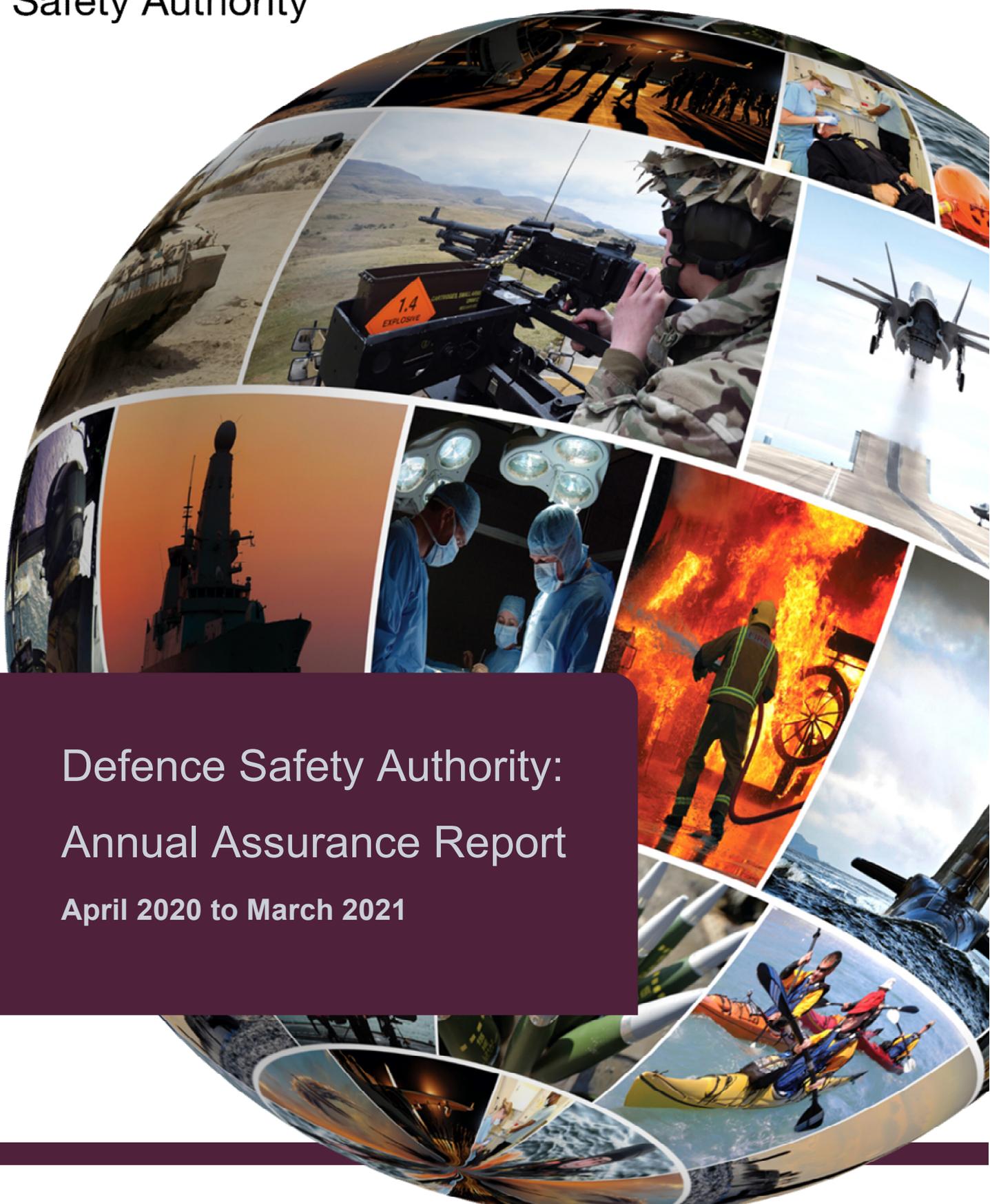




Defence
Safety Authority



Defence Safety Authority:
Annual Assurance Report
April 2020 to March 2021



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Introduction

The Defence Safety Authority is an independent body that provides Defence with Health, Safety & Environmental Protection (HS&EP) regulation, assurance, enforcement, and investigation capabilities.¹ It comprises Defence Regulators for aviation, maritime, land, nuclear, fire, ordnance, munitions and explosives (OME) and medical services, together with the Defence Accident Investigation Branch.



This Annual Assurance Report (AAR) provides the Secretary of State for Defence with independent assurance that Defence's policy for HS&EP is being adequately promoted and implemented.² This is the DSA's seventh AAR and covers the period 1 April 2020 to 31 March 2021.

Firstly, I'd like to acknowledge the outstanding efforts of the people across Defence who worked to tackle the coronavirus pandemic. Not only those responsible for planning and delivering their part in the national and MOD response whilst maintaining Defence's critical outputs, but also those who adapted their own lives and work practices to keep themselves, their families and each other as safe and healthy as possible.

I have not made individual recommendations this year. The continued improvements in Defence HS&EP governance, the ongoing development of the HS&EP aspects of the Defence Operating Model, and the work to achieve Substantial levels of assurance across Defence organisations by 31 March 2022 are all positive and will address the majority of the issues raised in this report. The systems for, and the SQEP resources required to deliver, 2nd Party Assurance remain the key issues and will need continued focus to reach Substantial, and then Full, assurance in due course. Within the areas that the DSA regulates, there were encouraging improvements and increases in HS&EP focus in many areas, which continue to mature under the oversight of the Defence Safety and Environment Committee, leading to broad but cautious optimism that Substantial assurance is achievable by the end of this Financial Year.

Operating a fully functioning assurance regime inevitably means finding new areas that need to improve their HS&EP performance; this is what a successful safety system is designed to do. Defence has made significant improvements in many areas where the DSA regulates and this has enabled us to begin to look at aspects we have not previously been able to prioritise, such as elements of the Maritime, Fire and Medical Services domains, as noted in Sections 3 and 4. Similarly, as Defence organisations improve their assurance regimes, it is worth remembering that they need to be looking across the full spectrum of HS&EP compliance, including UK legislation, Defence regulation, HMG and Defence policy, and the associated guidance.

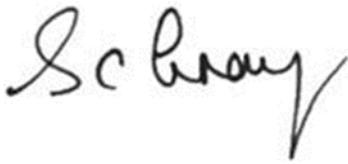
After an initial assessment of the Integrated Review and the associated Command Paper, the HS&EP impact appears to be largely due to both the introduction of autonomous systems and emerging technology and the volume and pace of activity that will be required

¹ MOD, [Charter for the Defence Safety Authority](#), 2020

² MOD, [Health, Safety and Environmental Protection in Defence](#), 2020

to bring about change. The system and SQEP requirements to meet new and emerging technologies, whilst maintaining old capabilities during the overlap period, will need to be managed carefully.

The DSA will continue to help set the standard for HS&EP in Defence; knowing, sharing, and demonstrating what good HS&EP culture, leadership and performance looks like. We do this specifically through our regulatory set but also through our embodiment and advocacy of a Just HS&EP Culture and through our assurance, enforcement, and investigative activities. We act not only as a regulator, but as a critical friend; working together to keep Defence healthy, safe, and environmentally sound.

A handwritten signature in black ink, appearing to read 'Sue Gray', with a stylized, cursive script.

Air Marshal Sue Gray CB OBE FREng
Director General
Defence Safety Authority

Section 1 – Executive Summary

HS&EP in Defence

- There were two safety related fatalities of Defence personnel and one non-MOD civilian died as a result of Defence activity between 1 April 2020 and 31 March 2021 (Section 2.2.1).
- Rates of safety related fatalities and the number of training related fatalities have decreased over the last five years (Section 2.2.1).
- There were no new injury statistics available for this year's report (Section 2.2.2).
- Steady progress continues to be made regarding the improvement to Defence HS&EP governance, with the HS&EP Function formally launched and a HS&EP Functional Strategy published (Section 2.5).

Themes

- COVID-19 (Section 5.2).
 - There was little reported impact on Defence HS&EP performance in the areas where the DSA regulates, and it was assessed that this was mainly due to a reduction in Defence activity.
 - The HSE did identify several breaches of COVID-19 regulations and a lack of a consistent approach to assuring compliance with these regulations.
 - There was some impact on the DSA's ability to regulate—mainly in the ability to conduct physical assurance activities and in the Medical Services domain.
- Legislative Compliance (Section 5.3).
 - There were two main organisational level themes identified in relation to legislative compliance: awareness of the requirements and compliance management systems.
- Autonomous systems and emerging technologies (Section 5.4).
 - There were signs that autonomous systems and emerging technologies are starting to have an impact on the regulated community and the DSA; particularly in the Air and Maritime domains.
- Integrated Review and Command Paper (Section 5.5).
 - After an initial assessment of the Integrated Review and the associated Command Paper, the HS&EP impact appears to be largely due to both the introduction of autonomous systems and emerging technology and the volume and pace of activity that will be required to bring about change.

- The consolidation of equipment types is positive in the long run, however there will be short term challenges.
- 2nd and 3rd Party Assurance (Section 5.6).
 - The Defence Maritime Regulator, Defence Land Safety Regulator, Defence Medical Services Regulator and Defence Fire Safety Regulator all cite weaknesses in 2nd Party Assurance within their regulatory areas.
 - The DSA and Director HS&EP are working to develop the methodology for providing a complete picture of Defence's HS&EP performance – including compliance with UK legislation, Defence regulation, HMG and Defence policy, and associated guidance
- Change and SQEP (Section 5.7).
 - The management of change and a lack of SQEP are perennial issues.
 - There is evidence of progress in both cases in the areas that the DSA regulates. Sustaining that progress whilst adjusting to the new demands will be a challenge and an area that the DSA will continue to monitor.

Regulatory Assurance

- The overall assessment for Defence HS&EP regulatory assurance remains **LIMITED** based on the Defence Regulators' assurance assessments of each domain and functional area (set out in Section 3 and shown in Figure 1-1) and supported by submissions from Defence organisations. Figure 1-2 shows the domain and functional area matrix assessment by Defence organisation.
- There were encouraging improvements and increases in HS&EP focus in many areas leading to broad but cautious optimism that the regulated communities can achieve Substantial levels of assurance by the end of March 2022 within the areas that the DSA regulates. The systems for, and the SQEP resources required to deliver, 2nd Party Assurance remain the key issue and will need continued focus to reach the target of Substantial, and then Full, assurance in due course.

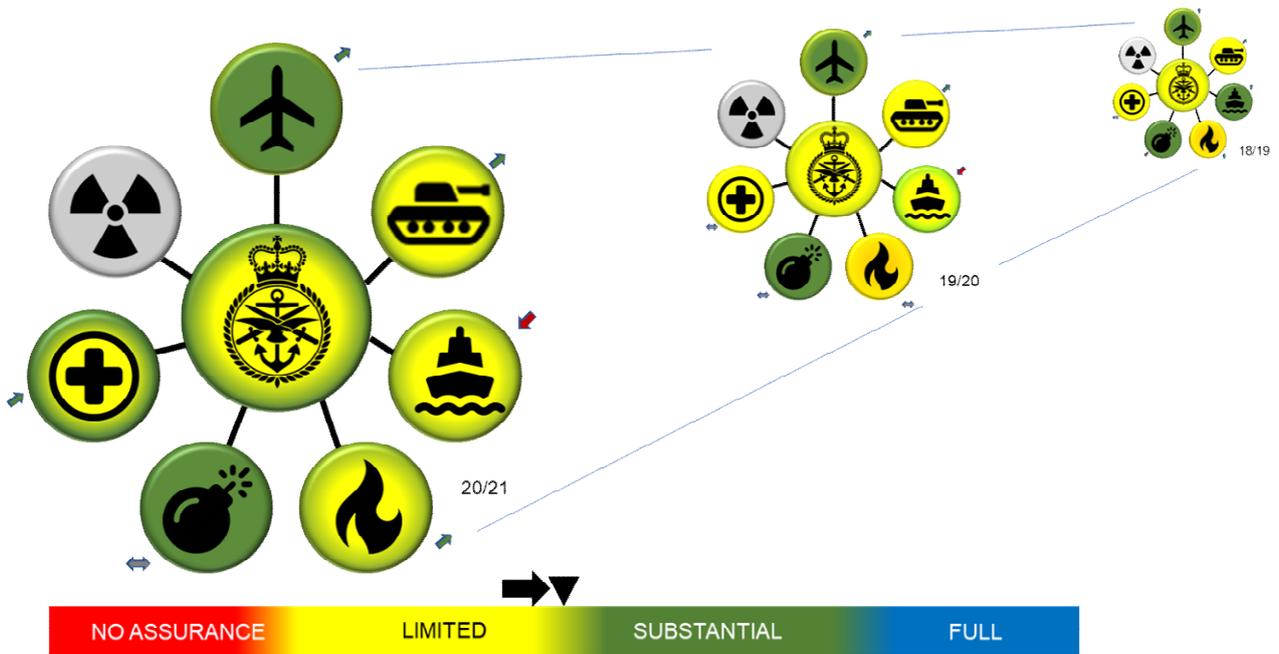


Figure 1-1 Defence Regulatory Assurance Assessments 2018/19 to 2020/21

Defence Organisation	Regulatory Domain					
	Aviation	Maritime	Land	Fire	OME	Med Services
Navy Comd	Substantial	Limited	Limited	Limited	Substantial	Substantial
Army	Limited	Limited	Limited	Limited	Substantial	Substantial
Air Comd	Limited	Substantial	Limited	Limited	Substantial	Substantial
UK StratCom	Limited	No Assurance	Limited	Limited	Substantial	Limited
DE&S	Limited	Limited	Limited	No Assurance	Limited	Substantial
DIO	Substantial	Limited	Limited	Limited	Substantial	Substantial

Figure 1-2 Defence Organisation Assurance 2020/21

- Aviation. **SUBSTANTIAL** assurance – building on last year’s assessment with continued improvement in most areas (Section 3.2.1).
- Maritime. **LIMITED** assurance – the high-volume activity areas are in a good place, however a broader view of the domain has uncovered areas where HS&EP requires greater focus to improve performance (Section 3.3.1).
- Land. **LIMITED** assurance – in spite of COVID-19, progress observed in most key areas this year, but improvements still required in SQEP, 2nd Party Assurance/3rd

Party Assurance and Safety Case Management to achieve Substantial by April 2022 (Section 3.4.1).

