B would have been 'head down' inside the turret (it was not possible to operate the traverse handle whilst 'head up'), they would not have had the situational awareness to have decided when to bring the gun to the front. If Soldier B had been required to continue looking out for c/s 31 Bravo at this point, the natural tendency would have been for Soldier B to have traversed the gun in a clockwise direction as c/s 62 Alpha started to turn left. As the turret was being traversed in an anti-clockwise direction (evidenced by it being at the 2 o'clock position), it was highly likely that the act to bring the gun to the front was made under the direction of Soldier A.

1.4.155. The panel concluded that immediately before the accident, the gun barrel was being moved forward (in an anti-clockwise direction), and that, at the point of collision, c/s 62 Alpha was travelling at approximately 20mph, with the gun

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barrel at the 2 o'clock position. The panel finds the position of the gun barrel to be the **causal factor**.

1.4.156. **Recommendation.** A recommendation has already been made at paragraph 1.4.141 that the Assistant Chief of Staff Equipment (Field Army) should update Combat Vehicle Reconnaissance (Tracked) Scimitar operating instructions, relevant instructional documentation and learning specifications, so that the driver is head down whenever it is possible for the turret to rotate in order to ensure driver safety.

1.4.157. The FCIU stated that there was no evidence of avoiding action (violent steering or braking) at the accident site, so it was likely that Pte Watson-Pickering was unaware of the danger that the hawthorn tree presented. The hawthorn tree was approximately 28m from the covered reservoir and, approaching the corner of the field as c/s 62 Alpha did, the trees around the covered reservoir would have likely obscured the hawthorn tree to the north of the byway for much of that portion of the route. Witness 01 Exhibit 193

1.4.158. By the time the hawthorn tree was distinguishable from the trees around the covered reservoir, the crew would have had less than four seconds to react.[62] This would have been reduced to approximately two seconds when c/s 62 Alpha had straightened up on the byway. Although c/s 62 Alpha had been in the area just minutes before, it was likely that the crew would not have paid attention to the hawthorn tree. Their attention would have centred on the covered reservoir and the tactical advantage that it gave them. The reasons for the lack of avoiding action could include any, or a combination, of the following:

a. **Unseen gun barrel.** It was possible that Pte Watson-Pickering could not see the gun barrel. Once the gun barrel had left the peripheral vision (approximately 30° to 110° either side of where the driver was looking but could be as little as 5° under heavy concentration), there were no further visual cues of the gun barrel position, either inside the vehicle (such as a gun position indicator as there was in a CR2) or outside it. Soldier A and Soldier B both stated that the gun barrel would have been at the back (or towards the back) of the vehicle for much of the time since crossing the berm, and the FCIU have stated that the gun barrel would only just have been coming back into Pte Watson-Pickering's field of vision at the time of the accident;

b. **Supervision.** It was possible that Pte Watson-Pickering could not see the gun barrel and had received no verbal guidance on where the gun barrel was, or any indications of the additional clearance required, when passing the hawthorn tree. Soldier A stated that they didn't remember

[62] Accepting Wiltshire Police's estimate that c/s 62 Alpha was traveling at 20mph.

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much about the accident apart from repeatedly shouting at the driver to stop as they felt the vehicle was out of control;

c. **Experience.** It was possible that Pte Watson-Pickering could have seen the end of the gun barrel but was insufficiently experienced to judge the amount of its overhang and its relative proximity to the tree. This was not taught on the CVR(T) Driver course as this was routinely completed in the Spartan-variant (which did not have a turret or a gun barrel); and

d. **Risk perception.** It was possible that Pte Watson-Pickering had seen the gun barrel but did not correctly predict the results of a gun barrel strike. The tree potentially looked like an overgrown bush at the time (Figure 1.4.20) and, if he assumed that the tree was less substantial because of its appearance, it may be that he knowingly did not leave enough clearance.

1.4.159. At the time of the accident, it was almost certain that Soldier B was 'head down' inside the vehicle operating the traverse handle as was discussed at paragraph 1.4.154.

1.4.160. At the time of the accident, it was almost certain that Soldier A was 'head up' (they stated that they were not 'head down' at any point in the exercise). Although Soldier A would have had a complete 360° view of the area around c/s 62 Alpha, from the statements provided by Soldier B and Soldier C, it is likely that their main aim at the time was to find and 'destroy' c/s 31 Bravo. It was not possible for the panel to determine where Soldier A was looking as the vehicle rounded the corner onto the byway, but the panel opined that it was more likely than not that they were scanning in the direction of Coombe Farm to the east. They would have had a better view of c/s 31 Bravo from their more elevated position and would not have wanted to lose sight of the CR2 before giving Soldier B a fire control order to 'destroy' it.

1.4.161. At the time of the accident, it was almost certain that Pte Watson-Pickering was 'head up' despite Soldier B's belief that he had been 'head down' since they left Coombe Farm. Soldier A had been able to look down on to him through the gaps between the various storage bins as they came up the hill towards the covered reservoir and had stated that they had never seen anyone drive a CVR(T) from the 'head down' position. It was almost certain that Pte Watson-Pickering would not have received a fatal injury from this accident if he had been 'head down' at the time.

1.4.162. The panel concluded that:

a. There was sufficient room for the width of c/s 62 Alpha to avoid the hawthorn tree, but this was insufficient for the gun barrel as it was positioned. The panel finds the crew's combined situational awareness regarding the position of the gun barrel to be a **contributory factor**;

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b. At the time of the accident, it was more likely than not that Pte Watson-Pickering could not see the gun barrel and received little or no direction regarding its position. The panel finds the lack of supervision at this point to be a **contributory factor**; and

c. At the time of the accident the gun barrel was traversing towards the front of the vehicle. This was a **contributory factor.**

1.4.163. **Recommendation. The Director Land Warfare should ensure that turreted vehicle training includes a positive check regarding the position of the gun barrel on approach to an obstacle in order to reduce the risk of gun barrel/turret strikes.**

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Section 3 - Safe person

1.4.164. ACSO 1200 defined safe person as: Exhibit 039

> 'Personnel who have been given the appropriate information, instruction, training and supervision to enable then to carry out a specific activity as a competent person with the appropriate qualification, currency, maturity and experience.'

Safe person summary

1.4.165. This section examines the competence of those involved in both the accident (the crew of c/s 62 Alpha) and of their chain of command. It finds that none of the crew was fully competent and some were barely competent. It also finds that there was a significant lack of competence within their chain of command. There was also a lack of supervision or adequate rehearsals and the combination of these issues combined to create the conditions for the causal factor (paragraph 1.4.155) to occur. Observations and recommendations have been made to improve the assurance of distributed training, to align the training syllabus for the same functional role within the armoured infantry and armoured corps, and to ensure that all training meets the requirements of AVSOs.

Competence

1.4.166. DSA 01.1 Defence Policy for Health, Safety and Environmental protection stated that the HSE defined competence as: 'the ability to undertake responsibilities and perform activities to a recognised standard on a regular basis. It combines practical and thinking skills, knowledge, and experience'. It further stated that: 'This is broader and more demanding than suitably qualified and experienced personnel (SQEP) because it is a measure of personal ability to undertake a role and implies some form of verification of that ability.' Exhibit 200

1.4.167. ACSO 1200 stated that: Exhibit 039

> 'Competence is a vital element of safety. It is achieved by ensuring that all personnel, commensurate with the task, are qualified, experienced and current, and that they are appropriately supervised. The Training Requirements Authority (TRA) sets the standard for Special-to-Arm and equipment specific training. This is assured and monitored by the appropriate Army Competent Advisors and Inspectorate (ACAI) who have the overall responsibility for setting the safe standards by which capability is provided.'

1.4.168. AVSOs stated that: Exhibit 044

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'Competence is a vital element of safety. It is achieved by ensuring that all personnel, commensurate with the task, are qualified, experienced and current, and that they are appropriately supervised. The Training Requirements Authority (TRA) sets the standard for Special-to-Arm and equipment specific training. This is assured and monitored by the appropriate Army Competent Advisors and Inspectorate (ACAI) who have the overall responsibility for setting the safe standards by which capability is provided.'

1.4.169. AVSOs stated that: Exhibit 044

'A person is deemed competent by having the required qualification, experience, currency and rank and they have also received the appropriate information, instruction, training and supervision.'

1.4.170. AVSOs also stated that: Exhibit 044

'Only a person considered as SQEP may be tasked to carry out a particular activity.' And that 'where possible units are to ensure that any newly trained and appointed AV crew persons, that do not have any experience on the platform, are placed in an experienced crew to reduce the risk of accidents (example: newly trained and qualified CR2/CVR(T) Troop Leader paired with a qualified, experienced and current AV crew).'

1.4.171. PAM 21 provided definitions of the key elements of competence as: Exhibit 040

a. **'Qualified.** A qualified individual must have attended and passed one of the qualifying courses laid down in this Chapter and remained current';[63]

b. **'Authorised.** An authorised individual must have been trained and tested using the Course Folder issued by [Dismounted Close Combat Training Delivery Team] DCC TDT or [Mounted Close Combat Training Delivery Team] MCC TDT and be authorised by the Commanding Officer';

c. **'Experienced.** To be deemed experienced an individual must possess the knowledge and skill acquired through participation in or exposure to the same or similar training in that appointment on a qualifying/authorising course or over a period of time'; and

d. **'Current.** Regardless of rank and appointment, it was the individual's responsibility to remain current in all aspects of the role in which they are to be employed'.

[63] AFV operator courses are listed in AVSOs rather than PAM 21.

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1.4.172. The start state letter, dated 14 October 2021, from CO 1 YORKS to the Comd CRTC stated that 'I have checked and confirm that all personnel on the exercise are qualified, current and competent for the role in which they will be deployed.' Exhibit 053

1.4.173. As the accident occurred on a blank firing exercise, the panel have used PAM 21 definitions to analyse the evidence and determine the competence of the crew for the task they were given on the day of the accident in line with the CO's statement to the Comd CRTC. This was based on their qualifications, authorisation, currency, and experience. Additionally, as supervision could be used to de-risk activity using personnel who did not meet the requirements of the definitions, the panel decided that supervision was a further category for examination. Finally, as safety culture was a reflection of leadership (as per CGS's statement in ACSO 1200), the same analysis was applied to the personnel in the chain of command of the crew involved in the accident.

AFV tactics waiver

1.4.174. 1 YORKS stated that the Armoured Close Reconnaissance Commanders Course (ACRCC) was not mandatory as HQ ARMCEN was unable to provide sufficient places to meet the demand.[64] The panel believes that this was a misunderstanding of the letter issued by the LWC in April 2021 detailing the process to apply for a formal training waiver; it was not a blanket waiver.[65] Furthermore, this waiver application process only covered the Warrior AFV tactics courses and was issued to armoured infantry units. Units were required to formally apply to the LWC for each individual they wanted the waiver to apply to and waivers were granted for a maximum of 12 months. The LWC stated that they had not received any waiver applications from 1 YORKS. The panel also received evidence from the Reconnaissance and Armoured Tactics Division within ARMCEN, which conducted the ACRCC, stating that since August 2020 (approximately when Soldier A and Soldier F moved to the reconnaissance platoon), they had run three ACRCC courses. They also stated that each of these courses had spare capacity which had been advertised to the second-in-command of each armoured infantry battalion.[66] Witness 06 Exhibit 044 Exhibit 063 Exhibit 064 Exhibit 065

1.4.175. AVSOs paragraph 1-05 stated that: Exhibit 044

> 'An AV Commander is deemed to be fully competent when tactically trained by the appropriate ARMCEN delivered AFV tactics course (for RAC and Infantry turreted platforms) or by virtue of training to Training Level (TL) Bravo (other Arms and platforms). An AV Commander is

[64] The ACRCC was the authorised tactics course for RAC and armoured infantry Scimitar commanders.
[65] LWC_04_06_07_02 STT (MCC) Armoured Infantry Warrior Crew Commander Tactical Training Waiver dated 29 April 2021.
[66] The dates for the ACRCCs were: 2 November 2020 to 11 December 2020 (five unfilled spaces), 5 April 2021 to 14 May 2021 (five unfilled spaces) and 18 October to 26 November 2021 (two unfilled spaces).

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> restricted to only commanding, mounted and dismounted, the AV from point-to-point (in a nontactical scenario), supervising maintenance, and driving in extremis (when taught) until the appropriate tactical training has been completed.
>
> [Officers and soldiers] conducting tactical training [training objectives in order to] become a fully qualified Crew Comd, can do so only if authorised by their CO (as part BCS) or if they are on an ARMCEN centralised/decentralised [course].'

1.4.176. An entry in the 1 YORKS Capability and Personnel Working Group (CPWG) record of decisions for October 2021 was for the '[Training Officer] to back brief to [sic] CO on any further failures to load onto Mandated Courses. This then enables the CO to engage with higher authorities on the risk being managed at Unit level.'

1.4.177. The panel considers it was clear that 1 YORKS position regarding the perceived non-mandatory nature of the AFV tactics course was incorrect. This was based on a misunderstanding on the application process for the waiver from LWC, and the mistaken belief that it included Scimitar. It was acknowledged that the inflexibility of dates for the centralised ACRCC meant that it was difficult to synchronise with other activities planned within the unit. The AVSOs stated that, without having received and passed an approved AFV tactics course, comds were restricted to non-tactical commanding of the AV from point-to-point (which would result in a skill level below that required for participation in Mission Zero activities).

1.4.178. Whilst it was unclear what mandatory training was being referred to during the CPWG meeting in October 2021, it was evident that 1 YORKS leadership realised that they had not achieved all training that was required of them and were seeking to address it.

1.4.179. The panel concluded that 1 YORKS had an incorrect understanding of the training requirements and the LWC waiver application process, which resulted in an erroneous belief that the ACRCC was optional. The panel finds this to be an **other factor**.

1.4.180. **Recommendation.** A recommendation has already been made at paragraph 1.4.92 that the Deputy Chief of the General Staff should ensure that it is mandatory for personnel appointed to command and executive positions to be suitably qualified and experienced in the unit role in order to provide effective oversight and assurance of their subordinates training requirements.

Reconnaissance platoon candidates

1.4.181. The selection process for a position within the reconnaissance platoon of 1 YORKS commenced with the platoon identifying vacancies for high quality

Witness 05

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soldiers, and the companies within the battalion proposing personnel to fill them. At the rank of private, ideally the candidates would be taken from those whose performance and potential was above average and be someone who would be eligible to attend a junior non-commissioned officer course within a year. They would also have a track-laying vehicle (Category H) licence, or at least a car (Category B) licence, to reduce the training burden on the reconnaissance platoon. These soldiers would then be loaded on to a Light Role Reconnaissance Patrolman's Cadre (known as the 'Recce Cadre') which would assess their character and aptitude for working within that specialist area.[67] On successful completion of the 'Recce Cadre' soldiers would be transferred into the reconnaissance platoon and continue their training. Unsuccessful candidates would be returned to their parent company.

1.4.182. Although previously regarded as some of the more experienced personnel within the battalion, staffing issues within 1 YORKS led to some personnel being put forward for reconnaissance platoon vacancies who had arrived in the battalion from Phase 2 training at the Infantry Training Centre only four months beforehand, and without the desirable driving licences. The paucity of appropriately experienced candidates meant that the reconnaissance platoon was in the position of having to take any candidates the companies would offer, and the 'Recce Cadre' became a training course rather a selection course. Witness 01 Witness 02 Witness 05 Witness 06

1.4.183. After the accident, an entry in the CPWG's record of decisions for October 2021 was, 'All [companys] to support OC Quebec and overload the 'Recce Cadre' for 2022. Recce Platoon to be restored to the Premier Platoon of the [battalion].' Exhibit 085

1.4.184. Whilst the reconnaissance platoon had formerly been the premier platoon in the battalion, in recent years it had suffered from a lack of prioritisation and was reduced to taking any candidates offered by the other companys, regardless of suitability and experience levels. The intention of 1 YORKS to actively seek to restore the prestige of being a reconnaissance platoon soldier was good to note, but as the pressures on the workforce had not changed, the increased attention on the reconnaissance platoon was likely to have come at a cost to other areas of the battalion.

1.4.185. The panel **observed** that reconnaissance platoon candidates had fallen in quality over recent years, but 1 YORKS had recognised the problem and was actively seeking to address it.

[67] The Army used the term 'cadre' to mean a type of course which usually includes an element of assessment or selection to join a specialist unit or to achieve a higher rank.

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RAC and armoured infantry AV training differences

1.4.186. Although the RAC and armoured infantry had different approaches to the delivery of training (centralised v distributed), it had been expected that the courses they followed would be essentially the same, however, they varied in some noticeable areas.

1.4.187. **'In extremis' driving.**[68] The majority of personnel in the RAC started their careers as an AV driver and, by the time they reached the position of AV comd, they were expected to know how to operate the vehicle in an emergency. Personnel following the direct entry route to AV comd would not necessarily have developed these skills. Their comds' driving and maintenance (D&M) course should include an element on how to control and drive the vehicle 'in extremis'. Soldier A entered the training pathway as a direct entrant AV comd and stated that, by the end of their AV comd's D&M course, they had not even sat in the driving seat of the CVR(T) and they were unaware how the seat was adjusted, how the driver's controls were operated or how to start or stop the engine.[69] Following the accident, Soldier A stated that they were unaware of how to make the vehicle safe by applying the parking brake, putting the vehicle into neutral gear and turning the engine off.

Witness 01
Exhibit 044
Exhibit 075
Exhibit 219

1.4.188. Should the driver not be available or become incapacitated, having the AV comd trained in the basics of controlling the vehicle and making safe if needed would be advantageous. This would also provide the comd with a better insight into how a driver might respond to tasks and tackle obstacles. It would also allow them to appreciate any limitations (especially restrictions in vision) that a driver might be processing and understand when a comd's input to the driver would be key.

1.4.189. **Fire and movement**. AVSOs required that Scimitar gunners and comds complete and pass the CVR(T) Gunnery Course. In this way they were both trained to understand their relative roles whilst operating the vehicle's primary, secondary and defensive weapons systems. A difference between the RAC and armoured infantry courses was that the armoured infantry trained their gunners and comds on the same course. This was only to the initial gunner live firing exercise (IGLFX) level. The RAC trained their gunners and comds separately with the comds achieving the course firing exercise (CFX) standard. This included range management qualifications and proof of competency for commanding an AFV on a fixed arc range through fire and movement exercises. For the RAC comd, this would provide the first formal opportunity to command

Exhibit 044
Exhibit 226
Exhibit 233

[68] 'In extremis' is described in AVSOs as situations where fire, flood, enemy action or any other circumstance specific to the vehicle location that could cause death or injury to the crew or persons in the immediate vicinity of the vehicle which requires the vehicle to be moved, and a trained driver is not available to move the vehicle, and the member of the AV crew has received the appropriate training to manoeuvre the vehicle.'
[69] Starting and stopping the vehicle was also a mandatory element of the CVR(T) Gunnery Course so it is unclear how Soldier A missed out on this training twice.

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and manage the full crew as they moved between different firing points. Courses that only required IGLFX did not have that element as the vehicle remained static throughout all firing serials. Therefore, a driver was not required to be in the vehicle. This was the case for the CVR(T) Gunnery Course that Soldier A, Soldier B and Soldier F attended.

1.4.190. Without the need to conduct serials from different firing points, and potentially not having a driver present in the vehicle, it was understood that on courses culminating in the IGLFX, the turret would have likely only been traversed by a minimal amount throughout. This would not support the comd or gunner in learning the habit of checking that the driver was 'head down' or that they were aware that the turret was about to rotate, and that the platform was making ready to fire.

1.4.191. **Communications and information systems (CIS) training.** In common with most AFVs, Scimitar was fitted with a suite of CIS which facilitated improved situational awareness as well as command and control capabilities. The equipment and software applications were complex and AVSOs required dedicated training on both to make use of the benefits they provided. Although the RAC complied with AVSOs in full, the content of armoured infantry syllabus did not include training on use of the applications.

Exhibit 044
Exhibit 226
Exhibit 233
Exhibit 243

1.4.192. This left the armoured infantry crews without mandatory training on the applications that they were required to operate and was, therefore, not compliant with AVSOs. The panel was not able to establish how long this had been an issue for but understood that it was not limited to CVR(T) but affected all armoured infantry AFV crews.

1.4.193. The courseware that was taught to the armoured infantry appeared to focus on treating elements of the vehicle in isolation. The D&M course taught the comd their role in operating a hull without a turret and, in practical terms, the armoured infantry gunnery course taught the comd their role in operating a turret without a hull. There was no module that put these two roles together under a controlled environment until attendance on the ACRCC. The ACRCC could not be convened at unit level and was, therefore, the course most likely not to be completed by armoured infantry units due to unit pressures of time and competing priorities.

1.4.194. The panel **observed** that the differences between RAC and armoured infantry courses resulted in the armoured infantry AFV crews being less prepared, less experienced, and less qualified for their role compared to their RAC counterparts.

1.4.195. The panel concluded that it was possible that none of the armoured infantry crews operating turreted platforms were fully trained to do so as the CIS

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training package provided to them did not include training on the software applications. The panel finds this to be an **other factor**.

1.4.196. **Recommendation. The Director Land Warfare should be assured that the training for all turreted platform crews ensures that all personnel are appropriately qualified and experienced.**

1.4.197. **Recommendation. The Deputy Chief of Staff Field Army should acknowledge and manage the risk for all armoured infantry turreted platform crews until such time as they can be appropriately retrained in communications and information systems in order to ensure that they can continue to train in the interim.**

1.4.198. **Recommendation. The Director Land Warfare should ensure that infantry communications and information systems training includes all aspects required by Armoured Vehicle Standing Orders in order to be assured that all infantry turreted platform crews can operate the full suite of capabilities provided to them.**

Training delivery deficiency

1.4.199. A training delivery deficiency (TDD) was the name given in ACSO 3249 when one or more training objectives (TOs) from a training course had not been completed within the agreed timeframe.[70] The responsibility for any risk generated by a TDD was held by the TP/unit. LWC Standard Operating Instruction (SOI) 325 issued in July 2020 required that TDDs were to be highlighted to the training delivery authority, and that no course qualification could be awarded where such training deficiencies existed. Units were authorised to use a 'part-trained' person for those elements of the role that they had been trained following appropriate risk mitigation under the duty holding framework. The TDD was expected to be closed by successful completion of the TO(s) within 12 months. LWC SOI 325, paragraph 14c stated:

Exhibit 062
Exhibit 071
Exhibit 225
Exhibit 270

> '…this process is time limited; any student carrying TDD that are not made up within 12-months of the end of the course they attended will be required to complete the course again in its entirety.'

The SOI did note that the TRA could authorise an extension to the 12-month period on a case-by-case basis.

1.4.200. Due to the catastrophic failure of one of the final drive units on a CVR(T) which caused a serious accident, an urgent safety notice via email

Exhibit 076
Exhibit 079
Exhibit 256

[70] ACSO 3249 (Conduct of Army Training) was the additional Army policy to complement the Defence Systems Approach to Training and set the requirements for the management and conduct of all Army training activities.

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(SNvE) was issued on 1 December 2017.[71] This stated that the maximum speed limit for CVR(T)s had been restricted to 20 mph (5 mph in the vicinity of pedestrians) and that they were prohibited from using the public highway. As public highway driving was one of the TOs for the CVR(T) driving and maintenance course, from that date, all CVR(T) driving and maintenance courses for drivers and comds had, or should have, concluded with the students receiving a TDD for that part of the course. Upgraded final drive units started to become available from late 2019 and any driver or comd using an upgraded vehicle was not subject to the restrictions and would be able to clear the TDD.[72]

1.4.201. LWC SOI 325 ensured that personnel were not awarded a qualification by any LWC operating group until they had fully completed a course of training.[73] It then highlighted an option for duty holders to continue to use a person who could not be considered 'safe' under the requirements of the safe system of work (SSW). However, in cases where the TDD could not be closed for an extended duration, such as where a vehicle type was not permitted to use public highways due to a requirement to re-engineer a key component, the SOI was excessively rigid. Should the re-engineering project not be fully implemented within the year, the students would be required to retake the full course of training which was detrimental to training resources. As a TDD had a maximum duration of 12 months, a more pragmatic approach in the case of enduring safety notices would have been to extend the duration of the TDD to the life of the notice plus 12 months.

1.4.202. The panel concluded that the rigidity of LWC SOI 325 was likely to cause needless burden on the training regime by cycling personnel through the same course on a yearly basis. The panel noted this to be an **other factor**.

1.4.203. **Recommendation. The Director Land Warfare should review the validity period of training delivery deficiencies to account for training limitations imposed by safety notices in order to prevent needless repetition of training.**

1.4.204. **'Pass with training deficiency'.** Some of the legacy AV courses on the Training and Finance Management Information System (TAFMIS) provided by the Defence Learning and Management Capability had not been updated in line with LWC SOI 325, and the options available to DTC were to award either 'fail', 'pass' or 'pass with training deficiency'. 'Pass' and 'pass with training deficiency' resulted in the qualification being awarded. However, the process for managing a

Exhibit 062
Exhibit 220
Exhibit 225

[71] A final drive unit is the part of the vehicle that transfers power from the engine to the sprocket wheel at the front of the track. On most AVs there are two final drive units, one for each sprocket to allow the tracks to move independently which allows an AV to turn.
[72] Soldier A was trained on an un-modified vehicle in September 2020 as the upgrade project had a lifespan of approximately 3-years from https://www.janes.com/defence-news/news-detail/ricardo-delivers-drives-to-keep-cvrt-in-uk-service (accessed 4 August 2022).
[73] The LWC operating groups were the Army Aviation Centre, the Combat Manoeuvre Centre (formerly the Armour Centre and the School of Infantry), the Royal School of Mechanical Engineers, the Collective Training Group, the Defence College of Logistics Policing and Administration, the Land Command and Staff College and the Education and Training Group.

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'pass with training deficiency' would be for the qualification to be rescinded after 12-months if a unit did not do one of the following: notify the DTC of training completion, apply for an extension, or repeat the course in full. HQ ARMCEN noted that the award of 'pass with training deficiency' had led to the closure of very few TDDs. When the panel visited HQ ARMCEN on 4 October 2022, they were tracking over 7,000 individuals who had a total of over 10,000 open TDDs.

1.4.205. With the 'pass with training deficiency' award being contrary to LWC SOI 325 since July 2020, it's continued presence on TAFMIS and potential for further use was frustrating HQ ARMCEN's attempt to draw down the number of open AV-related TDDs. There was no obvious reason for this award to remain an option on the system and removing it would reduce the likelihood of personnel who had not completed their training being awarded the qualification. Expired individual 'pass with training deficiency' awards remained on TAFMIS and contributed to an overly optimistic picture of the number of AV-qualified personnel in the Field Army.

1.4.206. The panel concluded that the 'pass with training deficiency' award was now obsolete and finds this to be an **other factor**.

1.4.207. **Recommendation. The Director Information (Army) should ensure that all non-policy-compliant awards are removed from all training management information systems in order to ensure that only fully trained personnel are given a qualification.**

1.4.208. **Recommendation. The Deputy Chief of Staff Field Army should ensure that 'pass with training deficiency' awards are reviewed in order to assure that only personnel who have completed all training objectives for a course have been awarded a requisite qualification on Training and Financial Management Information System and Joint Personnel Administration.**

1.4.209. **Training closure procedure.** For armoured vehicle training at armoured infantry unit locations, the course instructor would complete the DTC Course Closing and Results Form included in the DTC Aide Memoire, noting any TDDs. The course officer would then sign the document to certify that the course information was correct, that all relevant course paperwork had been archived, that any TDDs had been reported on the form and copies added to the unit's TDD register, and the student's personnel file had been updated accordingly. The form would then be sent to the DTC that was required to conduct a 100% desk level audit on all DT courses and record the results on TAFMIS. The DTC would then award the appropriate competency which could then be seen by the unit using the Joint Personnel Administration (JPA) management information system. If the qualification was related to driving or commanding a vehicle, an entry would then have been made on the individual F/MT 600 (MOD Motor Transport Driver's

Exhibit 044
Exhibit 070
Exhibit 225
Exhibit 234

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Permit) showing which vehicle types the person was now authorised to drive or command. For continuation training, it was both the chain of command's and vehicle comd's responsibility to ensure that all individuals were appropriately trained and that this training was accurately recorded.

Capability and personnel working group

1.4.210. Until February 2021, 1 YORKS held a quarterly CPWG. From February 2021 onwards Soldier E decided that the CPWG should be a monthly update where each company comd was required to outline the status of their company's current role qualifications.[74] This meeting discussed the issues affecting readiness across several areas for the battalion, and preparedness for Ex IS was a natural, but not exclusive, focus for it. A record of decisions was then compiled after each meeting. Figure 1.4.22 shows the status of Quebec Company, as presented at the February 2021 CPWG meeting, showing the start point in their preparations for Ex IS.[75] 1 YORKS was unable to provide an updated slide to show the status closer to the start of Ex IS which would have highlighted any training and qualification progression. The reconnaissance platoon was only required to provide five crews for Ex IS as 3rd (UK) Division was unable to resource the sixth Scimitar requested on the original statement of requirement.

Witness 04
Exhibit 084
Exhibit 085
Exhibit 239

[74] Soldier E was an experienced officer who commissioned into 1st Battalion, The Green Howards (Alexandra, Princess of Wales's Own Yorkshire Regiment) in 2003 in the light role. The battalion was amalgamated into 2nd Battalion, The Yorkshire Regiment (Green Howards) in 2006 and then further amalgamated into 1st Battalion, The Yorkshire Regiment in 2013. They had completed multiple operational tours including Northern Ireland and Afghanistan. They converted to armoured infantry for one tour as a company comd before later converting for tour in the light mechanised role. They had recently completed a staff tour as the Senior Requirements Manager for the Warrior Capability Sustainment Programme and AJAX (a future series of AVs). At the time of the accident, Soldier E was CO 1 YORKS and CO TFH.

[75] For clarity with Figure 1.4.22, the colours 'yellow' and 'amber' were used interchangeably, and both are represented by 'amber' in the key.

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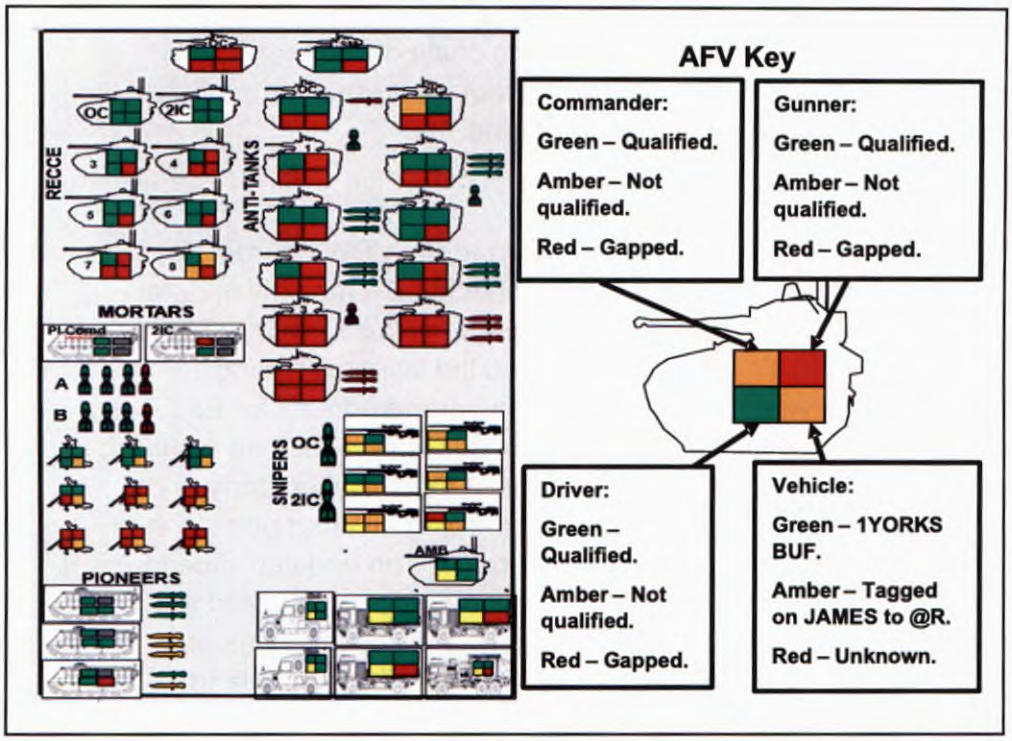


Figure 1.4.22: February 2021 CPWG summary for Quebec Company.

1.4.211. The information provided to the CPWG was not corroborated via other sources such as the 2IC, the adjutant, the training officer, or the training wing and some of the information accepted at the time was incorrect. The CPWG slides provided to the panel did not provide sufficient granularity as they did not provide any breakdown of individual qualifications required for each post (where there was more than one) or show where individual currency was being tracked. Exhibit 210

1.4.212. Figure 1.4.22 included the representation that all reconnaissance platoon Scimitar comds were fully qualified and that they could provide five fully qualified crews. Neither of these were correct in February 2021, nor were they correct at the time of the accident.

1.4.213. The Human Factors (HF) Report reasoned that, because of resourcing issues within 1 YORKS, there was an overreliance on SME advice when conducting management checks. Also, the HF Report noted the lack of qualifications within the hierarchy and provided a graphic highlighting these and other issues concerning the reasons why personnel did not complete their mandatory training (Figure 1.4.23). Exhibit 086 Exhibit 146

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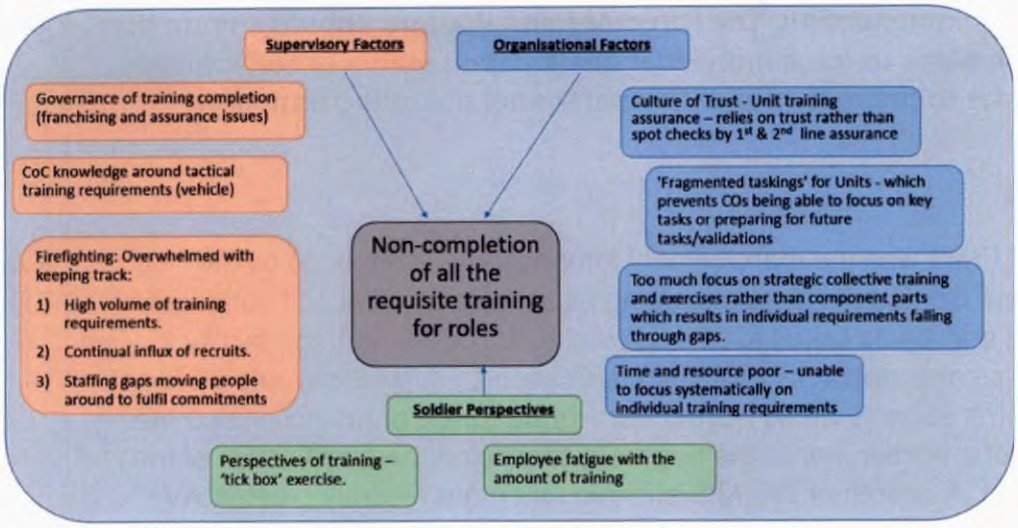


Figure 1.4.23: Causes of non-completion of required training.

1.4.214. Whilst the red areas shown in Figure 1.4.22 indicated that some issues within Quebec Company had been recognised and highlighted to the CPWG (and, therefore, the CO), inaccuracies in the way that qualifications were portrayed as a singular entry masked a deeper problem with the understanding of the full training requirements set. Some comds were shown as fully qualified having done only one of the four mandated courses which presented an optimistic picture of unit readiness to the CO. This was an indicator that there was little awareness of the requirements for each role, nor understanding of the actual position regarding the qualification status of each individual, at the start of Mission Zero.

1.4.215. As the CPWG information was not being corroborated by other sources, once incorrect or misleading information entered the system it largely went unnoticed. This pointed to a lack of governance of training completion within the unit. The CO could reasonably have expected others with responsibility for training matters within the unit to have been able to challenge the information being presented to the CPWG. AV qualifications within the executive element of the unit were scarce and the panel opined that there was insufficient professional competence within the upper levels of the hierarchy to question the information that was presented to the CPWG. The CPWG was in effect a management check, but the incomplete and inadequate nature of the analysis provided the basis for an overly optimistic picture on which the CO determined that the unit was ready to act as TFH on Ex IS.

1.4.216. The panel concluded that a lack of effective internal governance of training and qualification within 1 YORKS resulted in unqualified personnel being used on Ex IS. The panel finds this to be a **contributory factor**.

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1.4.217. **Recommendation. The Director Land Warfare should ensure that the system in place to track individual qualification status is sufficiently robust in order to prevent unqualified personnel operating armoured vehicles.**

TAFMIS/JPA

1.4.218. TAFMIS was the management information system used by the Mounted Close Combat DTC for managing all aspects of initial and subsequent trade training and it was linked to JPA, providing 1 YORKS with the facility to view its personnel's competencies including qualifications. TAFMIS caveats were not visible from JPA so units would not necessarily be aware of restrictions on the employment of a soldier, nor of the necessity to rescind the qualification at the 12-month point. A search of TAFMIS showed that more recently created AV courses were SOI 325 compliant and did not offer the 'pass with training deficiency' option. However, some legacy courses remained non-compliant over 2 years after SOI 325 was published in July 2020. Exhibit 062 Exhibit 066

1.4.219. The mismatch in reporting of qualification status between TAFMIS and JPA presented a problem for units in managing their personnel's qualifications. This was especially prevalent for entities further removed from the individual or training wing (such as the operations officer, company comd or battalion 2IC). Both training wing and the individual should have been aware of the TDD and should have been actively trying to clear it, but the hierarchy may accept the JPA position as being correct and requiring no further action. This mismatch was expected to reduce as the 'pass with training deficiency' award was removed from the system, but the after-effects of this designation could take a whole career cycle to be fully cleansed from the system if not actively addressed as recommended in paragraph 1.4.207 and paragraph 1.4.208.

1.4.220. The panel **observed** that the inability of JPA to present TAFMIS qualification caveats was an issue in terms of presenting limitations on qualification status to units who were required to manage them.

Reconnaissance platoon selection for the crew of c/s 62 Alpha

1.4.221. Soldier A had been in the infantry (light role) for approximately 15 years and had previous experience of being in a reconnaissance element but had limited experience of AVs. They had no previous experience as a member of an AV crew. They had previously served in various overseas tours including Iraq, Afghanistan, the Falkland Islands, Oman, and Kenya. They joined the reconnaissance platoon in August 2020 and were not required to attend a 'Recce Cadre' due to their previous experience in reconnaissance units. Witness 01 Exhibit 006

1.4.222. Soldier B had been in the infantry for approximately six years, had no previous experience of reconnaissance, and had some experience of working Witness 02 Exhibit 006

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from different types of AVs, although not in a crew position. They joined the reconnaissance platoon in January 2020 and passed the 'Recce Cadre' on 23 March 2021.

1.4.223. Pte Watson-Pickering had been in the infantry for approximately three years. He had enrolled in the Army Reserve on 19 January 2016, joining B Company of 4th Battalion the Yorkshire Regiment (4 YORKS) and after two years of reserve service, he made a successful application to join the regular Army, transferring on 12 July 2018. He conducted basic training at the Infantry Training Centre and on successful completion, he joined 1 YORKS. Before Pte Watson-Pickering was nominated to join the reconnaissance platoon he had no experience of reconnaissance, some experience of working from AVs (although not in a crew position), and he had a Category B driving licence. He joined the reconnaissance platoon in September 2020 and passed the 'Recce Cadre' on 23 March 2021. Witness 02 Witness 05 Exhibit 006 Exhibit 242

1.4.224. Despite the personnel issues that reconnaissance platoon was experiencing, each of the three members of the crew had served for a minimum of four years of regular or combined regular and reserve army service. Soldier A had extensive knowledge of light role reconnaissance skills from previous reconnaissance units and had deployed on numerous operations and exercises. Soldier B and Pte Watson-Pickering had less experience but were not the least experienced candidates on their 'Recce Cadre'.

1.4.225. The panel concluded that there were no substantial reasons why these three individuals should not have been nominated for the reconnaissance platoon. The panel finds that the selection of Pte Watson-Pickering, Soldier A and Soldier B for the reconnaissance platoon was **not a factor.**

Armoured vehicle crew training

1.4.226. The individual elements of training for personnel to become armoured vehicle crew were specific to each of their roles on the vehicle. These were set out in AVSOs and all courses were mandatory and required to be passed in full using the correct course folders (including lesson plans), for the person to be considered trained, qualified, and authorised to undertake the role as required by PAM 21. Exhibit 040 Exhibit 044

AFV crew qualifications

1.4.227. AVSOs required all AFV crew to be fully trained and qualified in their role within the vehicle. Depending on their AFV role, each crew member was to complete appropriate courses from the following list: Exhibit 044

a. **Commanders' Driving & Maintenance (D&M) Course.** This course provided an overview of the D&M tasks that the driver would carry Exhibit 076

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out and then focused on how the comd should supervise and command the driver in these tasks.

b. **D&M.** This would teach an understanding of the automotive systems for the CVR(T), the basic on-road and cross-country driving skills necessary to operate the vehicle across a range of terrains and obstacles, and emergency procedures.[76] It would also teach how to perform basic user maintenance tasks to keep the vehicle operational, from standard checks of engine oil to changing the tracks or the brake pads. The course concluded with a Driver and Vehicle Licensing Agency (DVLA) approved driving test for track laying vehicles (if the driver hadn't already acquired one as part of previous training on a different AV). Exhibit 079

c. **Gunnery.** This course taught the fundamentals of how to operate the fire control and targeting equipment and weapon systems, and how to use the various visual and thermal sighting systems. Exhibit 077

d. **CIS.** The Scimitar was fitted with a comprehensive CIS capability which included multiple radios, displays and software applications. Exhibit 044

e. **Tactics.** For Scimitar comds, the ACRCC taught how to operate tactically in the mounted and dismounted roles, to operate within the combined arms and joint environments, and to command, prepare, protect, and sustain the reconnaissance elements of the unit. A similar course was provided for Warrior comds. Exhibit 073

Soldier A – AFV training, qualifications, and authorisation

1.4.228. As an AFV comd, Soldier A was responsible for the operation of the vehicle and for the safety of its crew. An examination of Soldier A's training records showed that they were not fully trained in any of the following areas: Commanders' D&M, CIS or Tactics. Exhibit 044

1.4.229. **Commanders' D&M Course.** Soldier A completed the AFV All Arms Track Commander (Infantry) Course on 30 October 2020 and the result was incorrectly recorded as a pass on JPA/TAFMIS.[77] The D&M course concluded with TOs that were not completed because the CVR(T) was prohibited from driving on the public highway at that time due to a safety constraint. The course instructor correctly stated the TDD on the course closedown paperwork and, following the policy in LWC SOI 325, the DTC should have awarded a 'fail' to all personnel on the course. However, all students on that course were awarded a 'pass with training deficiency'. HQ ARMCEN has no record of Soldier A's TDD being cleared before the 12-month mark, no records of the training course being Witness 01 Witness 15 Exhibit 062 Exhibit 075 Exhibit 076 Exhibit 078

[76] The Spartan was usually used for driver training as the automotive parts were identical to the Scimitar, but the Spartan could carry more students making more efficient use of the resource.
[77] This is discussed further at paragraphs 1.4.218 to 1.4.220.

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redone, and the qualification was not removed from TAFMIS/JPA in October 2021 (the 12-month point). 'Pass with training deficiency' was still showing as an option for some courses on TAFMIS when the panel visited HQ ARMCEN on 4 October 2022.

1.4.230. **CIS.** HQ ARMCEN stated that they had no record of Soldier A having been enrolled onto a CPU CIS course. They also stated that any informal or on-the-job training that they may have received would not have met their requirements for qualification. Soldier A stated that their on-the-job training consisted of asking a more experienced person how to use the radios and computer systems in the vehicle and practicing over a lunchtime. They found a radio in one of c/s 62 Alpha's stowage bins and, thinking it was a spare, handed it in to their company quartermaster sergeant (CQMS). The radio was required to allow the Scimitar to be connected to two radio nets that would be needed on the exercise. The signaller who came to provide the encryption for the radios noticed it was missing and informed Soldier A who retrieved it from the CQMS to have it refitted. Soldier A went on to state that they had previously been on operations in a Mastiff (large, wheeled AV) and had also been self-taught on how to use that vehicle's radios. Witness 01 Exhibit 066

1.4.231. **Tactics.** Soldier A had twice secured a place on the ACRCC but had been removed both times by the 1 YORKS chain of command for perceived higher priority tasks. Firstly, to attend the Platoon Sergeants Battle Course, and then again to take part in Ex IS. Exhibit 024 Exhibit 055 Exhibit 066 Exhibit 235

1.4.232. Soldier A held the appropriate rank for the position of CVR(T) comd. HQ ARMCEN had no record of enrolment in some of the mandated courses (CIS and ACRCC), and the informal CIS training that Soldier A received was lacking in critical areas. The inability to attend a tactics course meant that at no stage before arriving at SPTA for Ex IS had Soldier A been in a Scimitar with both a driver and a gunner at the same time. They did not have the chance to establish how to command Soldier B and Pte Watson-Pickering as a crew (rather than as individuals), and they did not get the chance to practice increasingly complex tasks within a controlled and closely supervised environment.

1.4.233. Under the provisions of LWC SOI 325, the TDD would have permitted Soldier A to have been considered 'part-trained' for D&M, thus allowing them to be used in the areas for which they had received training for up to a year and allow them to clear the TDD. The non-policy-compliant result of 'pass with training deficiency' was recorded on TAFMIS and this was further incorrectly transposed on to JPA as 'pass'. As 'pass with training deficiency' was an option available to be awarded as recently as October 2021, the panel believed it was likely that other courses had been incorrectly attributed with that non-policy-compliant designation since the LWC SOI 325 was issued in July 2020. As Soldier A had not been trained and tested using the course folders issued by the Mounted

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Close Combat TDT, they could not be deemed to be fully trained, fully qualified, or properly authorised to operate an AFV.

1.4.234. The panel **observed** that the distributed training construct did not have a robust system for rescinding expired qualifications or ensuring that appropriate action was taken by units under local procedures.

1.4.235. The panel concluded that:

a. A 'pass with training deficiency' remained an option on TAFMIS even though it was a non-policy-compliant award. This prevented proper oversight by the duty holder framework, and it was continuing to allow personnel to be awarded a JPA qualification for training that had not been completed. The panel noted this to be an **other factor**;

b. Contrary to PAM 21, Soldier A was not fully trained, fully qualified, or properly authorised to operate as an AFV comd during Ex IS, nor were they eligible to be considered as 'part-trained' under the provisions of LWC SOI 325 as this only covered courses completed with TDDs (Soldier A was missing whole courses). The panel finds that the lack of formal training and qualification was a **contributory factor**; and

c. All students on Soldier A's D&M course were awarded their qualification in error, having not completed all the TOs for the course. The panel opined that it was very likely that this was not a single instance but was symptomatic of a wider problem. The panel finds that this was an **other factor**.

Soldier B – AFV training, qualifications, and authorisation

1.4.236. Soldier B was the gunner and AVSOs stated that the gunner operated the AFV weapon systems under the control and supervision of a qualified comd. An examination of Soldier B's training records showed that they were not qualified in CIS. Soldier B had previously received training on similar radios but not on the information systems and applications installed in a Scimitar.

Exhibit 044
Witness 02
Exhibit 066

1.4.237. HQ ARMCEN had no record of formal training being convened for the CIS course. Soldier B had some previous experience with similar radios and was able to operate c/s 62 Alpha's radios without difficulty. As the deputy vehicle comd, Soldier B was required to be trained on the Scimitar's information systems and applications in case they were required to take over as the vehicle comd at some point. Without any training in these systems, it would be unlikely that Soldier B would have been able to do this. As Soldier B had not been trained and tested using the course folders issued by the MCC TDT, they cannot be deemed fully trained, fully qualified, or properly authorised to operate an AFV.

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1.4.238. The panel concluded that, contrary to PAM 21, Soldier B was not fully qualified to operate as an AFV gunner during Ex IS, nor were they eligible to be considered 'part-trained' under the provisions of the LWC SOI 325 as this only covered courses completed with TDDs. The panel noted that the lack of formal training and qualification was an **other factor**.

Pte Watson-Pickering – AFV training, qualifications, and authorisation

1.4.239. An AFV driver was responsible for driving the AFV under the control and supervision of a qualified comd. Pte Watson-Pickering had not completed the CVR(T) D&M course and was not qualified to be a CVR(T) driver. The All Arms CVR(T) Crew Driver Course was completed on 22 July 2021; the result was incorrectly recorded as a 'pass' on TAFMIS although there was no corresponding JPA entry. The D&M course concluded without all TOs being completed as 1 YORKS did not have all the correct equipment available to practice trench crossing. The course instructor noted the TDD which should have resulted in a 'fail'. The course closure paperwork that 1 YORKS Training Wing sent to the DTC shows that no TDDs were recorded. There were no comments from the course officer noted on the closedown paperwork. All students on Pte Watson-Pickering's D&M course were awarded the full qualification in error on TAFMIS, but it is not known if the other students were awarded a JPA competency for this training. Pte Watson-Pickering (and the other students from this course) were eligible to be considered 'part-trained' under the provisions of LWC SOI 325 with the approval of the appropriate duty holder. As previously mentioned, some CVR(T) vehicles were, at that time, prohibited from driving on the public highway. The panel asked the D&M instructor if they had checked whether the vehicle was permitted to drive on public highways. The instructor responded that they had been told by someone of a more senior rank that it was.

Exhibit 044
Witness 15
Exhibit 007
Exhibit 062
Exhibit 066
Exhibit 070
Exhibit 079
Exhibit 080
Exhibit 081

1.4.240. None of the students on Pte Watson-Pickering's CVR(T) D&M course passed, due to issues that were outside of their control, but there was no evidence that the missing element would have had any bearing on this accident. As Pte Watson-Pickering had been trained and tested using the course folders issued by the Mounted Close Combat TDT, he was deemed part-trained and authorised to operate an AFV with the approval of the DDH.

1.4.241. The panel **observed** that All students on Pte Watson-Pickering's CVR(T) D&M course were issued their qualification in error, having not completed all the TOs. The panel opined that it was very likely that this was not a single instance but was symptomatic of a wider problem.

1.4.242. The panel concluded that Pte Watson-Pickering was issued his D&M qualification in error and, contrary to PAM 21 was, therefore, not fully qualified to operate as a Scimitar driver during Ex IS. Nor had part-trained status been applied for via the DDH under the provisions of LWC SOI 325. However, he was

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sufficiently trained to carry out all driving functions required of him on Ex IS and it was likely that the DDH would have given their approval had it been requested. The panel noted that the lack of formal training, qualification and DDH oversight was an **other factor.**

1.4.243. **Recommendation. The Chief of Staff Field Army should review the assurance process for accountable persons in units operating armoured vehicles, in order to ensure that they are fulfilling their regulatory and policy obligations regarding the employment and authorisation of suitably qualified and experienced persons in armoured vehicle roles.**

1.4.244. **Recommendation. The Head Defence Land Safety Regulator should review the governance for accountable persons in units operating vehicles in order to ensure that they are fulfilling their regulatory and policy obligations regarding the employment and authorisation of suitably qualified and experienced persons in vehicle-based roles.**

1.4.245. **Recommendation. The Head Defence Land Safety Regulator should ensure that appropriate governance is in place for all lines of defence assurance and ensure that robust 3rd line of defence assurance processes are in place to assure that motor transport qualifications and currencies are managed and updated effectively in order to prevent unauthorised personnel operating vehicles.**

1.4.246. **Recommendation. The Deputy Chief of Staff Field Army should ensure that all 'pass with training deficiency' awards are reviewed in order to assure that only personnel who have completed all training objectives for a course have been awarded a requisite qualification on Training and Financial Management Information System and Joint Personnel Administration.**

1.4.247. **Recommendation.** A recommendation has been previously made at paragraph 1.4.207 that the Director Information (Army) should ensure that all non-policy-compliant awards are removed from all training management information systems in order to ensure that only fully trained personnel are given a qualification.

C/s 62 Alpha chain of command – AFV qualifications

1.4.248. As ACSO 1200 stated that an effective safety culture was driven by strong leadership, one of the attempts to qualify this was to explore the prioritisation of training, qualifications, and authorisation within the management element of 1 YORKS. Each of the personnel forming the chain of command for c/s 62 Alpha were checked in turn from the CO down to the acting reconnaissance platoon comd.

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Soldier C – AFV training, qualifications, and authorisation

1.4.249. Soldier C did not have an AFV or AV role on Ex IS but their role within the battalion included being an AFV commander and they had previously passed the All Arms Warrior Crew Commander (D&M) Course in October 2020. They were not trained in CIS to CPU level, nor had they attended the Warrior gunnery or tactics courses. In 2009 and during a previous tour with an armoured infantry unit, Soldier C had passed the Bulldog Commander's D&M Course. Exhibit 066

1.4.250. Soldier C was not required to have any role with AVs during Ex IS. They were included here for completeness and to highlight that they had some experience with AVs and were aware of the training courses required for the personnel under their command. As Soldier C had not been trained and tested using the course folders issued by the Mounted Close Combat TDT, they could not be deemed fully trained, fully qualified, or properly authorised to operate an AFV.

1.4.251. The panel concluded that Soldier C was not required to, nor were they fully trained, fully qualified, or properly authorised to command an AV on Ex IS. The panel finds this to be **not a factor**.

Soldier E – AFV training, qualifications, and authorisation

1.4.252. Soldier E was not fully qualified to be an AFV commander on Ex IS as they had not completed the CIS and Tactics courses. The AFV All Arms Track Commander (D&M) course undertaken in 2014 was listed on TAFMIS as 'pass with training deficiency' which would have invalidated the qualification from 2015. However, on JPA it was shown as a 'pass' with the qualification awarded. Soldier E believed that: Witness 06 Exhibit 066 Exhibit 082 Exhibit 083 Exhibit 255

a. They were trained in CIS during their unit's conversion to Warrior in 2014. However, AVSOs require AFV comds to be trained on BCIP5.6 which entered service in 2019;[78]

b. The TDD noted against their D&M course was completed in early 2015 but the record had not been updated; and

c. There was no AFV tactics course available at that time (Soldier E was a major in 2014) as the courses were being prioritised towards junior officers, and that they had been trained 'on-the-job' in AFV tactics by a former ARMCEN instructor.

1.4.253. Soldier E did not have access to TAFMIS, and JPA showed the D&M course as a 'pass'. Therefore, Soldier E's belief that their TDD was completed was reasonable. It was likely that Soldier E was aware that they were required to

[78] BCIP5.6 was the latest version of the Army's Bowman Common Battlefield Application Toolset Infrastructure and Platform.

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update their CIS training, as the status of 1 YORKS CIS qualifications and courses was being briefed monthly via the CPWG. Due to their position in the hierarchy, and previous experience of AFVs, Soldier E would have been expected to set an example for their personnel to follow in terms of training qualification and authorisations. Acceptance of on-the-job training in lieu of formal training and inadequate checks of current policy (such as which courses the LWC tactics waiver applied to), resulted in an incorrect belief in their qualification status. As Soldier E had not been trained and tested using the course folders issued by the Mounted Close Combat TDT, they could not be deemed fully trained, fully qualified, or properly authorised to operate an AFV.

1.4.254. The panel concluded that, contrary to PAM 21 and their own belief, Soldier E was not fully trained, fully qualified, or properly authorised to operate an AFV on Ex IS. The panel noted that this was an **other factor**.

Soldier F – AFV training, qualifications, and authorisation

1.4.255. Soldier F was not fully qualified to be a Scimitar Commander on Ex IS as they were not qualified in CIS, D&M, and AFV tactics.[79,80] Soldier F believed that they completed the CIS training sometime in 2019, but the LWC stated that there were no records of Soldier F having been enrolled on to a vehicle CIS course. Witness 05 Exhibit 066

1.4.256. Soldier F had previously been a Warrior Commander which meant that they had some experience with AVs and AV operations. A search on TAFMIS confirmed that Soldier F was not qualified for this role in the areas of CIS or AFV tactics, but they did successfully pass a AFV All Arms Track Commander (D&M) and Warrior Comd/Gunner Course in 2014. Soldier F believed they had completed a Warrior tactics course in 2014, but HQ ARMCEN stated that there were no records of this. Since becoming a Scimitar Commander, Soldier F had twice been removed from their place on the ACRCC by the 1 YORKS senior leadership. Witness 05 Exhibit 066

1.4.257. Soldier F had not completed three out of the four mandatory training courses to be an AFV comd. Therefore, they could not be deemed fully qualified for the AFV comd role they performed on Ex IS. Each layer of command should have been aware of the training requirements for themselves and for the personnel under their supervision (as laid down in AVSOs) and there should have been a robust system in place to ensure that the correct qualifications had been completed. The panel believe it was likely that the lack of emphasis on gaining all

[79] The AFV All Arms Track Commander (Infantry) course was recorded as a 'pass' but, as 1 YORKS did not have any modified CVR(T) at that time, it would not have been possible to have completed all the training objectives as the public highways element of course could not be undertaken in an unmodified vehicle.

[80] Soldier F had a confirmed place on the ACRCC twice but was removed by the 1 YORKS chain of command, firstly to run a Live Fire Tactical Training range, and latterly to attend Ex IS; both tasks were deemed as higher priorities by their chain of command.

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requisite qualifications trickled down to their subordinates. Having twice been removed from the ACRCC, it was likely that Soldier F had little specific knowledge regarding the skills and information that both they and Soldier A had missed. As Soldier F had not been trained and tested using the course folders issued by the Mounted Close Combat TDT, they could not be deemed fully trained, fully qualified, or properly authorised to operate an AFV.

1.4.258. The panel concluded that, contrary to PAM 21:

a. Soldier F was not fully trained, fully qualified, or properly authorised to operate an AFV on Ex IS. The panel finds this was an **other factor**; and

b. None of the chain of command for the crew of c/s 62 Alpha had completed a formal AFV tactics course and finds that this was an **other factor**.

1.4.259. **Recommendation.** A recommendation has already been made at paragraph 1.4.92 that the Deputy Chief of the General Staff should ensure that it is mandatory for personnel appointed to command and executive positions to be suitably qualified and experienced in the unit role in order to provide effective oversight and assurance of their subordinates training requirements.

1.4.260. **Recommendation.** A recommendation has already been made at paragraph 1.4.243 that the Chief of Staff Field Army should review the assurance process for accountable persons in units operating armoured vehicles, in order to ensure that they are fulfilling their regulatory and policy obligations regarding the employment and authorisation of suitably qualified and experienced persons in armoured vehicle roles.

1.4.261. **Recommendation.** A recommendation has already been made at paragraph 1.4.245 that the Head Defence Land Safety Regulator should ensure that appropriate governance is in place for all lines of defence assurance and ensure that robust 3rd line of defence assurance processes are in place to assure that motor transport qualifications and currencies are managed and updated effectively in order to prevent unauthorised personnel operating vehicles.

AFV currency requirements

1.4.262. In terms of AFV competence, AVSOs stated that currency required individuals to have operated on a particular platform/variant within the past 12 months and to have completed an annual assessment. Evidence confirming this was to be maintained at sub-unit and unit level. For non-crew, including dismounts, an individual must have conducted specified AV training on a particular platform/variant and it must be recorded. An individual was required to complete all the competence training, assessments, and tests appropriate to the

Exhibit 044

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vehicle; the type of training required to reduce the risk of skill fade was specified in the Continuation Training and Assessment Matrix in AVSOs.

1.4.263. **Continuation training.** AVSOs also stated that the increase in risk of accidents to crews and personnel working in the vicinity of AVs was commensurate with skill fade. To prevent this and to ensure that currency was maintained, a specific-to-role annual assessment was mandated for all crew and dismounts. There was generic training for all AV users and specialist training in CIS and gunnery for personnel trained in those areas. Exhibit 044

1.4.264. **Return-to-role training.** If any personnel had not received continuation training within the preceding 12 months, they were required to undergo return-to-role training instead of continuation training, the format for which was specified in AVSOs. There was additonal continuation training specified for AV gunners and comds. All turret crew (gunners and comds) were required to be annually trained on AFV CIS. Exhibit 044

1.4.265. The Light Aid Detachment (LAD) of the Royal Electrical and Mechanical Engineers (REME) attached to 1 YORKS was the element which provided specialist maintenance for AVs. REME maintainers were not required to complete certain serials for the following reasons: Exhibit 044

> 'It is recognised that due to the nature of REME's trade training requirements to maintain/repair a multitude of vehicle platforms, specific equipment courses to support all Armoured platforms may not be practicable. Therefore, Appendix 1 and 2 of this chapter highlight which serials are required for a REME L2 maintainer to complete in order for them to work and maintain AV's [sic] safely. A qualified DMI is to conduct, verify and record all training.'
>
> 'All training completed will be recorded on a central record and made available for audit by the chain of command, ARMCEN TDDG and Army Inspectorate or Investigation Teams as required (e.g. Defence Accident Investigation Branch (DAIB).'

1.4.266. The LAD was part of Helmand Company and was not able to provide a copy of the central record mandated by AVSOs. The reason given was that they believed it was held by one of the other departments within Helmand Company. However, they felt assured that all the required training and checks were completed before they deployed on Ex IS. Exhibit 290 Exhibit 291

1.4.267. AVSOs did not set out the currency training key learning points in the manner required in JSP 822, Defence Direction and Guidance for Training and Education. It was understood by the panel that the instructors were expected to know what to teach by virtue of being an instructor. Exhibit 038 Exhibit 044

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1.4.268. The required continuation training and return-to-role training was comprehensive and well laid out in AVSOs. However, the tables provided at Chapter 6, covering currency training, did not provide sufficient detail to provide standalone training in accordance with JSP 822, which required TOs and key learning points to be defined. Instructors were expected to find the course folder and select elements that they felt best served the needs of each of the serials in the relevant appendix. The LAD was unable to provide a copy of the central record for 2021, nor was the training wing, or the operations officer. The lack of records meant that it was impossible for the panel to be assured that personnel from the LAD were current on any of the AVs prior to and during Ex IS.

1.4.269. The panel concluded that the individual currency training areas mandated by AVSOs were comprehensive and finds that this was **not a factor.**

1.4.270. The panel **observed** that:

a. The lack of support from ARMCEN to units and instructors regarding the content of the individual currency training was contrary to JSP 822; and

b. The lack of records being held, in contravention of AVSOs, made it impossible to determine if the personnel from the LAD who deployed in support of Ex IS were current.

Training record card

1.4.271. All aspects of currency training conducted via an annual assessment, continuation training or return-to-role training, was required to be recorded on an individual's training record card (TRC) as detailed in AVSOs. The training instructor was responsible for ensuring that the required standards had been met before completing and signing the TRC. Copies of each TRC were required to be held by a unit's training wing and the company's second-in-command and these were to be held for seven years. Therefore, TRCs showed the last seven years of currency training for an individual. TRCs remained a paper-based record and, although they were a key metric of the unit's 'deployability', the form had not been digitized into a suitable management information system. The evidence showed that: Exhibit 044 Exhibit 092

a. Helmand (HQ) Company's (including the battalion HQ) records were missing, which they presumed were destroyed by the training wing. The company stated that 'very little' training was completed during 2021 and that almost none of it involved AVs; Exhibit 092 Exhibit 226

b. Alma Company did not deploy on Ex IS as a formed unit, but certified that they had conducted training exercises in lieu of currency training. Alma Company submitted TRCs for 29 out of 109 personnel; Exhibit 088 Exhibit 215

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c. Burma Company was prioritised for training by 1 YORKS during 2021 in preparation for them joining the KRH BG for the validation event on Ex IS. This meant that they were the priority for battalion resources in the lead up to the event. Burma Company submitted TRCs for 90 out of 110 personnel; Exhibit 099 Exhibit 214

d. The TRCs for Corunna Company were missing with the reason given that they were deleted in November 2021 during efforts to refresh and re-baseline the sub-unit. Corunna Company certified that all personnel were qualified and current for all training that was undertaken throughout 2021; and Exhibit 100

e. The training progression specified in AVSOs had not been met for the majority of Quebec Company. The reconnaissance platoon also stated that in the year leading up to the accident it had conducted no training using its vehicles except for the gunnery courses. Witness 05 Exhibit 044 Exhibit 091 Exhibit 213

1.4.272. The main events list for the battalion's collective training exercise (19 July to 1 August 2021) showed that the event was not used to focus on developing currency. The majority of Quebec Company personnel who deployed on the exercise were in the light role due to the reduced availability of vehicles. The record of decisions from the CPWG for February 2021 to October 2021 had no entries against currency, continuation training, return-to-role training or any other references indicating that they were being tracked by the 1 YORKS senior management. Many issues were found regarding the accuracy and completeness of the TRCs provided by 1 YORKS. Witness 04 Witness 05 Witness 06 Witness 24 Exhibit 084 Exhibit 260 Exhibit 261 Exhibit 275

1.4.273. TRCs illustrate up to the last seven years of currency training for an individual. The lack of TRCs for Helmand Company made it difficult for the panel to assess the currency of the company and battalion HQ, members of which had a leadership role in ensuring that currency training was completed annually, to the mandated standards, and recorded correctly.

1.4.274. Whilst it was acceptable and preferable for Alma Company to complete mandatory currency training as part of other tasks, AVSOs still required TRCs to be completed and without them it was not possible to assess if all elements of currency training had been covered. Most of the TRCs that were provided were incorrectly completed. The panel also noted that some TRCs referred to having completed training that was not applicable to the type of vehicle in use, or for training that did not exist. As this training cannot have happened it showed, either a lack of care in completing paperwork, or that the record keeping system was being inconsistently applied. The TRC had 30 boxes but there was a maximum of 29 training serials listed in AVSOs. In some cases, the authorised instructors for Alma Company had signed for completing the training for serial 30 which did not exist.

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1.4.275. Although Burma Company submitted TRCs for 90 out of 110 personnel, the panel noted errors and that the TRCs only covered training that took place after the accident. Personnel had also signed as having trained and evaluated themselves which the panel opined was contrary to best practice in ensuring instructional standards were being maintained.

1.4.276. The disposal of Corunna Company's TRCs was non-compliant with AVSOs retention policy. Although a new TRC could be started to reflect a move on to a different vehicle, the old one was expected to be kept for up to seven years. Corunna Company certified that they were all current. However, with no evidence to support this position noting the poor state of currency training throughout the battalion, the panel believe it to be unlikely that Corunna Company had completed all aspects of currency training in accordance with AVSOs by the start of Ex IS.

1.4.277. None of the TRCs provided by Quebec Company were from the period under consideration and none of them showed a complete cycle of training that would qualify as meeting the requirements of AVSOs. Without any evidence of training and considering the statements from reconnaissance platoon personnel, the panel believes that at the time of the accident, Quebec Company was unlikely to have completed all aspects of currency training in accordance with AVSOs.

1.4.278. The panel did not receive a copy of the battalion-wide currency training spreadsheet from the training wing. However, it was almost certain that the training wing was not receiving or correctly processing copies of the TRCs as required by AVSOs. Otherwise, the errors, omissions, lack of coverage of the period under consideration and lack of consistency across the different companies should have been apparent.

1.4.279. An example of the issues found was that one individual's TRCs showed four-years of training. However, the driving and maintenance instructor who signed off each year of training had a different name but a very similar signature as the 'regimental instructor gunnery' who signed for the first three years on the Gunnery TRC. The panel believed this to be evidence of 'poor administrative housekeeping' within the unit. There were also very few TRCs completed for CIS currency training for anyone in the battalion.

1.4.280. There appeared to be a general lack of understanding about what currency training was, and this was evident across the battalion. The currency drills mandated in AVSOs were required to ensure that personnel remained safe to operate the AVs. Operating AVs without having accidents did not prove they were being operated safely. From a cultural perspective, if the CO didn't make currency training an important part of their own regime, it was unlikely that this would gain any traction at lower levels. The lack of recorded oversight of currency

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training at the CPWG shows that 1 YORKS did not recognise this as a factor affecting safety.

1.4.281. The panel concluded that 1 YORKS did not fully comprehend the requirements for AV currency training, as required by AVSOs, which resulted in an erroneous belief that they were current. The panel finds this to be an **other factor**.

Soldier A – AFV currency

1.4.282. 1 YORKS stated that there was no TRC held for Soldier A covering the period October 2020 to October 2021. Soldier A stated that they had not operated a CVR(T) since completion of the D&M course almost a year previously. Witness 01 Exhibit 089

1.4.283. As Soldier A's currency was due to expire during Ex IS, it would have been preferable for them to have completed all elements of the AVSO Continuation Training and Assessment Matrix, and gunnery continuation training, prior to deploying on the exercise. As there was no record of continuation training, and Soldier A did not remember having completed it, it was highly likely that it was not done. In that case, Soldier A's currency in gunnery expired on 9 October 2021. Soldier A's currency in 'vehicle operations' remained valid until 30 October 2021 which was the anniversary of their AFV All Arms Track Commander (Infantry) Course. As Soldier A had not completed the required CIS training qualification, they were not current in CIS at any time. As Soldier A was not current in all aspects of the role in which they were employed they could not be deemed current to operate an AFV.

1.4.284. The panel concluded that, contrary to PAM 21, Soldier A was not current in all aspects of their AV role on Ex IS and finds that this was an **other factor**.

Soldier B – AFV currency

1.4.285. 1 YORKS stated that there was no TRC held for Soldier B covering the period October 2020 to October 2021. Soldier B stated that they had not operated the vehicle since their gunnery course which concluded on 9 October 2020. Witness 02 Exhibit 090

1.4.286. As Soldier B's currency was due to expire during Ex IS, it would have been preferable for them to have completed all elements of the AVSO Continuation Training and Assessment Matrix, and gunnery continuation training, prior to going on the exercise. As there was no record of continuation training and Soldier B did not remember having completed it, it was highly likely that it was not done. Soldier B's currency in 'vehicle operations' and gunnery expired on 9 October 2021. As Soldier B had not completed the required CIS training qualification, they were not current in CIS at any time. As Soldier B was not current in all aspects of the role in which they were employed they could not be deemed current to operate an AFV.

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1.4.287. The panel concluded that, contrary to PAM 21, Soldier B was not current in all aspects of their AV role on Ex IS and finds this was an **other factor**.

Pte Watson-Pickering – AFV currency

1.4.288. 1 YORKS stated that there was no TRC held for Pte Watson-Pickering covering the period October 2020 to October 2021. Exhibit 081

1.4.289. Pte Watson-Pickering completed the CIS course in March 2020 and there was no CIS continuation training for intercom users listed in AVSOs. As he had completed the All Arms CVR(T) Crew Driver Course in July 2021 he was current for all aspects of AFV operations that were required of him on Ex IS.

1.4.290. The panel concluded that, in accordance with PAM 21, Pte Watson-Pickering was current in all aspects of their AV role on Ex IS and finds this was **not a factor**.

Soldier C – AFV currency

1.4.291. 1 YORKS stated that there was no TRC held for Soldier C covering the period October 2020 to October 2021. Exhibit 091

1.4.292. Soldier C was not required to be current in AV training for their role on Ex IS but has been included to highlight that there was a lack of mandated TRCs within Quebec Company. The company did not provide a single TRC covering the year leading up to the accident which led the panel to opine that the issue of currency was not being effectively owned and managed.

1.4.293. The panel **observed** that whilst Soldier C was not required to be current for their role on Ex IS, the absence of a TRC reinforced the panel's belief that there was a lack of effective ownership of currency training within Quebec Company.

Soldier E – AFV currency

1.4.294. 1 YORKS stated that there was no TRC held for Soldier E (nor for anyone else administered by Helmand Company) during the period October 2020 to October 2021. Exhibit 092

1.4.295. Soldier E was required to be current with AV training for their role as a Warrior comd on Ex IS. The lack of any documentary evidence, or personal recollection of currency training, meant that it was very unlikely that they were current. As Soldier E was not current in all aspects of the role in which they were employed they could not be deemed current to operate an AFV.

1.4.296. The panel concluded that, contrary to PAM 21, Soldier E was not current in all aspects of their AV role on Ex IS and finds that this was an **other factor**.

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Soldier F – AFV currency

1.4.297. 1 YORKS stated that there was no TRC held for Soldier F covering the period October 2020 to October 2021. Soldier F stated that the reconnaissance platoon had not completed any training using its AFVs outside of formal gunnery courses as it would have taken a week to move the vehicles to SPTA for a week's worth of training. It would then have taken a week to move them back again, and there was not enough time in the battalion's forecast of events (diary) to accommodate this. 1 YORKS was collocated with The Royal Lancers, another unit that operated Scimitars, who stated that they were able to maintain individual currency, although this was not checked by the panel. Witness 05 Exhibit 091 Exhibit 238

1.4.298. Soldier F was required to be current with AV training for their role as a Scimitar comd on Ex IS, but the lack of documentary evidence or personal recollection of currency training meant that it was highly unlikely that they were. As Soldier F was not current in all aspects of the role in which they were employed they could not be deemed current to operate an AFV. The panel opined that individual currency training could have been completed within the area of Alma Lines, the Heavy Vehicle Training Circuit, and the Heavy Vehicle Cross-Country Circuit of the Catterick Training Area.

1.4.299. The panel **observed** that there were sufficient facilities provided in the local area for 1 YORKS personnel to have maintained AV currency.

1.4.300. The panel concluded that, contrary to PAM 21, Soldier F was not current in all aspects of their role on Ex IS and finds that this was an **other factor**.

1.4.301. **Recommendation. The Deputy Chief of Staff Field Army should ensure that there is a robust process to assure that currency training is managed and recorded effectively, for all units operating armoured vehicles, in order to reduce the effects of skill fade.**

Driver records

1.4.302. Movement and Transport Safety Regulations (MTSRs) Regulation 12 stated for 'crew served' platforms that 'a commander shall hold a valid driving licence for the vehicle category and be formally trained and certified as a commander for the platform.'[81,82] Exhibit 044 Exhibit 093

1.4.303. JSP 800 - Defence Movements and Transport Policy stated that 'an authorised MOD Motor Transport Driver's Permit (F/MT 600) … was mandatory Exhibit 094

[81] For details regarding MTSRs, see paragraph 1.4.18. Regulation 12 concerned the control, management, and use of MOD Vehicles.
[82] AVSOs stated that the minimum requirements to operate an AV classified as 'crew served' were: 'a Competent Driver and a Competent Commander / Controller / Marshaller'. All tracked AVs were classified as crew served.

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... when driving cross-country', and when 'driving specialist vehicles'.[83] AVSOs stated 'that all commanders and AV drivers must carry a valid F/MT 600 endorsed for the AV being operated'. JSP 800 also stated that:

> 'A set of unit standing orders relating to the use of MOD vehicles must be produced, published and made available to all staff controlling, operating and/or using MOD vehicles, and they must be based on this JSP as a minimum standard. In addition, a set of driver's standing orders must be produced for personnel driving MOD vehicles. All drivers must acknowledge these orders by signing off an F/MT 103 (Certificate of Acknowledgement) or a robust, auditable, digital equivalent, which must also be resigned annually.'

1.4.304. The 1 YORKS Ex IS Start State Letter stated that they could 'confirm that each deploying individual has a signed and in-date Driver Training Record [for the individual's specified role and equipment] and in particular an F/MT 600 specific to the individual's deployment role'. Exhibit 053

Soldier A's F/MT 601 Driver Training Record

1.4.305. Although not employed as a driver, JSP 800 required that certain aspects of Soldier A's training as an AFV comd was recorded in an F/MT 601 Driver Training Record (DTR). The DTR provided by 1 YORKS for Soldier A showed that: Exhibit 094

a. Contrary to MTSRs, Soldier A did not have a full track-laying vehicle licence to allow them to command an AV; Exhibit 089

b. Contrary to MTSRs and AVSOs Soldier A's F/MT 600 did not have an endorsement to command a CVR(T). JSP 800 did not provide clear guidance on whose responsibility it was to endorse the F/MT 600 following successful completion of training (or under the LWC SOI 325 part-trained waiver). JSP 800 asserted that it was the responsibility of the unit licensing officer (within 1 YORKS this was the motor transport officer (MTO)) to ensure that F/MT 600s were correctly issued. The 1 YORKS MTO stated that it was the responsibility of the course instructor to update the F/MT 600, but the DMI who ran the course stated that they would only update and sign an F/MT 600 once the student has shown proof that the qualification was live on JPA; and Exhibit 089 Exhibit 267

c. Contrary to JSP 800 the F/MT 103 (Driver's Standing Orders Certificate) was missing the F/MT 600 serial number, and authorised vehicle types, but had still been signed by the MTO. Furthermore, Soldier Exhibit 089 Exhibit 267

[83] JSP 800 - Defence Movements and Transport Policy stated that it was: 'the overarching policy for MOD Transportation (Movements and Transport (M&T)), to meet our statutory obligations and the directed policy of the Secretary of State (SofS) for Defence. The policy also contributes towards the assurance and delivery of the MOD's duty of care, both to our own people and to the general public.'

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A's annual acknowledgement of MT Standing Orders, annual acknowledgement of Driver's Standing Orders, and annual driving licence check, were all out-of-date.

1.4.306. At the time of the accident, Soldier A's DTR was non-compliant with MTSRs, JSP 800 and AVSOs. In January 2022, Regulation 12 of MTSRs was updated to remove the requirement for comds of crew-served vehicles to have the same category of driving licence as required for the driver. The CVR(T) DMI's assertion that they would only update an F/MT 600 once the student had shown proof that the qualification was live on JPA was not policy compliant. It did not consider the LWC SOI 325 part-trained waiver that could be authorised using the duty holder framework. This should have been challenged by the MTO and the training wing, as both should have been aware of the part-trained waiver process. The MTO was required to ensure that personnel remained in-date for annual confirmation of understanding of MT and Driver's Standing Orders and for driving licence checks. It would have been preferable for 1 YORKS to have held a formal check of all personal documentation at Catterick before deploying personnel to Castlemartin Ranges and SPTA.

1.4.307. The panel concluded that the issues surrounding Soldier A's mandated MT paperwork were significant and finds that the lack of accuracy and assurance were an **other factor**.

1.4.308. **Recommendation.** A recommendation has already been made at paragraph 1.4.245 that the Head Defence Land Safety Regulator should ensure that appropriate governance is in place for all lines of defence assurance and ensure that robust 3rd line of defence assurance processes are in place to assure that motor transport qualifications and currencies are managed and updated effectively in order to prevent unauthorised personnel operating vehicles.