- Fire. **LIMITED** assurance – progress has been observed in most key areas, including the development of assurance processes for fire safety management (Section 3.5.1).
- Ordnance, Munitions & Explosives. **SUBSTANTIAL** assurance – similar to last year, with notable improvement in DE&S assurance of acquisition (Section 3.6.1).
- Medical Services. **LIMITED** – systems of internal control are established and demonstrate some evidence of maximising patient safety and quality improvement, with significant areas of weakness

DSA Maturity

- Overall, the DSA is assessed at **LIMITED** maturity. The assessed maturity level of each of the Regulators and the DSA’s overall investigative and policy capability, with indications of changes since last year, is summarised in Figure 1-3 (Section 4.2).

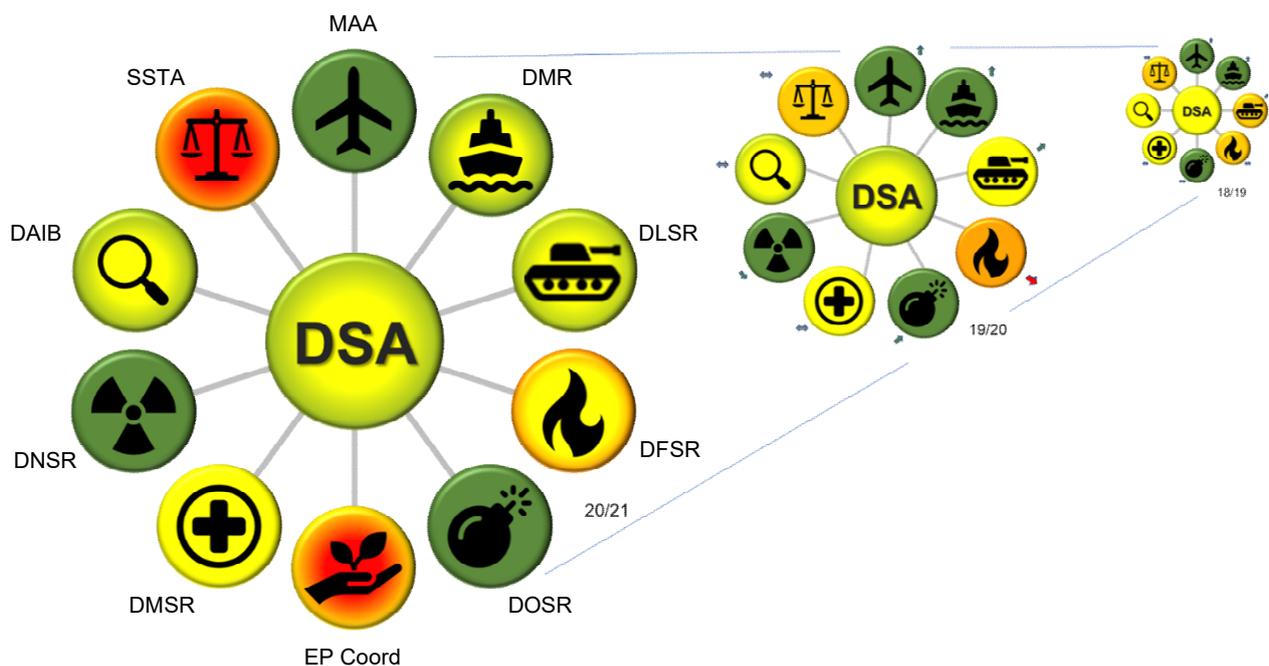


Figure 1-3 – Defence Safety Authority Maturity Assessments 2018/19 to 2020/21

- Incremental improvement continues within the DSA, however there are several areas that limit improvement and keep the assessment at Limited:

- Four of the DSA's seven regulators and the DAIB remain at Limited maturity, predominantly due to a gap between their current capability and their full remit.
- Two new capabilities were established to cover gaps in DSA capability—an Environmental Protection Coordination Team, and the Strategic Safety & Environmental Management System and Themed Assurance (SSTA) Team—both of which will take time to reach maturity.
- The continued evolution of roles and responsibilities between Head Office and the DSA (both HS&EP and corporate) create ambiguity for Defence organisations and prevents a stable base from which to develop and resource the DSA and D HS&EP. This will be a focus for the early part of Financial Year 2021/22.

Section 2 – HS&EP in Defence

2.1 – Context

This section provides an overview of HS&EP in Defence during the period 1 April 2020 to 31 March 2021. It covers safety performance, significant inquiries conducted by the DSA, HS&EP related enforcement action taken by external regulators, Defence governance and Environmental Protection.

2.2 – Safety Performance

2.2.1 – Fatalities

Overall Fatalities

The top four overall causes of death for Regular Armed Forces personnel in the calendar year 2020 were other accidents (15), cancer (12), suicide (9) and diseases of the circulatory system (7).³ Of the 15 deaths in the ‘other accidents’ category twelve are awaiting a verdict by a coroner or procurator fiscal and are subject to change.⁴ The number of deaths from Land Transport Accidents continued to fall. Similar to last year, it was identified that the Regular Armed Forces have seen a declining trend in male suicide rates since the 1990s and were consistently lower than the UK general population over the last 35 years. However, in the last five years the number of army male suicides have been increasing and since 2017, the risk of suicide among army males was the same as the UK general population for the first time since the mid 1990’s.⁵

Safety-Related Fatalities

There were three Defence safety-related fatalities during the reporting period (Table 2-1), two of which are subject to Service Inquiries and one subject to a Health & Safety Executive investigation.

³ MOD, [Deaths in the UK regular armed forces: Annual summary and trends over time 1 January 2011 to 31 December 2020](#), 2021. Figures are for UK regular armed forces and the non-regular members of the UK armed forces who died whilst deployed on operations. Figures include on and off duty fatalities.

⁴ MOD, [Deaths in the UK regular armed forces: Annual summary and trends over time 1 January 2011 to 31 December 2020](#), 2021. There were nine confirmed suicides. The mechanism of injury for twelve of the ‘other accidents’ suggest possible suicide but are awaiting verdicts and may be recategorized.

⁵ MOD, [Suicides in the UK regular armed forces: Annual summary and trends over time – 1 January 1984 to 31 December 2020](#), 2021.

Defence Safety-Related Fatalities
28 October 2020 – Civilian Construction works, Brock Barracks, Reading
16 November 2020 – Royal Navy Leadership course, HMS Collingwood, Portsmouth
4 March 2021 – Regular Army Live firing exercise, Castlemartin Ranges

Table 2-1 – Defence Safety-Related Fatalities.

The number of safety-related deaths continues to show a reducing trend (Figure 2-1), although it is worth noting that single accidents resulting in multiple deaths (such as aircraft accidents) and the low numbers add volatility to this rate.⁶

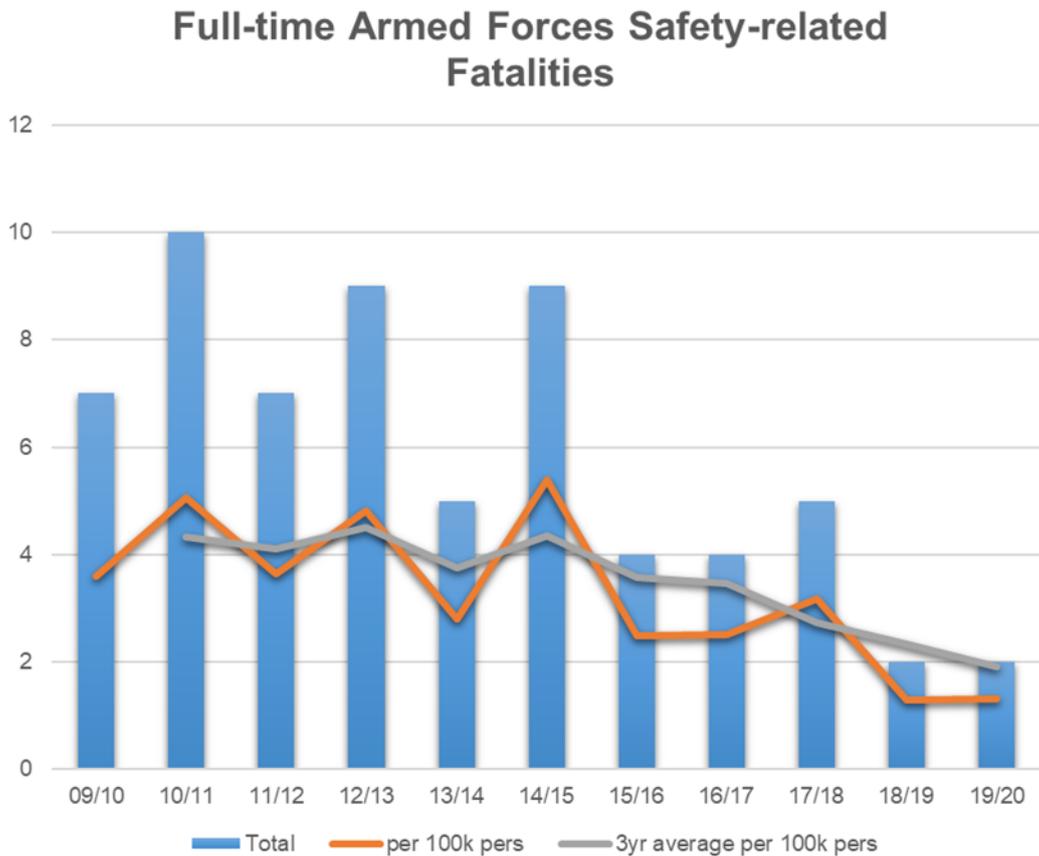


Figure 2-1 – Full-time Armed Forces Safety-related Fatalities

⁶ Fatality figures are drawn from MOD, [MOD Health and Safety Statistics: Annual Summary & Trends Over Time 2014/15 – 2018/19](#), 2019. Defence Statistics have decided to postpone the production of the MOD health and safety statistics for 2019/2020 which were due for publication on 19 November 2020, until summer 2021, at which time data for 2019/2020 and 2020/2021 will be released together. Population figures to determine the rate per 100,000 personnel are as at 1 April of that year and are drawn from MOD, [UK Armed Forces Quarterly Personnel Statistics 1 April 2020](#), 2020 for 2012-2020 figures and MOD, [UK Armed Forces Quarterly Personnel Report 1 January 2013](#), 2013 for 2009-2011 figures. Full-time Armed Forces comprise all UK Regulars, Gurkhas and Full-Time Reserve Service.