Pte Watson-Pickering's DTR

1.4.309. As the driver of c/s 62 Alpha, Pte Watson-Pickering was required to have a DTR. The copy of it provided by 1 YORKS showed that: Exhibit 081 Exhibit 094

a. Contrary to JSP 800, it did not include a record of the Category H (track-laying vehicle) annotation to his civilian driving licence. JSP 800 was not explicit regarding whose responsibility it was to maintain a DTR, but asserted that it was the MTO's responsibility to ensure that it was done; Exhibit 081 Exhibit 094 Exhibit 268 Exhibit 269

b. Contrary to JSP 800 his F/MT 600 did not include an authorisation to drive CVR(T) vehicles. JSP 800 did not provide clear guidance on whose responsibility it was to provide this authorisation following successful completion of training or granting of the LWC SOI 325 part-trained waiver. The 1 YORKS MTO stated that it was the responsibility of Exhibit 094 Exhibit 227 Exhibit 269

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the course instructor to update the F/MT 600, but the instructor stated that they would only update and sign an F/MT 600 once the student has shown proof that the qualification was live on JPA;

c. Contrary to JSP 800 the F/MT 103 did not include the Warrior or CVR(T) vehicle types or the F/MT 600 serial number, and the annual verification was out-of-date by over 6 months. Furthermore, Soldier Pte Watson-Pickering's annual acknowledgement of MT Standing Orders, annual acknowledgement of Driver's Standing Orders, and annual driving licence check, were all out-of-date.; and — Exhibit 081 Exhibit 094 Exhibit 269

d. A copy of his updated civilian driving licence which included the track-laying vehicle qualification was added to his driver folder after the accident. The MT section should have updated their copy of this document as soon as Pte Watson-Pickering provided them with a copy of it. — Exhibit 081

1.4.310. The assertion by the CVR(T) DMI that they would only update an F/MT 600 once the student had shown proof that the qualification was live on JPA did not consider the LWC SOI 325 part-trained waiver that could be authorised using the duty holder framework and was, therefore, not a policy-compliant standpoint. No one in the MT Platoon or Pte Watson-Pickering's chain of command checked that he held a valid F/MT 600 for all the vehicle types he would be expected to drive on Ex IS, before it commenced. It was likely that, because Pte Watson-Pickering had recently been on a CVR(T) drivers' course, it was assumed that the F/MT 600 had been updated.

1.4.311. 1 YORKS MT policy was that sub-units were responsible for checking that individual F/MT 600 documents were correctly updated. It was uncertain how the MTO would maintain assurance over this process without a confirmation process in place. There was no process for this in the 1 YORKS MT Standing Orders.

1.4.312. JSP 800 stated that it was the motor transport manager's (for 1 YORKS this was the MTO) responsibility to ensure that every driver signed as having read the MT and Driver's Standing Orders (the panel confirmed this had been done). However, the JSP only implied that this was to be done on an annual basis.

1.4.313. The panel concluded that the issues surrounding Pte Watson-Pickering's mandated MT paperwork were significant and finds that the lack of accuracy and assurance was an **other factor**.

1.4.314. **Recommendation. The Assistant Chief of Staff Logistics (Field Army) should ensure that there is a robust process to assure that motor**

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transport qualifications and currencies are managed and updated effectively in order to prevent unauthorised personnel operating vehicles.

1.4.315. **Recommendation.** A recommendation has already been made at paragraph 1.4.245 that the Head Defence Land Safety Regulator should ensure that appropriate governance is in place for all lines of defence assurance and ensure that robust 3rd line of defence assurance processes are in place to assure that motor transport qualifications and currencies are managed and updated effectively in order to prevent unauthorised personnel operating vehicles.

Training Assurance

1.4.316. The assurance of training was key to maintaining standards and was to be carried out in accordance with JSP 822. The Army Inspectorate conducted a study in 2022 into the governance and assurance of distributed training (DT) which concluded that better assurance was required.[84] Recommendation 8 was that the:

> 'Director of Personnel (Army) should review the training interventions of all leaders and managers within the Army training system. This should ensure all leaders and managers have sufficient policy awareness and practical application to role in terms of governance, assurance and conduct of Army training.'

Exhibit 060
Exhibit 095

1.4.317. In accordance with JSP 822, ACSO 9001, and ACSO 3249, for DT, at unit-level the 'first party audit and inspection' (1PA) was provided by the training provider, and they were expected to provide assurance for every course and carry out additional spot-checks on a periodic basis.[85,86,87] The 'second party audit and inspection' (2PA) for each course was provided by the training delivery authority. Within armoured infantry units this was HQ ARMCEN's DTC for D&M and gunnery courses, and the Land Warfare Centre (LWC) Dismounted Close Combat DTC for CIS. The DTCs were responsible for periodically convening, testing, validating, and inspecting courses run by 1 YORKS.

Exhibit 038
Exhibit 095
Exhibit 270

1.4.318. 1 YORKS Training Wing conducted a 'first line of defence assurance' (1LoDA) self-assessment before the accident and found themselves to be satisfactory in all nine areas.[88] However, the 1PA process that the wing applied to Pte Watson-Pickering's CVR(T) D&M course, created, and then did not correct, the issue that all students who finished the course were awarded a 'pass' grade. This was despite not having achieved all the training objectives and was contrary

Exhibit 044
Exhibit 062
Exhibit 080
Exhibit 096
Exhibit 271

[84] 20220511-Army Inspectorate Governance and Assurance of Distributed Training Report EXCO-O
[85] ACSO 9001 – The Army Policy for Audit and Inspection.
[86] ACSO 3249 – Conduct of Army Training.
[87] LoDAs are the way in which the MOD determines its assurance processes. For training, the 1LoDA was conducted internally by the organisation carrying out the training (the training provider), and 2LoDA was conducted by the training delivery authority on the training provider.
[88] Training wing personnel, access to training publications, completeness of course files, record of instructors, register of TDDs, records of continuation training, course administration, suitability of teaching areas, and the archive of previous unit inspections.

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to LWC SOI 325. Pte Watson-Pickering's course did not complete the trench crossing element as the equipment was not available to use; the DMI noted the TDD in the course report. The course closure paperwork sent by the training wing to the MCC DTC did not include the TDD and, therefore, the DTC recorded all the students as having passed when the results for each should have been recorded as a 'fail'.

1.4.319. Soldier A's D&M course concluded with a TDD as all CVR(T) vehicles were prohibited from using the public highway at that time. The TDD was notified to the MCC DTC who were required to conduct 2PA checks on every course. The DTC awarded a grade of 'pass with training deficiency' which was contrary to LWC SOI 325. They should have awarded a grade of 'fail' and allowed the duty holder to decide if they would permit the individual to carry on training for up to 12 months whilst attempting to clear the TDD. Exhibit 062 Exhibit 097 Exhibit 258 Exhibit 259 Exhibit 272

1.4.320. ARMCEN's DTC conducted a 'second line of defence assurance' (2LoDA) inspection of 1 YORKS on 1 October 2020 and recorded a score of 'Good Practice' against nine out of the twelve areas they checked, with the other three noted as contravening policy.[89] In the year after the assurance inspection the situation regarding some of these areas had changed as noted below: Exhibit 097

a. **Training wing staffing.** At the time of the inspection there was a training officer and two personnel at the rank of colour sergeant within the wing.[90,91] At the time of the accident this was reported to have been increased to a training officer, a training warrant officer, a colour sergeant, two sergeants (loaned from Alma Company) and two lance corporals. Exhibit 097 Exhibit 098 Exhibit 298

b. **Publications**. These were seen to be up-to-date and accessed via an authorised MCC DTC Portal on the MOD intranet. However, the panel has already noted at paragraph 1.4.35 that 1 YORKS was, at times, using an out-of-date version of AVSOs. Exhibit 087 Exhibit 088 Exhibit 097

c. **Course files.** These were noted by the inspection as contravening policy in that not all the required paperwork was being archived. A full course file includes some or all the following: Exhibit 097 Exhibit 228

(1) The convening paperwork;

(2) A nominal roll;

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[89] Training wing personnel, access to training publications, record of instructors, register of TDDs, records of continuation training, course folders, training areas and equipment, course lesson delivery, instructor documents, an observation of a lesson, the archiving of previous unit inspections, and completeness of course files.

[90] The Combat Arms Policy for Employment, Part 3 (The Directive for Infantry Employment), Annex A (June 2018) shows that there is no formal training or competency to become a training officer. In this respect it appears to be unique amongst all the Late Entry Infantry Officer roles.

[91] Colour sergeant is the infantry's term for a staff sergeant.

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(3) A course programme;

(4) AVSO test sheets;

(5) A copy of the AV authority to use document;

(6) Weapon handling test sheets;

(7) Live firing exercise score sheets;

(8) The test matrix;

(9) Internal validation sheets;

(10) Continual assessment sheets;

(11) Course closing paperwork;

(12) TDD reporting and task completion sheets; and

(13) The DTC course report.

When the panel requested the D&M course file for Soldier A the response was that it was 'largely missing' and only the convening and closing paperwork was available.

d. **TDD Register.** This was noted by the inspection as contravening policy and 1 YORKS was advised to improve. The issue of training wing not correctly recording TDDs is discussed at paragraph 1.4.239. Exhibit 097

1.4.321. The 2LoDA team from HQ ARMCEN advised 1 YORKS on the areas that required improvement. The panel noted that despite additional personnel being assigned to the training wing and the reduced training schedule due to the pandemic, some of these areas had not improved (course files and the TDD register). The panel also noted that other areas previously rated as satisfactory (continuation training and publications) had degraded.

1.4.322. Both D&M courses that the panel analysed had issues with the closedown procedures that should have been identified and dealt with at the earliest opportunity. The panel believed it to be very likely that students on other D&M courses were potentially viewed as qualified but remained not fully trained.

1.4.323. The panel **observed** that:

a. 1 YORKS had not addressed all the areas noted by the 2LoDA report of 1 October 2020 at the time of the accident, and had degraded in the areas of continuation training and publications; and

b. As there were issues with the closedown processes for both D&M courses that the panel analysed, the 1PA and 2PA regime for DT

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between 1 YORKS and the Mounted Close Combat DTC was not being properly employed by either party.

Deficiencies in training

1.4.324. Although the Learning Specifications (LSpecs) in HQ ARMCEN's CVR(T) course folders appeared comprehensive and easy to follow, the panel noted some safety areas that were pertinent to the SI but were not included. These were the following:

a. **Emergency procedures.** Although (anecdotally) a regular occurrence, there was no information in the LSpecs or AVSOs for what to do in the case of a loss of intercom whilst the vehicle was in motion. A course instructor informed the panel that there was a locally understood procedure that, in a Spartan, comds would tap the driver on the helmet to inform them to stop the vehicle. A different comd informed the panel that, when in a Scimitar, they unscrewed one of the vehicle's antennas and tapped the driver on the head for the same effect. Another said that their process was to tap the back of the driver's seat with their foot; — Witness 15, Witness 18, Exhibit 044, Exhibit 073, Exhibit 101

b. **'Head down'**. AVSOs provided a list of verbal orders for procedures such as 'Driver slow down', 'Driver prepare to advance' etc. However, there was no verbal order for a comd to tell the driver when to move between the 'head up' and 'head down' positions. There was also no advice or guidance to the comd on the situations when they might consider giving this order; — Exhibit 044, Exhibit 079, Exhibit 102

c. **Conversion training.** Driver and comd D&M courses were taught on the Spartan due to the number of students that could be carried at one time making the process of training multiple personnel more efficient. JSP 800 stated: — Exhibit 096, Exhibit 102

> '…where an individual is required to drive or operate a specialist vehicle, GS [general service] or UOR [urgent operational requirement] vehicle platform on which they have had no previous training they shall undergo a period of formal conversion training. The training was to be vehicle/vehicle platform specific and was to be provided by a suitably qualified instructor for that vehicle/vehicle platform. All training was to be in line with the relevant training pack issued by the Capability Director (CD) having responsibility for that vehicle/platform'.

The conversion training from Spartan to Scimitar in the CVR(T) D&M course consisted of briefings regarding the differences between the two vehicles. Although the Spartan shared the same major automotive components as the remainder of the fleet, it had a different body shape to

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Scimitar and did not have a turret. The course instructor taught a lesson covering the differences for fire-fighting equipment and casualty evacuation procedures etc;

d. **Avoiding gun barrel strikes.** There was no information provided to drivers or comds on the likely effects of a gun barrel strike or turret strike, or the dangers this posed to the driver when in the 'head up' position. For example, the LSpecs did not cover issues such as, on approach to an obstacle, if the driver could not see the gun barrel, they were required to check if the gun barrel was in a safe direction; and

e. **Turret lock.** Students on the CVR(T) gunnery course were not taught about the turret lock and its potential use in protecting a 'head up' driver from the effects of rotation of the turret.

1.4.325. These safety critical areas were not included in the LSpecs for the appropriate courses and the panel found this surprising given the age of the vehicle, and the number of training reviews that were likely to have been completed since it entered service. Allowing safety critical procedures to be locally driven by individual units, with the potential for lack of consistency throughout the fleet and confusion for personnel moving between units, did little to reduce the risks in these areas. Ensuring that equipment related safety critical issues were captured and taught to personnel, who would be expected to use the equipment in-role, would be likely to reduce the training burden, reduce the opportunity for confusion, and increase relevant experience levels in a safe environment.

1.4.326. The panel concluded that:

a. Key safety information was missing from the LSpecs and finds that the failure to identify equipment related safety critical issues, and teach them to the operators, was a missed opportunity. This was an **other factor**; and

b. The gaps in training for emergency procedures and instructions on avoiding gun barrel strikes impacted the level of understanding that the crew had about the way their turreted vehicle worked, and the dangers presented to the driver. The panel finds that the lack of vehicle specific training was a **contributory factor**.

1.4.327. **Recommendation. The Director Land Warfare should review armoured vehicle emergency procedures and amend turreted vehicle training in order to ensure that all relevant risk mitigation procedures are comprehensive, standardised, and included in formal training.**

Experience - AV collective training

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1.4.328. Collective training was a term that described most training activities that involved more than one individual from a formed unit. Chapter 20 of the Field Army Training Directive 2021 detailed this training as a series of levels from Alpha through to India. Table 1.4.3 depicts all collective training levels for context, but the ones that are of note to this SI are quoted directly from the directive: Exhibit 041

a. 'Training Level Alpha – Crew/section training including Individual, crew and section special-to-arm training focussing on core skills. Validation was the responsibility of the sub-unit comd;

b. 'Training Level Bravo – Troop/platoon training including. Troop/platoon special-to-arm training focussing on core skills. Validation was the responsibility of the sub-unit commander;

c. 'Training Level Charlie – Special-to-arm sub-unit training including focussing on troop and platoon training alongside each other to master its core role and drills in the context of their sub-unit role. This will normally be conducted as live training. Validation was the responsibility of the sub-unit commander; and

d. 'Training Level Foxtrot – Combined-arms battlegroup training including mastering the complexity of battlegroup tactical actions. This will be conducted in both the live and simulated environment. Training can be conducted as part of a Command Post Exercise (CPX) but battlegroup training was best delivered, and for validation must be delivered, in the field. The battlegroup should have a minimum of three combat sub-units and be supported by combat support elements so that the battlegroup was required to integrate with the brigade's other assets. The battlegroup headquarters and battlegroup commander will be validated at this level. Validation, if required, was the responsibility of Commander Collective Training Group or the brigade commander.'

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Training Level	Previous Collective Training levels	Validated by	Defence Training Level	Defence Training Level Definition
ALPHA	Crew/section	Sub-unit commander	Tier 0	Sub-unit training prepares individuals to operate as teams below unit level.
BRAVO	Troop/platoon	Sub-unit commander		
CHARLIE	Special-to-arm sub-unit	Unit commander		
DELTA	Special-to-arm unit	Commander Collective Training Group or brigade commander	Tier 1	Unit level training prepares units and sub-units to take their place within a tactical formation or combined/joint force component
ECHO	Combined-arms sub-unit	Commander Collective Training Group or battlegroup commander		
FOXTROT	Combined-arms battlegroup	Commander Collective Training Group or brigade commander		
GOLF	Brigade or group	Commander Collective Training Group or divisional commander	Tier 2	Tactical formation level collective training prepares tactical formations below the combined/joint force component level for operational employment.
HOTEL	Division	Director Land Warfare	Tier 2+	Component-level joint collective training prepares one or more combined/joint components for operational employment. It may be conducted in combined or joint contexts on a UK, NATO, or coalition partner framework basis.
INDIA	Corps	NATO		
			Tier 3	Combined/joint task force-level collective training prepares a combined/Joint task force for operational employment or a Permanent Joint Operating Base (PJOB) for an operational role. It may be conducted in combined or joint contexts and on a UK, Joint Expeditionary Force, NATO, EU, or coalition partner framework basis.
			Tier 4	Strategic-level training prepares the Defence Crisis Management Organisation (DCMO) to manage crises and provide strategic direction for, and conduct of, operations at the political-military strategic level. They may involve Other Government Department (OGD)/Non-Government Organisations, other International Organisations and/or NATO and the EU.

Table 1.4.3: Collective training level definitions

1.4.329. The KRH and 1 YORKS were both part of 12th Armoured Infantry Brigade. The KRH was informed on 26 October 2020 by a force preparation order, that their certification as the Lead Armoured Task Force, would be validated on a training level foxtrot event (Ex IS). 1 YORKS was not formally notified of their involvement until the warning order was received from the Chief of Staff of 12th Armoured Infantry Brigade, on 26 February 2021. Under this, 1 YORKS was directed to: Exhibit 003 Exhibit 281

a. Contribute to the design of, and generate forces to meet the statement of requirement (SOR) and equipment SOR. This included the requirement to provide 59 out of 121 personnel for the permanent range team at Castlemartin Ranges;

b. Train and deploy a credible Task Force HANNIBAL (TFH). This required 1 YORKS to provide 299 out of 406 personnel for this task; and

c. Be prepared to provide real life support to the exercise. 1 YORKS ended up providing 13 out of 138 personnel for the real-life support team.

1.4.330. To prepare for Ex IS, 1 YORKS developed a training package with the main element for most personnel being the Mounted Close Combat Battlecraft Syllabus (BCS) which was designed to introduce crews to the skills required to Witness 06 Exhibit 260 Exhibit 261

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work effectively at training level Alpha to training level Charlie between 19 July 2021 and 1 August 2021. It was the only collective training package organised by the battalion; the rest of the time between March and October 2021 allowed sub-units to conduct their own training.

1.4.331. Most of Quebec Company did not take part in the mounted element of the battalion's collective training event, as neither 12th Armoured Infantry Brigade nor 3rd (UK) Division were able to resource any vehicles for them. In response to the request for vehicles 3rd (UK) Division replied: Exhibit 006 Exhibit 043 Exhibit 275

> 'Having looked across the division's equipment holding and activity over this period, we are unable to provide the A [armoured] vehicle uplift you have requested. The other activity over this period is a higher priority and BCS, although desirable, is not a necessity for Task Force Hannibal troops. Clearly this has been driven by the cancellation of 1 R WELSH training in Germany, with 1 YORKS being a lower priority for training.
>
> 'However, the Ex IRON STORM 2-21 trawl provides all Task Force Hannibal equipment from the initial handover window (23 Aug - 5 Sep) so there is a potential opportunity for 1 YORKS to conduct BCS then … [we are investigating] … getting you SPTA access in the KRH BG CALFEX period.'

1.4.332. Quebec Company mainly conducted dismounted roles for the remainder of 1 YORKS to practice their mounted BCS activity against. Most of the reconnaissance platoon did not attend this event as they were required to isolate due to the pandemic. The reconnaissance platoon did manage to achieve some mounted collective training prior to Ex IS. This was done synthetically, at Warminster, using the Virtual Battlespace (VBS) in May 2021, and the Combined Arms Tactical Trainer (CATT) in July 2021.[92] Both VBS and CATT provided the opportunity for crew training in a virtual environment and individual simulators could be networked to train multiple crews in the same interactive environment at the same time. Witness 01 Witness 02 Witness 04 Witness 05

1.4.333. The panel, accompanied by staff from the Army Personnel Research & Consultancy, visited both the VBS and CATT facilities to try to ascertain how far they could mitigate the effects of a lack of live collective training. There was an opportunity for activities using the VBS and CATT to promote individuals to start forming relationships within a functional crew. However, at this stage the vehicle crews for Ex IS were not known. Soldier A and Soldier B were in different crews for the VBS training, Soldier A did not attend CATT, and Pte Watson-Pickering did not attend any of the collective training. The crew had not been notified that Witness 01 Witness 05 Witness 14 Exhibit 263

[92] JSP 822, the Armoured Close Reconnaissance BCS, and the Field Army Training Directive 2021 broadly stated that collective training could be delivered using live (with people and things that exist in the physical world), virtual (synthetically reproduced people and things that can be manipulated to create effects), or constructive (a mixture of live people and things blended with synthetic effects) means.

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they were going to be a crew at that stage, so there was no opportunity for them to start determining how they would operate together. Crucially, neither VBS or CATT had the capability to help a driver to understand the width of their vehicle or how much extra space was required to negotiate an obstacle with the turret at different angles (as the gun barrel protruded over the side of the vehicle). Nor could either system help the crew to understand the risks from a gun barrel or turret strike whilst the driver was in the 'head up' position.

1.4.334. Soldier A and Soldier F had been booked to attend the Armoured Close Reconnaissance Commanders Course (ACRCC), with the Reconnaissance and Armoured Tactics Division of ARMCEN, at Warminster from 18 October 2021 to 26 November 2021. They were both removed from this course in early August 2021 to ensure that the reconnaissance platoon had sufficient Scimitar comds for Ex IS. When Soldier A took part in the VBS package in May 2021 and Soldier F deployed on the battalion's collective training event in the light role in July 2021, neither had any expectation that they would be going on Ex IS.[93] Soldier A stated that they only found out that they were not going on the ACRCC on approximately 8 October 2021, whilst they were already at Castlemartin Ranges supporting the Permanent Range Team. Soldier B was aware that they were going to deploy on Ex IS, but until approximately one month before the event, they had been told that they were going to be in a Land Rover with another soldier from Quebec Company.

Witness 01
Witness 05
Exhibit 273

1.4.335. Training level Alpha to training level Charlie were the levels that the BCS was designed to provide the training progression for. However, the BCS was still largely aspirational due to the pressure on resources (paragraph 1.4.331) and it was not mandatory for personnel to have completed it, or have taken part in any other collective training event, prior to embarking on a training level Foxtrot event. Many of the reconnaissance platoon personnel had not been allocated into crews by the time they attended VBS or CATT. Soldier A, Soldier B and Soldier F were either not expecting to go on Ex IS or were not expecting to be in an AV. This diminished the opportunity for them to become completely invested in the training.

1.4.336. The panel opined that the virtual environment presented by VBS was very much like playing a networked computer game with rows of computers, screens and keyboards laid out on desks. CATT's presentation more closely replicated the internal environment of a range of AVs providing a more visibly accurate layout for the crews to work in. Both could be used to synthetically train crews in some of the drills needed to operate the vehicle on an exercise, but the training needed to be very structured and closely controlled to prevent those involved from losing focus and interest in the missions and drills being practiced.

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[93] Soldier F deployed in the light role as 3rd (UK) Division was unable to provide any Scimitars for the event.

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The distinct lack of immersive realism of VBS left it prone to misuse and the panel opined that it was a difficult tool to learn new skills on. It was better suited to practicing and confirming skills already known. CATT was significantly better in this respect and the enhanced realism of the surroundings and human machine interface improved the level of immersion and the feeling that it mattered about doing drills correctly.

1.4.337. The panel **observed** that the reconnaissance platoon derived minimal benefit from the virtual collective training events provided to them but they would have benefited from a live mounted BCS in the period immediately before Ex IS.

1.4.338. The panel concluded that the low priority given to 1 YORKS training, combined with the low availability of AVs, impacted on the ability of the battalion to conduct an effective mounted BCS, with Quebec Company being the most disadvantaged. By ordering 1 YORKS to conduct a mounted BCS whilst simultaneously tasking them to provide the permanent range team effectively denied them that training opportunity. The panel finds this to be an **other factor.**

1.4.339. **Recommendation. The Chief of Staff Field Army should re-examine the rationale for having a single brigade provide the validating battlegroup whilst also providing most of the support staff in order to ensure that the both the validating and the validators can be appropriately resourced.**

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1.4.340. Outlined in Table 1.4.4 are the activities that the various members of the crew were employed on in the lead up to the start of Ex IS.

2021	Pte Watson-Pickering	Soldier A	Soldier B
March	Light Role Reconnaissance Cadre	Platoon Sergeant Battle Course	Light Role Reconnaissance Cadre
April	Live Fire Tactical Training	Annual leave	Live Fire Tactical Training
May	Warrior/CVR(T) driver courses	Virtual Battlespace package	
June		Duke of York preparation /Pandemic isolation	
July		Pandemic	Combined Arms Tactical Trainer
August	Annual leave		
September	Permanent range team		In camp
October	Ex IS (Mission Zero)		

Table 1.4.4: Crew activities leading up to Ex IS.

1.4.341. Pte Watson-Pickering also spent the period immediately before moving to SPTA at Castlemartin Ranges as part of the permanent range team. Soldier A was also selected for this as they had previous experience in running ranges. Pte Watson-Pickering was picked for this task at less than 12-hours' notice to replace a Land Rover driver from elsewhere in the battalion who had been medically excused. Despite it being Alma Company's role to backfill gaps, there were not many qualified Land Rover drivers across the battalion. Therefore, the replacement was drawn from the reconnaissance platoon.

Witness 01
Witness 05
Witness 06

1.4.342. At paragraph 39 to the exercise instruction, issued by 12th Armoured Infantry Brigade, 1 YORKS was directed to conduct a mounted BCS from 9 September 2021. 1 YORKS believed that the date was an error and that it was intended to be 9 October 2021 as they were not scheduled to take over Knook Camp until 27 September 2021. From 21 September 2021 to 9 October 2021, the battalion HQ deployed on Ex ACES HIGH, the BCS package for 12th Armoured Infantry Brigade. This meant the battalion HQ was dislocated from the remainder of the battalion for the final three weeks before the deployment of the main party for Ex IS on 9 October 2021.

Exhibit 043
Exhibit 046
Exhibit 255
Exhibit 274

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1.4.343. For the period 10 October 2021 to 12 October 2021, 1 YORKS was focussed on finalising the individual training that CRTC required to be completed before personnel started the exercise (weapon handling tests, night driving assessments etc), and the issuing, fitting, and checking of TES equipment. 13 October 2021 was a compulsory no-driving day set by the CRTC to ensure compliance with driving hours policy.[94] Four of the required Warrior AFVs were not delivered to Knook Camp until 14 October 2021 which prevented one of the two armoured infantry platoons within Corunna Company from conducting any form of mounted BCS before the start of Ex IS. 14 October 2021 was also the conditions setting day for both TFH and the KRH BG where both sides were allowed to become familiar with the areas they would be using, but were not permitted to attack each other. 15 October 2021 was the first day of Mission Zero, so there were no further opportunities for Soldier A, Soldier B, Pte Watson-Pickering, or several of the wider TFH crews to engage in, or benefit from, collective training.

Witness 01
Witness 05
Witness 06
Exhibit 255
Exhibit 274

1.4.344. These factors did not just affect the crew of c/s 62 Alpha but were common across the reconnaissance platoon, Quebec Company, and to many across the battalion who struggled to prepare fully for the task. The battalion HQ was dislocated much of the time and deeply invested in its own training. This was because the main risk they were tracking was that they would not be able to give a good enough account of themselves tactically to provide a robust opposition to the KRH BG. The battalion HQ stated that they viewed the lack of training time as a risk to performance, a wider risk to competence, but not a risk to life, as they believed (despite removing Soldier A and Soldier F from mandatory courses) that everyone was qualified and just needed to gain some experience.

Witness 04
Witness 05
Witness 06

1.4.345. Before Ex IS, Pte Watson-Pickering, Soldier A, Soldier B and Soldier F had not been in a moving Scimitar. Despite the training event outlined in previous paragraphs, the total Scimitar experience for the crew of c/s 62 Alpha and their platoon comd was negligible. As far as the panel was able to determine, Pte Watson-Pickering had not sat in the driver's seat of a Scimitar before 10 October 2021 and the only time Soldier A, Soldier B and Soldier F had been in a Scimitar was on the gunnery course 12 months previously. The synthetic training events that were expected to raise the experience levels of the reconnaissance platoon added little value and could not cover the hazards that the crew of c/s 62 Alpha faced. They were designed as tactical training tools with no real-life consequences, nor the ability to learn from mistakes.

1.4.346. The battalion HQ was driven to ensuring that 1 YORKS gave the best account of itself possible and was focussed on its own tactical progression. In doing so, it lost sight of the potential risk to life issues that could arise from

[94] Driver's hours Scheme C.

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insufficient focus on the nucleus of any armoured unit – a fully-trained and experienced crew. The success at getting meaningful training for the battalion HQ meant that they were over-committed in the lead up to Ex IS. The lack of a questioning culture led to 1 YORKS not robustly questioning the Ex ACES HIGH or permanent range team tasks. Reduced support to these tasks could have provided a better opportunity for a second BCS in September 2021 or early October 2021 for those that had not been able to attend the first event in July 2021.

1.4.347. The panel concluded that the battalion HQ was over-committed to achieve tasks that were of little or no benefit to their own preparedness i.e. the permanent range team and Ex ACES HIGH. They did not exploit the opportunities to provide meaningful training for their AV crews prior to Ex IS. The panel finds that over-commitment was an **other factor**.

1.4.348. **Recommendation. The Chief of Staff Field Army should ensure that commanders understand the safety implications of dislocating a key element of a tactical unit in the period running up to a deployment in order to ensure that their focus remains on the safe and efficient deployment of the unit for which they are responsible.**

Supervision

1.4.349. AVSOs recommended that:

> 'Where possible units are to ensure that any newly trained and appointed AV crew persons, that do not have any experience on the platform, are placed in an experienced crew to reduce the risk of accidents.'

It also stated that:

> 'The Commander was responsible for the supervision of the operation of any equipment by any crew members.'

1.4.350. A high turnover of personnel, and a significant time away from their role working with AVs, had meant that most Scimitar drivers in the reconnaissance platoon had been replaced. National lockdowns and resilience tasks meant that it had not been possible to conduct CVR(T) driver courses until the summer of 2021. This resulted in most of the reconnaissance platoon drivers not attending their driver training courses until four to five months prior to the accident. There was a lack of qualified Scimitar gunners, as evidenced by two of the five reconnaissance platoon gunners on Ex IS who, having recently failed to complete their gunnery course, were still required to act in that capacity.[95] The gunners had been eligible to have been considered as part-trained and used in

Witness 04
Witness 05
Witness 18

[95] The live firing phase was cancelled before the last shoot.

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role with the consent of the DDH under LWC SOI 325, but this had not been applied for. During the VBS training session, Soldier A was paired with one of the most experienced gunners in the platoon, and Soldier B was paired with one of the most experienced comds in the platoon. As already mentioned, VBS had a basic representation of the Scimitar in which all the crew simulated being 'head down' throughout.

1.4.351. To gain confidence in their abilities as an AFV comd, newly qualified RAC officers would have their AFV paired with one commanded by a lower ranked (but more experienced) member of their troop.[96] Although the officer remained in charge of the mission, the more experienced comd would have more tactical knowledge and effectively support the development of an officer's practical AFV skills. During this developmental phase, the experienced comd would provide the lead vehicle for the officer to follow. Pte Watson-Pickering was thought to have been the best student on his CVR(T) driver course but had no experience on Scimitar. Soldier A was the least experienced comd in the reconnaissance platoon, had never commanded a Scimitar, and would not have been used on Ex IS if any other Scimitar comds had been available. Soldier B had no experience on Scimitar but was thought to be one of the better gunners in the reconnaissance platoon.

Witness 05
Witness 10
Witness 15
Exhibit 044

1.4.352. To provide effective supervision for Ex IS, it was not possible to provide a better mix of experience for the crew of c/s 62 Alpha as those perceived to be the weakest had already been paired with the strongest. In terms of crew ability, this left c/s 62 Alpha as broadly in the middle of the five Scimitar crews fielded by the reconnaissance platoon. However, this grouping actually meant that no one in c/s 62 Alpha had any experience of a moving Scimitar prior to deploying on Ex IS. Due to the requirements of TFH to pair direct fire and indirect fire assets to facilitate reconnaissance by strength (a Scimitar and a mortar fire control team in a Spartan respectively), Soldier A was not paired with a more experienced reconnaissance comd to learn from. C/s 62 Alpha was effectively self-supervising with remote command and control via a combination of radio and WhatsApp® messages from the time it left the leaguer position at 03:15 on 15 October 2021.

Witness 04
Witness 05
Exhibit 011
Exhibit 299

1.4.353. The crew were all inexperienced and VBS was an opportunity for Soldier A and Soldier B, having both been paired with highly experienced personnel, to learn skills that experienced personnel knew but were not taught on courses. The basic nature and lack of realism of the VBS human-machine interface meant that some of the situations that would require careful consideration of the driver's safety, such as gun barrel strikes or otherwise

[96] On Ex IS, c/s 31 Alpha (commanded by the troop leader) was paired with c/s 31 Charlie (commanded by the senior corporal in the troop). C/s 31 Bravo (commanded by the troop sergeant) was paired with c/s 31 Delta (commanded by the junior corporal in the troop).

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manoeuvring the turret whilst the driver was 'head up', could not occur. Tips on dealing with these situations were, therefore, not brought out.

1.4.354. Due to a lack of gunners, and the fact that most drivers were inexperienced, it was not possible for the reconnaissance platoon to provide a better mix of experience within the crews for Ex IS whilst deploying five Scimitars. There was no experienced person to provide the natural supervisor role. Deferring to the rank system, therefore, was the only alternative. No one in the chain of command for c/s 62 Alpha had passed an AV tactics course and their ability to supervise c/s 62 Alpha was limited once the vehicle left the leaguer. Normally Scimitars would deploy in pairs, and the crew of c/s 62 Alpha would have gained a lot of useful experience from being paired with a more experienced crew. Following the RAC model for pairing AFV comds, Soldier A would have been paired with an experienced platoon sergeant who would supervise their development.

1.4.355. The unconventional tactics directed to TFH on Mission Zero saw c/s 62 Alpha being paired with a crew from the mortar platoon in a Spartan. The potential for supervision and experience building by example was diminished. Once c/s 62 Alpha left the leaguer, TFH was reduced to supervising this inexperienced crew by radio communications or WhatsApp® messages which was ineffective. Over the radio Soldier C told Soldier A to disengage and return to the TFH main area via Crossing Point (CP) Bravo, however, Soldier A turned away from CP Bravo and attempted further engagement with the KRH BG. The panel felt it unlikely that this 'TES bravado' would have perpetuated if c/s 62 Alpha had been properly supervised within the construct of a Scimitar pair at this point.

1.4.356. The panel concluded that it would have been preferable to have fielded a smaller team than to force a weaker hand. It was not appropriate for such an inexperienced crew to be allowed so much freedom from supervision, regardless of the unconventional nature of the tactics. The panel finds the lack of effective supervision to be a **contributory factor**.

1.4.357. **Recommendation. The Deputy Chief of the General Staff should ensure that appropriate supervision is in place for all situations involving inexperienced personnel in order to ensure that experience is gained in a safe and controlled manner.**

Fatigue

1.4.358. Between the Ex IS 'prepare' phase at CMR and the gap until the start of the Mission Zero phase of Ex IS, drivers' hours were mandated in accordance

Witness 05
Exhibit 081
Exhibit 093
Exhibit 094

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with DSA 03, MTSR, Scheme B.[97] For the Ex IS Mission Zero phase, authority was granted to move to Scheme C. Contrary to the requirements of JSP 800 and MTSRs, Pte Watson-Pickering's driving hours record cards for October 2021 showed no entries for his time as a driver at CMR. At SPTA, none of the mandated daily line manager checks had been completed and time remained unaccounted for.

1.4.359. The changeover between Scheme B and Scheme C was accomplished by enforcing a 'no-drive day' on 13 October 2021. Pte Watson-Pickering's driving hours logbook for the week commencing Saturday 9 October 2021 recorded the following: Exhibit 081

a. **Saturday 9 October 2021**. Thirty mins of driving, 9.5 hours of other work and 14 hours of rest.

b. **Sunday 10 October 2021**. Two periods of driving, each of 30 min and 9 hours of other work, 14 hours of rest.

c. **Monday 11 October 2021**. No driving, 3.5 hours of other work and 10.5 hours of rest. A further 10 hours remained unaccounted for.

d. **Tuesday 12 October 2021**. No driving, 19.5 hours of rest and 4.5 hours of other work.

e. **Wednesday 13 October 2021**. No driving, 5.5 hours of other work and 18.5 hours of rest. This was a compulsory no-drive/minimum work day to move drivers between Scheme B and Scheme C.

f. **Thursday 14 October 2021**. 8 hours of driving, 2 hours of other work and 14 hours of rest. The log shows that Pte Watson-Pickering went onto a rest period at 18:30 which accords with other witness accounts. Witness 01 Witness 05

g. **Friday 15 October 2021**. There was no entry made for the day of the accident. Witness accounts put reveille at 02:30 and the evidence suggests that c/s 62 Alpha set off at 03:15. With the accident occurring at 11:37, there would have been a maximum of just over 8 hours of driving. TES traces show that c/s 62 Alpha was stationary for much of the time after the initial transit to the observation post. These hours would have been some combination of driving, other work and rest which was well within the boundaries of Scheme C.

1.4.360. Soldier F confirmed that no driving and only minimal essential work was conducted on 13 October 2021. They also confirmed that the above record broadly aligned with their recollection of events. Witness 05

[97] DSA03, MTSRs defined allowable driving hours and mandated rest periods according to different schemes. Scheme C allowed commanders to extend the allowable driving period in certain operational conditions.

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1.4.361. Conclusive corroboration of Pte Watson-Pickering's driving hours was not possible as the official record had errors and had not been counter-signed. However, from the recollections of witnesses, the requirements of Scheme B were being complied with from 9 October 2021 to 12 October 2021, and Scheme C requirements were being complied with on 14 October 2021. Whilst it cannot be confirmed that Pte Watson-Pickering was resting throughout all the periods allocated as such, the witnesses confirmed that only minimal essential activity was taking place in the immediate period before deploying on 14 October 2021, so it was very unlikely that fatigue was an issue in this accident.

1.4.362. The panel concluded that Pte Watson-Pickering was very likely to have been sufficiently rested over the period leading up to the accident and finds that fatigue was **not a factor**.

Medical records

1.4.363. The medical records for Pte Watson-Pickering and Soldier A and the Pathology Report for Pte Watson-Pickering were checked for relevant issues such as sight or [redacted], use of prescription or recreational pharmaceuticals and alcohol use that might have impaired either from performing their roles or otherwise had an influence on the accident. The following points were noted: Exhibit 012 Exhibit 300 Exhibit 314

a. Pte Watson-Pickering:

(1) The most recent vision test was in 2016 and recorded that he did not need to wear corrective lenses;

(2) The most recent [redacted] test from 2020 showed [redacted];

(3) No prescription pharmaceuticals and no evidence of non-prescription pharmaceuticals present at the time of the accident. Pte Watson-Pickering was teetotal, so alcohol was not a factor;

(4) No history of treatment for mental health issues; and

(5) Was not downgraded at the time of the accident.

b. Soldier A:

(1) No full vision test on record but was seen to be 6/6 (no requirement for corrective lenses) at a limited consultation in 2021;

(2) The most recent [redacted] test from 2020 showed [redacted];

(3) No history of recreational drug use, was not breathalysed at the scene but no evidence to suggest that alcohol was a factor;

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(4) No mental health issues present at the time of the accident; and

(5) Was not downgraded at the time of the accident.

c. Soldier B: Exhibit 317

(1) The most recent vision test was in 2017 and recorded that they did not need to wear corrective lenses;

(2) The most recent [redacted] test from 2021 showed [redacted];

(3) Was not breathalysed at the scene but no evidence to suggest that alcohol was a factor;

(4) No mental health issues present at the time of the accident; and

(5) Was not downgraded at the time of the accident.