A comparison of the fatal injury rate for the Full-time Armed Forces and other UK industrial sectors over the period April 2015 to March 2020 is in Figure 2-2.⁷ While the rate for the Full-time Armed Forces was higher than that in most industries, recent figures indicate that the rate is decreasing and approaching a rate comparable with the construction industry.⁸

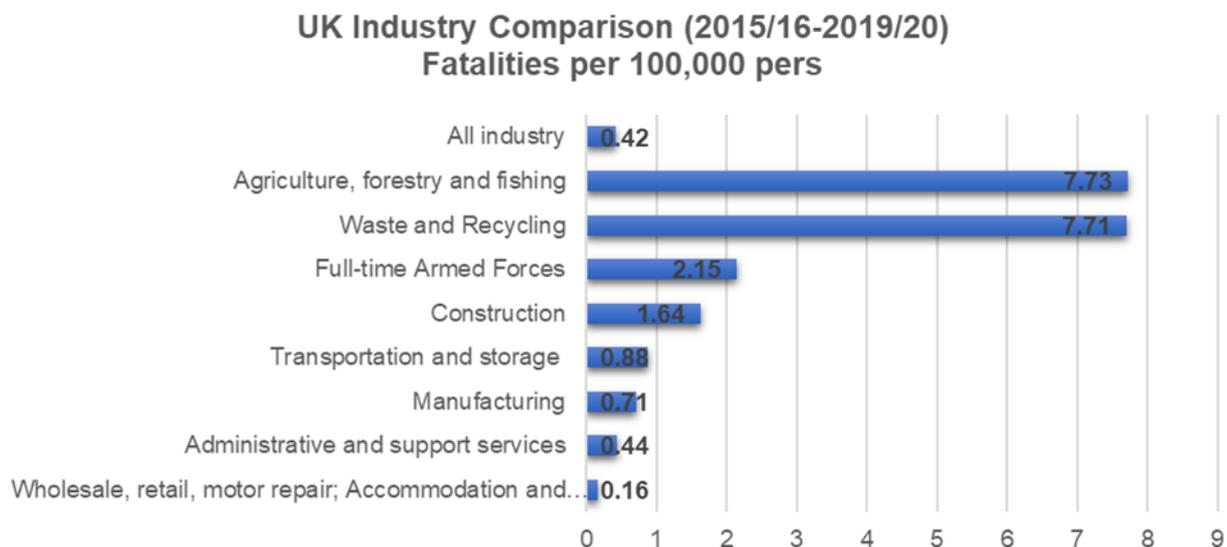


Figure 2-2 – UK Industry Comparison (2015/16 to 2019/20) Fatalities per 100,000 people.

Fatalities in Training

The total number of Army fatalities during training and exercises has steadily declined since 2014 and there were no deaths in 2020. Total Navy and RAF fatalities are too infrequent to draw conclusions over the same period (Figure 2-3).⁹

⁷ HSE, [Workplace fatal injuries in Great Britain, 2020](#), 2020, p. 6.

⁸ A rate of 1.6 fatalities per 100,000 for the Full-time Armed Forces would equate to an average of approximately 2.5 fatalities per year.

⁹ MOD, [Training and Exercise deaths in the UK armed forces 1 January 2000 to 28 February 2021](#), 2021, p. 5

Figure 2: Royal Navy^{1,2} deaths³ on training⁴ or exercise by calendar year⁵, numbers
1 January 2000 to 28 February 2021

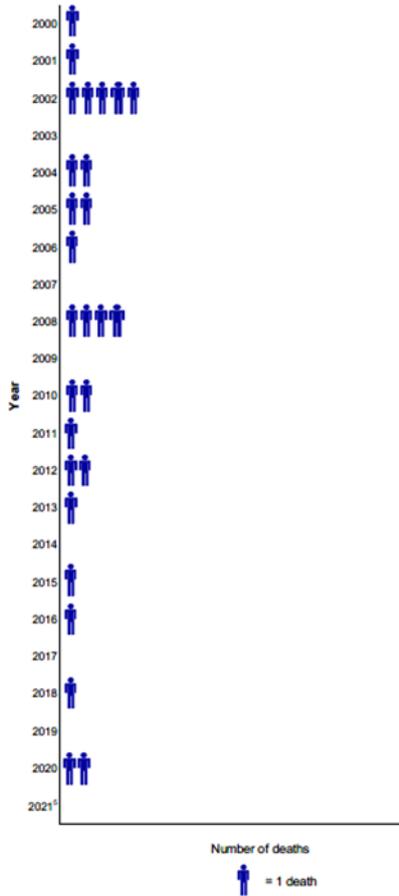


Figure 3: Army¹ deaths³ on training⁴ or exercise by calendar year⁵, numbers
1 January 2000 to 28 February 2021

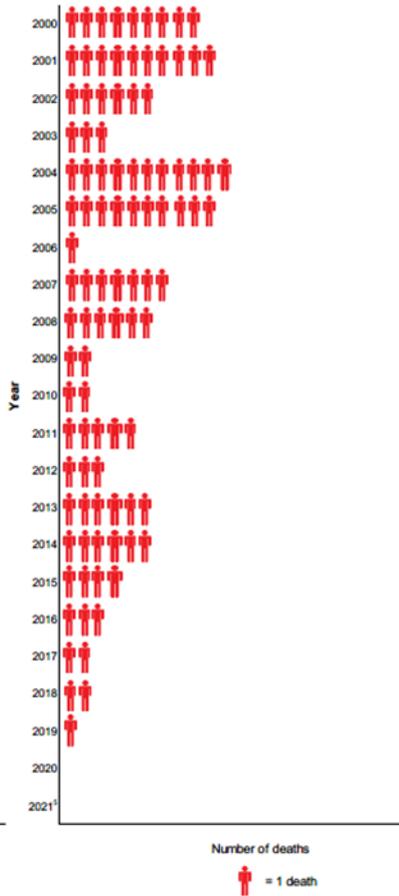
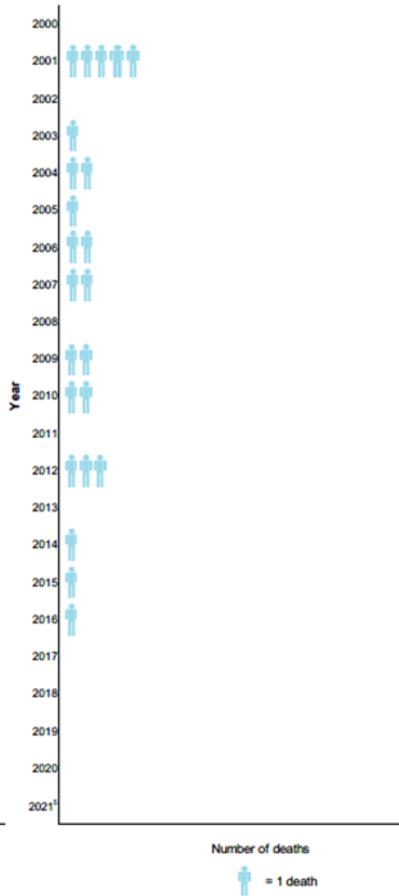


Figure 4: RAF¹ deaths³ on training⁴ or exercise by calendar year⁵, numbers
1 January 2000 to 28 February 2021



Source: Defence Statistics Health

¹ Figures are for regular and reservist personnel 'on duty'.

² Royal Navy and Royal Marines

³ Figures are for all causes of death and therefore include those deaths that occurred due to injury or natural causes whilst on training or exercise.

⁴ Figures are for all types of training and exercise.

⁵ Up to and including 28 February 2021.

Figure 2-3 – Armed Forces Deaths on Training or Exercise 2000-2021.¹⁰

2.2.2 – Injuries

As Defence Statistics have postponed the production of the MOD health and safety statistics for 2019/2020, which were due for publication on 19 November 2020, until summer 2021 (at which time data for 2019/2020 and 2020/2021 will be released together), there is no change to the information presented in last year's report.

¹⁰ These statistics come from [Training and Exercise Deaths in the Armed Forces – 1 January 2000 to 28 February 2021](#) (p5) and include safety-related deaths in operational theatres, but not deaths as a result of combat activity. The only operational theatre deaths are five in a helicopter accident in Afghanistan 2014 and one in a kayaking accident in Cyprus in 2015 (Op TOSCA). Non-safety related deaths in operational theatres are covered by a separate Defence Statistics report, UK Armed Forces Deaths: Operational Deaths Post World War II – 30 September 1945 to 15 March 2020 (graph on p6).

2.2.3 – Asbestos

Last year an audit of Defence Equipment & Support (DE&S) Operating Centres was conducted alongside a Non-Statutory Inquiry (NSI) by the Defence Accident Investigation Branch (DAIB) into the historic causes of failure of compliance. The audit and the NSI are complete.

It was found that due to significant organisational change over several years, poor record keeping and personnel churn prior to July 2018, the DE&S and Submarine Delivery Agency (SDA) had become significantly non-compliant with the law (statute) regarding the use of asbestos material within equipment components. Since December 2018, the DE&S have recovered understanding and records of the extent of ACM in equipment and have set out the mechanism for compliance, forecast for September 2021. A Defence Instruction & Notice was promulgated to inform Service and civilian employees, and Defence contractors of possible exposure to asbestos from Defence equipment and the reporting procedure to be followed if personnel consider they may have been exposed.¹¹

2.2.4 – COVID-19

During the coronavirus pandemic, Defence was required to implement a range of responses that balanced the need to maintain a safe working environment with the provision of essential activities such as support to the UK's coronavirus response and maintaining operations.

2.3 – Defence Service Inquiries and Non-Statutory Inquiries

In 2020/21 three Service Inquiries (SIs) and two Non-Statutory Inquiries (NSIs) were completed. Four of these inquiries were into fatal accidents and one was into the control of a substance hazardous to health. The DSA issued one Urgent Safety Advice note and made 232 safety-improvement recommendations. During the same period two SIs and one NSI remained on-going, and a further two SIs and two NSIs were convened.

In addition, significant safety actions taken by Defence organisations enabled the approval for closure of 267 (189 SI and 78 NSI) recommendations. This demonstrates the considerable range and scale of safety actions already taken across Defence in response to DAIB investigations. 361 recommendations remain open.

The DAIB deployed on 22 occasions to conduct the initial triage of incidents and provided specialist support to SIs, NSIs and other MOD organisations conducting their own investigations. The deployments included three vehicle incidents, six air systems incidents, three maritime incidents, four incidents involving weapons and explosives, two incidents involving physical activity (heat casualties and a fall from a rope), one incident involving an item of medical equipment and three incidents involving contractors where accidents occurred either on the MOD estate (two) or involved MOD munitions but was not on the MOD estate (one). This was a similar number of deployments to last year and a significant reduction in the number of deployments when compared to preceding years¹². It is

¹¹ MOD, [2018DIN06-025 Sea King Helicopter \(All Marks\) MoD Form 960 Asbestos Personal Record Annotation](#), 2018

¹² 2016/17 – 47; 2017/18 – 34; 2018/19 – 37; 2019/20 – 18; 2020/21 – 22.

noteworthy that the deployment threshold has not changed in this time, but it is too soon to consider this as an improving safety trend across Defence.

Further analysis of the incidents attended by the DAIB in 2020/21 and the inquiry reports published¹³ in the same period continue to highlight some familiar findings: failure to follow procedures; lack of appropriate oversight and supervision; inappropriate risk management, ownership and transfer, including inadequate risk assessment; and a lack of or inadequate leadership.¹⁴

2.4 – Enforcement Action

There were three Crown Censures served during the reporting period (Table 2-2).

Date of Censure	Defence Organisation	Date of Offence	Location	Notes
02 Sep 20	Royal Navy	26 Mar 18	National Diving and Activity Centre, Chepstow	Two Crown Improvement Notices were served in October 2018. ¹⁵ A Navy Command Service Inquiry was convened. It reported on 20 February 2019. ¹⁶
28 Sep 20	Joint Forces Command (now UK Strategic Command)	14 Nov 18	Portland Harbour, Dorset	A Crown Improvement Notice was served February 2019. ¹⁷ A DSA Service Inquiry was convened. It reported on 7 July 2020.
14 Dec 20	East Midlands Reserve Forces & Cadets Association	06 Feb 17	County HQ, Leicestershire	A review into the health and safety governance, management, culture and policy within the Reserve Forces' and Cadets' Associations (RFCA) was conducted. Recommendations for improvement were made and will be implemented as part of the RFCAs' transition to a Non-Departmental Public Body.

Table 2-2 – Crown Censures

The majority of findings during DSA audits or inspections are minor in nature and are dealt with locally through Corrective Action Requirements (CAR) or observations documented in

¹³ Published Ministry of Defence Inquiry Reports can be found at <https://www.gov.uk/government/collections/service-inquiry-si>

¹⁴ This includes the contribution at the Command level on an incident when allocating resource, setting the organisation's working parameters (including routines and culture) and generating the policy and guidance that subordinate units work to.

¹⁵ Notice numbers [309329324](#) and [309346826](#). HSE, <https://resources.hse.gov.uk/notices/default.asp>

¹⁶ MOD, [Service Inquiry into the Fatal Diving Incident at the National Diving and Activity Centre, Newport on 26 March 2018](#), 2019

¹⁷ Notice number [309835447](#). HSE, <https://resources.hse.gov.uk/notices/default.asp>

post-audit debriefs and reports. Enforcement Action is utilised by statutory and Defence regulators only where they find significant non-compliance or a hazard which, if left unaddressed, could impact upon safety, cause environmental damage, or place personnel and operational capability at risk. Conclusions from analysis of the DSA enforcement data inform the domain and organisational assurance assessments.