1.4.364. Pte Watson-Pickering, Soldier A and Soldier B had issues with [redacted] and, although both were being kept under review by the Defence Medical Services, it was not felt necessary to restrict their working environments. The examination of the medical documents submitted to the panel found no other areas of significance to this service inquiry.

1.4.365. The panel concluded that there were no relevant medical issues for either Pte Watson-Pickering, Soldier A or Soldier B on the day of the accident. The panel finds the medical health of Pte Watson-Pickering, Soldier A and Soldier B to be **not a factor**.

Safe person conclusion

1.4.366. As previously noted from AVSOs: Exhibit 044

> 'A person is deemed competent by having the required qualification, experience, currency and rank and they have also received the appropriate information, instruction, training and supervision.
>
> 'Only a person considered as SQEP may be tasked to carry out a particular activity.
>
> 'Where possible units are to ensure that any newly trained and appointed AV crew persons, that do not have any experience on the platform, are placed in an experienced crew to reduce the risk of accidents.'

1.4.367. The panel has shown that there were significant gaps in the qualifications, experience, currency, and supervision for each of the members of the crew of c/s 62 Alpha. Also, in some part, due to the lack of qualifications and

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currency of their leadership, there was a lack of understanding of the mandatory nature and benefits of this training. There was also a belief that some experience was all that was needed to mitigate the risk of tactical and reputational failure as 1 YORKS felt there was no overriding risk to life.

1.4.368. The panel concluded that it was almost certain that none of the crew of c/s 62 Alpha were fully competent whilst performing their AV roles on the Mission Zero phase of Ex IS. Further, it was almost certain that Soldier E and Soldier F were not fully competent whilst performing their AV roles on the Mission Zero phase of Ex IS. The panel finds a lack of competence to be a **contributory factor**.

1.4.369. **Recommendation.** A recommendation has already been made at paragraph 1.4.243 that the Chief of Staff Field Army should review the assurance process for accountable persons in units operating armoured vehicles, in order to ensure that they are fulfilling their regulatory and policy obligations regarding the employment and authorisation of suitably qualified and experienced persons in armoured vehicle roles.

1.4.370. **Recommendation.** A recommendation has already been made at paragraph 1.4.244 that the Head Defence Land Safety Regulator should review the governance process for accountable persons in units operating vehicles in order to ensure that they are fulfilling their regulatory and policy obligations regarding the employment and authorisation of suitably qualified and experienced persons in vehicle-based roles.

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Section 4 – Safe equipment

1.4.371. ACSO 1200 defines safe equipment as: Exhibit 039

> 'Equipment brought formally into Service together with the associated documentation and underpinned by a Safety Case to ensure its safe use by a competent person. Where no Safety Case exists, any equipment hazards must form part of the activity-specific Risk Assessment.'

Safe equipment summary

1.4.372. The accident vehicle was over 40 years old, and the post-accident technical inspection found that it had been in a poor state of repair. It was assessed that many of the faults were likely to have been present for some time and that the vehicle should not have been in use on Ex IS. However, none of the technical faults directly or indirectly caused the accident.

1.4.373. The design of the turret, and its subsequent modifications, presented a significant risk to a driver operating in the head up position. However, despite previous accidents causing injuries to drivers in this manner, the accidents were not properly investigated, and no changes were made to either the vehicle, or its operation, to mitigate the risk of reoccurrence.

1.4.374. Due to the seriousness of the panel's findings, several observations and recommendations have been made including suggestions to improve equipment safety cases, risk assessments, inspection process, incident reporting and the way in which MOD disposes of equipment with known safety issues which all have utility beyond the CVR(T) series of vehicles.

Technical description

1.4.375. Figure 1.4.24 and Figure 1.4.25 show the front and rear side aspects of a Scimitar with part names indicated.

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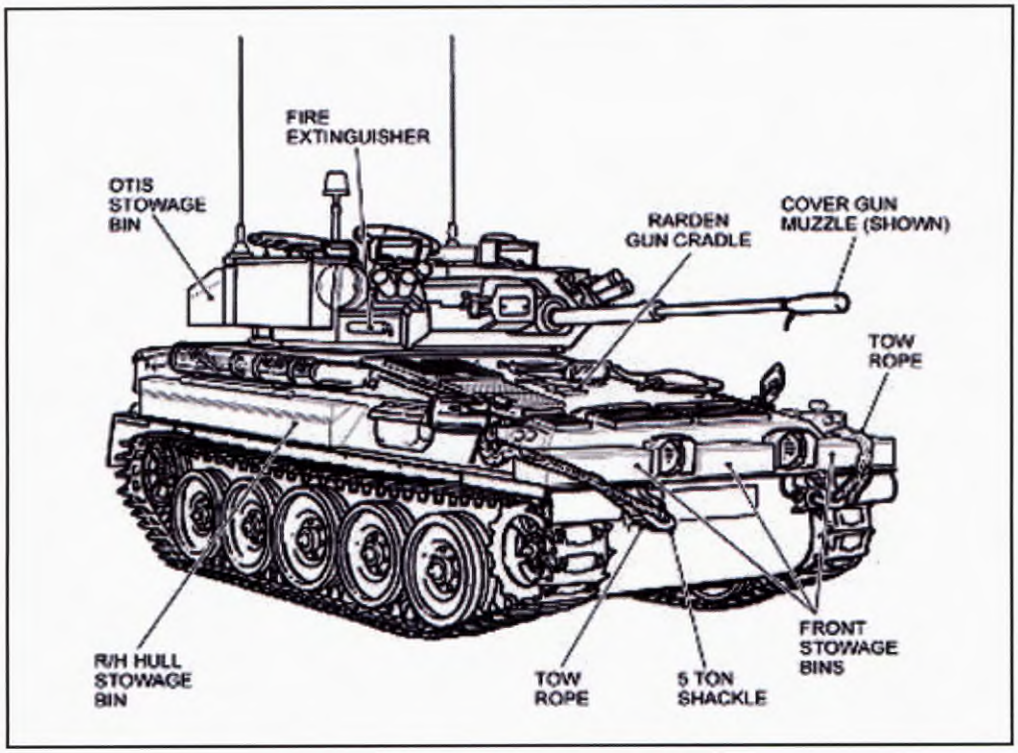


Figure 1.4.24: Scimitar front right side.

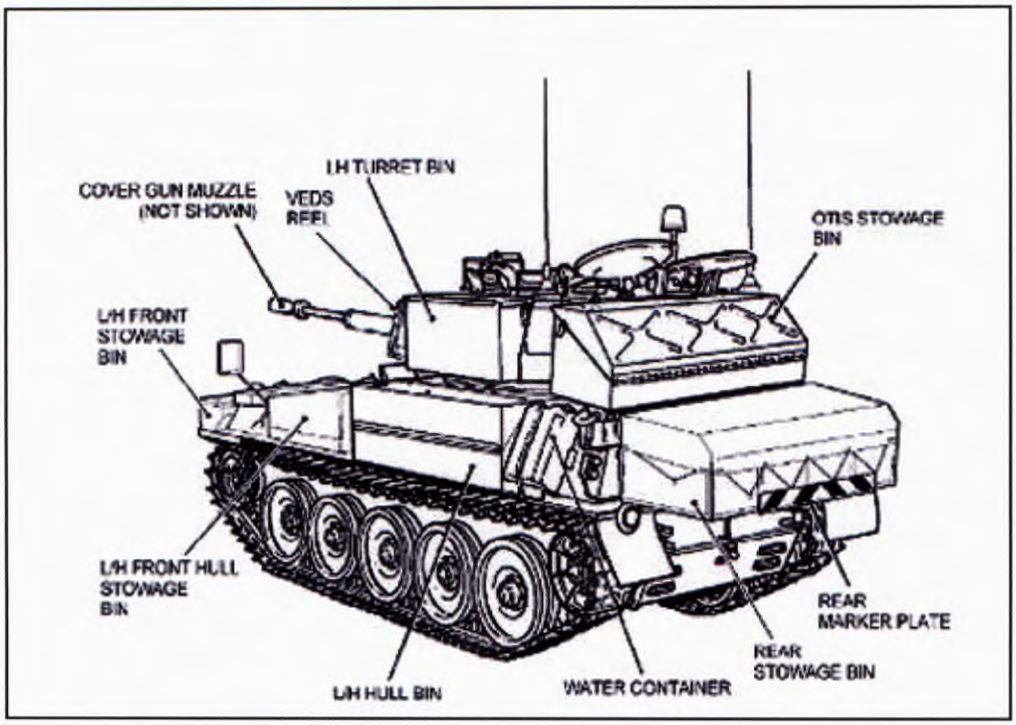


Figure 1.4.25: Scimitar rear left side.

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Exhibit 103



Figure 1.4.26: Scimitar driver's compartment

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CVR(T) vehicle history

1.4.377. The history of the CVR(T) series of vehicles can be traced back to the Director RAC Conference in December 1961 where the parameters of the need to replace FV 601(C) Saladin and FV 603 (Saracen) were discussed with several proposals being put forward.[98] It was not until November 1968 when General Service Requirement (GSR) 3479 defined the vehicle that would become the FV107 Scimitar as being: Exhibit 008 Exhibit 104

> 'A light tracked armoured reconnaissance vehicle to be made up of the turret, armament, and surveillance equipment of Fox (GSR 3358) mounted on the hull and running gear of the CVR(T) Fire Support (GSR 3301).'[99]

1.4.378. GSR 3479 went on to state that this variant, the CVR(T) - 30 mm, would replace the Ferret Mk II and the FV 432 in the reconnaissance roles as the Ferret did not provide 'adequate mobility or sufficient defensive armament for use within a predominantly tracked battlegroup', and the FV 432 was 'too slow, noisy and conspicuous for a reconnaissance vehicle'. The agreed target date for the vehicle was 1973. Figure 1.4.27 shows the relative sizes of the Scorpion and Fox noted in GSR 3479. Exhibit 008 Exhibit 105 Exhibit 106 Exhibit 107

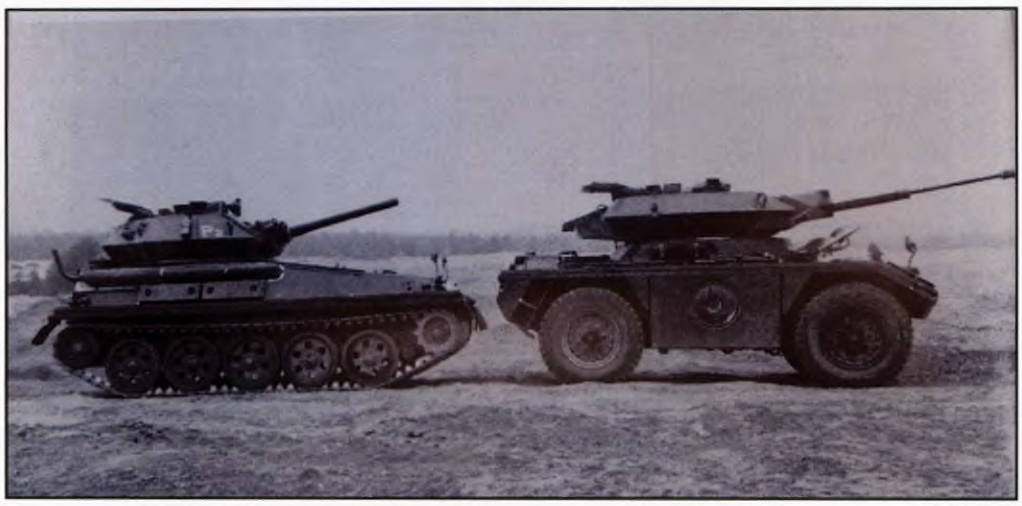


Figure 1.4.27: Prototypes of FV 101 Scorpion and the FV 721 Fox.

1.4.379. The requirement for the turret was changed at some point during the design process. The first prototypes were delivered in July 1971 using Scorpion turrets modified to fit the L21A1 30mm Cannon developed by the Royal Armament Research and Development Establishment and the Royal Small Arms Factory (Enfield) which became known as RARDEN.

[98] Dunston S (2021). *Scorpion FV101 Combat Vehicle Reconnaissance (Tracked) in British Service 1972-2020.* J H Haynes and Co Ltd. Yeovil.
[99] Which became known as the FV101 Scorpion.

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1.4.380. The issue of storage on the platform noted in trials of the Scorpion had already been addressed with the addition of stowage bins fixed to the rear of the hull and turret (Figure 1.4.28). These had been incorporated on to the prototype for the Scimitar before it entered service. Extensive testing of the almost identical Scorpion began in 1969 with Scimitar prototypes added in 1971 until they were accepted in 1972 and 1974 respectively.



Figure 1.4.28: Prototype Scimitar showing turret rear stowage bin.

1.4.381. The MOD ordered 288 of the FV 107 Scimitar on 30 July 1970 primarily as a close reconnaissance capability. Although GSR 3479 stated that it was to be used in the 'combat zone in Europe in general war' it was used extensively across the world from Norway to Belize and Cyprus as well as operations in the Falkland Islands, Kuwait, Bosnia, Kosovo, Iraq, and Afghanistan before being replaced by Scimitar 2 in 2011. Since then, the Scimitar had been progressively drawing down from regular use whilst waiting for the Ajax series of vehicles to be delivered to replace the capability.

Relevant modifications

1.4.382. There have been over 400 modifications to the CVR(T) series since it entered service. The modifications specifically affecting FV 107 Scimitar, and relevant to this SI, are listed in the following paragraphs.

Exhibit 021
Exhibit 023
Exhibit 108
Exhibit 109

1.4.383. **Turret Lock.** This modification to prevent accidental slewing of the turret was fitted in 1983. This Turret Lock consisted of a mechanical lock that would mesh with the teeth of the turret ring and was held in place by means of a

Exhibit 021
Exhibit 023
Exhibit 108

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spring. The turret lock can be seen both engaged and disengaged at Figure 1.4.29.

Exhibit 109
Exhibit 110
Exhibit 111
Exhibit 112



Figure 1.4.29: Turret lock engaged (left) and disengaged (right).

1.4.384. The main requirement for the turret lock was to prevent unintentional movement of the gun barrel due to mechanical vibration when the vehicle was in motion. Tactical use of the vehicle would require the gunner, on orders from the comd, to bring the weapon system to bear, and to be able to use the coaxial sighting systems to observe and locate targets. The turret lock would need to be disengaged for either of these actions to take place. No practical uses for locking the turret in any position other than at 12 o'clock position have been offered by any of the SMEs contacted by the panel.

1.4.385. The panel concluded that it was highly unlikely that the turret lock was engaged whenever the vehicle was being used tactically and, therefore, the panel finds the turret lock was **not a factor**.

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1.4.386. **Observer's Thermal Imaging System (OTIS) Mountings and Stowage.** The OTIS modification was incorporated in 1988 and allowed OTIS to be fitted to Scimitar and Scorpion AFVs. The modification provided a stable mount for the sensor in front of the comd's hatch and a larger rear turret bin to facilitate storage of the sensor and dismountable tripod when not in use (Figure 1.4.30). Exhibit 021 Exhibit 023 Exhibit 108 Exhibit 109

1.4.387. **Turret External Stowage.** To provide additional stowage space, in 1989, metal stowage bins were introduced to both left and right-hand side of the turret. Before this, a combination of external stowage bags and boxes had been used to increase storage capacity. Exhibit 108 Exhibit 109

1.4.388. **OTIS Mountings and Stowage.** This modification in 1990 was to provide strengthened brackets for mounting the OTIS rear turret bin onto. Exhibit 023 Exhibit 108 Exhibit 109

1.4.389. **OTIS Bin Improved Fixing Arrangement.** This modification in 1994 was to further improve and secure the fixing arrangement for the OTIS Bin. Exhibit 023 Exhibit 108 Exhibit 109



Figure 1.4.30: OTIS Bin fitted at the rear of the turret.

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1.4.390. The OTIS Bin was essentially a larger bin mounted on the rear of the turret to replace the original stowage bin. Even without stowage bins, the dimensions of the turret encroached on the safe working area of the driver through several angles when rotated. Figure 1.4.31 shows a bird's eye view of the driver's hatchway with the turret facing in the same direction as the hull (12 o'clock position).

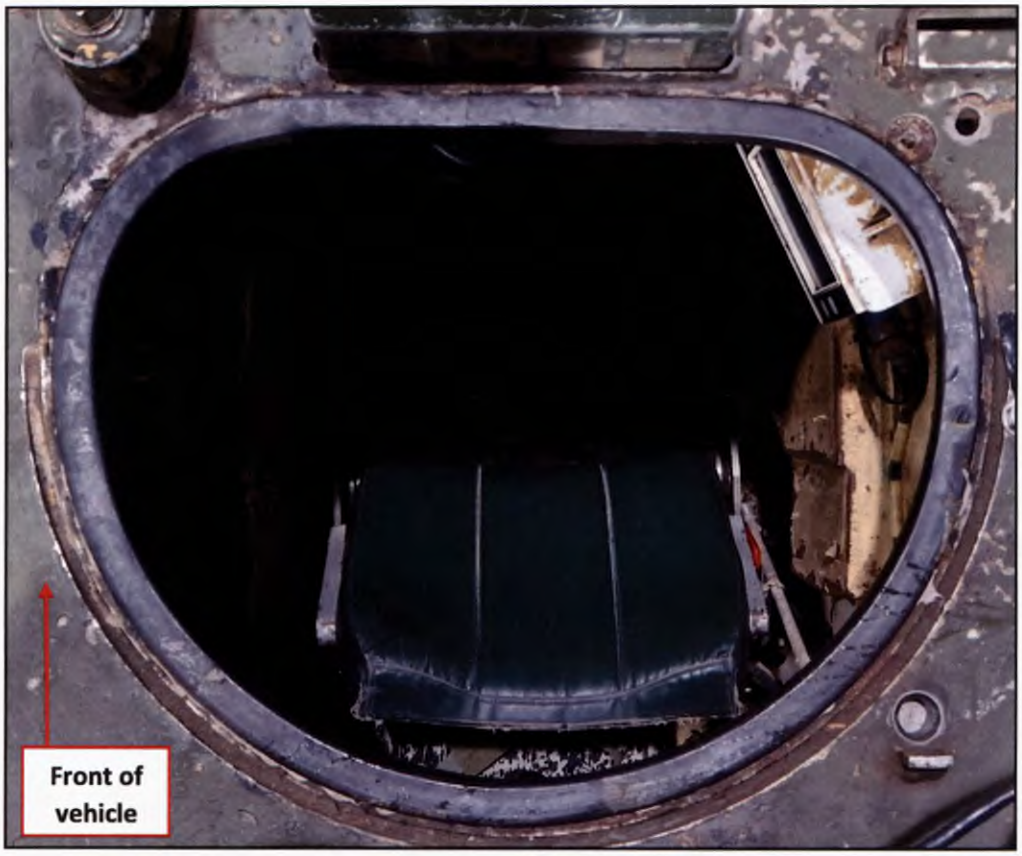


Figure 1.4.31: Vertical view of driver's hatchway with the turret at 12 o'clock position.

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1.4.391. Figure 1.4.32 shows the same view of the driver's hatchway with the turret rotated to the 5 o'clock position without any turret rear stowage bins fitted.



Figure 1.4.32: Vertical view of driver's hatch with the turret at 5 o'clock position without the OTIS Bin fitted.

1.4.392. The panel measured the original rear turret bin, fitted during trials for the FV 101 Scorpion to address concerns over crew storage, at 121cm x 49cm. The panel then measured the OTIS Bin at 159cm x 54cm.

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1.4.393. It can be seen from Figure 1.4.33 that there is encroachment into the driver's safe working area with the OTIS Bin in place. When rotated to the 5 o'clock position, the OTIS Bin completely covers the driver's hatchway when viewed from above.

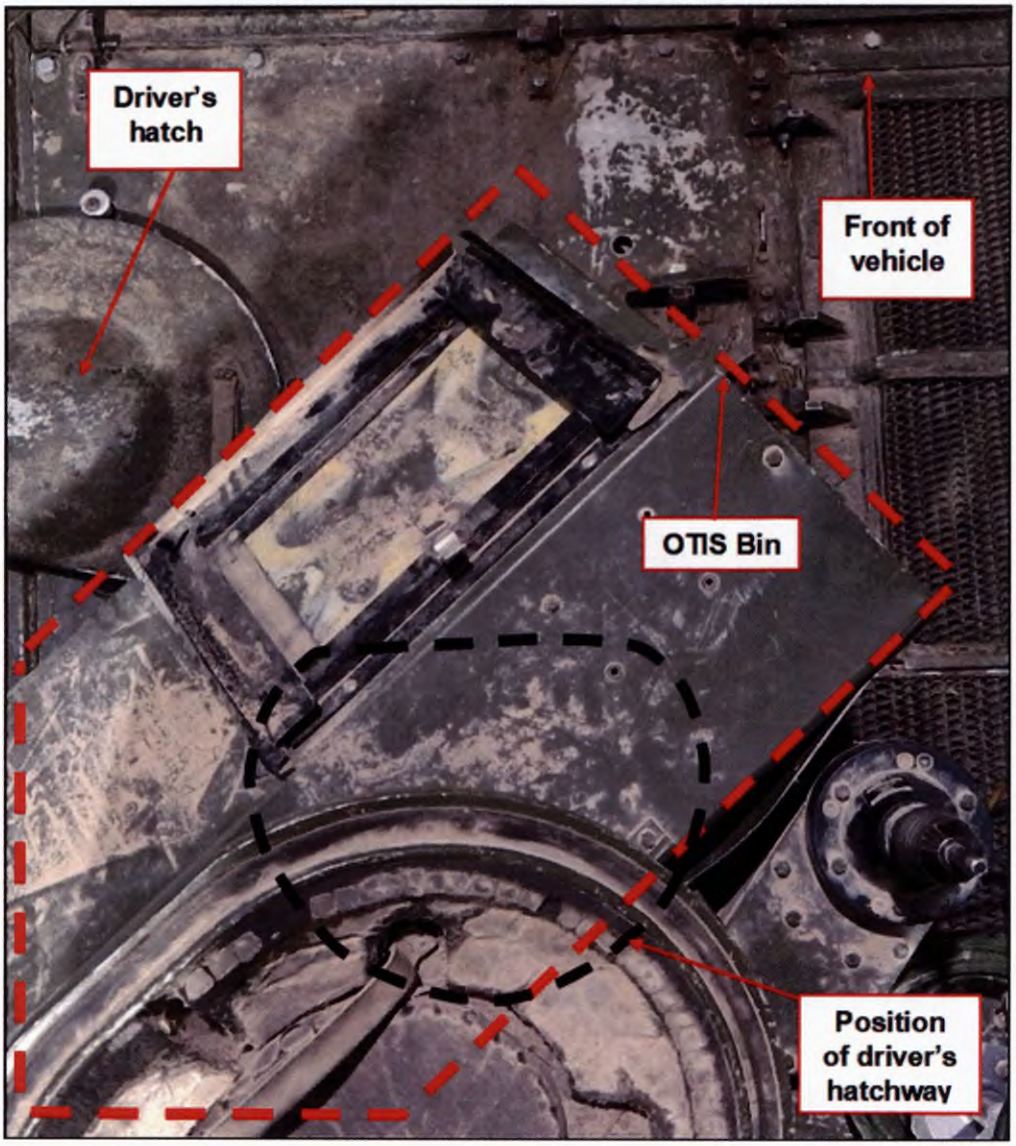


Figure 1.4.33: Vertical view of the OTIS Bin covering the driver's hatch with the turret rotated to the 5 o'clock position.

1.4.394. The forward hull of the Scimitar sloped down towards the front. This meant that the vertical gap between the top of the hull and the bottom of the OTIS Bin varied between 8cm and 15cm (when measured towards the rear and front of the driver's hatch respectively). In the upper position, the driver's seat was approximately 60cm below the hull. A person of Pte Watson-Pickering's seated height (90cm) whilst wearing a combat helmet, and with the driver's seat

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in the upper position, in a relaxed driving posture, would have protruded approximately 28cm to 30cm above the hull in normal driving conditions. This would be dependent upon posture and helmet adjustments as indicated using a soldier of the same seated height as Pte Watson-Pickering in Figure 1.4.34. When the turret was rotated to the 4 o'clock position, this places the soldier's head in a position where any further clockwise rotation of the turret would cause the OTIS Bin to strike the left side of the soldier's face and helmet.



Figure 1.4.34: Representative height above hull.

1.4.395. The Scimitar was often driven from the 'head up' position as it gave the driver a much greater field of vision and increased situational awareness. This was important for hazard identification and had significant tactical advantages for the comd as another set of eyes available to observe the enemy. However, when the turret was rotated the stowage bins present a clear risk of impact to the driver when their head was above the hatch aperture. The Scimitar comd or gunner received no formal training or guidance on how or when to instruct the driver to adopt the 'head down' position.

1.4.396. The stowage bins fitted to the side of the turret increased storage space for the crew for items that needed to be readily accessible whilst the comd or gunner were in a 'head up' position (such as binoculars etc). When fitted, these stowage bins encroached on the safe working area for the driver (although not to the same extent as the OTIS Bin).

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1.4.397. The encroachment of the side bins can be seen in Figure 1.4.35 where the red arrow indicates a minimum of approximately 13cm of clearance from the hull at its highest point. This was higher than the OTIS Bin which can be seen extending below the side bin in the rear of the right-hand image.

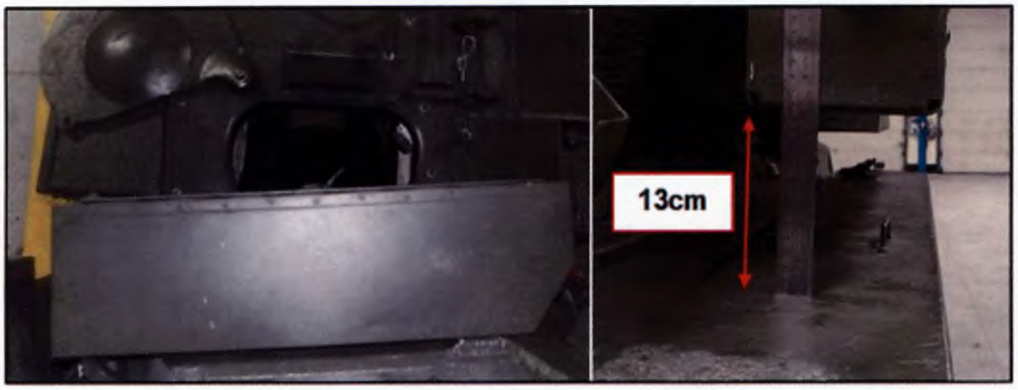


Figure 1.4.35: Top (left) and side (right) views of the turret external side stowage encroachment.

1.4.398. It should be noted that the standard side stowage bin was not being used on the day of the accident. As c/s 62 Alpha was fitted with TES, the turret side bins had been exchanged with stowage bins that had been modified with sensors. Whilst these modified bins look somewhat similar, the clearance above the hull was more restricted at less than 6 cm above the hull at its highest point (Figure 1.4.36).



Figure 1.4.36: Clearance between TES side stowage bins and top of hull.

1.4.399. The panel conducted a test with the Wiltshire Police Forensic Collision Investigation Unit which proved that as the turret side bin passed the

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driver it constricted the available space above the driver's hatch and pushed the driver's head and helmet forward. This action would likely have forced the driver's face or helmet against the vision block mounted in front of them and then, pinched between these two surfaces, exerted a turning force as it continued to move, this action rotated the driver's head to face the advancing OTIS Bin. Once the driver was pinned in this position further rotation of the turret would almost certainly have caused catastrophic injuries. Wiltshire Police accepted that this was the most likely sequence of events in this accident. The forensic pathologist viewed a demonstration of the theory and stated that it was consistent with the wounds observed during the post-mortem examination.

1.4.400. The panel concluded that rotation of the turret was a threat to a driver in the head up position. The panel finds that the turret design and additional stowage bins served to increase the likelihood of an accident occurring and was, therefore, a **contributory factor**.

1.4.401. **Recommendation.** A recommendation has already been made at paragraph 1.4.141 that the Assistant Chief of Staff Equipment (Field Army) should update Combat Vehicle Reconnaissance (Tracked) Scimitar operating instructions, relevant instructional documentation and learning specifications, so that the driver is head down whenever it is possible for the turret to rotate in order to ensure driver safety.

CVR(T) Safety and Environmental Case

1.4.402. **Safety Management System Legislation and Policy.** The Health and Safety at Work etc Act 1974 set out the overarching duty upon employers to ensure, as far as reasonably practicable, the health, safety, and welfare at work of all their employees and those visiting their premises. The Management of Health and Safety at Work Regulations 1999 contained further detail and mandated risk assessments and precautions to eliminate or adequately control the risks. DSA 01 was the MOD's overarching policy for the management of health, safety and environmental protection in Defence and compelled the front-line commands and Defence organisations to have a safety and environmental management system (SEMS) in place.

Exhibit 200

1.4.403. ACSO 1200 defined the Army SEMS policy. ACSO 1201 Land Equipment Safety Management Instruction provided the detailed direction as to how the Army SEMS policy was to be integrated across all Army capabilities. Within DE&S, the Acquisition Safety & Environmental Management System provided generic policy, instructions, and guidance on how implementation of the SEMS was undertaken.

Exhibit 039
Exhibit 113
Exhibit 114

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1.4.404. The Land Systems Safety Regulator mandated that a safety case was to be made up of the following three parts:[100] Exhibit 069 Exhibit 113 Exhibit 114

a. **Part 1 – requirements.** Evidence of the safety requirements for the system, identified from the user requirement document, it's concept of use, applicable legislation, standards, policy, and prescribed risk targets. Exhibit 008 Exhibit 069

b. **Part 2 – design.** Evidence and arguments that the system could meet the safety requirements established in the systems requirement document and part 1 safety case. Exhibit 069 Exhibit 114

c. **Part 3 – operation and support.** Supporting systems acceptance, the part 3 safety case should have demonstrated that residual risks associated with the system were as low as reasonably practicable (ALARP).[101] Exhibit 115 Exhibit 116

1.4.405. **Hazard log.** A hazard log should be used to support the safety argument detailed in the part 3 safety case by recording the results of the hazard identification and analysis, the risk assessments and ALARP justification. Exhibit 069 Exhibit 117 Exhibit 118

1.4.406. The safety and environmental management panel (SEMP), chaired by the DE&S Senior Operations Manager for CVR(T), was the forum through which a DE&S project team managed safety, including the development of the part 3 safety and environmental case summary report (SECSR) and hazard log. The SEMP consisted of representatives from the project team, the design authority, and the operator community/equipment sponsor.[102] Exhibit 113 Exhibit 114 Exhibit 118 Exhibit 119

1.4.407. A SECSR was defined in Def Stan 00-056 as: Exhibit 045 Exhibit 115 Exhibit 120 Exhibit 121

> 'A report that summarises the arguments and evidence of the Safety and Environmental Case, and documents progress against the Safety Programme.'

This report was how the project team demonstrated that all the safety issues relating to the project had been brought to a condition appropriate for that stage in the life cycle.

1.4.408. The aim of the SECSR review was to demonstrate that the residual risk was 'Broadly Acceptable' or 'ALARP and Tolerable'. The SECSR should provide a snapshot of the safety and environmental protection performance of the system. It should provide assurance, at that time, of safety and Exhibit 069 Exhibit 114

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[100] Land System Safety and Environmental Protection and Defence Codes of Practice

[101] DS03.DLSR.LSSR Defence Code of Practice E – Regulation 7 As Low as Reasonably Practicable.

[102] Capability Ground Manoeuvre is now the Futures Directorate (D Futures).

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environmental performance. Areas of potential weaknesses in the safety argument should be addressed by appropriate limitation.

1.4.409. The most recent CVR(T) SECSR (Issue 7.2) was completed on 14 August 2018. It was seen as an uncontentious SECSR and, following several handovers of the equipment sponsor for CVR(T), the SECSR was signed by proxy on 15 May 2020 with no issues raised. Exhibit 120 Exhibit 316

1.4.410. Due to the period in which the CVR(T) series of vehicles was conceived, it did not have a complete Part 1 and Part 2 safety case as is now mandated by the standards in DCoP D. However, the part 3 was articulated through application of the SEMS detailed in ACSO 1201. At the time of the accident the SECSR detailed the following safety argument:[103]

> 'The absence of a Pt2 Design Safety case for the current CVR(T) can be countered by the argument that the legacy design was accepted into service at the time it entered service and has continued to be operated as acceptably safe….It can be claimed that the years of in-service use has developed a level of knowledge and experience of the legacy platform that was not available during development stages, where a predictive approach may have been taken. Such a level of knowledge and in-service empirical evidence has enabled the design to be reassessed in areas which have warranted further investigation and where required design changes have been implemented.'

1.4.411. The implication was that, informed by the low number of accident and incident reports received, the vehicle design was taken as safe and as having satisfied the design safety criteria of the day. Work to incorporate modifications to the vehicle was undertaken to assess whether such changes would have made the vehicle more safe or less safe from that baseline, and risk management controls could then have been applied if required.

1.4.412. This formed an 'implicit safety case', an approach which was identified as a significant factor in The Nimrod Review following the loss of a Nimrod aircraft in Afghanistan in 2006. An implicit safety case assumed that the legacy platform was safe merely because it was built to design and had been operating without mishap for several years. This approach was widely discredited and the DSA's own regulations guarded against the methodology and the associated 'ignoring of age issues'.

1.4.413. This safety argument relied on the principle that a comprehensive accident and incident reporting system was in place and that any hazards would have been identified through the course of the vehicle's operation. Subsequent

[103] Paragraphs 102–103, page 35 of the CVR(T) SECSR (Issue 7.2 14 August 2018).

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trend analysis would have then allowed for controls to be put in place should unacceptable risk be present. Through the course of the investigation the panel learned of several previous accidents where there were opportunities to identify the risk to a driver.

1.4.414. The panel concluded that the implicit safety case methodology did not ensure a full appraisal of the residual risk retained by the platform and finds that this was a **contributory factor**.

1.4.415. **Recommendation. The Deputy Chief of Staff Field Army should ensure that extant safety cases in the land domain are not built on the principle of the 'implicit safety case' and that the safety argument detailed in the Combat Vehicle Reconnaissance (Tracked) Safety and Environmental Case Summary Report is not replicated amongst other platform safety cases, in order to ensure thorough risk management processes are applied.**

1.4.416. **Recommendation. The Head Capability Safety Group should ensure that the responsibility for the maintenance of safety cases is vested solely in the identified lead user and should ensure that transfers between organisations or key personnel follow the approved process in order to ensure continual accountability.**

1.4.417. **Recommendation. The Head Defence Land Safety Regulator should ensure that appropriate governance is in place for all lines of defence assurance and ensure that robust 3rd line of defence assurance processes are in place to assure that extant safety cases in the land domain are not built on the principle of the 'implicit safety case'.**

Previous incidents/accidents

1.4.418. The Land Systems Safety Regulator compelled Defence top-level budget holders (TLBs) to have an effective process for incident reporting, recording, investigation, and subsequent learning:[104] Exhibit 069

> 'All Incidents involving land systems should be reported, recorded and appropriately investigated to: Exhibit 069
>
> a. Determine underlying, or root cause(s);
>
> b. Determine immediate cause(s);
>
> c. Conduct trend analysis;
>
> d. Identify appropriate additional control measures;

[104] The core financial structure of the MOD comprises six Top-Level Budget (TLB) organisations and five Executive Agencies

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e. Identify any lessons that can be learnt;

f. Share information and lessons with stakeholders.'

'Incident(s) should be reviewed:

g. To promulgate lessons identified to other domains where applicable;

h. Against the relevant Safety and Environmental Case to ensure that residual risk remains ALARP.

i. TLBs should have a Learning From Experience (LFE) process in place to enable effective communication of lessons learnt to all relevant personnel.'

j. 'TLBs should have procedures in place to enable effective reporting, investigation and management of incidents involving land systems.'

1.4.419. The panel looked at all available previous incidents/accidents involving interaction between a Scimitar driver and the vehicle's turret or its attached components. In studying the minutes from the safety and environmental panel (SEP) meetings where these incidents should have been reviewed, there appeared to be no record of a risk assessment being made, nor risk controls applied to prevent reoccurrence. Exhibit 122 Exhibit 123 Exhibit 124 Exhibit 125 Exhibit 126

1.4.420. **Accident 01361-08-A.** The Army Safety Centre's (ASCen) Incident Notification System (INS) contained a brief description of an incident which occurred on 7 June 2008: Exhibit 122 Exhibit 123 Exhibit 127 Exhibit 128

'IP [Injured Person] was on exercise and driving a CVR(T) (Scimitar) through a forest and pulled the right stick a bit hard. IP hit the tree and the turret spun 90 degrees, he ducked as much as he could but caught his head on the commanders [sic] bin. IP was given [redacted]'

1.4.421. The panel could not find any further detail on the incident described in the INS database, and no further record (paper-based or digital) could be located by the Army Reporting Cell staff within the ASCen, by DE&S, or by the design authority. Similarly, there was no record of this incident having been discussed at a CVR(T) SEP meeting.

1.4.422. Given the lack of detail that was entered into the INS, the lack of any other records regarding the incident held by the ASCen, and the fact that no record of it could be found in the minutes of the SEP, it was the opinion of the panel that it was very likely that no risk management process was instigated as a consequence of the incident on 7 June 2008, and that the risk presented to the

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driver by the turret and its attached components was not assessed or recorded in the CVR(T) Hazard Log.

1.4.423. The panel concluded that the lack of an investigation into this incident meant that an opportunity to identify and control this risk was lost. Equally, an opportunity to accurately record the incident was missed which in turn invalidated the safety argument outlined in the CVR(T) safety case. The panel finds that the lack of effective reporting, investigation, trend analysis, and subsequent risk assessment was a **contributory factor**.

1.4.424. **Accident 00720-09-A**. Date 24 February 2009. The Army Incident Notification Centre held a record of a letter outlining an accident with the following information at paragraph 3:

> 'Whilst deployed in Afghanistan on OP LOAM, IP was driving a Scimitar vehicle on a night move he sustained an injury to the head, when the turret [redacted]

1.4.425. At paragraph 7 of the letter, the following direction was given:

> 'In accordance with JSP 375 and LANDSO [Land Standing Order] 1217 an investigation is to be carried out as appropriate to investigate the immediate and underlying cause of the accident/incident and to ensure that remedial action is taken wherever possible. Please send a copy of the investigation report to AINC (Email preferred) for recording on the incident database.'

1.4.426. No subsequent report could be located by Army Reporting Cell staff in connection with this incident. A report recorded on the Serious Equipment Failure Investigation Team (SEFIT) database held by the DAIB showed an accident report with the Serial Number 2009/50.[106] The date on this report was 2 March 2009, only a week after the incident detailed in the AINC letter reference 00720-09-A. The subject unit was the 1st Battalion, The Princess of Wales's Royal Regiment in both cases, and both describe an accident where non-commanded turret rotation resulted in head injury and the IP being transferred to

[105] Camp Bastion was the main operating base for UK forces in Afghanistan from 2005 to 2014.
[106] The DAIB was formed in October 2015 from an amalgamation of the Land Accident Investigation Team (LAIT), SEFIT and the Military Air Accident Investigation Branch.

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Camp Bastion, Afghanistan. The panel believes it was very likely that the AINC letter and the SEFIT report refer to the same event.

1.4.427. In the SEFIT report, the accident was described as having occurred due to the turret traverse gearbox suddenly falling from its mountings. It was determined that this happened because the securing bolts were fitted hand tight only. The insecure traverse gearbox fixings coming loose would have allowed the turret to freely rotate with no opportunity for the crew to intervene to restrict the movement.

1.4.428. Whilst the root cause for this incident was different to that of the accident on 15 October 2021, the mechanism of injury to the driver was similar. Part of the turret or its attached components came into contact with the driver's head, resulting in injury. Whilst the injury was not life changing, it was the opinion of the panel that it could reasonably have been seen that the injury sustained could have been more serious and, therefore, warranted further risk management.

1.4.429. It was not possible to establish if any further action was taken to assess the risk of reoccurrence or if there was any application of risk management controls. The incident was noted in the minutes of the CVR(T) SEP meeting held at Bovington on 1 July 2009. There was no recorded detail of the discussion and no actions placed on any member present at the SEP.

1.4.430. The panel concluded that the mechanism of injury was similar to that of the accident on 15 October 2021, and that this warranted further investigation and risk management with respect to interaction between the driver and the turret or its attached components. There was, therefore, a missed opportunity to prevent occurrence of a similar accident happening again and the panel finds this was a **contributory factor.**

1.4.431. **SEFIT 2015/154.** The SEFIT database contained a report of an incident of a CVR(T) gun barrel strike involving The Royal Lancers that occurred on 30 October 2015 with the following detail:

Exhibit 016
Exhibit 134
Exhibit 135

> 'Approximately halfway through the woodline one of the Left Hand (LH) turret stowage bins struck the trunk of a tree, this caused the turret to rotate violently to the left by approximately 20 degrees and come to rest with the gun barrel of the main armament pointing over the front LH headlamp assembly. The LH forward edge of the mantlet struck the driver on the Right Hand (RH) side of his helmet. The driver immediately stopped the vehicle and called for assistance from the vehicle commander. There were suspected head and neck injuries to the driver, who was subsequently taken to hospital'.

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1.4.432. According to the incident report both the DAIB and SEFIT attended the incident. The panel understands that this referred to personnel from the same organisation as it was approximately a month after the DAIB was formed and it was likely that SEFIT processes were being followed under the DAIB branding. Despite the IP requiring hospital treatment, the DAIB Initial Investigation Report centred on the suspected failure of the traverse gearbox: Exhibit 016 Exhibit 135

> 'Initial inspection confirmed there was no equipment failure with the traverse gearbox. The gearbox operated as designed in the fact that when the LH turret stowage bin struck the trunk of the tree the friction clutch within the traverse gearbox slipped. This design feature is incorporated to minimise damage to the main armament or turret should a gun barrel or turret strike occur.'

1.4.433. A DAIB Hazard Risk Matrix assessment was conducted (Table 1.4.5) and included the same justification.

HAZARD		Severity of Risk			
		Minor	Major	Critical	Catastrophic
Likelihood of Recurrence	Frequent	M	H	VH	VH
	Occasional	L	M	H	VH
	Remote	VL	★	M	H
	Improbable	VL	VL	L	M

Table 1.4.5: DAIB assessment of residual risk following Incident 2015/154.

1.4.434. The report concluded that there were 'no immediate safety recommendations to make' and it was sent to the Director General of the Defence Safety Authority (DG DSA). There was no record of the response and there was also no record of a service inquiry or non-statutory inquiry being convened to investigate the matter further, nor of any urgent safety advice being published to reduce the likelihood of reoccurrence. Exhibit 016

1.4.435. The Royal Lancers submitted a Land Forces Incident Report on 15 January 2016 following the incident. Through the course of their own investigation the unit appeared to have recognised the risk still present to the driver and they instated a standard operating procedure (SOP) to control the risk: Exhibit 134

> 'The SEFIT investigation concluded that no personnel were at fault and that there had not been an equipment failure. Nevertheless, B Squadron

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The Royal Lancers has instituted an SOP that all CVR(T) drivers are to be closed down when manoeuvring in wooded areas.'

1.4.436. This incident report and the intended SOP were distributed to several stakeholders including Army HQ, Collective Training Group Warminster, DAIB, Chief Environmental and Safety Officer (Army) and HQ Defence Infrastructure Organisation. However, no learning account, further record or detail pertaining to this SOP, or interaction between The Royal Lancers and other stakeholders could be located by the panel.

1.4.437. The design of the traverse gearbox friction clutch was intended to prevent damage to the main armament. There was no acknowledgement that the friction clutch presented a danger to the driver in the event of a gun barrel or stowage bin strike if the driver was driving in the 'head up' position. Therefore, no risk assessment was conducted to identify or control the residual risk to the driver when driving 'head up'. The limited DAIB investigation that did not adequately consider the cause of the accident, nor provide any immediate safety recommendations, was attributed to SEFIT's former purpose as a technical investigative organisation. Despite the IP requiring hospital treatment, there appeared to be no input from the former Land Accident Investigation Team, and the DAIB passed the initial investigation report to the DG DSA based on it being a technical investigation where no fault was found.

1.4.438. Considering the low speed of this incident as detailed in the initial report (5 kph to 10 kph), the panel opined that if the vehicle had been travelling at higher speed, the turret rotation would likely have been faster and could have rotated to a greater angle. This indicated an obvious risk of injury or death to the driver should a Scimitar have had a stowage bin/gun barrel strike at higher speed with the driver 'head up'.

1.4.439. There was a lack of recorded consideration of the 'worst credible case' outcome and associated severity of risk (which from Table 1.4.5 should have been determined as 'critical'). Despite the IP requiring hospital treatment, both the DAIB and the DSA seem to have accepted what had happened, rather than what could have happened. This meant that the opportunity for learning from this incident was missed. The DAIB has since developed into a multi-modal investigative organisation whose focus is holistically on safety and, therefore, would be very likely to identify the residual risk to the driver. The DSA processes for determining the requirement for further investigation, or for issuing urgent safety advice, are now more developed and it was deemed unlikely that the same lack of rigour would be applied in the future.

1.4.440. The panel **observed** that investigation conducted by the DAIB was in line with SEFIT processes which were still extant at the time of this incident, and which looked primarily at equipment failure. The DAIB and the DSA have both

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evolved their processes since this accident, reducing the likelihood that the opportunity for learning would be missed in the future.

1.4.441. Following the initial investigation by DAIB, the incident was discussed at the SEP (6 November 2015) with stakeholders from DE&S, the Army and industry. In the minutes of the 22nd in-service SEP meeting, the SEFIT 2015/154 accident was discussed at Item 4.1. The notes in the SEP minutes similarly did not recognise the residual risk posed by the turret and its attached components to a driver who was in the 'head up' position and the SEP members subsequently: Exhibit 203

'Agreed the classification and that no further action is necessary.'

1.4.442. To determine the residual risk, the risk assessment process should consider both the likelihood of occurrence, and the severity of the consequence of that occurrence being realised. This risk assessment process relied on SME judgement both from the technical and the operator perspectives. These should be combined with empirical evidence gained through the collection and analysis of previous incidents to give a robust assessment of residual risk.

1.4.443. Cognisant of hindsight bias, the panel concluded that this series of previous incidents demonstrated a clear and foreseeable risk to the driver of a Scimitar in the event of a turret rotation when the driver was head up. Equipment focussed rather than risk-based investigations resulted in limited learning from experience. Several opportunities to identify and control the risk presented to the driver were missed. Both the quality of reporting, and lack of in-depth investigation, meant that there was insufficient detail forthcoming to those who were charged with conducting the risk management activity. The panel, therefore, finds that incident reporting was a **contributory factor**.

1.4.444. The panel concluded that the investigation undertaken by SEFIT/DAIB focussed on the technical aspects of equipment functionality, rather than investigating the hazard and assessing the risk to the driver. The follow-on activity of the project team focussed on the same. The panel finds that the lack of follow-on risk management activity by the SEP was, therefore, a **contributory factor.**

1.4.445. **Recommendation. The Director Health, Safety and Environmental Protection should ensure that governance is created which establishes the requirement for all accidents and incidents to be tracked in a 'closed-loop' system in order that subsequent investigation can occur, and the outputs be fully recorded.**

1.4.446. **Recommendation. The Director Health, Safety and Environmental Protection should ensure that governance is created which**

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establishes the requirement for all accident and incident reports to contain sufficient detail for onward analysis.

1.4.447. **Recommendation. The Director Health, Safety and Environmental Protection should ensure that governance is created which establishes the requirement for users/safety case owners and all other stakeholders with defence organisations to be informed of how and when to extract information from the incident reporting system so that they are fully informed of previous incidents relating to their capability.**

1.4.448. **Recommendation. The Director Health, Safety and Environmental Protection should ensure that governance is created which establishes the requirement to have a system in place to conduct trend analysis for accidents and incidents, including those incidents recorded in legacy databases, in order to ensure that trend analysis can be conducted by defence organisations.**

Hazard identification and eCassandra hazard log

1.4.449. The eCassandra hazard log was a live database that acted as the principal reference for demonstrating the safety characteristics of a piece of equipment and for providing traceability of the hazard management process.[107] The hazard log should have contained a series of top-level hazards, with associated 'accidents' and 'causes', in order to accurately reflect the level of risk presented by the platform and its systems, therefore, allowing assessment of residual risk and 'controls' applied where required in order to reduce the level to ALARP. Guidance on the conduct of the hazard identification and risk management system was provided via both the DE&S Acquisition Safety and Environmental Management System and DSA03.DLSR.LSSR DCoP D. The 'hazard', 'cause', 'control' and 'accident' will be discussed in turn.[108]

Exhibit 069
Exhibit 116
Exhibit 117
Exhibit 118
Exhibit 119
Exhibit 136
Exhibit 137
Exhibit 138
Exhibit 139
Exhibit 140
Exhibit 141
Exhibit 142

1.4.450. **Hazard.** At the time of the accident on 15 October 2021 the eCassandra database contained hazard 'H7 – Contact with non-powered moving parts on vehicle'. In the description for this hazard, it did not specifically detail the possible encroachment of the turret, or its attached components into the driver's safe working area, when driving the vehicle 'head up'. It had the following description:

> 'This hazard covers the causes associated with personnel being entrapped or impacting with hatches, doors and moving parts on the vehicle/platform.'

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[107] eCassandra was the digital database tool utilised by DE&S to record and manage platform/equipment hazards.
[108] Acquisition Safety and Environmental Management System. https://www.asems.mod.uk/asems-revision-history (accessed 15 November 2022). A history of ASEMS up to and including the latest versions can be found on the Acquisition Systems Guidance pages on the Defence Gateway.

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It also noted:

> '… the dominant causes relating to this Hazard were; 'failure to lock or secure: Engine Decking, Hatches, Louvres, Radiators, Mounts, Doors, Equipment failure of same.'

This description did not, therefore, identify the hazard, to the driver, of the turret's rotation.

1.4.451. The process of hazard identification should utilise previous accidents/incidents and near miss reporting to more accurately reflect the level of residual risk presented by a platform. The panel has determined that whilst several incidents of non-commanded turret rotation had occurred, this had not been captured as a specific hazard within the eCassandra hazard log and as such, had not been subjected to the risk management process.

1.4.452. The panel concluded that the lack of a specific hazard reflecting the accident on 15 October 2021 meant that the requisite assessment of risk cannot have taken place and, therefore, opportunities for intervention prior to the accident were missed. The panel finds that this was a **contributory factor.**

1.4.453. **Recommendation. The Director Land Equipment should ensure the hazard logs for all turreted platforms are updated to include a specific hazard assessment that accurately reflects the danger of turret rotation to driver's with 'heads out' in order to ensure an effective assessment of the residual risk.**

1.4.454. **Cause.** Each hazard within the hazard log was linked to a series of possible causes. Cause 'Z12 - controlled or uncontrolled movement – turret/cupola/gun' was linked to hazard H7. As at 15 October 2021 this cause only partially described the mechanism by which the accident happened. It was insufficiently detailed to allow an effective appraisal of the residual risk to be carried out. Furthermore, it contained a control that suggested the Turret Traverse Box Clutch (friction clutch) was a safety measure when in fact it was actually a hazard.

Exhibit 137
Exhibit 139
Exhibit 140
Exhibit 141
Exhibit 142

> 'C296 Design - Turret Traverse Box Clutch. Description: A friction clutch in the gearbox maintains turret position and will only slip at 3900 ± 100 lbf in. should the gun barrel or turret strike an obstruction.'

1.4.455. The friction clutch was designed specifically to protect the main armament in the event of gun barrel strike. Its design presented a risk to the driver when driving head up as it would still slip under certain circumstances. Therefore, it was an inappropriate risk control in relation to this hazard.

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1.4.456. Following the Emergency SEP on 11 February 2022, the cause Z270 - uncontrolled movement of Scimitar turret was added to the CVR(T) Hazard Log:

> 'Uncontrolled movement of the Turret. An example of this could be striking of the gun barrel or external stowage bins causing an uncontrolled movement of the turret.'

1.4.457. This cause was a detailed and accurate entry into the Hazard Log and allowed for further risk management activity to be undertaken. However, C296 as detailed paragraph 1.4.454 remained as a linked control. As discussed, this control fundamentally did not reduce the residual risk to the driver.

1.4.458. The panel concluded that having mis-categorised a significant Risk Assessment endorsed by Army Headquarters Capability (Ground Manoeuvre) and DE&S in the Hazard Log and SECSR did not adequately assess the risks posed by the vehicle to its crew. This was despite examples of previous similar accidents being registered with the Army Safety Centre. The panel finds that it could not be considered that the risks were controlled to ALARP and Tolerable and this was a **contributory factor.**

1.4.459. **Recommendation. The Director Land Equipment should ensure the hazard logs for all turreted platforms are updated to include an appropriate hazard assessment that reflects the danger to all crew from turret rotation in order to ensure an effective mitigation of risks to life.**

1.4.460. **Injuries from moving parts.** The CVR(T) Hazard Log criteria that was most closely related to the accident was 'A8 - injury from moving parts (hatches, doors and non-powered moving parts)'. This did not have any detail or description of a linked hazard that reflected the danger of the turret.

Exhibit 069
Exhibit 116
Exhibit 117
Exhibit 119
Exhibit 136

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1.4.461. Previous incidents relating to the turret had not fed into the statistics on which the accident frequency (Table 1.4.5) assessment was made at the SEP. The severity associated with accident A8 was assessed as marginal (Table 1.4.6) due to the assessed minor nature of potential injuries sustained, because of the linked hazards, and their associated statistics.

Accident Frequency	Occurence *during operational life considering all instances of the system*
Frequent	Likely to be continually experienced
Probable	Likely to occur often
Occasional	Likely to occur several times
Remote	Likely to occur some times
Improbable	Unlikely, but may exceptionally occur
Incredible	Extremely unlikely that the event will occur at all, given the assumptions recorded about the domain and the system

Category	Definition
Catastrophic	Multiple deaths
Critical	A single death; and/or multiple severe injuries or severe occupational illnesses
Marginal	A single sever injury or occupational illness; and/or multiple minor injuries or minor occupational illnesses
Negligible	At most a single minor injury or minor occupational illness

Table 1.4.6: Definitions of severity and frequency.[109]

1.4.462. The CVR(T) Hazard Log recorded a severity of marginal, and an accident frequency of occasional. This resulted in an overall risk category of 'C' (Table 1.4.7) meaning that the risk needed to be monitored through regular reviews, with opportunities to reduce the risk taken as resources and programmes permitted.

	Catastrophic	Critical	Marginal	Negligible
Frequent	A	A	A	B
Probable	A	A	B	C
Occasional	A	B	C	C
Remote	B	C	C	D
Improbable	C	C	D	D
Incredible	C	D	D	D

Table 1.4.7: Risk assessment matrix.

[109]Available at: https://www.asems.mod.uk/toolkit (accessed 15 November 2022).

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1.4.463. The panel determined that by the definitions outlined in Table 1.4.8, the hazard of the turret and its encroachment into the driver's safe area changed the risk category of accident A8 to 'critical'. This should, therefore, have elevated the risk class from 'C' to 'B' requiring continuous monitoring. An active programme should have been put in place to reduce the risk at the first opportunity.

Risk Class	In procurement	In service
A	The assessment and subsequent mitigations should be subjected to independent review. Where the potential consequences are likely to involve multiple deaths independent analysis of the assessment should be considered. If it is not feasible to mitigate risks and they are taken on by the operator agreement must be reached at 2* level with the Front Line Top Level Budget, and managed through the Project Safety Committee.	Risks classified at this level before mitigation should be closely monitored even if mitigations have reduced the residual risk to an acceptable level. If such risks are to be/have been taken on and mitigated by process or procedure by the operator, agreement at 2* level with the Front Line Top Level Budget must be recorded.
B and C	Risks must be justified a ALARP. A clear agreement must be made with the Front Line Command Top Level Budget authority responsible for the equipment, as a stakeholder on the Project Safety Committee, that the risks and the mitigation requirements are accepted and understood.	B class risks require continuous monitoring. An active programme should be in place to reduce the risk at the first opportunity. C class risk risks need to be monitored through regular reviews and opportunity to reduce the risk taken as resources and programmes permit.
D	Accepted through normal project reviews by all stakeholders through the Project Safety Committee.	Subjected to regular planned reviews by the Project Safety Committee and monitoring of DRACAS (Data Reporting, Analysis and Corrective Action System) and accident reports, by the Project Safety Committee.

Table 1.4.8: Risk class definitions.

1.4.464. The notes detailing the dominant causes in the hazard log were not exhaustive. The panel concluded that not having a linked hazard, that identified the danger of the turret, meant that none of the 'accidents' listed in the hazard log reflected the accident on 15 October 2021. Therefore, ineffective risk management controls were applied. The panel finds that not having identified an appropriate hazard and its omission from the hazard log was a **contributory factor**.

1.4.465. **Recommendation.** A recommendation has already been made at paragraph 1.4.453 that the Director Land Equipment should ensure the hazard logs for all turreted platforms are updated to include a specific hazard assessment that accurately reflects the danger of turret rotation to driver's with 'heads out' in order to ensure an effective assessment of the residual risk.

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1.4.466. **Safety and environmental case assurance.** The Head Defence Land Safety Regulator (DLSR) was charged with assurance of safety regulation throughout the land domain. That responsibility was divided into five functional pillars (Figure 1.4.37). Exhibit 069 Exhibit 200 Exhibit 221

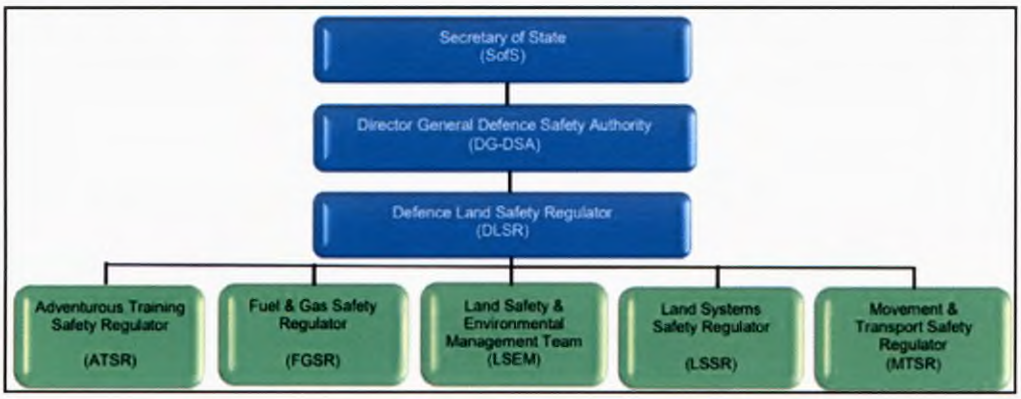


Figure 1.4.37: Functional pillars of the DLSR.

1.4.467. The Land Systems Safety Regulator (LSSR) was responsible for the following within the land domain: Exhibit 069 Exhibit 221

> '… any system designed to be operated and maintained in the land environment, where the output and the activity does not primarily impact on Air or Sea worthiness.'

This included:

a. Vehicles, integrated weapons, communication systems, information systems, support equipment;

b. People as an element of the land system function; and

c. Rail systems (including rail rolling stock, power units and running gear owned or operated by, or on behalf of the MOD).

1.4.468. Regulation 4 of the Land Systems Safety Regulations stated that:[110]

> 'Those holding safety and environmental responsibilities shall establish, use and maintain a valid Safety Case and Environmental Case, including summary reports, for land systems.'

1.4.469. The LSSR had a responsibility to ensure compliance with regulation 4. At the time of the accident, there were approximately 760 vehicle platforms with over 400 safety cases under the purview of the LSSR. This created a Witness 22 Witness 23

[110] The Land Systems Safety Regulations provided a number of Defence Codes of Practice that provide detailed guidance on how the regulations are to be enacted.

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significant workload to assure that the safety risk management process had been fully applied for each platform/equipment. With a team of 12, the LSSR stated that there wasn't the personnel resource available to look at every single safety case, and so they were reviewed on a risk prioritised basis.

1.4.470. The LSSR analysed trends in data relating to incidents and equipment failure, sourcing information from the DAIB, the Accident Reporting Cell, and their own surveillance of the platforms and equipment under their remit. This analysis then allowed them to assess the need for bespoke audit/assurance on a risk prioritised basis. This approach assumed a complete data set was available to determine accurate risk levels and prioritise assurance activity.

1.4.471. The LSSR stated that, based on the information available to them at the time, the CVR(T) series of vehicles had raised no specific concerns. The LSSR had not, therefore, appropriately prioritised a review of the CVR(T) safety case. The panel's analysis of previous incidents showed that there were inherent risks that should have been raised to the LSSR which may have prompted more immediate action.

1.4.472. The panel concluded that risk-based prioritisation of the assurance activity undertaken by the LSSR was a sensible approach given limited resource. However, it left some opportunity for safety cases of platforms/equipment that had not met the risk threshold to go unchecked. The panel finds the LSSR safety case assurance process to be an **other factor**.

1.4.473. **Recommendation. The Head Defence Land Safety Regulator should ensure that the risk threshold for post-incident reviews of capabilities adequately captures incidents that fall below the threshold for service inquiry and non-statutory inquiry interventions and that sufficient resource is available to meet this additional need.**

DAIB technical report

1.4.474. DAIB engineers, supported by 4 Armoured Close Support Battalion REME, undertook a review of the condition of c/s 62 Alpha, including a review of the previous technical inspections and servicing conducted in the lead up to the accident. The following section is a summary of the key parts of the DAIB technical report with resultant analysis from the panel. Exhibit 143

1.4.475. **Mandatory equipment inspection (MEI).** An MEI was defined as: Exhibit 143

> '… the mandatory inspection of equipment (Less manned aircraft) carried out by unit personnel and REME tradesmen in accordance with inspection policies laid down in AESPs or technical policy directives. The responsibility for ensuring that they are completed on time rests with unit commanders. Unit commanders must be aware that there may be legal

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implications if any equipment is used if it has not had a valid inspection within the prescribed time interval.'

1.4.476. **Equipment state definitions.** The following equipment states were categorized as follows: Exhibit 144

a. **'Fully Fit (Green).** The faults must not affect the equipment's safe and legal operation or its full operational capability. The fault may be minor or cosmetic. Fully Fit equipment can be used to conduct any task within the limitations of the equipment's safety case.

b. **'Limited Role (Amber).** The fault does affect the equipment's full operational capability but NOT its safe or legal operation. Limited Role equipment must not be used for a task which falls within its role restriction. Role restrictions must be fully understood by both those authorising the equipment for use and the equipment user.

c. **'Non Taskworthy (Red).** The fault makes the vehicle either unsafe or illegal to operate. The vehicle is not to be used unless it is being moved to a maintenance facility and has passed a road worthiness inspection conducted by an authorised maintainer enabling it to do so. Non-Taskworthy will apply when one or more of the following conditions occur:

(1) 'The equipment is overdue its scheduled mandatory annual or six-monthly safety inspection.

(2) 'The equipment has a safety critical fault identified during scheduled inspection or maintenance.

(3) 'The equipment has an outstanding safety critical modification.

(4) 'The equipment is overdue time/usage maintenance or out of phase maintenance.

(5) 'There is a prohibition notice in force (VOSA [now DVSA] or DSLR as a consequence of MEI).'[111]

1.4.477. The output of the maintenance and inspection regime was to determine the serviceability of the platform, equipment, and subordinate systems.

[111] VOSA was the UK's Vehicle and Operator Services Agency (2003 to 2014) and was replaced by the Driver and Vehicle Standards Agency (DVSA) which is responsible for ensuring compliance with driver and vehicle safety standards.

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Land equipment audit

1.4.478. A land equipment audit (LEA) assessed a unit's compliance and conformance with legislative, regulatory and policy requirements.[112] The scope of the audit included all criteria applicable to unit holdings, command management, weapon systems, road going vehicles, tracked vehicles, non-road going equipment, lifting and recovery equipment, and medical equipment. This should confirm if equipment care risks were being adequately managed, particularly for safety critical activities. Exhibit 095 Exhibit 224

1.4.479. During an LEA, the standards of equipment care and equipment serviceability were audited. This audit provided the chain of command with assurance that the unit was conducting equipment maintenance to the required standard. C/s 62 Alpha was held by the 1st Battalion, The Royal Welsh (1 R WELSH) in the time preceding 1 YORKS use of it for Ex IS. The following section addresses the LEAs that were undertaken on both 1 YORKS and 1 R WELSH. Exhibit 105 Exhibit 145 Exhibit 224

1.4.480. **1 YORKS LEA.** 1 YORKS was subjected to an LEA between 28 June 2021 and 30 June 2021. The LEA report found six areas of non-conformance, nine opportunities for improvement, and 31 areas identified as good practice.[113] Of the six areas of non-conformance, five were related to the management of road going vehicles and one related to the management of weapon systems. The five areas of non-conformance for the management of road going vehicles were:

a. The electronic signature process was not being correctly followed for recording maintenance. The JAMES system was updated by a different individual, with repairers and certifiers added and tasks closed. No signed worksheets were provided to meet Army requirements for recording maintenance activities;

b. The recording of maintenance conducted had the repair action amended from L2 maintainer to L1 maintainer;[114]

c. Vehicle emission tests of MAN SV vehicles were not being conducted to the correct standard during MEIs;[115]

d. There were multiple errors identified with the completion of inspection forms; and

[112] Non-conformance - breach of MOD policy. Non-compliance - a breach of legislation or MoD/Army policy that is considered critical.
[113] Non-conformance was listed as a breach in MOD policy. A non-compliance was listed as a breach of legislation.
[114] L1 maintenance was carried out by the driver/crew for specified tasks, assisted by a qualified equipment support trades person where required and approved by an authorised competent person. L2 maintenance was carried out by specialists within units who were responsible for maintenance advice to the unit commander and the co-ordination of all aspects of maintenance within the unit.
[115] Man SV (Support Vehicle) was a range of 4-wheel drive trucks in use by the UK MOD.

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e. There were no records of inspection report documentation for earth bonding tests of some vehicles.

1.4.481. Although the LEA for 1 YORKS highlighted areas of non-conformance, specifically with regards to the management of road going vehicles, there were no serious breaches identified as non-compliance.

1.4.482. The panel concluded that the LEA conducted on 1 YORKS identified some non-conformances, but specifically mentioned 31 areas of 'conformance and identified good practice'. Despite this, the unit's maintenance management practices at the time of the audit were in good order. Therefore, the panel finds the 1 YORKS LEA was **not a factor**.

1.4.483. **1 R WELSH LEA.** 1 R WELSH was subjected to an LEA between 17 to 19 May 2021. The published report found one non-compliance, five non-conformances, 14 observations, and 23 areas in which the unit was conforming to policy. The one non-compliance and five non-conformances identified were: Exhibit 147

a. **Non-compliance.** A Panther MEI dated 11 February 2021, associated fault, investigate reversing lamp inoperative was incorrectly classed as 'Fully fit'.[116] This should have been classed as 'Fail – Major (non-taskworthy)', invalidating the MEI. This vehicle had been used for a driving course since the MEI;

b. **Non-conformance.** There was no evidence to confirm the CO, or the equipment support comd had read and made comment on a selection of circulated inspection reports;

c. **Non-conformance.** Scimitar mantlet inspections had not been recorded prior to live firing or to the periodicity detailed within the equipment specific AESP.[117] This included a Scimitar which had not had a mantlet inspection recorded since 2017 and had fired its main armament after this date;

d. **Non-conformance.** Weapon inspection sheets (bench sheets) were found to have several anomalies and omissions. Examples included bench sheets without dates, signatures, and countersignatures. Faults recorded on bench sheets had not been recorded on JAMES;

e. **Non-conformance.** Weapon inspections had not been recorded within the relevant sections of the gun documentation. It was also found

[116] A Panther was a wheeled protected patrol vehicle often used as the commander's vehicle for engineer troops, anti-tank, mortar and supporting fire platoons.
[117] A gun mantlet was an armour plate or shield attached to an armoured fighting vehicle's gun, protecting the opening through which the weapon's barrel projects.

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that examination of ordnance recorded in the documentation did not match the dates recorded on JAMES;

f. **Non-conformance.** There were multiple completion errors on inspection reports, for example, a Warrior that:

(1) Had a fault stating that the rear wide vehicle reflector plates were missing. This was classed as Fully fit. Missing reflector plates should have been classed as Fail/Major making it a non-taskworthy fault;

(2) Due to other faults identified, was classed as 'Limited role'. There were no limitations or restrictions stated. A fault stating that there was a crew seat belt unserviceable but was classed as fully fit.

1.4.484. The LEA for 1 R WELSH identified areas of both non-compliance and non-conformance. There was a repeat issue with the incorrect classification of vehicles following inspections and the continued use of vehicles that should have been classed as 'non-taskworthy'. The findings of this LEA indicated that management processes within 1 R WELSH were not in line with Army policy. This was supported by the MEI that the 1 R WELSH conducted on c/s 62 Alpha. This similarly showed examples of incorrect classification in its CIS inspections and a lack of restrictions recorded against Limited role faults.

1.4.485. The panel concluded that the 1 R WELSH LEA showed evidence of a lack of management oversight, resulting in potentially unsafe vehicles remaining in use and on the road. Furthermore, the management practices identified in the LEA report resulted in road going vehicles being used in a manner they were unfit for. The panel finds engineering management practices to be an **other factor.**

Technical inspections

1.4.486. CVR(T) was classed as JAMES Managed Equipment. JAMES allowed the full management of maintenance, repair, modification, and overhaul for equipment through life, and provided the means to electronically store key equipment records, along with the capacity to produce automated reports and returns. It was a maintenance management system that was used to forecast preventative maintenance such as inspections or servicing. In addition, any faults and resulting corrective maintenance required, or conducted, were to be recorded on the system. Exhibit 144

1.4.487. **Mandatory equipment inspection (MEI).** All CVR(T) variants were scheduled to receive an MEI every 6 months. Information and policy on equipment classification and 'reasons for failure' was laid down in the DSA Standards and Inspection Manual 11 (SIM 11) - Tracked Vehicles. The Exhibit 164 Exhibit 229 Exhibit 230 Exhibit 231

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inspection standards for the CVR(T) Scimitar were contained in two publications, one for all variants of CVR(T) and one specific to Scimitar. Exhibit 232 Exhibit 236

1.4.488. **1 R WELSH MEI.** The most recent MEI conducted on c/s 62 Alpha was completed by the 1 R WELSH LAD, on 29 June 2021. An MEI was broken down into six main sections:

a. **Automotive.** This inspection was to assess the overall serviceability of the automotive aspects of the platform. The vehicle was classed as 'passed – Fully fit';

b. **Role equipment.** This inspection assessed the vehicle's ability to complete its designed role. The report highlighted no role equipment faults at the time of inspection:

(1) **Communications.** This inspection assessed the CIS equipment held within the vehicle. The inspection highlighted no defects, advisories, or limitations with the platform;

(2) **Weapons.** This inspection assessed the serviceability of the turret and main armament. The inspection passed the vehicle with a classification of Fully fit, but highlighted six previously reported faults as advisories;

(3) **Optronics.** This inspection covers the sights and scopes within the vehicle for serviceability. The inspection highlighted no defects but highlighted three previously reported faults; and

(4) **Chemical, Biological, Radiological and Nuclear (CBRN).** This inspection covered the integrity of the CBRN protection offered by the vehicle. The inspection found no defects, advisories, or limitations at the time of inspection.

Vehicle condition assessment - 28 February 2022 to 11 March 2022

1.4.489. **4 Armoured Close Support Battalion (4 Battalion) REME MEI.** C/s 62 Alpha was subject to a full and independent MEI that was undertaken by 4 Battalion REME in support of DAIB engineers during the period 28 February 2022 to 11 March 2022, to determine the post-accident technical condition of the vehicle. Exhibit 143 Exhibit 164

1.4.490. Due to non-taskworthy faults, c/s 62 Alpha could not be safely road tested. However, brake and steering functions were tested and found to be serviceable. A total of 75 additional faults were found across the following sections:

a. **Automotive:** 64 faults of which 44 were non-taskworthy, 9 limited role and 11 fully fit;

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b. **Communications**: 5 faults of which 2 were non-taskworthy, 1 was limited role and 2 were fully fit;

c. **Weapons:** 5 faults of which 1 was non-taskworthy, 2 were limited role and 2 were fully fit;

d. **Instruments/optronics:** 1 limited role fault found; and

e. **Pre-existing faults:** 12 faults of which all were fully fit.

1.4.491. The number of faults found on c/s 62 Alpha found by 4 Battalion REME was far greater than recorded by the 1 R WELSH MEI. The panel noted that 1 R WELSH had recorded 10 faults on JAMES prior to the accident, none of these made the vehicle non-taskworthy. The subsequent MEI found 75 faults, of which, 47 should have individually meant the vehicle was classified as non-taskworthy. Many of the faults, such as wheel bearing play, would most likely have been caused after a prolonged period of use and, therefore, were likely to have been present for some time before the accident.

1.4.492. The following analysis of the key parts of the technical investigation will cover:

a. Traverse gearbox and friction clutch;

b. Communications;

c. Rear view mirrors;

d. Driver's seat; and

e. Vehicle handover process.

1.4.493. **Traverse gearbox.** The Scimitar was fitted with a two-speed traverse gearbox that was controlled by the gunner to rotate the turret through 360 degrees. This allowed for surveillance using the fitted optical and sighting systems and for targeting the weapon systems. The gearbox consisted of two gears, 'high' and 'low', that could be selected by either pushing the traverse handle up to engage the 'high' gear or by pulling the handle down to engage the 'low' gear. A friction clutch within the gearbox was set to slip (3900 ± 100 lbf in) should the gun barrel, turret, or an attached component, strike an obstruction. When an external force exceeded that of the clutch pre-set, the turret would freely rotate until the force was removed. The friction clutch was primarily designed to protect damage to the main armament, including the turret ring and traverse gearbox, but would also protect the gunner's arm by preventing an output at the gearbox traverse handle.

Exhibit 103
Exhibit 150
Exhibit 151
Exhibit 152

1.4.494. During the DAIB MEI, the friction clutch was tested to ensure that it was operating at the correct tolerances. During this test, the gearbox was

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removed from the vehicle and bench tested using a calibrated torque wrench; the friction clutch was deemed to have operated within its tolerances. At the time of the DAIB MEI there was only one test jig available in the south of England to investigate the tolerances of the friction clutch. It was the panel's opinion, therefore, that it was very unlikely that this element of the 1 R WELSH MEI was conducted in accordance with policy.

1.4.495. The panel **observed** that the significant difficulties in locating a gearbox friction clutch test jig were indicative of policy-compliant technical procedures not being followed by any Scimitar unit in the south of England.

1.4.496. The panel concluded that the traverse gearbox friction clutch operated as designed and, therefore, the force exerted by the gun barrel's impact with the tree was in excess of the design limits. The panel further concluded that early slippage of the traverse gearbox friction clutch was **not a factor**.

1.4.497. **Communications.** A complete CIS inspection could not be conducted due to the encrypted CIS equipment having been removed from the vehicle by 1 YORKS personnel and Wiltshire Police on the day of the accident. Exhibit 103 Exhibit 143

1.4.498. The Bowman Audio Interface Unit (BAIU) in the driver's compartment was found to be non-taskworthy. There were no audio ancillaries (headset) connected to the driver's BAIU at the time of the inspection. The driver's headset had been retained by Wiltshire Police and, therefore, could not be tested. However, a push-to-talk button in the driver's compartment was tested and this was confirmed to function correctly. Exhibit 149

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1.4.499. A switch which controlled the volume of the driver's headset was missing (red circle in Figure 1.4.38). When both the comd's and gunner's headsets (proven functional) were used to test the functionality of the driver's BAIU, it was found to be producing excessive noise interference and 'screeching'. The excessive noise and screeching from the BAIU could have caused a distraction to the driver. The faults present with the BAIU would have made the platform non-taskworthy.



Figure 1.4.38: Driver's compartment BAIU indicating a defective volume switch.

1.4.500. The driver's headset was later released to the panel who requested the assistance of 1710 Naval Air Squadron (NAS) to conduct non-destructive testing on it.[118] 1710 NAS undertook an x-ray scan of the headset, the result of which determined that there was no obvious damage or debris to the internal workings. A full check of the headset was then performed by 4 Armoured Close Support Battalion REME which concluded that it was functioning correctly.

1.4.501. From the post-accident inspections conducted, it was deemed that the vehicle CIS was in an unsafe state for vehicle operations. The CIS state pre-accident cannot be accurately assessed, however, it was highly likely that some of the faults would have been present prior to the accident.

[118] 1710 Naval Air Squadron delivers scientific and engineering support to UK Armed forces aircraft worldwide.

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1.4.502. The panel concluded that due to the inherent danger associated with the movement of AVs, the correct functionality of an intercom system was important from a safety perspective, and it may have made communication between the comd and the driver more difficult. Therefore, the panel finds this is an **other factor.**

1.4.503. **Recommendation. The Deputy Chief of Staff Field Army should carry out a review of equipment maintenance standards and practices in order to ensure non-taskworthy vehicles are not released for use.**

1.4.504. **Recommendation. The Head Defence Land Safety Regulator** should **ensure that appropriate governance is in place for equipment maintenance standards in order to ensure non-taskworthy vehicles are not released for use.**

1.4.505. **Recommendation.** A recommendation has already been made at paragraph 1.4.327 that the Director Land Warfare should review armoured vehicle emergency procedures and amend turreted vehicle training in order to ensure that all relevant risk mitigation procedures are comprehensive, standardised, and included in formal training.