2.5 – Governance of Safety in Defence

Steady progress continues to be made regarding improvement to Defence’s HS&EP governance and some important milestones have been reached:

- The HS&EP Function was formally established in July 2020 as part of the Functional Leadership construct and a permanent Director HS&EP is now in post.
- The HS&EP Functional Strategy was published. It describes the role of the HS&EP Function, the vision for Defence and the priorities in terms of safety leadership, health, and environmental protection.¹⁸
- A Memorandum of Understanding between the MOD and Health & Safety Executive was signed in December 2020.
- Ownership of the MOD HS&EP policy development role and key MOD HS&EP policies was handed from Director General DSA to Director HS&EP in December 2020.
- An updated Heat Illness Prevention Policy was published in October 2020. The new policy was developed and tested using a team of subject matter experts and a Commander’s Guide and Individual’s Guide were published to make the policy more accessible to front line staff.¹⁹

A HS&EP Functional Operating Model is in development. The aim of the Operating Model is to describe how HS&EP is managed across Defence with a clear articulation of roles and responsibilities. It will provide a regulatory, policy and guidance hierarchy—explaining who does what in each area—and set out how HS&EP is included in decision-making, governance arrangements, policy, risk management, performance management, defence tasking and communications. Progress in developing the Operating Model was slow, with simple and clear articulation and agreement of the roles and responsibilities across Defence being the primary hurdle. It has however been a complex undertaking that has required extensive consultation and the investment in time and effort should pay dividends.

The Defence Safety & Environment Committee (DSEC) is well established with a quarterly meeting cycle and the agenda expanded to include climate change and sustainability. The direction from the Permanent Secretary for Defence organisations to reach SUBSTANTIAL assurance by March 2022 and show a path to FULL assurance has focussed attention on the practical implications of assurance at Defence organisation level, particularly in terms of 2nd Party Assurance. Support to the DSEC has also been improved with the

¹⁸ MOD, [Health, Safety and Environmental Protection Functional Strategy](#), 2020

¹⁹ MOD, [Joint Service Publication 375, Volume 1, Chapter 41 Heat Illness Prevention](#), 2020

establishment of the Functional Steering Group and the Functional Delivery Group, which bring the right level of expertise together.

2.6 – Environmental Protection

This past year has been significant for the United Kingdom, witnessing the UK Government making commitments to tackle climate change and biodiversity loss as a global leader, and as the first major economy to legislate to achieve 'net zero' greenhouse gas emissions by 2050. It has been significant for Defence too, with the publication in May 2020 of the National Audit Office's (NAO) report on the MOD in the *Environmental Sustainability Overview*,²⁰ followed by the production of Lt Gen Richard Nugee's *Climate Change and Sustainability Report* (December 2020), which resulted in the publication of the new *MOD Climate Change and Sustainability Strategic Approach* in March 2021.²¹ Defence accounts for 50% of the emissions from UK Government sources, thus it must play a leading role in addressing climate change by reducing emissions, as well as building capacity to deal with challenges emerging due to a climate-changing world.

The NAO reported that MOD leadership and governance for environmental matters was not previously well functioning. In response, this year the terms of reference for the DSEC were amended to cover both climate change and environmental protection. However, MOD policy for EP is under separate ownership from Sustainability Policy and sits across multiple stakeholders in Defence as it spans estate and infrastructure, equipment and defence activities. The developing HS&EP Functional Operating Model should address this issue.

Last year's recommendation to *review the options for and benefits of formally establishing a Defence Environmental Protection Regulator* is being progressed by the DSA with options due to be presented to the DSEC in July 2021.

²⁰ NAO, [Ministry of Defence Environmental Sustainability Overview](#), 2020

²¹ MOD, [Climate Change and Sustainability Strategic Approach](#), 2021

Section 3 – Safety and Environmental Regulatory Assurance

3.1 – Scope

In the UK, Defence follows all health, safety, and environmental protection (HS&EP) laws that apply in the UK. Overseas, Defence follows the laws that apply in that location. If laws that apply overseas fall short of UK requirements, Defence will apply UK standards as far as reasonably practicable.

To enable Defence to operate effectively, there are aspects of UK law and regulation that do not apply to Defence activities. In these cases, Defence makes Departmental arrangements that produce outcomes that are, as far as reasonably practicable, at least as good as those required by UK law. Defence does this through sensible and proportionate self-regulation which balances risk against operational capability.

The DSA, on behalf of the Secretary of State (SofS), maintains arrangements in the form of Defence Regulations.²² The DSA divides this requirement into seven domains and functional areas, each of which is overseen by a Defence Regulator (Figure 3-1) who produces and enforces regulation and conducts assurance activity within that domain or functional area. The DSA is also required to provide independent assurance to the SofS that Defence is complying with their HS&EP Policy Statement,²³ and to investigate accidents.



Figure 3-1: DSA Regulators

²² 'To produce outcomes that are, so far as reasonably practicable, at least as good as those required by UK legislation', MOD, [Health, Safety and Environmental Protection in Defence](#), 2020, para 3.

²³ MOD, [Charter for the Defence Safety Authority](#), 2020, para 2.

Assurance Model

Each DSA regulator conducts assurance activities in its domain or functional area across all relevant Defence organisations to make an evidence-led assessment of HS&EP compliance. This is done by conducting independent audits and inspections while also drawing on the results of the assurance activity conducted within Defence organisations.

A three-level assurance model is used for HS&EP:

- **First Party Assurance (1PA).** Self-assurance (formation/unit/section level).
- **Second Party Assurance (2PA).** Management oversight (Defence organisation/formation level).
- **Third Party Assurance (3PA).** Independent assurance (DSA, statutory regulator).

The DSA's assessment of the assurance level of each of the regulated domains and functional areas is based on the regulators' assurance assessments of each respective Regulated Community.²⁴ It is based on evidence collected throughout the reporting year and inputs from Defence organisations.²⁵ Levels of assurance are categorised as: Full, Substantial, Limited or No Assurance (see Table 3-1 for definitions and colour-coding used in the diagrams).²⁶

Assurance Level	Definition
Full	System of control established and operating effectively.
Substantial	System of internal control established and operating effectively with some minor weaknesses.
Limited	System of internal control operating effectively except for some areas where significant weaknesses have been identified.
No Assurance	System of internal control poorly developed or non-existent, or major levels of non-compliance identified.

Table 3-1 – Defence Safety Assurance Levels.

This section of the report provides a statement of regulatory assurance for each domain and functional area as a whole and the regulatory assurance of each Defence organisation operating in that domain or functional area.²⁷ Assurance is represented pictorially

²⁴ Defined as the organisations or units within a Defence organisation whose activities fall under Defence safety regulations for a specific domain or functional area.

²⁵ Defence organisations were invited to provide DSA with any additional evidence (in the form of annual assurance report, risk registers, etc) to inform the safety assurance assessment.

²⁶ Defence Internal Audit definitions of assurance which originate from the Chartered Institute of Internal Auditors.

²⁷ Defence organisations operate across multiple regulated domains and functional areas.

(explained in Figure 3-2), showing relative levels of activity by the Defence organisations active in the domain (represented by the size of the bubble), and an assessment of their assurance level (represented by the colour).

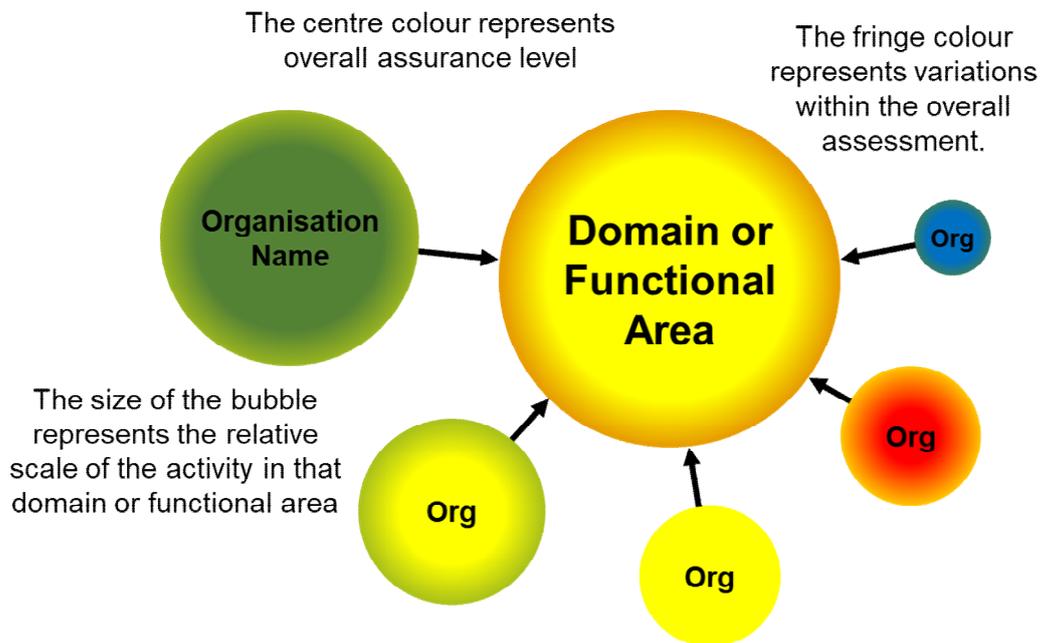
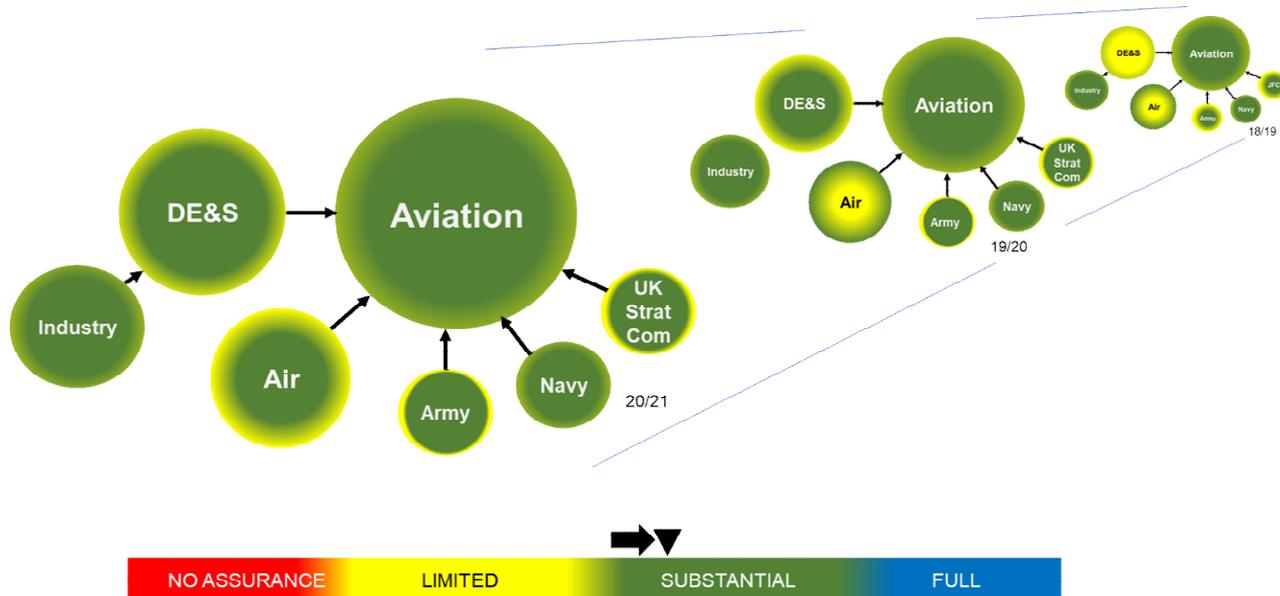


Figure 3-2 – Depiction of Defence Safety Assurance Levels for Domains.

3.2 – Aviation

3.2.1 Aviation Assurance Summary

SUBSTANTIAL Assurance – building on last year’s assessment with continued improvement in most areas



There has been an improvement in most areas, leading to a slight improvement in the Defence Aviation Environment’s (DAE) assurance level, with the assessment remaining at **SUBSTANTIAL** assurance. Minor weaknesses remain and the picture is not consistent across all Defence organisations. Specifically, Duty Holder (DH) Facing organisations have seen some issues that will be a focus of the MAA in the coming year²⁸. The top Air Safety threats are, in priority order; Mid-Air Collision (MAC), managing change safely, Suitably Qualified and Experienced People (SQEP), Aviation Duty Holder (ADH) assurance, enterprise governance and infrastructure. There is an improvement in the use of Organisational Safety Assessments (OSA), which is encouraging; these should remain a focus of the MAA, and broader DSA, to ensure they support future change initiatives. MAC, SQEP and infrastructure remain as managed issues with continued steps being taken to address them. It will take some time to deliver substantial improvement, slowed in the early part of this year by COVID-19 restrictions and the timescale to deliver improvements to infrastructure remains a long-term goal. The issues related to enterprise governance are still of concern, but progress is encouraging especially regarding closer ADH and Senior Responsible Officer (SRO) relationships and understanding. Continued focus across the whole spectrum²⁹ is required to ensure the Air Safety Culture continues to mature and to ensure an enduring Substantial assurance level.