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1.4.506. **Wing mirrors.** During the inspection it was noted that c/s 62 Alpha was missing both of its wing mirrors (Figure 1.4.39). Both mirrors were found in the vehicle stowage bins. These are a legal requirement for on-road driving and a reason for failure under the vehicle inspection criteria listed in the Service Inspection Manual. However, according to AVSOs:

Exhibit 044
Exhibit 143
Exhibit 153
Exhibit 164

> 'Driving mirrors are to be fitted and correctly adjusted when required to drive on public highways (or removed and stowed, during cross country driving/or on operations). Mirrors are to be maintained in a clean and serviceable condition'.



Figure 1.4.39: C/s 62 Alpha with wing mirrors removed.

1.4.507. The Exercise Action & Safety Plan (EASP) stated that 'Driving mirrors are to be fitted, maintained, cleaned and adjusted for the driver'. However, it was usual practice with operators of Scimitar that wing mirrors were removed when using the vehicle for tactical purposes to reduce visual signature. In removing the mirrors, the driver lost their awareness of the angle of the turret once it traversed beyond their peripheral vision, as they no longer had the ability to see rearwards down the side of the vehicle. Without the mirrors fitted, the driver would have had to rely on the instruction/guidance from the vehicle comd as to the relative angle of the turret.

1.4.508. The panel **observed** that without the wing mirrors fitted, and no other means by which to see the position of the gun barrel, the driver would not know

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its angle and, therefore, how much space they would require to safely manoeuvre. However, the vehicle comd had overall responsibility for maintaining situational awareness and notifying the driver of potential hazards.

1.4.509. **Driver's seat.** To position the seat (Figure 1.4.40) for height, the driver was required to ease their body weight from the seat, then pull upwards on the height adjustment lever (9) located at the front of the seat. They would then have to force the seat down using their body weight, or allow the seat to rise, due to the pulling force of the elastic cords (1). They would then release the lever and, having ensured that both locating pins were fully engaged in the new position, commit their full body weight into the seat. If the locating pins were not engaged, the driver would have to raise the seat using manual force until the pins clicked into position. To move the seat forwards or backwards, the driver had to pull the longitudinal adjustment lever (6) upwards and move the seat to the required position.

Exhibit 103
Exhibit 143

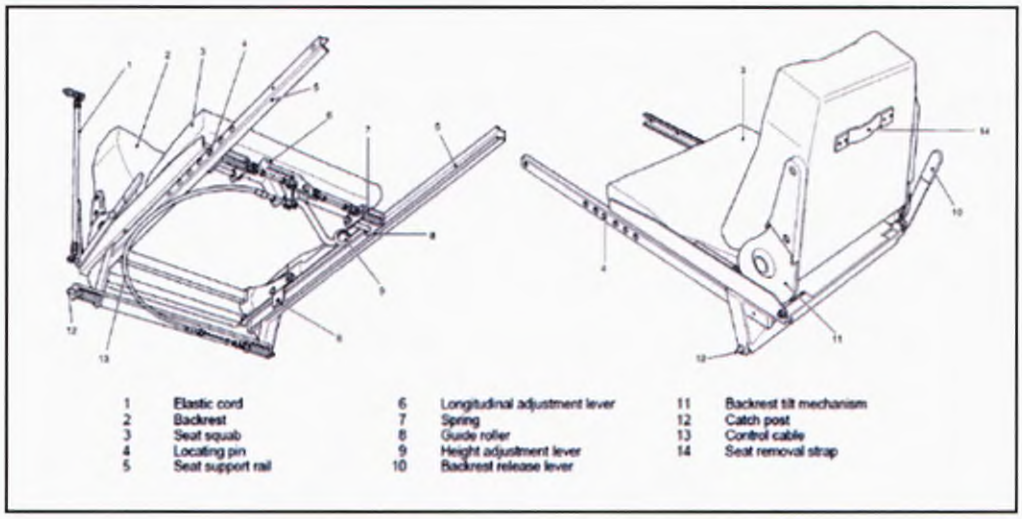


Figure 1.4.40: Driver's seat drawing.

1.4.510. The panel believed that it was very likely that the driver's seat was in the upper of the two possible positions at the time of the accident. The post-accident MEI found a total of three faults with the driver's seat:

a. The seat was difficult to move forwards and backwards;

b. The locking pin release handle was difficult to operate; and

c. The seat was missing the left elastic cord.

1.4.511. During the MEI the left elastic cord was found to be attached to the vehicle hull but not connected to the seat. This would have reduced the force available to help raise the seat from the lower to the upper position. This was

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unlikely to have had a significant impact in the ability to change the seat from the upper to lower position, as this was achieved mainly through use of body weight.

1.4.512. The operation and subsequent 'reasons for failure' during the inspection of the seat were open to an examiner's interpretation e.g. what one inspector would deem difficult, another may not. It was also possible that the seat had become difficult to operate during the time the vehicle had been in storage post-accident.

1.4.513. The panel concluded that the serviceability of the driver's seat was poor, and it would have been difficult to raise the position of the seat from the lower to the upper position. However, it would have been possible to lower the seat relatively easily and, therefore, finds that the serviceability of the seat was **not a factor.**

1.4.514. **Vehicle handover.** All units transferring armoured vehicles to be utilised for Ex IS were mandated to handover such vehicles in line with the policy set out by 3rd (UK) Division. This included completing a proof of good order certificate (POGO) for each vehicle. This was an assurance requirement to ensure appropriate standards were met for all equipment handed over for use on Ex IS, including compliance with legislation. It was essential to ensure that equipment was handed over in good order, enabling the gaining unit to have 'fit for purpose' equipment. Exhibit 154 Exhibit 155 Exhibit 156 Exhibit 157 Exhibit 158 Exhibit 159

1.4.515. 1 YORKS also conducted an 'in-house' process referred to as an 'Annex Q'.[119] The annex Q was completed by a 1 YORKS class 1 vehicle mechanic (VM) from their REME LAD, with the issuing unit in attendance. This was to ensure that the platform was fit to be tasked as per its serviceability state recorded on JAMES. It also provided an opportunity for 1 YORKS to highlight any level 1 (L1)/level 2 (L2) maintenance tasks, both on the vehicle or on JAMES, for the issuing unit to complete prior to the official handover.[120,121] This was known as the 'first look' and was usually conducted five to seven days before handover. Exhibit 158 Exhibit 159

1.4.516. In the case of c/s 62 Alpha, the annex Q was undertaken on 30 September 2021 by 1 YORKS. It identified a number of L1 and L2 faults:

a. 'All hull plates missing (L1);

b. 'Front bin damage (L1);

c. 'N/S drop link slight play (L2);

[119] This was an annex of the Unit Equipment Care Directive (UECD).
[120] L1 maintenance was carried out by the driver/crew for specified tasks, assisted by a qualified equipment support trades person where required and approved by an authorised competent person.
[121] L2 maintenance was carried out by specialists within units who were responsible for maintenance advice to the unit commander and the co-ordination of all aspects of maintenance within the unit.

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d. 'O/S drop link excessive play (L2);

e. 'Missing handbrake guard (L2); and

f. 'Convoy light inop [inoperative] (L2).'

1.4.517. The vehicle failed on two items (the suspension faults at paragraphs 1.4.516c and d). In the inspection report remarks box, the VM identified 'excessive play' as the reason for failure. Only the automotive parts of the annex Q were completed, leaving the sections for turret/cupola/hatches/sighting system and CIS incomplete. The unit assured the panel that the remaining sections of the annex Q were undertaken by the correct technical personnel. However, no audit trail could be provided. As the UECD did not specify a retention policy for this documentation, the annex Q for other vehicles that were used on Ex IS was destroyed following the return of the vehicles to their parent unit. This meant that the panel was unable to determine if the annex Q documentation was complete across the fleet of vehicles used by 1 YORKS on Ex IS.

1.4.518. 1 YORKS stated that the CIS elements of the annex Q were the responsibility of the crew of c/s 62 Alpha with support from the CIS platoon. None of the crew of were at SPTA when the annex Q inspection was completed. The faults in the vehicle's intercom system that were identified during the DAIB MEI were not identified or recorded during the process of the vehicle handover. The panel acknowledged that the annex Q added an extra layer of assurance for the receiving unit. This reduced the likelihood of issues or delays to the handover of vehicles before the start of the exercise. As the annex Q was a static and visual inspection, much of the onus was on the issuing unit to be assured that the vehicle was in a taskworthy condition prior to the handover. As a user responsibility, the CIS check did not give adequate opportunity for rectification prior to the start of Ex IS, especially given the short timescales that crews had to take over their vehicles.

1.4.519. C/s 62 Alpha was further subject to a POGO inspection and handover routine conducted by 1 YORKS LAD on 1 October 2021 in line with the requirements set out by 3rd (UK) Division Equipment Transfer Standard Operating Instruction. This inspection was essentially a check of documentation and was mostly conducted by the fleet manager rather than a specialist tradesman. The inspection did not identify or record any faults remaining on the vehicle. From the DAIB technical investigation and MEI, it was evident that c/s 62 Alpha was highly likely to have been in a non-taskworthy state prior to the start of Ex IS and should not have been used.

1.4.520. The panel **observed** that:

a. The handover process for vehicles taken on in advance of Ex IS was adhered to in line with the requirements set out in the SOI.

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b. Whilst there was a lack of opportunity for the CIS inspection and rectification of faults, the annex Q pre-handover inspection added a useful layer of additional assurance for 1 YORKS in addition to the mandated handover inspections.

1.4.521. **1 YORKS technical inspection.** The handover/takeover process for 1 R WELSH vehicles used for Ex IS was completed by a team from the 1 YORKS LAD. This was comprised of a sergeant who was a class 1 VM, a corporal class 1 VM, and a craftsman class 2 armourer (equivalent to private). According to the Land Equipment Engineering Standards, a VM should be assessed to equipment proficiency level 'O' which meant that they have 'sufficient experience to be deemed competent to diagnose faults, work unsupervised and supervise and conduct inspections'. The annex Q and POGO were both undertaken by the corporal class 1 VM with qualifications as follows: Exhibit 154 Exhibit 157 Exhibit 159 Exhibit 160 Exhibit 161 Exhibit 162 Exhibit 163 Exhibit 296

a. Qualified as a class 1 VM on 21 January 2020;

b. Record of experience chart level 'O' for CVR(T) was signed by the LAD engineering officer on 7 June 2021;

c. Land systems maintenance engineering authority signed by the LAD engineering officer on 1 November 2020;

d. F/MT 936 Appointment of Inspectors was signed by the LAD engineering officer on 1 March 2021; and

e. MEI refresher training was conducted on 15 January 2021.

1.4.522. The above qualifications show that the VM who undertook the annex Q pre-handover inspection, and the POGO, was fully qualified to conduct those tasks and had recently undergone refresher training to ensure they were current. The panel, therefore, couldn't determine why faults on the vehicle had not been identified during either of these inspection opportunities.

1.4.523. The panel concluded that the handover/takeover process was followed and that it was conducted by a VM who was a suitably qualified and experienced person for this task. The panel finds that the technical competence of the VM was **not a factor**.

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Personal protective equipment

1.4.524. The current Scimitar personal protective equipment (PPE) requirements were set out in AVSOs; an extract of which can be seen at Table 1.4.9. Further detail was provided within the eCassandra hazard log under control C116: Exhibit 040 Exhibit 044

> 'Provision of PPE is worn by the Crew eg. Crew Guard Helmet, boots with suitable soles, ear protection when not wearing head set, high visibility vests, Combat body armour (CBA) and Goggles.'

Equipment (All Eqpt is issued as per Defence Stores only)	AV Crewmen			Remarks
	AV Static Engine Running	AV Moving	"Head Out" Position	
Audio Gear	X	X	X	
Hearing Protection	X	X	X	Correct levels as per JSP 375
Crew Guard/Helmet		X	X	Issued Helmet
Eye Protection		X	X	
Body Armour		X	X	Not required when the vehicle is being ground marshalled in barracks.
Wearing of Seat Belts	X	X	X	

Table 1.4.9: Minimum levels of PPE.

1.4.525. At the time of the accident there was a safety notice in place that mandated the use of the Combat Mk II Headset, when operating the CVR(T) and Warrior platforms, due to the levels of noise attenuation required. Therefore, it was required for Scimitar crews to wear Virtus ballistic helmets in place of the 'Crew Guard' helmet, due to the compatibility with the Combat Mk II headset. Pte Watson-Pickering was wearing a Combat Mk II Headset and Virtus helmet at the time of the accident. To ensure that the PPE worn by Pte Watson-Pickering did not place him under additional risk of injury, the panel undertook an assessment of the interaction between the driver in the head up position and the turret as it rotated. This assessment was undertaken in conjunction with Wiltshire Police Forensic Investigation Unit and repeated in the presence of a forensic pathologist. Exhibit 012 Exhibit 165

1.4.526. The panel utilised a soldier who was similar in stature and wore the same PPE as those used by Pte Watson-Pickering to simulate the effect of turret rotation on a driver who was in the head up position. The traverse gearbox was disengaged and the turret was rotated slowly by hand pressure on the end of the gun barrel to safely replicate the relative movement of the turret. The interaction

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between the turret stowage bins and the driver was assessed through multiple cycles.

1.4.527. It was determined that it was highly likely that both Crew Guard and Virtus helmets would have interacted in a very similar way with the turret stowage bins and, therefore, regardless of which helmet the driver was wearing, it was highly likely that the outcome would have been the same.

1.4.528. The panel concluded that the PPE worn by Pte Watson-Pickering was appropriate for the task being conducted, and for operating the CVR(T) Scimitar. The panel acknowledges that there was a strand of work underway through DE&S to address noise attenuation whilst operating AVs. As part of that work, recommendations will be made on the most appropriate PPE for use in all AVs. The panel, therefore, finds that PPE was **not a factor**.

Technical summary

1.4.529. The MEI and subsequent assessment concluded that the vehicle was likely to have been in a non-taskworthy condition both pre- and post-accident. The vehicle was deemed serviceable for brakes, steering and turret traverse gearbox operation. This would likely mean that the vehicle was, in an automotive context, operating within tolerance during driving operation.

1.4.530. The panel concluded that, notwithstanding all the technical issues that meant that c/s 62 Alpha should not have been in use on Ex IS, it had no faults that directly or indirectly caused the accident on 15 October 2021 to happen. The panel finds that the technical condition of c/s 62 Alpha to be **not a factor**.

Obsolescence management

1.4.531. The CVR(T) has been an unqualified success for the UK. Since 1973, over 1800 vehicles have been sold internationally and a further 1863 brought into service by the MOD.[122] The vehicles had served with distinction in many theatres and sometimes had been the only AVs that provided any useable capability. This was because of their balance of armour and firepower combined with small size and low weight.[123] The basic design, however, was from the 1960s and there have been numerous programmes to upgrade or replace the series since the late 1980s.[124] These started with the Family of Light Armoured Vehicles study paper in 1989 which stated the rationale for replacing the Bulldog and CVR(T) series, as both were struggling with problems of reduced mobility, capability, and survivability. The study provided the foundation for the Future Family of Light Armoured Vehicles programme later in 1989. This programme was absorbed by the Tactical Reconnaissance Armoured Combat Equipment

Exhibit 301
Exhibit 302

[122] https://www.thinkdefence.co.uk/british-army-medium-weight-capability/ (accessed 10 November 2021).
[123] The Falklands and Balkans Campaigns were but two examples.
[124] Dunston S (2021). *Scorpion FV101 Combat Vehicle Reconnaissance (Tracked) in British Service 1972-2020.* J H Haynes and Co Ltd.

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Requirement (TRACER) programme in 1992. TRACER became a joint UK/US programme with an expectation of delivery in 2004. To enable the CVR(T) series to continue out to TRACER's delivery date, a life extension programme was initiated in 1995.[125] TRACER was cancelled in 2001 when the UK and US decided to pursue different solutions.

1.4.532. The Future Rapid Effects System (FRES) programme started in 2001 with an expected delivery date of 2009. In 2006 the delivery date for FRES was changed to 2015-2018. By 2010, Scimitars in Afghanistan had been fitted with combinations of additional armour to protect against rocket propelled grenades. However, the increasing use of improvised explosive devices showed that CVR(T) required better protection. The MOD ordered 50 of the Scimitar Mark 2 vehicles. This was effectively a newly manufactured Spartan hull with a refurbished Scimitar turret.[126] These AVs were delivered in 2011 and provided significant improvements in survivability for the crew. At that time approximately 1,100 of the original CVR(T) (now known as Mark 1) were still in use by UK MOD.

Exhibit 278
Exhibit 301
Exhibit 302

1.4.533. In a 2011 report, the National Audit Office noted that CVR(T) would be completely obsolete by 2016, and that the 'FRES Scout' would start to replace it from 2017, and fully replace it from 2030.[127] As successive Defence and Security Reviews reduced the size of the Army, fewer CVR(T)s were required. In 2014, 124 CVR(T)s were sold to Latvia.[128]

Exhibit 303

[125] The LEP included a diesel engine to replace the Jaguar petrol engine, thermal imaging optics which could be used on the move to replace OTIS which could only be used when the vehicle was static, and many other more minor improvements.
[126] https://www.army-technology.com/projects/scimitar-mark-2-light-armoured-reconnaissance-vehicle/ (accessed 14 September 2022).
[127] The Cost-Effective Delivery of an Armoured Capability, National Audit Office, 20 March 2011.
[128] https://www.thinkdefence.co.uk/british-army-medium-weight-capability/ (accessed 8 September 2022).

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1.4.534. In 2017, the out-of-service date for CVR(T) was brought forward from 2027 to 2023. The implementation order (IO) to 'de-field' CVR(T) was published by the Field Army Equipment Through Life Support Branch on 31 January 2022. The IO stated that 192 CVR(T) remained in the active fleet, with a further 239 in storage. The IO aimed to progressively remove all CVR(T) from the active fleet by March 2023 (Figure 1.4.41). Over time, FRES Scout changed to 'Scout SV', and more recently Ajax. However, as of 1 January 2023, no replacement for CVR(T) had been accepted into service.

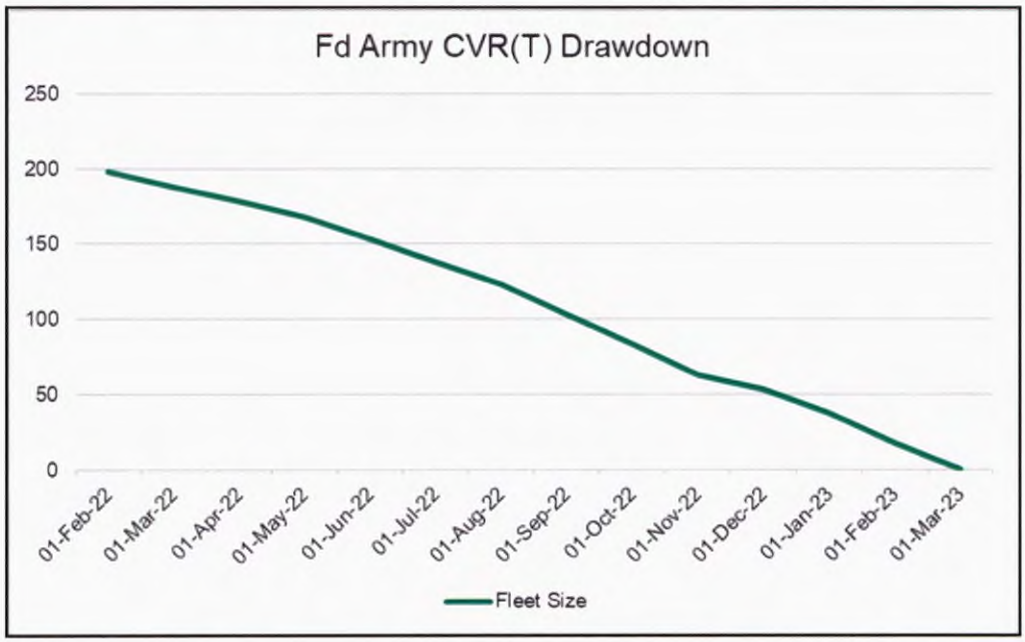


Figure 1.4.41: Field Army CVR(T) drawdown plan.

1.4.535. Between 2011 and 2022, the CVR(T) fleet had reduced from 1,100 to 431. As discussed at paragraph 1.4.331, the availability of the active fleet of 192 CVR(T) was insufficient to provide basic levels of collective training. The Ajax programme had been subjected to continued issues which had caused its initial operating capability date of 2016 to slip. The CVR(T) drawdown was largely dependent upon Ajax. However, plans for the two capabilities did not appear to be synchronised. Despite delays to the Ajax programme, CVR(T) had been progressively drawn down, resulting in a mismatch between operational ambitions (to field units at readiness), and technical realities (sufficient trained crews to use them). The cost of maintaining the availability of the aged CVR(T) fleet was likely to have been considerable. Additionally, not fixing safety issues in a timely manner, such as the problem with the final drives, was detrimental. For the four years CVR(T) was considered too unsafe to be allowed on the public highway (paragraph 1.4.200), CVR(T) driver training was taking twice as long. This was because drivers now had to be trained on Warrior before converting to type. The joint impact of these issues was that there were too few

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vehicles to train with, and those that were available were unsafe to use for all aspects of training.

1.4.536. There had been numerous studies and programmes raised to replace CVR(T) and modification projects to update it, address safety issues, and sustain it. There were several points at which there was the opportunity to note inherent driver safety issues and address them.

1.4.537. The panel concluded that there needed to be a more accurate matching of the dependencies between equipment capabilities. The lack of Scimitars to train on had an impact on the experience levels of the crew and the availability of a capability should be more closely mapped to the operational and training requirements of it. It should be possible to call on the vehicles held in storage to be used for training where the active fleet is insufficient. Intent to drawdown a capability should be linked with the expected residual use of the platform. The panel finds this to be a **contributory factor**.

1.4.538. **Recommendation. The Chief of Staff Field Army should ensure that AV unit training requirements are always matched to the resources available in order to enable AV competency levels are maintained.**

Disposal

1.4.539. The MOD used commercial contracts to dispose of surplus capabilities.[129] The contracts were managed by the Defence Equipment Sales Authority (DESA) which was a branch within DE&S. DESA stated that they had provided all relevant safety information to Latvia during their purchase of surplus CVR(T) from the UK and that they continued to do so. They also stated that commercial and private entities purchased these vehicles at their own risk (sold as seen) and that no technical or safety information was required to be provided with the sale. There were many CVR(T) in private ownership in the UK and abroad. As part of its research, the panel visited a company in Warwickshire that had over 100 CVR(T) in stock.[130] There were several held by museums and some were registered with DVLA and used on the public highway.[131,132] In addition to the risks posed by non-commanded turret rotations, it was likely that many of the current operators would be unaware that the MOD had not been using CVR(T) on the public highway since 2017, and that only a proportion of the fleet had since been modified to remove the safety risk. Exhibit 304

1.4.540. Many of the current private owners of CVR(T) would be unaware of the risks posed by non-commanded turret rotations. Additionally, all CVR(T) sold

[129] www.mod-sales.com (accessed 19 October 2021).
[130] www.militaryvehiclesolutions.com (accessed 18 October 2022).
[131] https://youtu.be/qzaOba-aYOg (accessed 18 October 2022).
[132] https://www.youtube.com/watch?v=ZWJUCdHUhYk (accessed 18 October 2022).

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prior to 2019 would not have had modified final drive units fitted. Some vehicles sold since 2019 would also not have received the modification. The panel opined that it should be incumbent upon the MOD to make current and future owners aware of other safety-related information as and when that became available.

1.4.541. The panel concluded that the MOD was now aware of these dangers and that the premise of 'sold as seen' should not apply in cases where it was aware of a specific risk but chose not to inform the purchaser. There was an obligation, akin to a duty of care, to ensure that current owners and all future DESA CVR(T) sales were made aware of key safety information. The panel finds this to be an **other factor**.

1.4.542. **Recommendation. The Director Engineering Safety (Defence Equipment & Support) should provide sufficient governance to ensure that all relevant safety information (to include information that comes to light at some point in the future) is provided to owners of surplus defence equipment purchased direct from the MOD (direct-purchasers).**

1.4.543. **Recommendation. The Director Engineering Safety (Defence Equipment & Support) should provide sufficient governance to ensure that, when purchasing the equipment from the MOD, the new owners should be advised that, in the event that they sell the equipment to a third party, they must ensure that they inform the third party of any safety information given to them by the MOD.**

1.4.544. **Recommendation. The Director Engineering Safety (Defence Equipment & Support) should provide sufficient governance to ensure that relevant safety information is included on direct transfer of ownership of equipment from the MOD to another party (the '2nd' Party). If new safety concerns emerge that the MOD becomes aware of, the governance arrangements should also ensure that relevant information is passed to that 2nd Party.**

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Section 5 - Safe place

1.4.545. ACSO 1200 defines safe place as: Exhibit 039

> 'This is the space to be occupied by the military for the conduct of their activities and includes any surrounding areas together with any military or civilian population which might be affected by those activities. The Safe Place must form part of the activity specific Risk Assessment taking into account the proposed use of the space and controls put in place.'

Introduction

1.4.546. This section of the report shows that the SPTA is a safe place to train and that there were no environmental factors involved in this accident. Observations and recommendations for improvements have been made to provide better information to personnel planning and conducting exercises, to simplify the process for communicating with the emergency services and ensuring that essential information regarding competence is passed to exercise organisers so that they can determine if they are 'safe persons' or if additional mitigation would be required to include them in the exercise.

SPTA

1.4.547. The accident on 15 October 21 took place during Ex IS on SPTA. Therefore, the panel focussed on the training environment and management processes specific to this exercise as undertaken on SPTA. SPTA is highlighted by the yellow area in Figure 1.4.42.



Figure 1.4.42: SPTA.

1.4.548. SPTA was the largest military training area in the UK. It covered approximately 390 square kms between Warminster and Westbury in the west, and Tidworth and Perham Down in the east. It was one of few authorised Exhibit 166

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training areas that permitted AVs to exercise tactically in the UK. SPTA was sub-divided into several smaller areas that could be booked in whole, or in part, for different activities depending on the main use of that area. Although the land was owned by the MOD, SPTA also had several civilian villages within its borders and was crossed by many civilian roads and the River Avon.

Ground conditions

1.4.549. The terrain in the general area of the accident, bounded by the River Avon to the west and Dreweatt's Barn to the east (Figure 1.4.43) consisted of gently sloping agricultural land, intersected by metalled and non-metalled tracks, and interspersed with woodblocks and civilian agricultural buildings. The land was well maintained, with ploughed fields separated by low fences and shrubs/hedges.

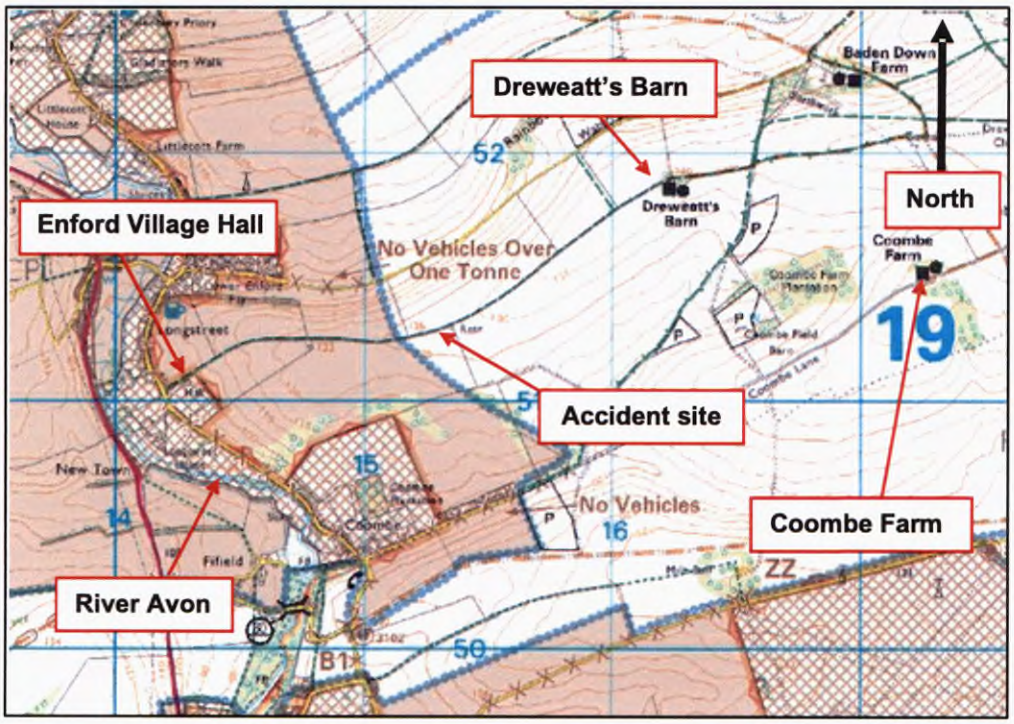


Figure 1.4.43: SPTA range map detailing the area of the accident.

1.4.550. The terrain in the vicinity of the accident consisted of a straight non-metalled track extending along a shallow ridge line from Enford Village Hall in the west, to Dreweatt's Barn in the east. The track was even and level, although lightly rutted from vehicle traffic. To the north of the track the terrain was level fields for approximately 200m before sloping gently down into a shallow valley. To the south of the track, ploughed fields gently sloped into another shallow valley. The accident occurred approximately 200m from the western edge of the training area and was within the non-contact zone. This had been created to

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ensure that scenario play did not interfere with the local residents and to ensure 'fighting' did not extend across the River Avon and the main road (A345) nearby.

1.4.551. The accident occurred at the location seen in Figure 1.4.43 and Figure 1.4.44. C/s 62 Alpha was travelling on a non-metalled track moving from east to west along the route shown by the dotted red line. To the immediate east of the accident site there was a group of shrubs/small trees surrounding an elevated concrete reservoir. To the north of the track stood a single hawthorn tree.

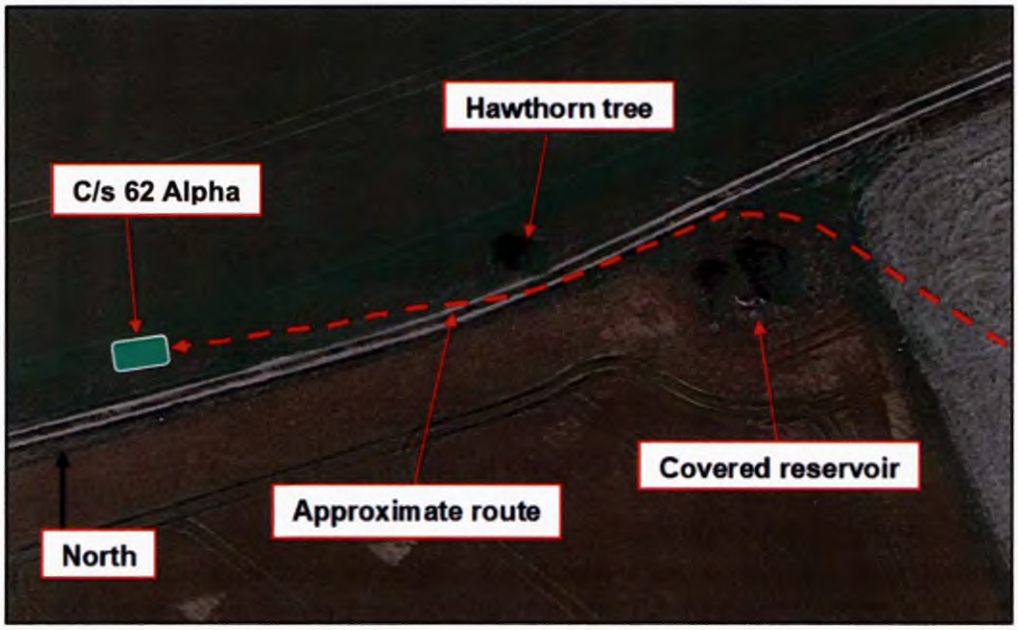


Figure 1.4.44: Aerial view of accident site.

1.4.552. The flat, even ground had only minor variations in topography that were easily identifiable by plain sight. The straight and level track, along with ploughed fields in the immediate vicinity of the accident site provided a sound surface for movement of 4x4 wheeled and tracked vehicles. The small group of shrubs/trees around the reservoir, and the lone hawthorn tree were isolated against the sparse terrain with little other vegetation and ploughed level fields. These obstacles, therefore, stood out in contrast and were easily identifiable.

1.4.553. The panel concluded that the terrain and ground conditions in the vicinity of the accident were suitable for Scimitar operations, and, therefore, they were **not a factor.**

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1.4.554. **The accident site.** The hawthorn tree was approximately 1m to the north of the track and was approximately 3m in height (Figure 1.4.45).



Figure 1.4.45: Image of accident location looking west.

1.4.555. It was possible that the short stature of the tree combined with the thick foliage that was present did not allow for an accurate assessment of the risk posed by a collision with the tree as it obscured its substantial trunk. During exchanges between the panel and experienced Scimitar crews in the immediate aftermath of the accident, the crews expressed surprise that the hawthorn tree could cause the level of damage that it did to c/s 62 Alpha. This indicated to the panel that operator risk perception with respect to gun barrel strike and non-commanded turret rotation was likely to be low. This may be exaggerated with the relative inexperience of operating a Scimitar for Pte Watson-Pickering.

1.4.556. The panel **observed** that the driver's perception of the risk posed by the tree in the event of a collision was low.

Environmental conditions

1.4.557. The Met Office weather data for Larkhill (7km from the accident site and the nearest available weather observation station) at 12:00 on 15 October 21 showed the following:

Exhibit 167
Exhibit 168

a. Cloud cover: overcast

b. Fog: nil;

c. Precipitation: 0mm;

d. Visibility: very good (8-20km);

e. Temperature: 13.1˚C; and

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f. Wind: 040° 7 knots.

1.4.558. On the day of the accident the weather was fair, comfortable, and dry, as had been the case for the preceding 24 hours. This created good conditions for the operation of tracked vehicles. The soldiers operating on SPTA with the relative protection of a Scimitar would not have been exposed to any extremes of temperature, weather or other poor conditions that would cause undue fatigue or a similar degradation in performance.

1.4.559. The panel concluded that the environmental conditions on SPTA were optimal for operating a Scimitar and, therefore, finds that they were **not a factor**.

Ex IS and SPTA policy/documentation

1.4.560. ACSO 1200 stated that the safe place must form part of the activity specific risk assessment taking into account the proposed use of the space and controls put in place. Exhibit 039

1.4.561. SPTA Range Standing Orders (RSOs) were to be utilised by personnel working within the bounds of SPTA. 'Chapter 3 – Training Area Safety' was the chapter that contained detail on all safety aspects of training on SPTA and it had annexes for specific hazards and mitigations. Exhibit 166

1.4.562. Significant emphasis was placed on the rate of vehicle accidents as a major hazard during training on the area. Within the foreword to the RSOs, three of the seven bulleted points related to road safety. These were:

a. 'Public Access: The Public have a right of access to many areas, and you must be alert to their presence. Three busy public roads cross the Plain, and safe procedures at the designated tank crossings are crucial;

b. 'Speed: 30 mph applies across the Plain for all types of vehicles. Commanders and drivers are to note that this was an upper limit aimed at maintaining safety; it is not a minimum speed guide; and

c. 'Cross Country Driving: Cross country driving accidents are common. Vehicle comds need to consider their route and control their driver.'

1.4.563. Within SPTA RSOs Chapter 7 (which was an A to Z of hazards and mitigations), the following was detailed:

'Cross country driving on SPTA is hazardous and serious accidents occur on natural features, military earthworks and obstacles. In winter, hazards are exacerbated by flooding and slippery slopes, (particularly chalk tracks). In summer, craters, ditches and other obstacles are obscured by vegetation, dust is also a significant hazard. The CCDA

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[Cross Country Driving Area] can be used to practice cross country driving. The terrain is one of the uncontrolled hazards on SPTA against which commanders must produce a risk assessment and mitigate accordingly'.

1.4.564. It was a clear intent of the RSOs to highlight, to those utilising SPTA, the dangers associated with military vehicle driving. The panel identified that 'Chapter 3 – Training Area Safety' was comprehensive and relevant, with specific references to the uncontrolled hazard of cross-country driving. In this case the comd was the senior planning officer, and the risk assessment conducted was the TESEX Risk Assessment (discussed at paragraph 1.4.593 to paragraph 1.4.598).[133] In annex G to chapter 7, specific rules and limitations were placed on the SPTA user which further served to constrain opportunities for the risk to manifest itself.

1.4.565. The panel concluded that the rules and limitations placed on users within SPTA RSOs were thorough, appropriate, and freely available to units operating on SPTA and, therefore, finds the SPTA RSOs were **not a factor.**

'It's Plain Sense' video

1.4.566. It was mandatory for all ranks exercising on SPTA to watch the video entitled 'It's Plain Sense' which covered the main 'dos and don'ts' of operating on SPTA. It was published in 2009 and consisted of several parts. The section relating to safety for troops was 'Section 2 – Orientation and Safety', which all personnel taking part in Ex IS were to have watched. 1 YORKS Operations Officer verbally stated to Soldier D that 1 YORKS personnel had watched 'It's Plain Sense'; this was also confirmed in the 1 YORKS Start State Letter.

Exhibit 166
Exhibit 169
Exhibit 170

1.4.567. At first glance 'It's Plain Sense' had a dated feel, with video clips of soldiers wearing disruptive pattern material uniform which, at the time of writing, had not been in regular use for well over a decade. Similarly, some of the images were of vehicles no longer in service which added to the stylistically aged feel. As the video developed, it referred to documentation and screenshots taken from the 'military intranet', specifically referring to Standing Orders for Training (now RSOs) and a screenshot of an aide memoire that was dated 2009. Whilst this did not affect the validity of the safety points that were highlighted and articulated within the video, the panel considered that the out-of-date imagery could detract from the importance of the content.

1.4.568. The safety points that are identified in the TESEX risk assessment are addressed and reinforced early on. This underlined the importance of the information that followed; the major causes of injury or death on SPTA. It

[133] TESEX describes an exercise that uses the Tactical Engagement System (TES) to ensure fair play.

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identified that the highest rates of accidents were caused by, or involved, military vehicles. The video identified speed as the most common cause of fatalities, with the next being off-road driving. Specific examples of terrain hazards or ground conditions were given along with advice on how the risks should have been managed. This could not be exhaustive as no exercise or conditions were the same. It placed emphasis on the need for troops to exercise caution.

1.4.569. Following the major causes of accidents on SPTA, the video signposted a flow chart within the SPTA aide memoire for actions in case of emergency or accident. This was given to all participating troops. The video instructed exercising troops to give an 8-figure grid reference of the incident rendezvous (RV) point. The civilian emergency services did not routinely use 8-figure grid references and preferred post codes, What3Words®, or even latitude and longitude.[134] Whilst this may have added a layer of confusion, the 2022 SPTA aide memoire has addressed this with the use of a table of identified RV points and their corresponding What3Words® location and grid reference.

1.4.570. The panel **observed** that whilst the 'It's Plain Sense' video looked dated, its content remained relevant and identified the highest risk activities that personnel undertook whilst training on SPTA.

SPTA aide memoire

1.4.571. All personnel taking part in exercises on SPTA were required to carry with them a copy of the Aide Memoire for Troops Training on the SPTA. This leaflet contained vehicle rules, general rules, and emergency procedures as well as a map of SPTA identifying its key features and landmarks. Exhibit 153 Exhibit 171 Exhibit 172

[134] What3Words® was a proprietary geocode system designed to identify any location with a resolution of about 3m. It was owned by What3words Ltd, based in London, England. The system encoded geographic coordinates into three permanently fixed dictionary words. Located at https://what3words.com/about (accessed 18 October 2022).

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1.4.572. The SPTA aide memoire provided a flow diagram detailing the required emergency response to guide those involved in an incident (Figure 1.4.46). This flow diagram clearly prioritised direct contact with the emergency services by those 'on scene' by dialling 999 with a follow up action to contact Range Operations who would provide further support and liaise with external agencies as required.

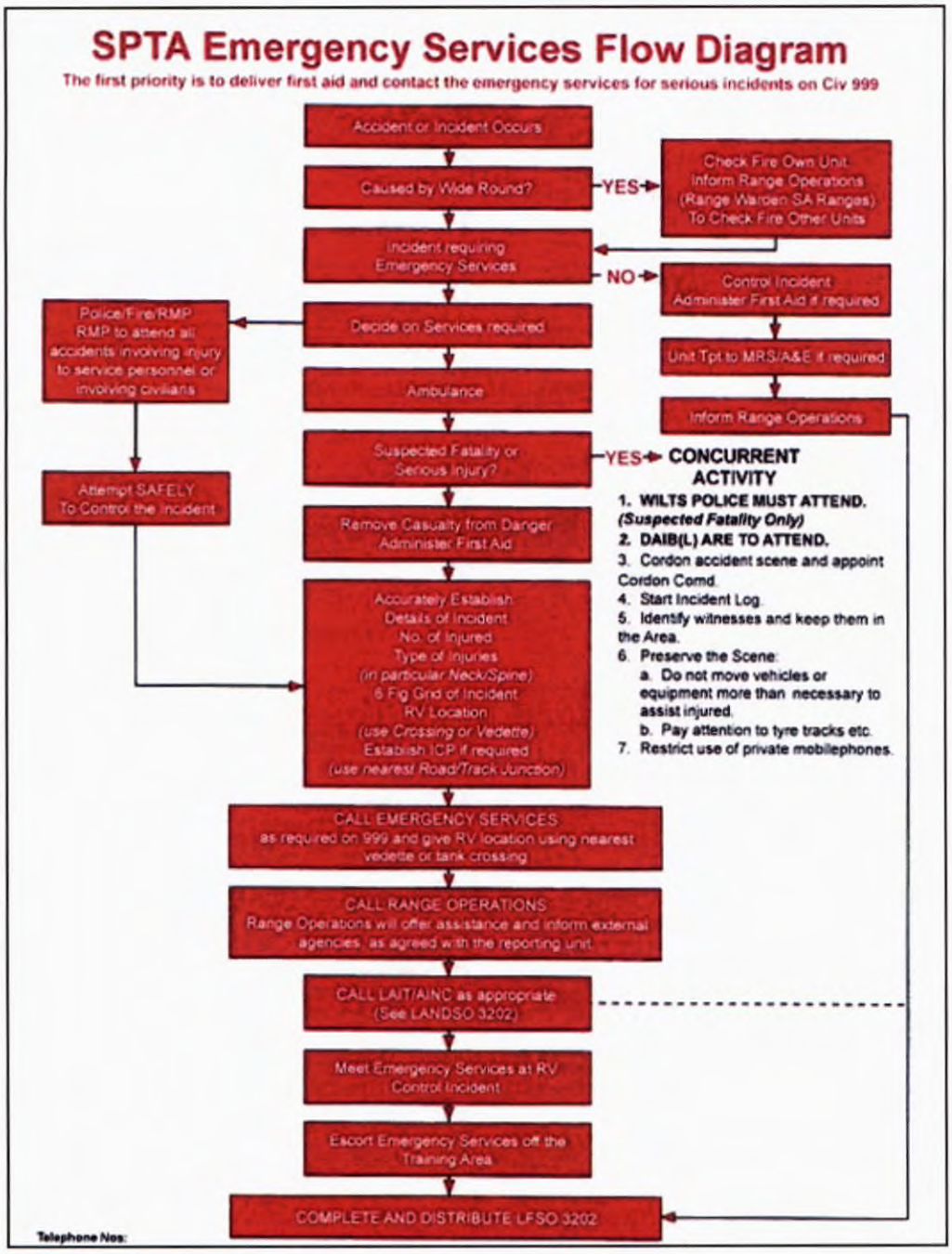


Figure 1.4.46: SPTA emergency services flow diagram.

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1.4.573. Since the accident, the aide memoire had been updated and a new emergency services flow diagram produced (Figure 1.4.47). This changed focus in that the primary action of the personnel 'on scene' was to report the incident to the 24-hour operations room for them to co-ordinate the response. Furthermore, changes include an updated format for providing a situation report in the METHANE format.[135] This was intended to improve information flow back to co-ordinating personnel in the 24-hour operations room. An additional change was the provision of a table of known RV points in the format of What3Words® locations. The panel considered this to be a significant improvement that would allow for expedient identification of a suitable RV point for civilian emergency services.

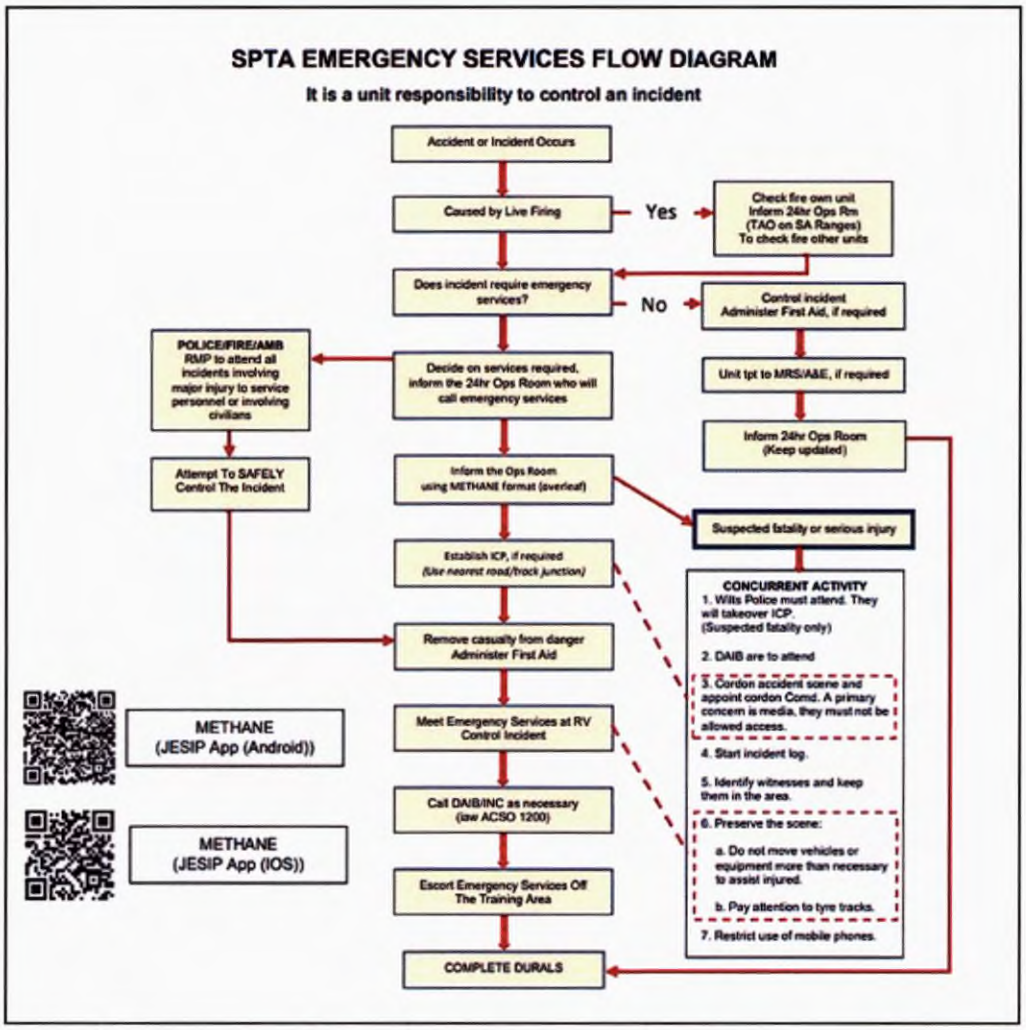


Figure 1.4.47: Updated SPTA emergency services flow diagram.

[135] M-Major Incident, E-Exact location, T-Type of incident, H-Hazards, A-Access, N-Number and Severity, E-Emergency services required

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1.4.574. The extra layer of communication in the early stages of incident response had the potential to delay the attendance of civilian emergency services. Emergency services would routinely speak directly to personnel that were at the scene, to ensure they were able to gather full information, prioritise and allocate the correct level of resource, in addition to being able to provide advice to those present at the scene.

1.4.575. The panel **observed** that the updated SPTA aide memoire was a significant improvement on the version available at the time of the accident. However, it was sub-optimal for the early stages following an accident as the extra layer of communication was likely to hamper the ability of the emergency services operator to support those on the scene at the outset.

1.4.576. **Recommendation. The Head of Regional Delivery, Overseas and Training Region (Defence Infrastructure Organisation) should ensure that training area standard operating procedures for emergency services direct initial contact from personnel at the scene of an incident towards the civil emergency services, in order to maintain critical information flow and ensure timely support to those at the scene.**

1.4.577. **Recommendation. The Chief of the Naval Staff should ensure that all training areas and ranges not controlled by the Defence Infrastructure Organisation are provided with appropriate guidance regarding initial contact with emergency services.**

1.4.578. **Recommendation. The Chief of the General Staff should ensure that all training areas and ranges not controlled by the Defence Infrastructure Organisation are provided with appropriate guidance regarding initial contact with emergency services.**

1.4.579. **Recommendation. The Chief of the Air Staff should ensure that all training areas and ranges not controlled by the Defence Infrastructure Organisation are provided with appropriate guidance regarding initial contact with emergency services.**

1.4.580. **Recommendation. The Commander United Kingdom Strategic Command should ensure that all training areas and ranges not controlled by the Defence Infrastructure Organisation are provided with appropriate guidance regarding initial contact with emergency services.**

1.4.581. **Recommendation. The Chief Executive Defence Equipment and Support should ensure that all training areas and ranges not controlled by the Defence Infrastructure Organisation are provided with appropriate guidance regarding initial contact with emergency services.**

1.4.582. **Recommendation. The Chief Executive Defence Science and Technology Laboratory should ensure that all training areas and ranges**

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not controlled by the Defence Infrastructure Organisation are provided with appropriate guidance regarding initial contact with emergency services. Recommendation. The Commander United Kingdom Strategic Command should ensure that all training areas and ranges not controlled by the Defence Infrastructure Organisation are provided with appropriate guidance regarding initial contact with emergency services.

1.4.583. **Recommendation. The Chief Constable Ministry of Defence Police should ensure that all training areas and ranges not controlled by the Defence Infrastructure Organisation are provided with appropriate guidance regarding initial contact with emergency services.**

Pamphlet 21

1.4.584. Pamphlet 21 (Pam 21) covered the planning, conduct and supervision of training with infantry weapon systems, AFVs and pyrotechnics. The application of the regulations was mandatory. It was approved best practice, enabling realistic and demanding training whilst ensuring that risks were reduced to ALARP. PAM 21 was structured to follow the progression of training associated with infantry weapon systems and AFVs. It explained the SSW and rules for awarding qualifications to plan, conduct, and supervise all live and blank firing with infantry weapon systems and AFVs. Exhibit 040

1.4.585. Due to the high-risk nature of live firing exercises, the majority of Pam 21 was necessarily focussed towards live firing considerations and planning. However, Chapter 3 – Training Simulation, laid out the requirements for the planning and execution of a simulated exercise. This directed the planning officer to utilise the planning processes and accident procedures laid out in chapter 2 of the pamphlet. The panel concurred that the CRTC planning process was compliant with the policy. Exhibit 040

1.4.586. In the training simulation guidance, there was no mandated safety qualification for exercise assistants, or specified ratio of exercise assistants to personnel. Exercise assistants were appointed by the senior planning officer (SPO) and were responsible for the safe conduct of those aspects of an exercise involving blank ammunition or pyrotechnics that were allocated to them. Whilst there was no qualification requirement, the exercise assistant was to be competent with the weapons and pyrotechnics they were supervising; they must have been briefed by the exercise conducting officer (ECO) and hold the minimum rank of lance corporal. Exhibit 040

1.4.587. This left the ratio of exercise assistants to personnel on an exercise to be determined by exercise planners based on the nature and complexity of the exercise. Whilst the panel could not determine if this had any effect on safety during Ex IS, the lack of guidance in Pam 21, regarding the ratios of required exercise assistants, left open the possibility of an error in judgement on the part

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of an exercise planner, resulting in insufficient supervisory safety personnel during exercises.

1.4.588. The panel concluded that Pam 21 was the appropriate document to guide the exercise planning and directing staff in the execution of Ex IS and that it provided sufficient information relating to collective training, except for the requirement for exercise assistants. The panel finds that the lack of guidance on the ratio and qualifications of exercise assistants was an **other factor**.

1.4.589. **Recommendation. The Director Land Warfare should introduce guidance into Pamphlet 21 regarding the numbers and qualifications of exercise assistants, or other appropriate safety staff, during blank firing and dry exercises in order to ensure that appropriate levels of safety personnel are resourced.**

Ex IS Safety Brief

1.4.590. The Ex IS Safety Brief was authored by the CRTC ECO and disseminated to 1 YORKS Operations Officer for onward distribution to all personnel deploying on Ex IS. Verbal confirmation was obtained by the ECO that the safety brief had been delivered by 1 YORKS sub-unit comds to their personnel prior to them embarking on the battlegroup conditions setting day. Exhibit 173 Exhibit 174 Exhibit 175

1.4.591. The safety brief was comprehensive and followed the SSW structure detailing the SOPs that would be required in the event of an accident. This reinforced and reiterated the information also provided by RSOs, EASP, the SPTA aide memoire and the 'It's Plain Sense' video.

1.4.592. The panel concluded the Ex IS Safety Brief was comprehensive and was delivered to all personnel taking part in Ex IS as TFH and, therefore, finds the Ex IS Safety Brief was **not a factor.**

TESEX risk assessment

1.4.593. The TESEX risk assessment was conducted by Soldier D and authorised by Comd CRTC, signed on 13 October 21, one day before deployment to SPTA. The risk assessment was conducted using the Army Form 5010, the standardised Army risk assessment form, which utilised the following five step risk assessment process: Witness 17 Exhibit 176

a. **Step 1**. Identify the hazards;

b. **Step 2.** Decide who might be harmed and how;

c. **Step 3.** Evaluate the risk and decide on precautions (control measures);

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d. **Step 4.** Record the significant findings and include in exercise/coordinating instructions as necessary. Implement control measures; and

e. **Step 5.** Review the risk assessment and update as necessary.

1.4.594. This process facilitated a risk score calculation to be made (Table 1.4.10).

Likelihood (L)	Multiplied by	Impact (I)	Equals	Risk Score Calculation					
					Likelihood				
					1	2	3	4	5
1 – Remote / Rare		1 – Minor		Impact 5	5	10	15	20	25
2 – Unlikely		2 – Moderate		4	4	8	12	16	20
3 – Possible		3 – Major		3	3	6	9	12	15
4 – Probable		4 – Severe		2	2	4	6	8	10
5 – Highly Probable (Almost Certain)		5 – Critical *Note: impact number is unlikely to change with control measures*		1	1	2	3	4	5

Table 1.4.10: AF5010 risk assessment matrix.

1.4.595. At Step 3 of the TESEX risk assessment, the following risks were identified:

'Fatality or injury following a Road Traffic Accident/Incident [RTA/I] as a result of:

a. 'Sleep deprivation Driver Operator error/recklessness;

b. 'Impact or crush injury;

c. 'Driving into unforeseen terrain feature (shell crater, water feature, target pit etc) resulting in injury; and

d. 'Reckless driving due to TES 'Bravado' resulting in RTA/I.'

1.4.596. The TESEX risk assessment identified the hazardous activity of 'driving / operating bespoke military vehicles', this was subdivided to include several distinct hazards. With a likelihood of 3 – possible, and an impact of 4.5 – severe/critical, the resultant risk score was 13.5 which was the most significant of all risks identified within the risk assessment. The panel concurred with this assessment and agreed that additional risk controls were required. Several control measures were identified and put in place which resulted in the assessment of residual risk falling from 'Medium' to 'Low', which should have demonstrated the risk had been reduced to ALARP and tolerable. However, control measures should have been precise and focussed to address the specific hazards identified. Whilst the inclusion of specific non-contact zones was designed to ensure that there were distinct and identifiable breaks from the 'battle' to allow all participants to regain their composure, the panel determined

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that this was not effective alone and did not actively address the hazard 'Reckless driving due to TES 'Bravado' resulting in RTA/I'. This hazard remained extant and the risk was not effectively controlled, therefore, it remained at a score of 13.5.

1.4.597. The panel concluded that the TESEX risk assessment was correctly implemented in line with DSA policy for risk management, with specific controls applied to reduce the residual risk to an acceptable level for most of the identified hazards. However, the specific hazard of 'Reckless driving due to TES 'Bravado' did not have a control measure applied and, therefore, the risk remained high. The panel finds that this was an **other factor.**

1.4.598. **Recommendation.** A recommendation has already been made at paragraph 1.4.135 that the Director Land Warfare should ensure that simulated engagement systems software/equipment can be remotely configured or disabled to allow EXCON more effective control.

Ex IS EASP

1.4.599. Paragraph 2 of the EASP stated that:

Exhibit 040
Exhibit 153
Exhibit 171
Exhibit 173
Exhibit 172

'The aim of this EASP is:

a. 'To confirm that the Safe System of Training (SST) is in place;

b. 'Demonstrate the approved planning process was followed;

c. 'Detail staff duties and responsibilities for the activity; and

d. 'Detail the mandatory safety brief requirement.'

1.4.600. The EASP was a comprehensive document that covered all points as directed in Pam 21. It included an 'Immediate Action Drill' to guide actions to undertake in the event of an incident/accident. To ensure compliance with the SSW, Pam 21 included a checklist of activities that had to be conducted which including specific requirements of the EASP. The panel checked the EASP against this checklist and found it to be correct.

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1.4.601. During the analysis of the exercise documentation, safety briefs and SOPs, the panel discovered that there was an inconsistency between the Immediate Action Drill, as briefed to personnel and included in the EASP (Table 1.4.11), and the SPTA aide memoire emergency services flow diagram. Specifically, the 'Stop, Stop, Stop' procedure (S3) was omitted from the aide memoire flow diagram. The S3 procedure was:

> 'Any person is to shout 'Stop, Stop, Stop' and transmit the same message over the nearest available radio net if they see an incident about to happen which might pose a threat to life or serious injury. The message is to be re-broadcast on all available means.'

1	**ON THE COMMAND *"STOP, STOP, STOP"*** Stop all fire and movement and await instructions from the Safety Staff.
2	**GIVE FIRST AID AND GET MEDICAL HELP** (If required) Implement the medical emergency plan.
3	**ENSURE WEAPON SAFETY AND PRESERVE EVIDENCE** Do not attempt to unload, make safe, strip or clean any weapon involved, *(unless not doing it would increase the risk to personnel)* or alter bearing, range or elevation setting. (If necessary, move personnel to safety)
4	**INFORM AND SEEK ADVICE** (This is a Unit responsibility) **RANGE CONTROL 01980 67 4706 or 4951 or Mil 94325 4706/4951** – Who will advise on contacting others. **EXERCISE DIRECTOR AND SENIOR PLANNING OFFICER – 0A on Range Command Net.** **ATO, AINC and Defence AIB Land (Ops)** (Are always to be informed). **ATO**: Joint Service EOD Operations Centre (JSEODOC) Mil: 94234 Ext 3360 / 3361 / 3362 Civ: 01235 51 + Ext 3360 / 3361 / 3362 **AINC: Military: 96770 3661. Civil: (+44) 0306770 3661** **DAIB Duty Coordinator:** Military: 9679 86587. Civil (+44) 030679 86587 **CESO Civil:** 01264 887536 **SIB RMP** (On SASC/Defence AIB Land (Ops) advice).
5	**CORDON THE AREA AND GATHER EVIDENCE** • Protect evidence. Everything is to remain in situ until seen by investigators. Personnel are to mark their position with a helmet or PLCE. • Record weapon details. Damaged weapons, lodged bullets, empty cases are to be left where they fell. (If necessary, seek Armourer assistance). • Identify witnesses. To prevent influencing, stop discussion and separate witnesses. Witnesses are to produce a brief written account of the events. • Make a sketch map for the investigators. Record the position of all fragments and personnel (injured and witnesses), stating the direction they were facing, their stance, weapon state and the direction of their weapon.
6	**CONTROL AMMUNITION AND EVIDENCE** • Record the ADAC, designation and BKI of the ammunition. It is to be segregated and not used again unless approved by ATO. • Misfires/Blinds are to be destroyed in accordance with this pamphlet and ATO instructions and reported to ATO. • Only after all investigating agencies have been consulted should the ATO authorise clearance of the scene.
7	**SUSPENSION OF RANGE STAFF** All Staff directly involved are temporarily suspended, pending investigation.
8	**RECORD THE ACCIDENT/INCIDENT IN THE LAND RANGE LOG** This is the Conducting Officers responsibility.

Table 1.4.11: Immediate action drill from safety brief and EASP.

1.4.602. The panel concluded that the EASP was detailed and comprehensive, describing the resources and actions to undertake for both directing staff and Ex IS participants. The panel finds the EASP was **not a factor**.

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1.4.603. The panel **observed** that the S3 procedure included in the EASP was correctly briefed to all participants on the exercise despite its omission from the SPTA aide memoire.

1 YORKS start state

1.4.604. The Field Training Unit Mounting Instruction, known as the 'Green Book', mandated the start state for all exercising troops deploying on Ex IS as part of a collective training package. It stated that all troops must hold the appropriate qualification(s) and be current and competent on the weapons/equipment that they operated. The Green Book set out the requirement for a unit training progression statement, often referred to as a start state letter or an assurance letter. Within the Green Book there was a template provided for a start state letter, detailing the unit's organisation, its attachments from other units, training statistics and, notably, sections on training shortfalls and risk to life (RtL). Exhibit 178

1.4.605. Collective Training Group SOP 17 stated that start state letters are to be with Comd CTG one month before the exercise start date (re-iterated in the Ex IS Exercise Instruction) but were only required for units conducting field training. Comd CRTC stated that start state letters were routinely only required for the training audience (the KRH in this case), not OPFOR. However, the lack of sight and knowledge of 1 YORKS preparation for Ex IS was discussed during a CRTC risk assurance conference. It was, therefore, decided by Comd CRTC, in excess of what was required by SOP 17, that 1 YORKS would be directed to produce a start state letter. This was to prompt 1 YORKS to conduct a review of competencies and to provide Comd CRTC, as the activity deliverer, written and signed confirmation that they were qualified, current, competent, and safe to act as TFH. On 6 October 2021, 2IC 1 YORKS notified all subordinate comds that the unit would be required to send a start state assurance letter to Comd CRTC to confirm that all TFH personnel were SSW compliant. To that end they were required to 'personally check and confirm to CO 1 YORKS that all their personnel had completed the following: Exhibit 053 Exhibit 180

a. 'Weapon handling tests for all personal and crew served weapons;

b. 'Pyrotechnic training suitable to role;

c. 'Driving platforms suitable to their exercise role;

d. 'Night driver training for those personnel driving on night vision devices (NVDs);

e. 'Appropriate hazardous material & special to arm training for personnel operating special to role equipment;

f. 'Watched the 'It's Plain Sense' video;

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g. 'Medical review for all personnel not rated as medically full deployability. State how many medically limited deployability soldiers were deploying and confirm that these soldiers are aware of their limitations and their company sergeant majors will track their usage to ensure they do not exceed their limitations;

h. 'Each deploying individual has received the relevant driver hours scheme brief;

i. 'Each deploying individual had a signed and in-date Driver Training Record and in particular an F/MT 600 (MOD Motor Transport Driver's Permit) specific to the individual's deployment role;

j. 'All deploying equipment is task-worthy to use throughout the deployment; and

k. 'All relevant vehicle documentation is being taken on exercise to ensure records can be correctly maintained.'

The subordinate comds were also required to include and describe any reduced capabilities and any absent qualifications where appropriate.

1.4.606. The response from Quebec Company to CO 1 YORKS on 10 October 2021 was that they would be competent and current by the end of 13 October 2021 except for some NVD training due to the late arrival of an AV. They further elaborated that all their soldiers had completed, or were planned to complete, the requirements listed at paragraph 1.4.605 sub-paragraphs a, b, d, f, g and h, and the F/MT 600 element of sub-paragraph i. It also noted all required medical information and stated that: Exhibit 279 Exhibit 280

'Reconnaissance Platoon is currently [commanded] by the unqualified Reconnaissance 2IC. Whilst unqualified in Armoured Reconnaissance, [they had] significant [light role] experience and also recent simulated experience in the armoured role.'

1.4.607. It is not known why the remainder of the required information was not provided or if this was questioned by the CO before they compiled the start state letter. Although the overall tone of the 1 YORKS Start State Letter to the CRTC was positive and stated that they were ready and configured for their role, it did detail a number of issues such as: Exhibit 053 Exhibit 257

a. '[Quebec] Company training for specialist weapons platoons has been impacted by the limited access to and availability of [the AV] fleet in the UK; as such they enter Ex IRON STORM operating on [AVs] tactically for the first time since Op CABRIT 3 in 2019; and

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b. 'OC [Reconnaissance], OC [Anti-Tanks] and OC Mortars will not deploy on the exercise, as they are all new in post and are away on their respective qualifying courses. The specialist platoons will be led by their respective 2ICs, of which [Mortars] and [Anti-Tanks] are qualified. 2IC Reconnaissance is not [Armoured] Reconnaissance qualified, but is [Platoon Sergeants Battle Course] and AFV qualified, and has significant experience in the role. All 2ICs are competent and safe.'

1.4.608. The letter also noted that Quebec Company had not completed the battlecraft syllabus (BCS) or any other collective training. It also stated that 1 YORKS had 'checked and confirmed that all personnel were qualified, current and competent for the roles in which they will be deployed' and then listed all the items outlined at paragraph 1.4.605. The 1 YORKS Start State Letter was sent to the CRTC at 10:34 on 14 October 2021. The CRTC stated that because there were no live firing serials planned for that phase of Ex IS, the template for the 1 YORKS Start State Letter was far shorter and less complex than for those units involved in live firing phases would be directed to provide. They also stated that: Exhibit 053 Exhibit 253

'What is important is that personnel are qualified for their roles on the basis of having completed a suitable course that provides authorisation for individuals to function in the particular role – then beyond that they are current and competent [i.e. they] have [continued] to pass Weapon Handling Tests and the like. Moreover they not only assured us about the personnel but also assured us that all vehicles were fully taskworthy for the exercise.'

'Laid out very clearly and stated all the necessary requirements without cause for further concern. All were Qualified, authorised, current and competent for their roles and had received the safety brief along with watching the Salisbury Plain 'plain sense' video. There was no requirement to pass the letter any further, all bases were covered and we were content and assured they were in a good place to exercise as an OPFOR, maximising an excellent training opportunity.'

1.4.609. When issues with 1 YORKS qualifications, experience and currency were pointed out to the CRTC, they stated that they would have rather 1 YORKS had properly articulated their risks and issues in their start state letter. In that way the CRTC staff could have either reduced the SOR or revised the regeneration protocol to manage a credible TFH with fewer live assets. Witness 18

1.4.610. There was some ambiguity as to whether TFH should provide a start state letter. Safety affects everyone and most of the personnel deploying onto any collective training event were likely to be an unknown quantity for the CTG. The ASCen confirmed (see paragraph 1.4.63) that the duty holding responsibility (and, therefore, the authority to deviate from the SSW) was vested in the body

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providing the training, not the participant's chain of command. It was, therefore, the CTG's responsibility to ensure that only 'safe persons' attended their exercises and the best way to achieve that would have been with start state letters covering all personnel.

1.4.611. The 1 YORKS Start State Letter was sent after the reconnaissance platoon, and very likely other elements of 1 YORKS, were already exercising on SPTA during the battlegroup conditions setting day. This was too late for the CRTC to have conducted a meaningful analysis of the start state and, with less than 24-hours before Mission Zero was expected to commence, was insufficient time for a robust safety assurance process.

1.4.612. Quebec Company did not answer all the points that were required and some of their responses were incorrect. Quebec Company stated that they would all be current by the end of 13 October 2021, but as they had conducted little to no mounted currency training within the last year, it was highly likely that most (if not all) of the Quebec Company personnel were not current in their AV role.

1.4.613. Quebec Company's response to the CO didn't mention the driver training records. However, 1 YORKS confirmed that all driver training records had been checked. It has been shown at paragraphs 1.4.305 and 1.4.309 that this was not the case. Quebec Company raised an issue with some of their driver permits but stated they would be quickly resolved. However, issues remained with the permits for both Soldier A and Pte Watson-Pickering, which were the only F/MT 600 documents that the panel checked.

1.4.614. Quebec Company noted that at least one of their personnel was not qualified in their role, and this information was passed to the CRTC. Instead of asking for more details or stating that the person could be used but with restrictions (such as that they would not be allowed to act as AV crew but could operate from a Land Rover as others were doing due to a lack of available AV), the CRTC decided that the issue required no further action. Using unqualified crews in AVs was a deviation from the SSW and should have been raised to Comd CTG, as the DDH, for approval.

1.4.615. The panel concluded that all personnel deploying onto a CTG sponsored exercise should be covered by a start state letter from the deploying unit. The 1 YORKS Start State Letter was not accurate and provided an overly optimistic representation of their qualification status, which was not based on detailed checks. Regarding the unqualified person, the CRTC should have ensured that they could only be used in roles for which they were fully qualified or raised the issue to the DDH. The panel finds that the 1 YORKS Start State Letter was **a contributory factor.**

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1.4.616. **Recommendation. The Director Land Warfare should require all personnel deploying on Collective Training Group sponsored exercises to be covered by unit training progression statements (start state letters) in order to assure the delivery duty holder that they can be considered as 'safe persons'.**

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Section 6 - Post-accident management

Post-accident management summary

1.4.617. This section of the report examines the actions that took place from the period immediately after the accident and includes the medical and mental health support provided to those involved. Overall, the response by the CRTC and DIO staff was exemplary. However, some observations and recommendations have been offered to improve the response to future incidents and the longer-term mental health care for affected personnel.

Immediate response

1.4.618. Soldier A and Soldier B checked with each other regarding injuries but were unable to get a response from Pte Watson-Pickering on the intercom. Soldier A told Soldier B to dismount and check on Pte Watson-Pickering. Soldier B did so and, from the extent of his injuries, immediately assessed that Pte Watson-Pickering was fatally wounded and signalled to Soldier A to exit the vehicle. Soldier A agreed that Pte Watson-Pickering had suffered a fatal injury. At 11:41, Soldier A contacted Soldier C by mobile phone and explained what had happened. Whilst on the phone, at 11:42 Soldier C called 'Stop, Stop, Stop' on the ISTAR radio network (which was then rebroadcast over all other exercise radio networks) and concluded the call with Soldier A. Soldier C then contacted their CO and apprised them of the situation. Soldier A contacted Soldier C again at 11:45 and was told to contact the emergency services. At 11:46, Soldier A contacted the emergency services and provided details of the accident to the operator.

Witness 01
Witness 02
Witness 04
Exhibit 012
Exhibit 013
Exhibit 026
Exhibit 027
Exhibit 040
Exhibit 153
Exhibit 171
Exhibit 173

1.4.619. According to the flow diagram in the SPTA aide memoire, the actions of the crew should have been to call the civil emergency services. However, the crew's first action was to call Soldier C at 11:41. In the first phone call to the emergency services at 11:46, Soldier A stated that they believed Pte Watson-Pickering had died instantly which the panel understood to have been the reason for the phone call to Soldier C rather than the emergency services in the first instance.

1.4.620. During the 11:46 phone call to the South Western Ambulance Service Trust (SWAST) call centre, Soldier A initially identified CP Bravo as the location of the accident. CP Bravo would likely only be familiar to those with a detailed understanding of Salisbury Plain in its military training context. There were two SWAST call centres that served the southwest and these were at Bristol and Exeter. Neither of these were close to SPTA. Therefore, it is very unlikely that an

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operator would be able to understand associated military landmarks on SPTA. The operator requested a What3Words® location multiple times.[136] However, Soldier A did not have the What3Words® smartphone application on his personal phone, and did not understand what it was, instead they offered a 10-figure grid reference. Although the SWAST operator was able to take the 10-figure grid reference, they were not familiar with the format and needed to request additional support from a colleague to turn it into a location format that was readily understood. This process of establishing the location took over 2 minutes and, whilst it was likely already too late for Pte Watson-Pickering, this time delay could have had an impact if his injuries were less severe.[137] The 'Stop, Stop, Stop' fixed all exercise participants in position as it was intended to do.

1.4.621. The panel **observed** that:

a. Whilst there was a short delay between the accident and initial contact with the emergency services, it did not affect the outcome; and

b. The difficulty in communicating the accident location to SWAST personnel caused a period of delay that may have impacted on the response times of emergency service personnel.

1.4.622. **CRTC response.** Having heard the 'Stop, Stop, Stop' call over the radio, Soldier D called Exercise Control (EXCON) at Westdown Camp to confirm the location of the accident site and then moved to that area. At 11:49 EXCON also called the emergency services with the information they had at that time.

Witness 01
Exhibit 001
Exhibit 014

1.4.623. At 11:53, Soldier C and Soldier D converged near CP Bravo with two DIO training safety marshals. After a brief discussion, the safety marshals were dispatched to CP Bravo to await the arrival of the emergency services whilst Soldier C and Soldier D travelled to accident site.

Witness 03

1.4.624. Soldier C and Soldier D arrived at the accident site at 12:01 and observed Soldier A and Soldier B standing near c/s 62 Alpha with Soldier A on the phone to the emergency services. At 12:02, Soldier D's driver put through a further call to the emergency services to provide a What3Words® location for the accident site and confirmed to the operator that they could see approaching blue flashing lights. The first civilian medical support arrived at 12:05. This was the Wiltshire Air Ambulance response vehicle with a specialist practitioner in critical care.[138]

Witness 03
Witness 04
Exhibit 009
Exhibit 013
Exhibit 016
Exhibit 019

[136] This was an application that was not in common use with by the military.
[137] The SPTA Aide Memoire has been updated since the accident to include a table of SPTA military landmarks and their corresponding What3Words® addresses.
[138] There were 3 types of pre-hospital emergency medical treatment services ranging from Paramedic through Enhanced Care to Critical Care who were authorised to carry out emergency anaesthesia if required. (Joint, Enhanced and Critical Care Strategy, A Shared Vision for the South West, V1.0 dated 12 June 2015).

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1.4.625. Soldier D established a Bronze Command control position at the accident site.[139] At 12:11, EXCON contacted the emergency services to confirm that paramedics were at the accident site, and to put in a further request for fire brigade support to assist with the extraction of Pte Watson-Pickering from the vehicle. They also requested an air ambulance for aeromedical evacuation. The first Wiltshire Police unit arrived at 12:14 and an air ambulance from the South Central Ambulance Service arrived at 12:16.

Witness 03
Exhibit 018
Exhibit 153
Exhibit 001
Exhibit 031

1.4.626. The EASP immediate action drill instructed Soldier D to control the incident from the accident site as Bronze Command. Soldier D was able to enact this protocol and form a central communications node with emergency services and EXCON and was able to ensure the correct resources were brought to bear.

1.4.627. The EASP section on pre-hospital emergency care required that a minimum of a 'team medic' was to deliver enhanced first aid within 10 minutes.[140] Unfortunately, Pte Watson-Pickering was the only qualified and current team medic within the crew of c/s 62 Alpha. The first ambulance did not arrive until 34 minutes after the 'Stop, Stop, Stop' call. Personnel who arrived at the accident site in advance of the ambulance were not enhanced first aid trained. EXCON could have coordinated enhanced first aiders to attend the accident but there was no process to do this as initial medical support was a unit-level responsibility. The rigidity of the 'Stop, Stop, Stop' process prevented personnel who were within sight of the accident (c/s 31 Alpha to c/s 31 Charlie) from moving to it and providing immediate support.

1.4.628. The panel concluded that the initial response by the chain of command was quick, efficient, and in line with the protocols directed in the EASP. The panel, therefore, finds the initial response was **not a factor.**

1.4.629. The panel **observed** that the rigidity of the 'Stop, Stop, Stop' process may have prevented enhanced first aid from reaching the casualty within the 10 minute window. The panel noted that enhanced first aid would not have prolonged Pte Watson-Pickering's life.

1.4.630. Soldier A and Soldier B received treatment for emotional shock before the medical team put them into a civilian ambulance at 14:15 for transport back to Knook Camp. During the journey, the condition of Soldier A deteriorated and, in consultation with the 1 YORKS Regimental Medical Officer, it was decided to take both personnel to the Salisbury District Hospital for assessment and treatment.

Witness 01
Witness 02
Witness 12
Exhibit 001
Exhibit 012
Exhibit 020

[139] A Bronze Command was a control position set up near the scene of an accident to control resources and provide a focal point for each of the responding agencies to work through.
[140] Army Field Manual AC 72132 – Health Service Support to Land Operations Handbook states that a team medic was a non-vocational healthcare provider capable of providing immediate life-saving basic battlefield first aid to optimise patient outcomes.

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The ambulance arrived at Salisbury District Hospital at 15:19 and Soldier A was assessed by a Senior Duty House Officer at 15:46 and treated for minor injuries.

1.4.631. Following medical treatment, Wiltshire Police assumed primacy of the accident site from the ambulance service. 1 YORKS recovered the small arms, ammunition, secure radios, and personal effects from c/s 62 Alpha; they also cut the power to the engine rendering the vehicle safe. The air ambulance departed at 12:41. The fire appliances were released but were advised that help would be required later for the extraction of Pte Watson-Pickering from the vehicle. At 14:10 the Joint Casualty and Compassionate Centre (JCCC) was informed and the KINFORM process started.[141]

Witness 08
Witness 12
Exhibit 015
Exhibit 019
Exhibit 028
Exhibit 029

1.4.632. On transition to the recovery phase, Soldier D's responsibility was to co-ordinate with EXCON and other agencies as required to cordon the area and protect evidence in accordance with the EASP. The cordon prevented civilian media, who were noted to be present, from accessing the accident site. Soldier D's management of the accident site was praised by officers from Wiltshire Police who extended their gratitude for the support they received in conducting their initial investigative activities.

Witness 03
Witness 04

1.4.633. At approximately 16:00, the personnel and vehicles not closely involved in the accident were released and returned to their formation's location. Once Wiltshire Police had collected all initial evidence from the accident site, the process of extracting Pte Watson-Pickering began. The OTIS Bin was removed and, with the combined efforts of Dorset and Wiltshire Fire and Rescue Service and the 1 YORKS Light Aid Detachment, at approximately 01:00, Pte Watson-Pickering was extracted from the vehicle and placed into a battlefield ambulance. He was then moved under Wiltshire Police escort to the coroner's team who were waiting in the Enford Village Hall car park.

Witness 12
Exhibit 197

1.4.634. C/s 62 Alpha was physically marked to record the position of the turret for ease of reinstatement at a later date, and the turret was then rotated to the 12 o'clock position for the purposes of transportation. C/s 62 Alpha was then winched on to a low-loader for recovery under Wiltshire Police escort to a secure storage facility at MOD Boscombe Down, arriving at 01:45 on 16 October 2021.