²⁸ Air Manoeuvre Wing has been graded as HIGH Concern of Air Safety Risk and other Duty Holder-Facing Organisations are currently at MEDIUM risk. Duty Holder-Facing organisations are showing a lack of Air Safety awareness and have barriers that lay outside of Aviation Duty Holder control but are engaged with the MAA and seeking improvement.

²⁹ This includes but is not limited to: Aviation Duty Holders (ADHs), Senior Responsible Owners (SROs), DE&S Delivery Teams (DTs) and Duty Holder-Facing Organisations

3.2.2 Aviation Domain Scope

Defence has almost complete exemption from the United Kingdom's Air Navigation Order requiring it to regulate all Defence activity in the DAE. This is conducted by the Military Aviation Authority (MAA), the safety regulator for all UK Military Aviation. All Military Commands operate in the Aviation Domain with significant support from DE&S and industry which are also subject to MAA regulation and assurance.

3.2.3 Regulator Activity

The MAA continues to undertake a risk-based approach to assurance, covering the full spectrum of the DAE: DH and DH Facing organisations; DE&S Delivery Teams; and Industry Approved Organisation Schemes³⁰. Throughout the COVID-19 restrictions, the MAA has continued to deliver assurance through a combination of virtual and physical engagement (audit, surveillance and oversight), the frequency of which is informed by the MAA's 'Air Safety rich picture'. This reporting period the MAA conducted 617 audit, oversight or surveillance events. It issued or reviewed 164 organisational approvals, issued 60 Type Certificates and Certificates of Safety (Aviation) and delivered or managed and oversaw 22 training courses attended by some 3644 people from across Defence and industry. This training spanned industry approved organisations, the four Military Commands and DE&S—whose Delivery Teams are fundamental in ensuring Air Systems are appropriately certified and 'Safe to Operate'.³¹ Progress against closure of Enforcement Notices and Corrective Action Recommendations³² has seen a steady improvement³³ and some long-term issues are now either closed or approaching the final stages of closure³⁴.

3.2.4 Findings

This year has once again seen safety improvements across the DAE and no fatal air accidents. These improvements, combined with only minor Air Safety control weaknesses and managed issues, has maintained the assessment of the DAE's assurance level as **SUBSTANTIAL** assurance. This builds on the improvements of last year, but continued work is required for all areas of the DAE, specifically DH Facing organisations, to maintain this assurance level.

Aviation Duty Holders across all commands are managing risk to tolerable levels, often under increasing pressure to deliver operational effect. In several cases this management is achieved through a reduction in output, as the Operating Duty Holders (ODHs) do not

³⁰ The MAA maintains industry Approved Organisation Schemes for Contractor Flying (CFAOS), Air Traffic Management Equipment providers (AAOS), air system Design Organisations (DAOS) and maintenance providers (MAOS).

³¹ The Military Commands, through Duty Holders, ensure they 'Operate Safely'.

³² In line with Risk Based Assurance, coupled with our guiding and mentoring approach, we continue to issue a reduced volume of Corrective Action Reports (CARs) but with improved targeting and focused escalation, where necessary.

³³ The average closure time for CARs over the past 12 months is 34 days, down from 48 at the beginning of the year.

³⁴ Joint Helicopter Command Chinook Improvement Notice has a path to closure and expected by mid-2021.

always own the necessary levers to reduce the risk by other means³⁵. ODHs have reported in the MAA Operators Council that they feel closer to the boundary of ALARP³⁶ and Tolerable risk, without the ability to satisfactorily address the risk. Encouragingly, there are several examples of ADHs, and the airworthiness chain, implementing additional assurance and engagement to resolve issues and improve decision making and communication of these risks. Examples include conducting additional Equipment Safety Reviews to recover from an airworthiness issue³⁷ and additional Air System Safety Working Groups to address concerns over the Air Safety of capabilities³⁸. This spans across a broad spectrum, including Rotary and Fixed Wing areas, and is extremely encouraging in the reduction of risk against ADH assurance and understanding.

Mid-Air Collision

Military Air Proximity (Airprox) statistics show a continuing downward trend in reported near-miss incidents within the UK over the last 10 years, although 2020 saw a significant reduction (35%) compared to the previous year despite a 2% increase in flying hours. This drop is almost certainly due to COVID-19 restrictions limiting General Aviation (GA) activity, with incidents involving GA aircraft accounting for more than half of all UK military airprox (Figure 3-3). Similar to previous years, most incidents (60%) occurred during May-September when GA is most active. It is worth noting that the number of military near-miss incidents involving suspected drones reduced by 45%, compared to 2019. This confirms that consumer education, combined with the introduction of Flight Restriction Zones (FRZ) around airfields and the 400 ft Above Ground Level (AGL) height restriction on drones, is having a positive effect.

³⁵ An excellent example of this is the pause of all activity in 100 Sqn, operating the Hawk T1, due to engineering workforce issues that fall outside of the Aviation Duty Holder area of influence and control.

³⁶ ALARP – As Low as Reasonably Practical.

³⁷ 2* led Equipment Safety Reviews (ESRs) were held regularly during the recovery from an airworthiness issue resulting in the Pause in Flying of the Gazelle aircraft.

³⁸ Fixed Wing Manned Airborne Surveillance and P8 both had additional Air System Safety Working Groups scheduled by Air Officer Commanding (AOC) 1 Gp. Of note AOC 22 Gp also significantly increased the focus and engagement to resolve a Tutor Airworthiness and Air Safety issue.

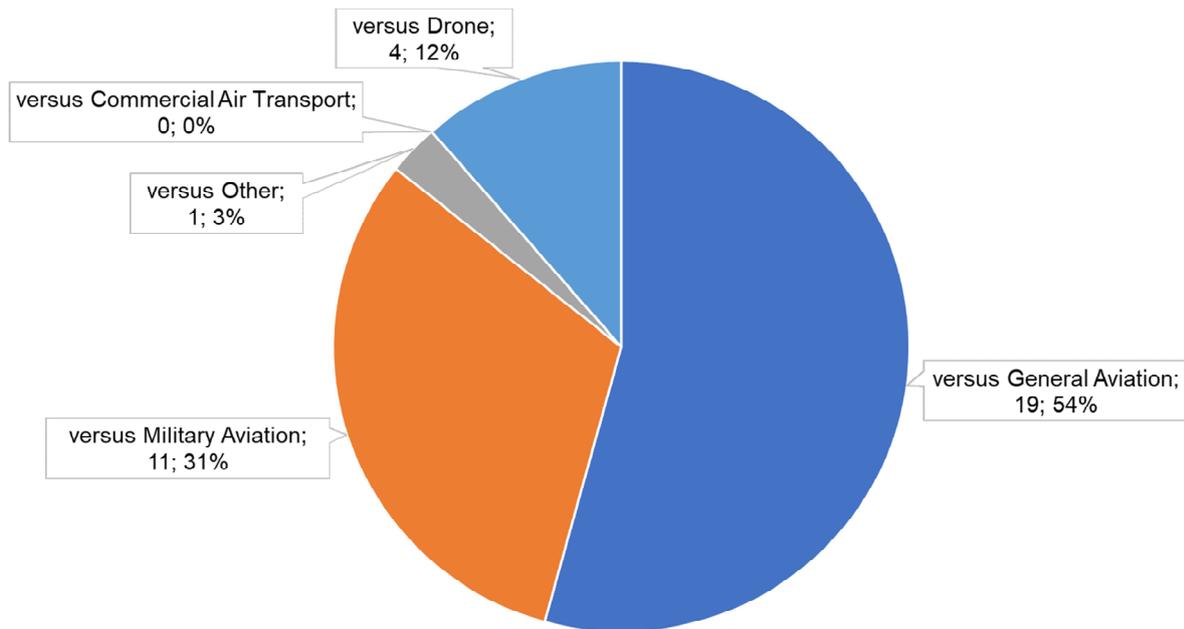


Figure 3-3 – 2020 Military Air Proximity incidents by Conflicting Aircraft Classification

Change

Change remains a constant across Defence and this is true of the DAE. Key to managing this safely is a clear understanding of the magnitude of the change combined with the direct and indirect impacts across the wider Defence enterprise. Encouragingly, Organisational Safety Assessments (OSA) are now more widely utilised which is encouraging. This has been especially true for Air Command, with whom the MAA have engaged closely on several change issues³⁹. The improvement in use of OSAs through this year has seen them emerge as a decision-making aid and enhancement to safety through the implementation of change; this is encouraging and focus should continue as the process embeds in the safety culture of the DAE. The improvement in Air System Safety Cases (ASSCs) has helped close gaps across the pan-Defence Lines of Development (DLod) safety argument; however, this is not a replacement for a robust OSA.

With the release of the Integrated Review at the end of this report year there will be additional pressures as more change must be planned for and implemented,⁴⁰ combined with pressures on some equipment types as they must maintain operational output while they sunset which increases focus on the wider enterprise governance which must be addressed.

³⁹ For example, the combining of Lightning Force HQ and Typhoon Force HQ to form a single Combat Air Force HQ demonstrated early and close engagement to complete the OSA prior to the move being completed and the production of an action plan to mitigate risks, issues or concerns raised.

⁴⁰ This is expected to include organisation restructures, movement of SQEP resource between platform types and pressures to maintain output with reducing resources as they are diverted to growing capabilities.

SQEP

Shortfalls in SQEP remain a challenge and, while it receives focus from the ADHs, it is often due to the ODHs being unable to influence the issue due to lack of levers available. Many of these levers sit with Service Manning authorities or within DE&S and are impacted upon by conflicting priorities across Defence. There have been some improvements but there is still not always a correlation between a post's priority and finding a suitable candidate to fill it. Air Safety Teams (AST) across Joint Helicopter Command suffer from varied levels of SQEP personnel. Four specific areas of SQEP shortfall are of particular concern:

- ADH understanding of assurance has continued to improve across their direct Areas of Responsibility but there is **misunderstanding of air safety responsibilities and requirements in some DH Facing organisations**. This is often in areas that sit outside the traditional DAE boundaries and on several occasions the ADH does not own the levers for improvement. The increased maturity of ASSC and development of ASSC-Reports have aided the ADHs with a clear move toward safety argument based ASSWGs. There is also evidence of the ADH chain proactively questioning and challenging the positions taken by key stakeholders⁴¹, such as the Type Airworthiness Authority and Continuous Airworthiness Management Organisation, but also providing support where appropriate. Whilst greater understanding of the importance of assurance is now common across the ADH fraternity, fragility of AST manning remains a threat to the rate of improvement.
- **Levels of Air Traffic Management SQEP remain a concern**, with workforce shortages and the dilution of controller experience affecting many units. When combined with a sizable proportion of first-tour personnel at frontline units⁴², this places a heavy burden on On-the-Job-Training and greater reliance on supervision to maintain standards. Whilst the implementation of local workforce initiatives is having a positive effect⁴³, training capacity and traffic levels remain a limiting constraint; particularly when considering the impact of COVID-19.
- **Legacy SQEP challenges remain within DE&S** despite various initiatives to address it. Improvements have been seen at Safety Responsible and Senior Safety Responsible levels but there remains a shortfall at the Safety Delegated levels⁴⁴. Investigation has also shown a protracted interval between appointment to attainment of SQEP; obtaining greater understanding of the causes of this should inform a fresh approach. The impact varies by Delivery Team but an eroded effectiveness to conduct routine activities, potential over-

⁴¹ AOC 22 Gp scrutinising suitability of Programme MARSHALL Air Traffic Control (ATC) systems at Shawbury, and AOC 1 Gp informing Air Capability that without a P8 contracted engineering support package, tasking levels would need to be restricted.

⁴² Whilst the average percentage of first tourist controllers within ATC units is 34%, six units reported having more than 48%.

⁴³ These initiatives are usually Station or location led to address the specific shortfalls unique to them; principally through the reduction of core outputs, such as reduced opening hours or a reduction in service provision.

⁴⁴ Level 2/3 or OF1-2.

reliance on Engineering Delivery Partnership and an unsustainable working regime experienced by many personnel have all been noted⁴⁵. Triaging of airworthiness activities and prolonging of non-conformance rectification appear to be developing as accepted norms within some teams⁴⁶. A review of Delivery Team Work Breakdown Structures, initially delayed by COVID-19, is due to be delivered by July 2021 and should either authenticate the current structures or provide the evidence of mismatch between establishment and the task levels that will need to be addressed and funded at an appropriate level. The MAA sees the review in the establishment and appropriate resourcing of teams as a fundamental step in the path to resolution of the SQEP challenge.

- Good and regular communication between the MAA and single-Service desk officers has ensured personnel selected for a post have a solid basis of SQEP for the assignment and delivery a good level of SQEP into the MAA. Where issues are highlighted (such as a lack of SME personnel in rank), the desk officers think outside the box to demonstrate where another course of action may be appropriate (selection of a junior, but SQEP, rank to fill a post); the 'quality' of those coming into the MAA is extremely promising. The following themes continue to require oversight to maintain the MAA's output; Remotely Piloted Air System SQEP; Parachuting SQEP; Emerging Technologies and CyberSoftware SQEP.