Exhibit 030

1.4.635. It should be noted that, Wiltshire Police was highly appreciative of the support provided by the Army during the post-accident management phase of this incident. Wiltshire Police have now amended their own processes and are buying some specialist equipment so that they will be less reliant upon external support in future.

[141] KINFORM was the military term for the Joint Casualty and Compassionate Centre (JCCC) instructing a Casualty Notification Officer (CNO) to inform the closest living relative and/or other nominated emergency contact in any case of serious injury or bereavement.

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1.4.636. It was identified that Soldier A and Soldier B were in a state of emotional shock early on, and efforts were made by their chain of command to ensure they were looked after. Although the EASP directed that brief written statements were to be taken from key witnesses to an accident, this was not done in the immediate aftermath of the accident, as Soldiers A and B were promptly taken for medical treatment. Therefore, the opportunity to gather initial statements was lost. Whilst the panel understands this would have been a difficult process for these witnesses and others at the accident site, it would have helped to establish key facts in the early stages of the investigation and allowed the witnesses the opportunity to record detail of the events before they were subsequently lost or they evolved due to elapsed time.

1.4.637. It took several hours before the OTIS Bin was removed from c/s 62 Alpha, allowing for Pte Watson-Pickering to be extracted. The OTIS Bin, which is held in place by a pair of brackets secured by drop nose pins, was the restrictive factor. Several methods of removal were discussed, including a full turret lift, before the mechanism to release the bin was identified. Initial plans were likely to require significant mechanical intervention and, as such, all police investigative activities were completed prior to the commencement of the extraction. This then allowed for access to remove Pte Watson-Pickering from the vehicle.

1.4.638. The panel **observed** that:

a. The opportunity to take initial written accounts was missed prior to the key witnesses departing the accident site resulting in the possibility of key evidence being lost; and

b. There was a delay in the removal of the OTIS Bin, due to a lack of understanding of its securing mechanism, and that this could have had an impact on the ability of the emergency services to provide medical care.

Trauma risk management

1.4.639. Trauma risk management (TRiM) was a tri-service endorsed strategy that provided support to military personnel who had been involved in a traumatic incident.[142] TRiM was a peer delivered psychological support strategy designed to identify those personnel who may have needed additional support or referral for further care. TRiM was a chain of command function that depended on good

Exhibit 237
Exhibit 282

[142] JSP 661 stated that a traumatic incident was any event which led to an individual experiencing significant helplessness, horror, or fear and, as a result, had the potential to cause emotional or psychological harm. It could also be any event that could considered to be outside of an individual's usual experience and had the potential to cause physical, emotional, or psychological harm. Examples included sudden death, serious injury, disablement or disfigurement, multiple traumas, near miss and when individuals are encountering overwhelming distress (examples include disaster relief and body-handling duties).

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leadership and robust human resource management practice. It was an administrative initiative conducted by fellow personnel rather than by medical specialists. The intention was to help individuals use their own coping mechanisms to remain operationally effective. TRiM did not involve the medical treatment of traumatised soldiers and it was not therapy or counselling. It applied a simple system of filtering for those involved in an incident to correctly identify individuals and groups who may have been most at risk of developing psychological problems. Having identified these personnel a tailored, detailed, and appropriate response was formulated. This may have included some individuals being encouraged to take part in a simple risk assessment.

1.4.640. **TRiM risk assessment.** The TRiM risk assessment process was conducted through an informal interview/discussion by a TRiM practitioner. During the interview, an assessment would be made of how the individual was coping and a record was kept of the findings. One month later, a follow up interview was conducted to confirm the individual was recovering from the experience (Figure 1.4.48). Should the individual appear to not be coping, they would have been encouraged to seek help from any acceptable source including the medical chain, military chaplain, or welfare services. Exhibit 282

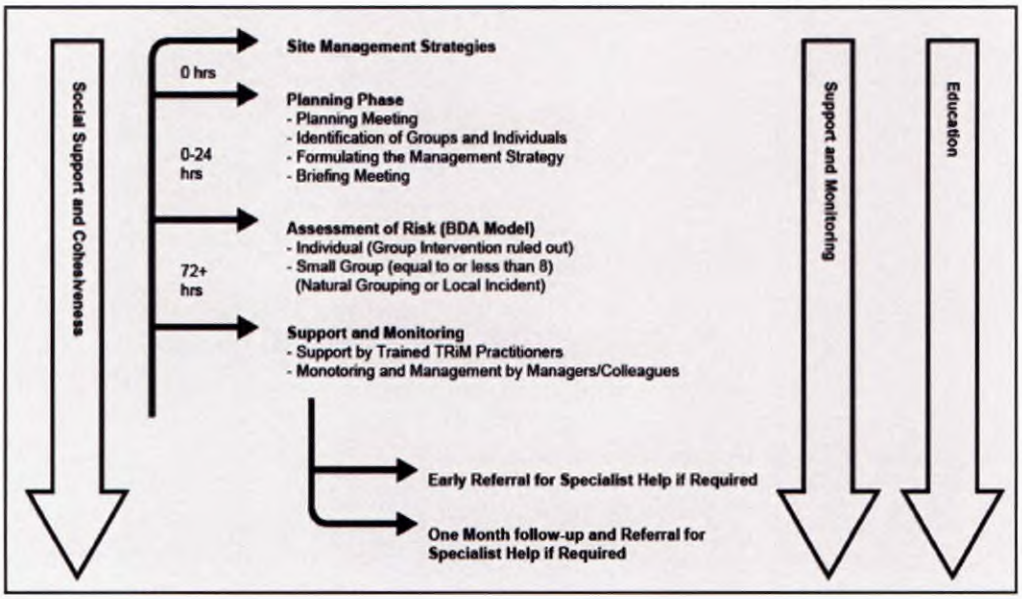


Figure 1.4.48: Summary of the management strategies carried out following a traumatic incident.

1.4.641. **TRiM policy.** The Defence TRiM policy was in JSP 661 and was last reviewed in 2022. The Army TRiM policy (Land Forces Standing Order (LFSO) 3217) was last reviewed in 2011. Despite the age of LFSO 3217, Army General Administrative Instruction Volume 2 (updated in 2022) instructed units to continue to comply with it. LFSO 3217 mandated that a formed unit must have a TRiM Exhibit 282 Exhibit 312 Exhibit 313

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policy statement issued by the CO. Units were also required to produce a unit TRiM plan and maintain a TRiM Incident Log Book for each incident, store it securely and retain it on the unit for 24 months from the date of the last entry. TRiM activity was to be recorded on JPA. This was to show which stages of the TRiM process had been completed and to ensure that accurate records were being kept for future assurance checks.

1.4.642. The Army's TRiM policy was over a decade old and was mostly focussed towards operational and post-operational stress management. Whilst most of the processes also applied to non-operational traumatic incidents, more recent documents such as JSP 661 provided a better context for all the circumstances that might have required TRiM support. JSP 661 noted that body-handling duties could be traumatic for some. The panel did not examine if TRiM support had been offered/given to those from 1 YORKS who had been required to conduct body-handling as part of Op RESCRIPT (paragraph 1.4.79 and footnote 45).

1.4.643. The panel **observed** that the focus for LFSO 3217 did not provide sufficient guidance for non-operational TRiM.

1 YORKS TRiM

1.4.644. 1 YORKS convened a TRiM planning meeting on 16 October 2021. Soldier A and Soldier B and a number of other personnel identified as at-risk received initial TRiM risk assessments in line with the policy requirements. Both Soldiers A and B were referred to the Regimental Medical Officer (RMO) for further assessment and were then further referred to the Department of Community Mental Health for onward care. Soldier C received an initial TRiM interview conducted by the RMO approximately four days after the accident. A follow up interview was discussed but the appointed TRiM practitioner was several ranks below peer level. Despite Soldier C's request that an alternative TRiM practitioner be appointed, none was, and the follow-on interview did not take place.

Exhibit 308
Exhibit 309
Exhibit 311
Exhibit 317

1.4.645. 1 YORKS had a number of TRiM qualified personnel and Soldier A and Soldier B were treated in accordance with the policy and referred on as necessary. Soldier C raised that they had not found it easy to deal with the aftermath of the accident. TRiM methodology suggested that two (or three if required) interviews should be conducted to allow a trained person to assess the psychological risk of the individual. However, Soldier C only received an initial interview with no follow up. The premise of TRiM was that it should be peer led, allowing colleagues to identify when an individual was struggling with the aftermath of a traumatic event. As a major unit, LFSO 3217 required 1 YORKS to have five TRiM coordinators and a further 20 TRiM practitioners to conduct TRiM

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interviews on a peer-to-peer basis.[143] Within 1 YORKS there were no TRiM practitioners of equivalent rank available to support Soldier C. Soldier C did not pursue their request for a more suitable TRiM practitioner to be appointed (possibly from HQ 12th Armoured Infantry Brigade), nor did the 1 YORKS TRiM Coordinator, or the Unit Health and Wellbeing Committee, which was required to meet monthly with a standing agenda to discuss TRiM issues.[144] This did not meet the requirements of the policy and potentially left a high-risk individual to deal with a stressful event in isolation.

1.4.646. The panel **observed** that whilst 1 YORKS had performed their duty of care with respect to their junior soldiers, the TRiM process was not adhered to for Soldier C as they were not provided with a TRiM practitioner of peer status. This left a high-risk individual to deal with a traumatic event in isolation.

CRTC TRiM

1.4.647. The CRTC did have a TRiM policy statement but did not have a TRiM coordinator at the time as those identified in the TRiM policy had both left the unit. A TRiM coordinator from the Land Warfare Centre was brought in to oversee the support to the CRTC personnel for this accident. The CRTC conducted a TRiM planning meeting on 16 October 2021 where two personnel were identified who required TRiM assessments. Both personnel were provided with an initial TRiM interview within the required timescale and these actions were noted in the TRiM incident log book for this accident. The ranks of the personnel who were identified as requiring TRiM support were a fusilier and a major (Soldier D). Following the initial TRiM interviews, the fusilier was released back to their parent unit (no longer under the command of the CRTC) and a handover of the TRiM process was undertaken. Soldier D noted that their initial interview was curtailed due to an administrative error regarding room booking. Soldier D was offered a subsequent follow-up interview conducted by a TRiM practitioner of the rank of sergeant within the same organisation. Soldier D did not feel able to have an open and frank conversation about deeply personal issues with someone so far removed from their peer group. An alternative TRiM practitioner was not provided and, therefore, a follow-on interview was not undertaken.

Exhibit 305
Exhibit 306
Exhibit 307
Exhibit 310

1.4.648. Similar to the issues identified within the 1 YORKS TRiM process, the TRiM practitioner who had conducted the initial interview for Soldier D was of significantly lower rank, and from within the same command chain. Both Soldier D and Soldier C expressed a discomfort with this dynamic due to the sensitive content of a TRiM discussion. The process of TRiM was intended to be peer/unit

[143] Army General Administrative Instructions Volume 1, Chapter 5 stated that a major unit had a total established strength of 300 personnel or greater. https://modgovuk.sharepoint.com/sites/defnet/Corp/Army/Publications/AGAI_005.pdf (accessed 18 October 2022).
[144] The 1 YORKS TRiM Plan showed that the TRiM coordinator was the Regimental Sergeant Major.

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led as those within the unit were often well placed to identify personnel who might need additional support following a traumatic incident. The LFSO 3217 provided guidance on the numbers of the TRiM qualified personnel within a formed unit, but it did not identify the spread of those qualified in terms of rank, only the minimum and maximum ranks for TRiM training courses (corporal to major). It is accepted that there would be a far greater number of personnel at lower ranks that could be expected to witness, or be involved in, a traumatic incident. However, the lack of TRiM practitioners within the commissioned officer ranks meant there was a lack of suitably qualified peer personnel available to support Soldier D.

1.4.649. The panel **observed** that the CRTC was non-compliant with the TRiM policy in that Soldier D was not provided with a TRiM practitioner of peer status. This left a high-risk individual to deal with a traumatic event in isolation.

TRiM conclusion

1.4.650. The panel concluded that the benefits of the TRiM process were not realised by those who did not engage with it. Personnel of all ranks were, and continue to be, at risk of witnessing, or being involved in, a traumatic incident and should be offered peer support in line with policy. The panel finds the lack of suitable peer level TRiM practitioners to be an **other factor**.

1.4.651. **Recommendation. The Head Armed Forces People Support should provide appropriate governance in the Defence trauma risk management policy in order to ensure that adequate peer level support is available to all personnel.**

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Summary of factors

1.4.652. The panel identified a number of accident factors during the Service Inquiry.

1.4.653. **Causal factor**. The panel identified a single causal factor which directly led to the accident. This was the position of the gun barrel (2 o'clock) as c/s 62 Alpha passed the hawthorn tree. 1.4.155

1.4.654. **Contributory factors.** The panel identified 24 contributory factors which made the accident more likely on the balance of probability:

a. 1 YORKS was conducting inadequate management checks of qualification status; 1.4.91

b. Reconnaissance platoon did not conduct adequate rehearsals for Mission Zero and that the TES equipment was left in an inappropriate mode at the conclusion of the TAP; 1.4.111

c. C/s 62 Alpha was in the incorrect TES mode for the exercise; 1.4.133

d. Insufficient supervision of c/s 62 Alpha by TFH; 1.4.134

e. Crew situational awareness of the position of the gun barrel; 1.4.162

f. Supervision of the driver by the remainder of the crew; 1.4.162

g. Gun barrel traversing towards the front of the vehicle; 1.4.162

h. Unqualified AV personnel being used on the exercise; 1.4.216

i. Lack of formal training and qualification for Soldier A; 1.4.235

j. Gaps in AV training for emergency procedures and vehicle specific training; 1.4.326

k. Crew inexperience and lack of supervision; 1.4.356

l. Lack of AV competence for crew and their supervisors; 1.4.368

m. Design of the turret, exacerbated by the attached stowage bins; 1.4.400

n. The implicit safety case methodology which did not provide a full appraisal of the residual risk from the platform; 1.4.414

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o. The lack of detailed investigations into previous incidents, trend analysis or subsequent reassessment of risk;	1.4.423
p. The missed opportunities to learn from similar accidents;	1.4.430
q. The lack of reviewed risk assessments following any of the previous accidents;	1.4.443
r. The quality of the reporting for previous incidents;	1.4.444
s. The lack of a specific hazard in the hazard log for this type of incident;	1.4.452
t. An inadequate vehicle risk assessment meant that the risks were not ALARP and tolerable;	1.4.458
u. Hazard log risk management controls were ineffective;	1.4.464
v. Lack of availability of suitable vehicles to train with; and	1.4.537
w. The 1 YORKS Start State Letter was not accurate and mis-represented their personnel's AV qualifications.	1.4.615

1.4.655. **Aggravating factor**. The panel identified a single aggravating factor which made the outcome of the accident worse. This was the configuration of Pte Watson-Pickering being 'head up' at the time of the accident with his seat in the upper position. 1.4.140

1.4.656. **Other factors.** The panel identified 32 other factors which were noteworthy as they could contribute to, or cause, a future accident:

a. 1 YORKS had been using out of date publications;	1.4.37
b. The Ex IS DDH was not fully qualified for their role;	1.4.69
c. Insufficient clarity and distinction between duty holding and safety risk management in ACSO 1200;	1.4.70
d. The erroneous understanding that the ACRCC was an optional course for Scimitar vehicle commanders;	1.4.179
e. Software applications were not being trained as part of the CIS course;	1.4.195
f. The lack of flexibility in the TDD system was contributing towards unnecessary training;	1.4.202

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g. Obsolete and non-compliant training awards were still present on TAFMIS;	1.4.206
h. Personnel being granted safety-critical awards for training that had not been completed;	1.4.235
i. Soldier B was not fully qualified to operate as an AFV gunner;	1.4.238
j. Pte Watson-Pickering was not fully qualified to operate as Scimitar driver;	1.4.242
k. Soldier E was not fully qualified to operate as an AFV comd;	1.4.254
l. Soldier F was not fully qualified to operate as an AFV comd;	1.4.258
m. None of the chain of command for the crew of c/s 62 Alpha had completed a formal AFV tactics course;	1.4.258
n. 1 YORKS did not understand the requirements for AV currency training;	1.4.281
o. Soldier A was not current in all aspects of their AV role on Ex IS;	1.4.284
p. Soldier B was not current in all aspects of their AV role on Ex IS;	1.4.287
q. Soldier E was not current in all aspects of their AV role on Ex IS;	1.4.296
r. Soldier F was not current in all aspects of their AV role on Ex IS;	1.4.300
s. Soldier A's MT paperwork was inaccurate and lacked management oversight;	1.4.307
t. Pte Watson-Pickering's MT paperwork was inaccurate and lacked management oversight;	1.4.313
u. Key safety information was missing from the course training materials;	1.4.326
v. The lack of training collective opportunities for the crew of c/s 62 Alpha;	1.4.338
w. 1 YORKS was over-committed with activities that did not support their own preparedness training;	1.4.347
x. The LSSR was not ensuring that safety cases for platforms involved in accidents were being checked to be assured that appropriate risk assessment and mitigation activities had been taking place;	1.4.472

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y. The engineering management practices at 1 R WELSH MEI had allowed an unsafe vehicle to be used;	1.4.485
z. The noise present within the intercom system made communication between the driver and comd difficult;	1.4.502
aa. Vehicles disposed of by the MOD did not include all appropriate safety information. No effort was being made to contact current users of ex-MOD vehicles whenever a serious safety issue occurred;	1.4.541
bb. Pam 21 did not provide information regarding the qualification and quantity of exercise assistants for collective training;	1.4.588
cc. There was no control measure in the risk assessment for preventing TES bravado and the risk remained unmitigated; and	1.4.597
dd. There were insufficient TRiM practitioners at all ranks to provide peer level support.	1.4.650

1.4.657. **Observations.** The panel identified 37 observations which were worthy of note to improve working practices but did not relate directly to the accident:

a. Lack of administrative control over DDH competences;	1.4.77
b. Lack of recognition of the cumulative impact of multiple taskings, extended standby periods on unit preparedness;	1.4.84
c. Army reliance on units to resolve the impact of national resilience on unit preparedness;	1.4.84
d. TFH breached the no-move-before time without permission;	1.4.110
e. EXCON did not address the unauthorised breach of the no-move-before time;	1.4.110
f. Personnel being put forward for reconnaissance platoon selection did not always meet the expected quality threshold;	1.4.185
g. RAC vehicle commanders were better prepared, more experienced and more qualified in armoured vehicle operations than their armoured infantry counterparts;	1.4.194
h. Inability of JPA to correctly map the training qualification caveats entered in TAFMIS;	1.4.220
i. The distributed training construct did not have a robust system for rescinding expired qualifications;	1.4.234

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j. Incorrect closure of AV courses and subsequent competency awards appeared to be symptomatic of a wider problem;	1.4.241
k. Lack of training materials to support AV currency training;	1.4.270
l. Poor record keeping prevented meaningful examination of AV currency status;	1.4.270
m. Lack of effective ownership of unit AV currency training;	1.4.293
n. Local facilities to conduct AV currency training were sufficient but had not been used;	1.4.299
o. 1 YORKS had not addressed all areas of note from the previous 2LoDA report;	1.4.323
p. The 1LoDA and 2LoDA processes at both 1 YORKS and the Mounted Close Combat Distributed Training Cell were not being followed;	1.4.323
q. The virtual collective training undertaken was not an effective substitute for a live mounted BCS;	1.4.337
r. There was no handover process between engineering and operating investigations for legacy incident investigations;	1.4.440
s. It was unlikely that any Scimitar unit in the south of the UK had followed the prescribed testing regime;	1.4.495
t. Lack of ability to see the gun barrel presented an increased reliance on supervision from the vehicle commander;	1.4.508
u. The vehicle handover process was conducted in accordance with policy, but the process was not robust enough to pick up the faults;	1.4.520
v. 1 YORKS conducted additional checks during the handover process which provided an additional layer of assurance but was still not robust enough to pick up the faults;	1.4.520
w. Pte Watson-Pickering's perception of the risk posed by the tree in the event of a collision was low;	1.4.556
x. 'It's Plain Sense' was dated but remained relevant;	1.4.570
y. The updated SPTA emergency services contact flow chart likely to hamper emergency services to personnel in the initial stages of an incident;	1.4.575

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z. The 'Stop, Stop, Stop' procedure was not included in the SPTA aide memoire;	1.4.603
aa. The delay between the accident and initial contact with the emergency services did not affect the outcome;	1.4.670
bb. Difficulties in communicating the rural location of the accident to the emergency services may have contributed to a delay in their response time;	1.4.670
cc. The rigidity of the 'Stop, Stop, Stop' process may have prevented enhanced first aid from reaching the casualty within the prescribed window;	1.4.629
dd. The opportunity to take initial witness statements was missed;	1.4.638
ee. A delay in removal of the OTIS Bin was due to a lack of knowledge of how its securing mechanism worked;	1.4.638
ff. The Army's policy for TRiM did not provide sufficient guidance for non-operational use;	1.4.643
gg. Insufficient TRiM practitioners were available at appropriate ranks within 1 YORKS to cover the community at risk; and	1.4.646
hh. Insufficient TRiM practitioners were available at appropriate ranks with the CRTC to cover the community at risk.	1.4.649

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Part 1.5

Recommendations

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Part 1.5 - Recommendations

1.5.1. **Chief of the Naval Staff should:**

a. The Chief of the Naval Staff should ensure that all training areas and ranges not controlled by the Defence Infrastructure Organisation are provided with appropriate guidance regarding initial contact with emergency services. 1.4.577

1.5.2. **The Chief of the Air Staff should:**

a. The Chief of the Air Staff should ensure that all training areas and ranges not controlled by the Defence Infrastructure Organisation are provided with appropriate guidance regarding initial contact with emergency services. 1.4.579

1.5.3. **The Commander United Kingdom Strategic Command should:**

a. The Commander United Kingdom Strategic Command should ensure that all training areas and ranges not controlled by the Defence Infrastructure Organisation are provided with appropriate guidance regarding initial contact with emergency services. 1.4.580

1.5.4. **The Chief Executive Defence Equipment and Support should:**

a. The Chief Executive Defence Equipment and Support should ensure that all training areas and ranges not controlled by the Defence Infrastructure Organisation are provided with appropriate guidance regarding initial contact with emergency services. 1.4.581

1.5.5. **The Chief Executive Defence Science and Technology Laboratory should:**

a. The Chief Executive Defence Science and Technology Laboratory should ensure that all training areas and ranges not controlled by the Defence Infrastructure Organisation are provided with appropriate guidance regarding initial contact with emergency services. 1.4.582

1.5.6. **The Chief Constable Ministry of Defence Police should:**

a. The Chief Constable Ministry of Defence Police should ensure that all training areas and ranges not controlled by the Defence Infrastructure Organisation are provided with appropriate guidance regarding initial contact with emergency services. 1.4.583

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1.5.7. **Deputy Chief of the General Staff should:**

a. The Deputy Chief of the General Staff should request that the Army Senior Duty Holder review the authorisation of all Army duty holders trained between January 2021 and September 2022 until it is confirmed that they have completed all the required training in order to ensure that only trained duty holders make duty holding decisions. 1.4.71

b. The Deputy Chief of the General Staff should ensure that it is mandatory for personnel appointed to command and executive positions to be suitably qualified and experienced in the unit role in order to provide effective oversight and assurance of their subordinates training requirements. 1.4.92

c. The Deputy Chief of the General Staff should ensure that appropriate supervision is in place for all situations involving inexperienced personnel in order to ensure that experience is gained in a safe and controlled manner. 1.4.357

d. The Deputy Chief of the General Staff should ensure that all training areas and ranges not controlled by the Defence Infrastructure Organisation are provided with appropriate guidance regarding initial contact with emergency services. 1.4.578

1.5.8. **The Chief of Staff Field Army should:**

a. The Chief of Staff Field Army should review the assurance process for accountable persons in units operating armoured vehicles, in order to ensure that they are fulfilling their regulatory and policy obligations regarding the employment and authorisation of suitably qualified and experienced persons in armoured vehicle roles. 1.4.243

b. The Chief of Staff Field Army should re-examine the rationale for having a single brigade provide the validating battlegroup whilst also providing most of the support staff in order to ensure that the both the validating and the validators can be appropriately resourced. 1.4.339

c. The Chief of Staff Field Army should ensure that commanders understand the safety implications of dislocating a key element of a tactical unit in the period running up to a deployment in order to ensure that their focus remains on the safe and efficient deployment of the unit for which they are responsible. 1.4.348

d. The Chief of Staff Field Army should ensure that AV unit training requirements are always matched to the resources available in order to enable AV competency levels are maintained. 1.4.538

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1.5.9.	**The Deputy Chief of Staff Field Army should:**	
	a. The Deputy Chief of Staff Field Army should acknowledge and manage the risk for all armoured infantry turreted platform crews until such time as they can be appropriately retrained in communications and information systems in order to ensure that they can continue to train in the interim.	1.4.197
	b. The Deputy Chief of Staff Field Army should ensure that all 'pass with training deficiency' awards are reviewed in order to assure that only personnel who have completed all training objectives for a course have been awarded a requisite qualification on Training and Financial Management Information System and Joint Personnel Administration.	1.4.246
	c. The Deputy Chief of Staff Field Army should ensure that there is a robust process to assure that currency training is managed and recorded effectively, for all units operating armoured vehicles, in order to reduce the effects of skill fade.	1.4.301
	d. The Deputy Chief of Staff Field Army should ensure that extant safety cases in the land domain are not built on the principle of the 'implicit safety case' and that the safety argument detailed in the Combat Vehicle Reconnaissance (Tracked) Safety and Environmental Case Summary Report is not replicated amongst other platform safety cases, in order to ensure thorough risk management processes are applied.	1.4.415
	e. The Deputy Chief of Staff Field Army **s**hould carry out a review of equipment maintenance standards and practices in order to ensure non-taskworthy vehicles are not released for use.	1.4.503
1.5.10.	**The Director Land Warfare should:**	
	a. The Director Land Warfare should ensure that exercises involving opposing forces have specific live training serials included in order to ensure that tactics, techniques, and procedures are practiced in advance.	1.4.112
	b. The Director Land Warfare should ensure that the Tactical Engagement System (TES) operating mode is visible to EXCON and/or that a visual alarm highlights when a crew 'tamper' with their TES equipment to inappropriately switch mode.	1.4.113
	c. The Director Land Warfare should ensure that simulated engagement systems software/equipment can be remotely configured or disabled to allow EXCON more effective control.	1.4.135
	d. The Director Land Warfare should ensure that turreted vehicle training includes a positive check regarding the position of the gun barrel	1.4.163

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on approach to an obstacle in order to reduce the risk of gun barrel/turret strikes.

e. The Director Land Warfare should be assured that the training for all turreted platform crews ensures that all personnel are appropriately qualified and experienced. 1.4.196

f. The Director Land Warfare should ensure that infantry communications and information systems training includes all aspects required by Armoured Vehicle Standing Orders in order to be assured that all infantry turreted platform crews can operate the full suite of capabilities provided to them. 1.4.198

g. The Director Land Warfare should review the validity period of training delivery deficiencies to account for training limitations imposed by safety notices in order to prevent needless repetition of training. 1.4.203

h. The Director Land Warfare should ensure that the system in place to track individual qualification status is sufficiently robust in order to prevent unqualified personnel operating armoured vehicles. 1.4.217

i. The Director Land Warfare should review armoured vehicle emergency procedures and amend turreted vehicle training in order to ensure that all relevant risk mitigation procedures are comprehensive, standardised, and included in formal training. 1.4.327

j. The Director Land Warfare should introduce guidance into Pamphlet 21 regarding the numbers and qualifications of exercise assistants, or other appropriate safety staff, during blank firing and dry exercises in order to ensure that appropriate levels of safety personnel are resourced. 1.4.589

k. The Director Land Warfare should require all personnel deploying on Collective Training Group sponsored exercises to be covered by unit training progression statements (start state letters) in order to assure the delivery duty holder that they can be considered as 'safe persons'. 1.4.616

1.5.11. **Director Health, Safety and Environmental Protection should:**

a. The Director Health, Safety and Environmental Protection should ensure that governance is created which establishes the requirement for all accidents and incidents to be tracked in a 'closed-loop' system in order that subsequent investigation can occur, and the outputs be fully recorded. 1.4.445

b. The Director Health, Safety and Environmental Protection should ensure that governance is created which establishes the requirement for all accident and incident reports to contain sufficient detail for onward analysis. 1.4.446

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c. The Director Health, Safety and Environmental Protection should ensure that governance is created which establishes the requirement for users/safety case owners and all other stakeholders with defence organisations to be informed of how and when to extract information from the incident reporting system so that they are fully informed of previous incidents relating to their capability. 1.4.447

d. The Director Health, Safety and Environmental Protection should ensure that governance is created which establishes the requirement to have a system in place to conduct trend analysis for accidents and incidents, including those incidents recorded in legacy databases, in order to ensure that trend analysis can be conducted by defence organisations. 1.4.448

1.5.12. **The Director Land Equipment should:**

a. The Director Land Equipment should ensure the hazard logs for all turreted platforms are updated to include a specific hazard assessment that accurately reflects the danger of turret rotation to driver's with 'heads out' in order to ensure an effective assessment of the residual risk. 1.4.453

b. The Director Land Equipment should ensure the hazard logs for all turreted platforms are updated to include an appropriate hazard assessment that reflects the danger to all crew from turret rotation in order to ensure an effective mitigation of risks to life. 1.4.459

1.5.13. **The Director Engineering Safety (Defence Equipment & Support) should:**

a. The Director Engineering Safety (Defence Equipment & Support) should provide sufficient governance to ensure that all relevant safety information (to include information that comes to light at some point in the future) is provided to owners of surplus defence equipment purchased direct from the MOD (direct-purchasers). 1.4.542

b. The Director Engineering Safety (Defence Equipment & Support) should provide sufficient governance to ensure that, when purchasing the equipment from the MOD, the new owners should be advised that, in the event that they sell the equipment to a third party, they must ensure that they inform the third party of any safety information given to them by the MOD. 1.4.543

c. The Director Engineering Safety (Defence Equipment & Support) should provide sufficient governance to ensure that relevant safety information is included on direct transfer of ownership of equipment from the MOD to another party (the '2nd' Party). If new safety concerns emerge 1.4.544

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that the MOD becomes aware of, the governance arrangements should also ensure that relevant information is passed to that 2nd Party.

1.5.14. **The Head Capability Safety Group should:**

a. The Head Capability Safety Group should ensure that the responsibility for the maintenance of safety cases is vested solely in the identified lead user and should ensure that transfers between organisations or key personnel follow the approved process in order to ensure continual accountability. 1.4.416

1.5.15. **The Assistant Chief of Staff Equipment (Field Army) should:**

a. The Assistant Chief of Staff Equipment (Field Army) should update Combat Vehicle Reconnaissance (Tracked) Scimitar operating instructions, relevant instructional documentation and learning specifications, so that the driver is head down whenever it is possible for the turret to rotate in order to ensure driver safety. 1.4.141

1.5.16. **The Assistant Chief of Staff Logistics (Field Army) should:**

a. The Assistant Chief of Staff Logistics (Field Army) should ensure that there is a robust process to assure that motor transport qualifications and currencies are managed and updated effectively in order to prevent unauthorised personnel operating vehicles. 1.4.314

1.5.17. **The Director Information (Army) should:**

a. The Director Information (Army) should ensure that all non-policy-compliant awards are removed from all training management information systems in order to ensure that only fully trained personnel are given a qualification. 1.4.207

1.5.18. **The Head Defence Land Safety Regulator should:**

a. The Head Defence Land Safety Regulator should review the governance for accountable persons in units operating vehicles in order to ensure that they are fulfilling their regulatory and policy obligations regarding the employment and authorisation of suitably qualified and experienced persons in vehicle-based roles. 1.4.244

b. The Head Defence Land Safety Regulator should ensure that appropriate governance is in place for all lines of defence assurance and ensure that robust 3rd line of defence assurance processes are in place to assure that motor transport qualifications and currencies are managed and updated effectively in order to prevent unauthorised personnel operating vehicles. 1.4.245

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c. The Head Defence Land Safety Regulator should ensure that appropriate governance is in place for all lines of defence assurance and ensure that robust 3rd line of defence assurance processes are in place to assure that extant safety cases in the land domain are not built on the principle of the 'implicit safety case'. 1.4.417

d. The Head Defence Land Safety Regulator should ensure that the risk threshold for post-incident reviews of capabilities adequately captures incidents that fall below the threshold for service inquiry and non-statutory inquiry interventions and that sufficient resource is available to meet this additional need. 1.4.473

e. The Head Defence Land Safety Regulator should ensure that appropriate governance is in place for equipment maintenance standards in order to ensure non-taskworthy vehicles are not released for use. 1.4.504

1.5.19. **The Head of Regional Delivery, Overseas and Training Region (Defence Infrastructure Organisation) should:**

a. The Head of Regional Delivery, Overseas and Training Region (Defence Infrastructure Organisation) should ensure that training area standard operating procedures for emergency services direct initial contact from personnel at the scene of an incident towards the civil emergency services, in order to maintain critical information flow and ensure timely support to those at the scene. 1.4.576

1.5.20. **The Head Armed Forces People Support should:**

a. The Head Armed Forces People Support should provide appropriate governance in the Defence trauma risk management policy in order to ensure that adequate peer level support is available to all personnel. 1.4.651

1.5.21. **The Chief Safety (Army) should:**

a. The Chief Safety (Army) should amend Army Command Standing Order 1200 as necessary to provide appropriate governance for duty holding and safety risk management in order to ensure that sufficient distinction and clarity is provided for the safe system of work and risk to life activities. 1.4.72

b. The Chief Safety (Army) should amend Army Command Standing Order 1200 as necessary to ensure the training and assurance requirements for duty holders is unequivocal in order to ensure that all future duty holders are appropriately qualified before being authorised to make duty holding decisions. 1.4.73

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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 25 October 2021 to investigate the circumstances surrounding the tragic death of Private (Pte) Jethro Watson-Pickering, 1st Battalion, The Yorkshire Regiment (1 YORKS) who was taking part in Exercise IRON STORM 2/21. The accident took place on the Salisbury Plain Training Area on 15 October 2021 whilst Pte Watson-Pickering was driving a Scimitar-variant Combat Vehicle Reconnaissance (Tracked) (CVR(T)) armoured fighting vehicle (AFV).

1.6.2. The SI panel has submitted its report to me after 18 months of detailed evidence gathering, interviews and analysis. The report identified that, although it was a singular event, the cause of the accident was an accumulation of many factors, some of which had taken root decades previously. These included issues with policy and governance, assurance and record-keeping, training, design, and human factors. The panel has submitted its recommendations to me and I would urge all commands to consider their wider applicability; many of these can be applied more broadly than merely tying them to the prevention of a similar accident. Having reviewed the report, I agree with the panel's findings and recommendations and offer the following observations.

Policy and governance

1.6.3. Defence owes a duty of care to its employees and, despite the CVR(T) series of vehicles being over 50 years old, there were significant gaps in the governance covering training and safety documentation. The lack of knowledge of mandatory training requirements within the officer cadre of the armoured infantry was a significant factor and the lack of pre-employment training for those officers led to a general dilution of corporate knowledge/professionalism throughout the armoured infantry, as formal training was not afforded the appropriate degree of importance, largely being treated as optional.

1.6.4. Retrospective action to comply with key safety case lessons had not been taken. The CVR(T) safety case had errors and significant omissions which led to a serious risk being overlooked and inadequate control measures being applied. The safety case had also been signed by a proxy for the owner, who did not raise any concerns with it. Some of the issues were like those raised by the service inquiry into an accident at Castlemartin in 2017 which noted an inadequate risk assessment and an incomplete safety case.[1] The review and refinement of historical safety cases for in-service equipment is a time-consuming but essential process, and several standardised techniques exist to assist with this.

[1] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/727954/20180823-Challenger_SI_Castlemartin_Redacted_RT.pdf

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Assurance and record-keeping

1.6.5. Assurance processes that were required to ensure that training was being conducted in accordance with the relevant policies were not adhered to. This led to personnel being awarded safety-critical qualifications for training that had not been completed. With numerous incorrect training records being found by the panel, the credibility of the current record-keeping and assurance processes were in doubt.

Training

1.6.6. Personnel without adequate competence were placed into positions of responsibility at many levels of command within the unit. For some, this meant the risks that they and their subordinates were facing were not identified and, therefore, were not addressed. Insufficient emphasis was placed on both formal training (individual training courses that build skills), and informal training (collective training exercises for developing experience), and neither was appropriately resourced to enable 1 YORKS Reconnaissance Platoon to safely provide the capabilities that were asked of them.

Design

1.6.7. The turret provided a hazard to the driver when they were in the 'head up' position by encroaching into their safe working space. Over time, the hazard was increased by the addition of multiple storage bins to the outside of the turret. More recently, additional armour had been applied to the outside of the turret for vehicles on operations. All of these changes incrementally made driving 'head up' more dangerous and this should have been noticed at the time of each successive design change and appropriately addressed within the safety case. Furthermore, there was no consideration of anthropometrics within the original design, nor has it been considered in the current safety case. The changing characteristics of soldiers and equipment, such as the requirement to wear body armour, should make this a mandatory consideration when reviewing the safety cases for all legacy platforms.

Human factors

1.6.8. Circumstances led to a very inexperienced crew being put together without due regard for additional supervision or assessment of any potential second order consequences. Inevitably, people with less experience are more likely to make hasty decisions or not fully consider all the factors before deciding on a course of action. It is imperative that, regardless of rank, personnel are appropriately supervised until they have built up sufficient competence and have been tested across a range of representative activities.

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Lessons and previous occurrences

1.6.9. The panel obtained the results of searches of digital archives and found that three similar accidents had occurred previously. It would be fair to postulate that further incidents had occurred in pre-digital times but records for these were no longer available. The panel noted that as none of the recorded legacy accidents had resulted in a fatality, they were not subject to a thorough investigation. This meant that the opportunity for gaining valuable lessons was missed. If any of the three previous incidents had been investigated with a view to determining the worst credible outcome, rather than solely addressing what happened, it is highly likely that many of the issues covered by this report would have been dealt with before a fatality occurred.

Urgent safety advice

1.6.10. Whilst the panel did not mention it specifically in the report, it is worth noting that following the initial investigation by the Defence Accident Investigation Branch, urgent safety advice was issued to the Army Headquarters which stated that drivers should be always 'head down' whilst driving tactically. A further accident of a similar nature to the one investigated by the panel occurred a matter of weeks later but, by adhering to the urgent safety advice, there were no injuries to the crew.

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. Whilst accidents will continue to happen, we have a responsibility to reduce all risks, particularly in a training environment, to a level that is as low as reasonably practicable whilst maintaining the military purpose. To a large degree, this accident was preventable and there are areas that can be improved with immediate effect. Since the culmination of this inquiry, the CVR(T) has been retired from service. However, the recommendations contained within this report have been, or will be, actioned and, where appropriate, will be implemented across other armoured vehicle types to reduce the likelihood of accidents in the future.

1.6.12. On behalf of the Defence Safety Authority, I offer my sincere condolences to Pte Jethro Watson-Pickering's family, friends and loved ones.

S J Shell CB OBE MA
Air Marshal
Director General Defence Safety Authority

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