Aviation Duty Holder Assurance

Several facets combine to enable ADH assurance: ADH understanding of their assurance responsibilities; suitable AST SQEP; comprehensive ASSC; Continuing Airworthiness interaction; effectiveness of 2nd Party Assurance use of BowTie Diagrams; and DE&S quality assurance. AST manning has remained largely static since mid-2020 but variance continues across the DAE as filling posts with suitable SQEP remains challenging. Despite COVID-19 restrictions⁴⁷ 2nd Party Assurance activity has improved. In particular, Joint Helicopter Command has seen a dramatic improvement with the completion of one season of Assurance User Working Groups; the culmination of which was held on 22 February 2021. There was a dramatic improvement over the previous process and the new methodology should be considered an example of good practice. Director Force Generation 2nd Party Assurance was affected by the Royal Navy Reserve funding removal which impacted 2nd Party Assurance resourcing; the long-term effects of which are uncertain.

Infrastructure

The physical condition of the defence estate remains a significant challenge for ADHs, with the policy of non-preventative maintenance resulting in the degradation of key facilities at many aerodromes. MAA oversight and surveillance has noted that despite large

⁴⁵ Stretched resources varies by platform but new projects such as Apache-E and P-8 Poseidon are facing particular challenges.

⁴⁶ For example, Airseeker DT have a Type Airworthiness Authority prioritised list of Alternatives, Waivers & Exemptions requiring staffing and submission but they have not been due to a lack of SQEP cited at 2* ESRs

⁴⁷ RAF Safety Centre 2nd Party Assurance achieved much of its 2nd Party Assurance program despite COVID-19 showing a marked improvement independent 2nd Party oversight.

infrastructure investment at some Units, establishments or stations, many others display a disparity in conditions that often impacts upon the workspace⁴⁸, generating not only Human Factors and Flight Safety concerns, but also potentially affecting the operational sphere. Programme MARSHALL⁴⁹ has also highlighted the poor state of cable ducts and pits associated with the radio and radar renewal programme. All these issues place additional pressure on Heads of Establishment in delivering a safe operating environment.

Enterprise Governance

Delays to the introduction of new capabilities to succeed legacy platforms and fill emerging capability gaps extend legacy platforms in service and prolong the risks associated with ageing aircraft. These delays have far ranging effects on these fleets, as well as across broader Defence capabilities, and on the need to sustain aircrew and type-engineering training pipelines. The risks are exacerbated by incrementally increasing Out of Service Dates (OSDs), including long delays in safety modifications for a number of platforms⁵⁰. The increases obsolescence and supply issues, adding pressure to platform capability delivery, with legacy decisions either requiring or not being revisited correctly⁵¹. This is a direct effect of late capability decisions resulting in a requirement for ageing platforms to continue to deliver operational output long beyond their expected, supported, lifespan instead of slowly reducing output as they approach OSD⁵². The introduction of RA1205⁵³ and the generation of ASSC has improved the ability of the ODHs to manage Air Safety risks, albeit there are still a number of cases where the only option remains reduction in output. This in turn increases pressures on other air systems as the respective demand signal increases to compensate⁵⁴. The closer link between the SRO, Sponsors, ADH,

⁴⁸ For example, the fire station at RAF Marham has been condemned due to structural issues, resulting in the temporary relocation (next 5 years) of fire crews to aerodrome positions that mean they are no longer able to achieve the required response times defined by DFSR. The ATC tower at RAF Northolt leaked rainwater into the approach room during the winter, resulting in the Precision Approach Radar (PAR) being unavailable during poor weather due to the risk of electric shock. RAF Cranwell ATC air-conditioning system was so ineffective that ATC had to close when temperatures exceeded safe levels during the summer due to health and safety concerns for the controllers and the inability to cool the equipment in the approach room. The ATC air-conditioning at RAF Valley doesn't clear the windows of condensation in the Visual Control Room, resulting in poor visibility of the aerodrome.

⁴⁹ Programme MARSHALL is a Defence Aviation wide improvement of Air Traffic Management equipment.

⁵⁰ Long lead times for Puma2 modifications directly related to Service Inquiry recommendations and continued requirement for long standing Hawk T1 modifications.

⁵¹ As part of any Out of Service Date (OSD) Extension Programme there should be a Safety Assessment Report that revisits decisions. With multiple OSD extensions some of these may be missed as with Gazelle AH Mk1. This error resulted in a flying pause that required 2* led recovery action.

⁵² For example, delays in delivering the range of A400M capabilities has resulted in the extension in service of the C130J and significant additional tasking allocation C17. Of note, the UK C17 aircraft are now the world fleet leaders in terms of hours flown.

⁵³ RA1205 – Air System Safety Cases

⁵⁴ Gazelle AH Mk1 OSD is currently 31 Mar 2025, but with any replacement still awaiting approval, the forecast Full Operating Capability of the replacement in Q3 2024 is unlikely to be met. The complex relationship in this example, which involves Special Projects MultiAir Platform DT, DComd Find, Army Cap, 1 Flying Training School, UK Military Flying Training School DT and Air Cap will need careful management by the SRO and will need close MAA oversight. There is also a desire to maintain operational output by continuing Gazelle task-lines, potentially across 2 x UK sites and in Canada, during the delivery of the new capability, which presents an increased risk above that of extending the OSD further.

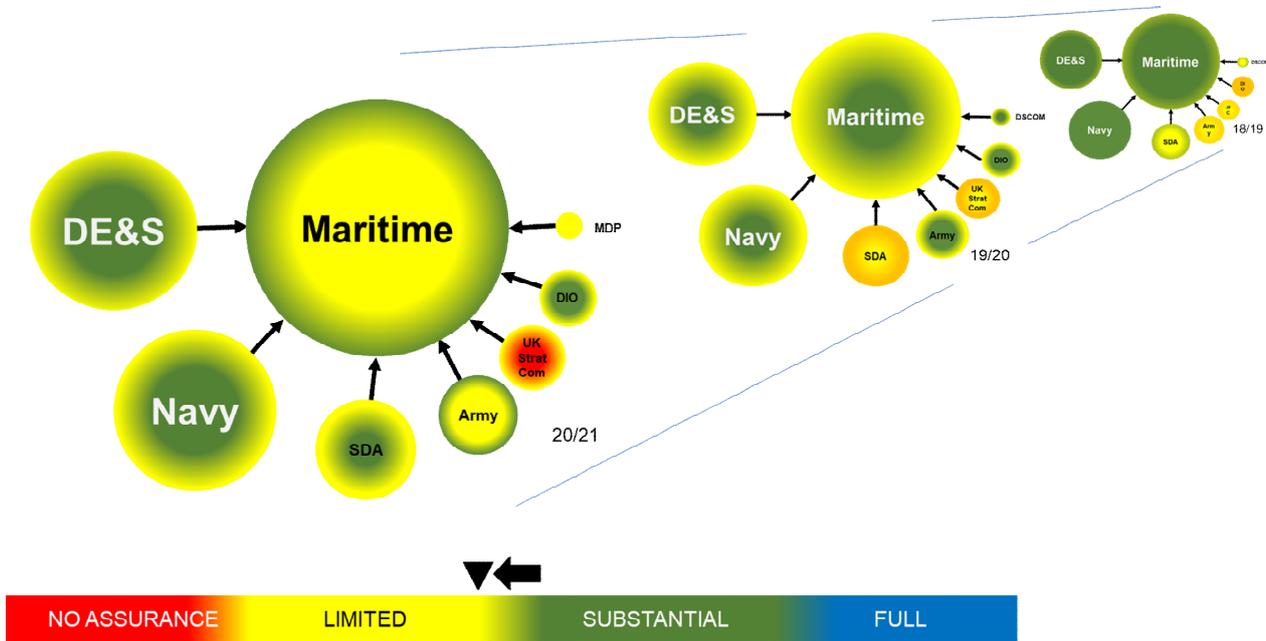
Accountable Manager (Military Flying) and MAA is proving to be of great benefit and should be encouraged; SROs (and Sponsors for civilian-operated military registered Air Systems) hold the key to pan-DLoD defence-wide governance of all enterprises⁵⁵. This reaches beyond purely the DAE and into other regulators and is an area for further focus.

⁵⁵ For example, close stakeholder engagement is allowing the governance arrangements for the joint RAF / Qatar Emiri Air Force Hawk 167 programme to be established with a holistic enterprise view.

3.3 – Maritime

3.3.1 Maritime Assurance Summary

LIMITED Assurance – The high-volume activity areas are in a good place, however a broader view of the domain has uncovered areas where HS&EP requires greater focus to improve performance.



The *Operate Safely* element of the domain is complex with diverse approaches to accountability; concerns have been raised about the adequacy of safety and environmental management arrangements. This raises challenges which will require focus in the coming years. The *Safe to Operate* area has seen improvement but is challenged by the scale and pace of the introduction of new technologies and novel acquisition paths. The top risks in the maritime domain are: Overarching Arrangements and identification of Accountable Persons (APs); Submarine Production (SMP) – product safety and quality control; Evidence of Legislative Compliance; and Environmental Protection, Management and Process. Key emergent issues raising concerns across the maritime domain are: Maritime Autonomy / Experimentation; domain SQEP – Navy Command Headquarters (NCHQ), Director General (DG) Ships, Submarine Delivery Agency (SDA), Naval Advisory Group (NAG) in particular; and Hazardous Materials Management.

3.3.2 Maritime Domain Scope

The Defence Maritime Regulator’s (DMR) regulatory domain covers six Defence organisations and provides a framework of regulation, assurance and enforcement across MOD shipping (ships and submarines), ports, harbours and maritime facilities, and Defence diving activity. The domain is divided into two halves—*Safe to Operate* and *Operate Safely*. *Safe to Operate* covers the provision of safe equipment, systems and platforms and is predominantly made up of DG Ships within DE&S and DNO (including SDA). *Operate Safely* is made up of those organisations operating equipment, systems,

platforms, or facilities, or conducting maritime activity. This is dominated by NCHQ activity, but also includes Army and UK StratCom.

3.3.3 Regulator Activity

DMR activity has continued with greater emphasis on legislative compliance, reviewing the progress on environmental baselining, Maritime Autonomous Systems (MAS), and renewed engagement with the Maritime Coastguard Agency (MCA). The Defence Shipping Register has been expanded to capture accountability and key responsibilities against each platform. It now includes MAS, which is a developing area and is testing the boundaries of the DSA02 DMR Regulations. DMR conducted eight audits (two Document of Compliance (DOC) audits, three Duly Authorised Organisation charter reviews, two risk-based interventions, and one mid-point review of DG Ships). Across the maritime domain there are five outstanding Improvement/Prohibition notices: three within DE&S and two within the Submarine Delivery Agency (SDA) Submarine Production (SMP).

3.3.4 Findings

Overarching Arrangements and Identification of Accountable Persons

DMR baseline reviews and initial engagements have raised concerns of inadequate safety and environmental management arrangements for: UK Strategic Command (specifically Director Overseas Bases);⁵⁶ Army Maritime; acquisition and development of novel and emergent technologies; and trials pre the Vessel Acceptance Date (VAD).

The previously identified issues with lack of clarity over Accountable Persons (AP) and lack of an adequate Safety & Environmental Management System (SEMS) in Army (Maritime) is being addressed. A new duty holding construct went live on 1 January 2021 and work is ongoing to update documentation and formalise authority and responsibility within the Army (Maritime) domain.

Where procurement and development activity were taking place regarding Maritime Autonomous Systems (MAS) and experimentation, there was inadequate evidence that Accountable Persons had suitable and sufficient management arrangements and assurance activities in place. The agility required to develop new technologies and allow the exploitation of the opportunities that present themselves has highlighted issues with the Document of Compliance requirements, the nomination of suitable Accountable Persons, and assurance of regulatory compliance for platforms pre-VAD. The aim is for clear accountability chains and management arrangements that are suitable and sufficient for the activity being conducted. This may result in changes to the DSA02 DMR regulation set.

Submarine Production

A risk-based Intervention Audit of Submarine Production (SMP) in October 2020 followed concerns over several ASTUTE class issues, including the potential exposure of the ship's crew and contractors to Benzene during the build process. It was found that there was an effective process in place for the management and articulation of programme risks at the strategic level, but this was not mirrored where there was a concomitant safety risk. Whilst

⁵⁶ Baseline review of Headquarters Director Overseas Bases, October 2020.

specific individual safety risks were being managed and articulated at a lower level, the deficiency at strategic level gave the perception that safety is not of strategic importance. Linked to this was a non-compliant Safety and Environment Case Report (SECR) process which did not allow for effective articulation of the overarching safety risk arising from the known supplier quality deficiencies; which are a key focus of some programme risks. Closely allied to the deficiencies identified in the management arrangements were deficiencies identified in the assurance processes both at 1st and 2nd Party level. A lack of resourcing and prioritisation had also meant that environmental management arrangements were insufficient. It is felt that these findings were likely to have wider applicability across the maritime build enterprise.

Evidence of Legislative Compliance

Evidence of legislative compliance management across the domain was not strong. A recent DMR Compliance Improvement Programme has increased engagement at senior levels, particularly around the major platforms. More compliance statements are being inputted into the Defence Legislation Support Tool although statement quality continues to be an issue. It is hoped that DE&S Ships' Project Minerva and the DMR Guide to Compliance will assist. Despite the focus at senior levels, there remain significant areas where little evidence of compliance management can be seen.

Environmental Protection, Management and Process

In 2019/20, DMR conducted an Environmental Baseline Review. Of the 27 recommendations, 19 have seen notable improvement. DG Ships initiated a 2-year programme which has seen significant improvement despite SQEP issues. SDA continue to strengthen their arrangements by defining environmental responsibilities and establishing a resource plan.

As part of this domain risk, DMR conducted two studies which independently verified the NSC's Environmental Protection Plan against two of the three environmental objectives. F-Gas and oil spills are reported below, with hazardous waste management being raised separately. Between 1 January and 31 December 2020, there were:

- 68 F-Gas releases, resulting in 4.194 metric tonnes of F-Gas being released into the atmosphere. This has an approximate global warming potential (GWP) of 8,766 metric tonnes of carbon dioxide, marking a reduction of 46% compared to records in 2019.
- 77 hydrocarbon spills overboard across the Defence maritime domain, resulting in the loss of 2,100 litres. This is a reduction of 20% compared to records in 2019.

Maritime Autonomy & Experimentation

There has been a significant increasing in acquiring and developing Maritime Autonomous Systems (MAS). Thus far there has been inadequate evidence of Accountable Persons having suitable management arrangements and assurance activities in place and a demonstrable non-compliance with some DSA02 DMR regulations. DMR are working closely with Director DEVELOP, MOD acquisition teams and the Navy Safety Centre to ensure regulatory requirements are understood, that there are robust and proportionate

safety and environmental management systems in place for trials and operation of equipment, that roles and responsibilities are correctly articulated, and that documentation and evidence is in place at the applicable milestones. Work has been started to develop the DMR Regulatory, Guidance and Assurance foundation before further issues arise.

Domain SQEP – NCHQ, DG Ships, SDA, NAG

Previous reports have recognised SQEP as a continuing issue and noted the impact of the remedial programmes, especially in the military domain, would take time to deliver. SQEP has again become noticeable as a key issue in the domain especially in HS&EP management. Within DD Ships, SQEP has been constrained due to Transformation and has meant several Corrective Actions have not been addressed. Within DG Ships there was evidence that the number of staff in HS&EP posts is improving slowly, but there are ongoing problems; especially with the competence boards used to confirm incumbents are deemed to be suitably qualified and experienced. DG Ships has issued a challenge to the organisation to have the situation remedied in a six-month window.

Issues have also been reported in the SDA and a number of DMR's Duly Authorised Organisations have also reported SQEP as an issue and that is impacting on their ability to carry out their roles. Where SQEP is in place, as in DD SM for example, Corrective Actions are being resolved.

Hazardous Materials Management

Initial indications of issues surrounding legacy uses of hazardous materials were raised during an assurance review of the management of asbestos across the DG Ships and the SDA, as part of the wider DSA activity looking into the management of asbestos in Defence. It was concluded that overall, asbestos is being managed effectively but that there were some risks that should continue to be monitored. A key issue, highlighted repeatedly throughout the review, was the resourcing of hazardous materials management. The significant increases in environmental and safety legislation in recent years have placed a significantly greater load on safety managers and without dedicated resource, legacy platforms will continue to struggle to keep hazardous material records under annual review and achieve the targets set by DG Ships and SDA.

Significant concern has been raised around prohibited materials being introduced onto new platforms, specifically Type 26, and legacy Queen Elizabeth Class and Type 45 platforms. There are indications of a lack of understanding of the default requirement for legislation compliance when applied to Defence activities. The result is that hazardous material issues are often not identified until capabilities reach service and require significant resources to rectify.

There are two underlying issues and both are linked to the recurring theme of legislative compliance:

- There is a misunderstanding around the applicability of Derogations, Exemptions and Disapplications (DED). The SofS's Policy Statement for HS&EP is clear in that in the UK, Defence will comply with all applicable HS&EP legislation and that where there are DED, Departmental arrangements that produce outcomes that are, so far as is reasonably practicable, at least as good

as those required by UK legislation will be maintained.⁵⁷ There are examples of contractors 'using the DED' when delivering new systems without ensuring that the Accountable Person knows or is accepting the associated risk.

- There has been an assumption that because prohibited substances have been used previously, it is acceptable to continue to use them in existing Government Furnished Equipment in new uses. However, the opposite is true: use on existing platforms should be phased out in line with legislative requirements, and the default position will be full compliance with legislation on new platforms.

A fleet-wide approach to resolving the problem is needed to identify and address legacy equipment that either contains prohibited hazardous materials or where hazards are unknown due to a lack of data. There is evidence to suggest that the problem is due to poor requirement setting and management from the outset of the concept phase, so a more rigorous approach in the early acquisition stages is needed to ensure legislative requirements around hazardous materials are properly understood and taken forward.

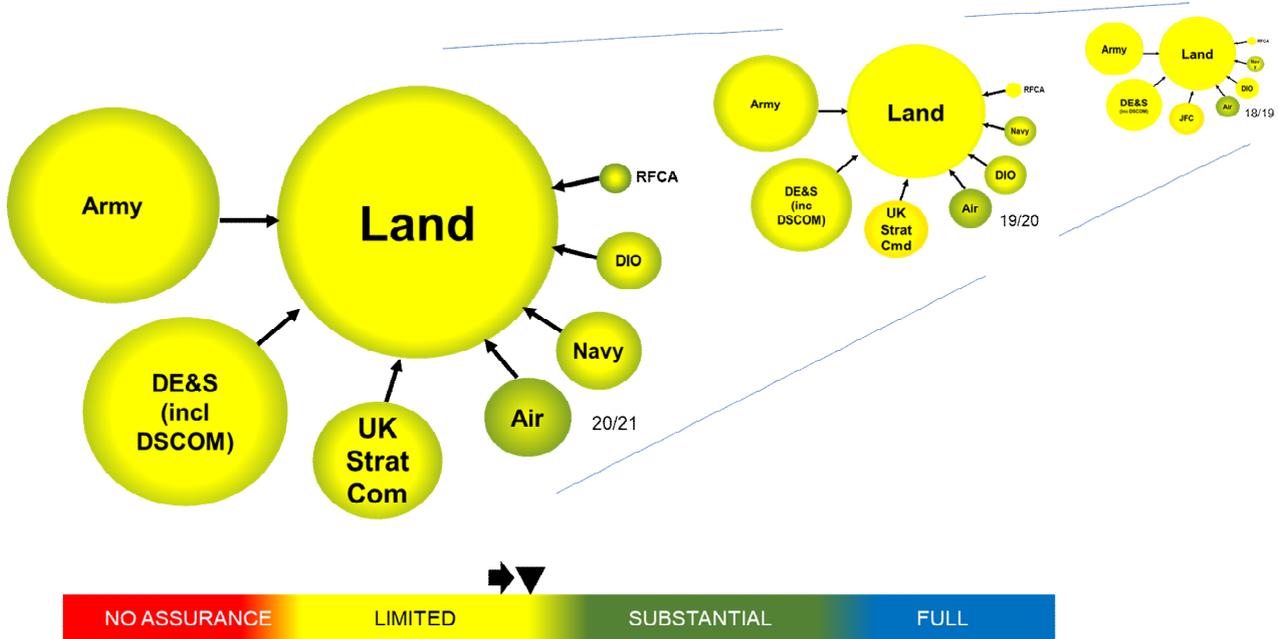
Whilst this issue is about the use of hazardous materials, in most cases there are indications that there is an underlying lack of understanding of the requirement for legislative compliance when applied to Defence activities. The result is that issues are often not identified until capabilities reach in-service and require significant resource to rectify.

⁵⁷ MOD, [Health, Safety and Environmental Protection in Defence](#), 2020, para 3

3.4 – Land

3.4.1 Land Assurance Summary

LIMITED Assurance – in spite of COVID-19, progress observed in most key areas this year, but improvements still required in SQEP, 2nd Party Assurance/3rd Party Assurance and Safety Case Management to achieve Substantial by April 2022.



Activity across Defence has been curtailed for much of the year due to COVID-19, nevertheless, progress across all key areas is being made. Key indicators of this include:

- **SQEP.** The appointment of a number of key individuals in Defence organisations including a Land Systems Safety Inspector in the RAF as part of the Air Inspector Model, and a lead for infrastructure in the RFCA.
- **Assurance.** The plans presented to DSEC by Navy, UK StratCom and DIO to get to Substantial assurance demonstrate strong understanding of and commitment to resolve the outstanding issues.
- **Safety Case Management.** The DE&S/Army joint study into Safety Case management and the re-alignment of areas of accountability in Navy Command are positive steps towards better safety case management.

The outlook is very positive and combined with the proposed improvements in the Defence Land Safety Regulator (DLSR), it is forecast that the Land Domain is capable of achieving Substantial assurance in the coming year.

3.4.2 Land Domain Scope

Most of the activity in the Land domain is regulated by the UK's statutory regulators and not Defence, as there are fewer Derogations, Exemptions or Disapplications than in other

domains. As a result, a high proportion of safety-related incidents and injuries in the Land domain occur outside Defence regulated areas. The DLSR regulates in four areas:

- The Fuel & Gas Safety Regulator (FGSR) for Fixed Fuel and Liquid Petroleum Gas (LPG) Infrastructure.
- The Land Systems Safety Regulator (LSSR) for Land Systems Acquisition, Maintenance/Inspection and Disposal.
- The Movements & Transport Safety Regulator (MTSR) for Movement and Transport activity across all modes, including the carriage of dangerous goods.
- The Adventurous Training Safety Regulator (ATSR) for Defence Adventurous Training (AT) Centres.

All Military Commands, as well as the Reserve Forces and Cadets Associations (RFCA), operate in some aspect of the Land domain with significant acquisition and support activity from DE&S and infrastructure management and maintenance by the DIO.

3.4.3 Regulator Activity

During the reporting period the DLSR conducted 98 audits and inspections consisting of 67 Fuel & Gas Infrastructure (FGI) installations, 20 Movement & Transport activities, 11 AT Centres, and approved 21 requests for exemptions from statutory regulations.⁵⁸ The development of new ways of working and the implementation of remote assessment and assurance mechanisms have enabled critical Defence activity to continue despite pandemic-related restrictions.

There were three Urgent Improvement Notices (UINs) and 16 Improvement Notices (INs) issued during the year. 25 Enforcement Notices remained unresolved as at 1 April 2021. The pattern of enforcement remained stable across the year, and similar to last year despite the impact of the coronavirus pandemic.

3.4.4 Findings

Based on DLSR assurance activity, the overall assurance level for all areas of Defence across land domain remains at **LIMITED** assurance. AT activity remains at Substantial assurance and other areas have demonstrated positive movement along the Limited assurance continuum towards Substantial.

Despite COVID-19 restrictions, there has been considerable positive activity in the Land domain with several examples of good progress against the issues raised in the 2019/20 report. For example, the transport of Dangerous Goods (DG) has seen marked improvement, particularly where Command Dangerous Goods Safety Advisors are appointed. Despite this progress, common themes remain which will need to be overcome to achieve Substantial assurance; these are outlined below.

⁵⁸ Head DLSR approves routine exemption requests on behalf of the SofS under Carltona principles at the Land Exemptions Committee.

SQEP

Lack of SQEP individuals in key posts continues to be an issue, especially in the Fuel & Gas and Movements & Transport areas, particularly in terms of currency and experience. This remains a general concern raised by both the regulator and the stakeholder community. If Defence is to ensure that such activities are conducted safely and effectively the requirement to have competent personnel for all aspects of activities (including management and supervision) remains key. For example, over half (51.5%) of the Fuel & Gas Major Non-Compliances identified resulted from either skills not remaining up-to-date or personnel not being adequately trained.

2nd and 3rd Party Assurance

There are still inconsistencies regarding the conduct of 2nd Party assurance activity across Defence, and it remains neither clear nor consistent across all organisations. In some instances, 2nd Party Assurance arrangements are insufficient to provide a complete safety picture, leaving the Chain of Command unclear on the safety standards being achieved by their organisation. Initial benchmarking activity and engagement aimed at identifying the Organisation and Arrangements (O&A) for Movement, Dangerous Goods (DG) and Transport activity identified inconsistencies across Defence relating to the level and effectiveness of 2nd Party Assurance. In Fuel & Gas areas, a direct relationship can generally be drawn between effective 2nd Party Assurance and quantity of Major Non-Compliances found. Defence organisations are encouraged to conduct a review to assess 2nd Party Assurance effectiveness.

In several areas in DLSR, 3rd Party Assurance is being conducted through an extrapolation of permissioning activities and DLSR needs to improve its mechanisms to be able to both conduct effective 3rd Party Assurance, as well as to understand what 2nd Party Assurance is being conducted.

Safety Case Management

Safety Case Management continues to be a theme identified by both Regulators and Defence organisations as an area of concern. The differences in approach and maturity of capability development between Defence organisations has led to lack of clarity over roles and responsibilities. This in turn has hampered the effective management of safety cases in certain capabilities. There has also been much good work in this area which bodes well for the future. Examples include:

- The joint study into Safety Case Management from DE&S and Army HQ on roles and responsibilities has added significant clarity in this area.
- The introduction of the Head Engineering Assurance post in DE&S Land Domain will reinforce 2nd Party Assurance in this area and greatly assist 3rd Party Assurance delivery.
- The presentation of plans to achieve Substantial assurance at DSEC by Navy, UK StratCom and DIO demonstrate excellent progress in this area and plans from the other Defence organisations are expected within the year.

Legislative Compliance.

DLSR noted some continuing issues in the support to and knowledge of Legislative Compliance this year, including:

- A limited review of 17 projects in the Land Equipment Operating Centre (LEOC) revealed a lack of capacity and understanding of some aspects of Legislative Compliance with some projects holding out of date Legislative Compliance cases. This was linked to the complexity of these cases and in some areas resource and cost.
- The increase in early engagement between applicants to the Land Exemption Committee (LEC) and DLSR in preparation for exemption cases was a great improvement but also resulted in an increase in cases being withdrawn at short notice. This trend was ascribed to teams identifying increased numbers of issues through the early engagement that should already have been addressed.

It is noted that LEOC have allocated greater resource to this area during the year and it is anticipated that many of the concerns in this area will be addressed as a result and of note, recent submissions to the LEC have benefitted from this new approach.

Fuel & Gas Infrastructure

The key issues identified across Fuel & Gas infrastructure are: 175 non-compliances of emergency procedures across 45 sites; 159 non-compliances of infrastructure siting and design issues across 39 sites; and 87 non-compliances over 43 sites relating to the safe regulation of Explosive Atmospheres⁵⁹. These provided the leading source of Major Non-Compliances (MNCs) found in Defence organisations during permissioning inspections. It should be noted that 100% of inspections resulted in at least one MNC being identified, even if sites were allowed to continue operating. The DIO Fuel & Gas Ten-Year Infrastructure Plan is starting to take effect as evidenced by a reduction in enforcement notices issued due to failing infrastructure.⁶⁰

Road Traffic Collisions

Whilst deaths from Road Traffic Collisions (RTCs) have decreased over the last 35 years, they remain one of the top causes of Armed Forces fatalities.⁶¹ DLSR continues to assist

⁵⁹ An explosive atmosphere is defined as a mixture of dangerous substances combined with air, under atmospheric conditions, in the form of gases, vapours, mist or dust in which, after ignition has occurred, combustion spreads to the entire unburned mixture. They are managed under the ATEX (Explosive Atmospheres) 95 and 137 Directives and the Dangerous Substances and Explosive Atmospheres Regulations 2002 (DSEAR).

⁶⁰ Out of the 88 UK projects forecast for completion in FY20/21 (Command Infrastructure Delivery Plan (CIDP) Rough Order of Cost (ROC) was £20M), 74 Projects will be completed in year and 14 projects across the TLBs will slip into FY21/22 programme due projects not being delivered on time due to C-19 restrictions. Of 25 overseas projects forecast for completion in FY20/21 (CIDP ROC was £10M) 4 Projects will be completed in year and 21 projects will slip into FY21/22 due to C-19 restrictions. While 32% of projects were delayed due to COVID-19, there was still a significant investment and improvement in the Defence fuels and gas infrastructure estate.

⁶¹ MOD, [Deaths in the UK regular armed forces: Annual summary and trends over time 1 January 2011 to 31 December 2020](#), 2021.

Director HS&EP in developing the Defence Road Safety Strategy, aiming to establish a robust framework of education, enforcement, engineering, engagement and evaluation initiatives and programmes to eliminate land traffic fatalities and reduce serious injuries.

The introduction of electronic reporting via e-IMPACT⁶² has enabled the alignment of RTC reporting with the standard AAR reporting period. However, to ensure full and accurate reporting this report covers the period from 1 January 2020 to 31 March 2021; a 15-month period, due to the now-rapid availability of data⁶³.

During this extended 15-month reporting period there were a total of 3333 on-duty RTCs reported to the IMPACT Data Cell (IDC) resulting in a total of two fatalities and 82 injuries. This is an average of 222 RTCs per month. This represents a significant reduction compared to the 2989 RTCs (249 per month) reported in a 12-month period last year, but it is too early to tell if this decrease is solely related to reduced activity caused by the pandemic.

There have been ten serious incidents of involuntary vehicle movement reported this year, one of which resulted in a fatality. These are either as a result of inadequate load restraint (despite processes established in response to previous incidents of inadequately restrained vehicle loads) or occurred whilst vehicles were being manoeuvred. DLSR Inspectors have routinely taken dynamic enforcement action when personnel have placed themselves, knowingly or otherwise, in positions of danger.

Management and use of containers

There have been 12 incidents of incorrectly loaded containers reported, including occurrences of inadequate load restraint and undeclared dangerous goods. The most extreme case endangered a ship at sea, which led to significant damage to major equipment, vehicles and materiel, leading to an adverse impact on operational capability. This event had a potential risk to life, legislative non-compliances and the potential for considerable reputational damage to Defence.

Adventurous Training and High-Risk Sport

The first half of a review into High-Risk Sport was completed.⁶⁴ Although it was not possible to undertake the second half of the review due to the coronavirus pandemic, it was identified that some form of 3rd Party Assurance regime for selected high-risk sports would be welcomed by the three heads of single Service sport. The roll out of this work strand is in progress and has overtaken the requirement to complete the review.

Improved access to Defence Statistics (Health) data showed that over the period 1 April 2019 to 31 March 2020, there were no Adventurous Training related deaths across

⁶² e-IMPACT is a web-based RTC reporting tool, which has replaced the legacy, paper based, F/MT-3 series. It is a Modified Off The Shelf Solution¹⁷ which offers a complete reporting, validation, archiving and analysis solution. The system uses the latest technology which can be accessed across multiple platforms. Formally introduced to Defence on 1 Jul 20, e-IMPACT has been a huge success attracting positive comments from transport managers and individual users alike. Since launch, there have been 2174 RTCs recorded on the system. Immediate benefits include savings in time and resource and accuracy of data.

⁶³ Subsequent years will report 12 months, following the financial year timeline.

⁶⁴ Directed as a result of a DAIB investigation into a Luge accident that occurred in early 2018.

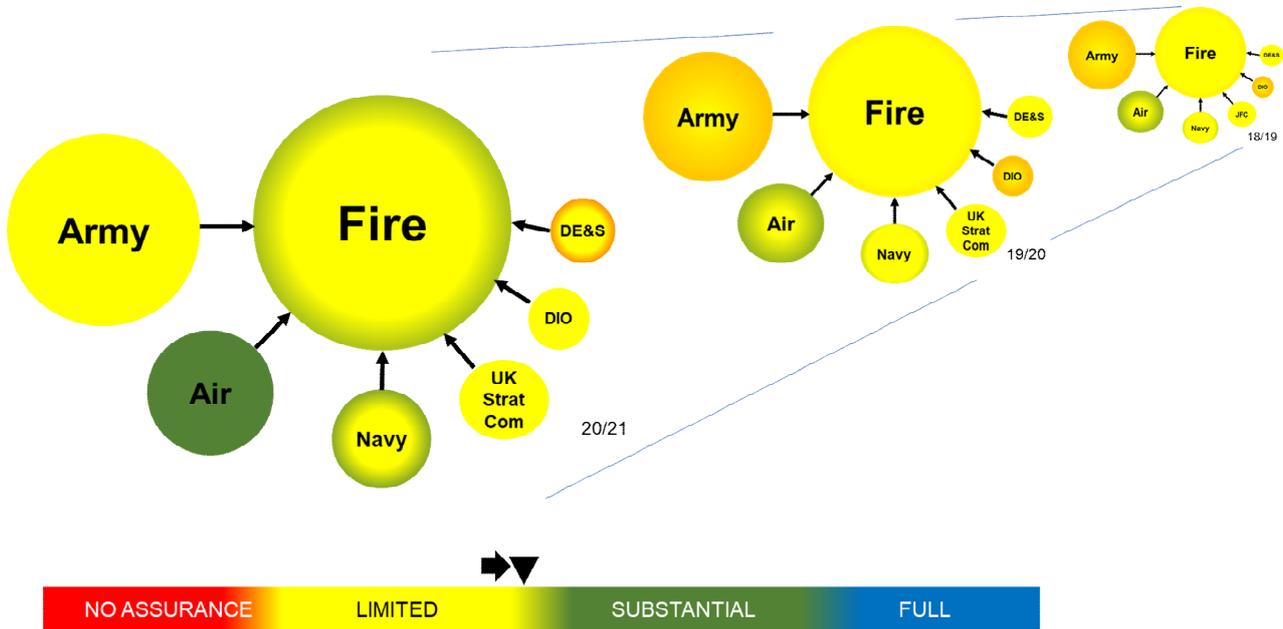
Defence. However, there was 446 reported injuries to personnel, of which 68 (15%) were designated serious. Extrapolation to Army activity demonstrates that overarching rates across all nine core Adventurous Training activities⁶⁵ per 1000 participants are **0.64** and **0.60** for Unit and Centre delivered activity respectively. These are encouragingly low figures and it is hoped to be able to access data for the other Services for the next AAR.

⁶⁵ Offshore sailing, sub-aqua diving, canoeing/kayaking, caving, mountaineering, mountain biking, skiing, gliding, and parachuting/paragliding.

3.5 – Fire

3.5.1 Fire Assurance Summary

LIMITED Assurance – progress has been observed in most key areas, including the development of assurance processes for fire safety management.



Evidence suggests that the gradual improvements seen in Fire Safety in Defence have continued. Dedicated Fire Safety SQEP in Safety Centres has been re-established and the formation of a Building Safety Regulator should help consolidate infrastructure compliance. The commitment to improving the Fire Safety culture, especially in Single Living Accommodation, must be maintained.

The change-management challenges presented by the Defence Fire & Rescue Project will continue until Full Operating Capability is achieved and the DF SR will continue to monitor this transfer of contractual arrangements. The threat to training and operational capabilities of the Aerodrome Rescue Firefighting services continues to be an area of concern and without intervention could affect the competence of firefighters, and ultimately Air Safety. Overall, despite some encouraging signs, there are still deficiencies in Fire Safety arrangements that require addressing if Defence organisations are to reach Substantial assurance.

3.5.2 Fire Domain Scope

As a statutory regulator⁶⁶ the Defence Fire Safety Regulator's (DFSR) role is to provide assurance that Defence is compliant with UK law and Defence Fire Regulations for both Fire Safety and Fire and Rescue services. This includes the requirement for general fire

⁶⁶ Under the Regulatory Reform (Fire Safety) Order 2005 and the Fire Scotland (Regulations) 2006 the DF SR has duties as the Enforcing Authority for UK Fire Safety legislation. This differs from the other Defence safety regulators who regulate where Defence has a disapplication, exemption or derogation from law.

precautions to be taken by Responsible (Accountable) Persons⁶⁷ and the duty to consult with the DFSR for proposed building works. These duties are discharged through Risk Based (Fire Safety) Audits and an agreed formal consultation process.⁶⁸ Post-fire audits may also be undertaken⁶⁹ to determine possible failings in compliance and suitable corrective/enforcement action where appropriate. The DFSR works closely with its statutory peers and is represented on the National Fire Chiefs' Council (NFCC).

3.5.3 Regulator Activity

Because of COVID-19, the DFSR adapted the way it conducted its operations. New assurance methods were identified that, although not providing the same level of assurance, maintain an acceptable level in the circumstances. Examples include fire safety self-assessments and remote audits.

The DFSR conducted 72 Risk Based Audits during the reporting year, 54 less than the previous year, which resulted in three Enforcement Notices being issued. 844 consultations on building works were provided and Fire Safety Inspectors were appointed on 532 occasions to advise on the more technical and complex projects. 19 Fire & Rescue oversight and surveillance audits of Defence Aerodromes and Major Accident Control Regulations sites were conducted.

3.5.4 Findings

Fire Safety

DFSR Fire Safety audits have again found that most areas examined were 'broadly compliant'.⁷⁰ Compliance rates continue to recover slowly from the decline identified in previous reports and small improvements in the areas of fire safety management and maintenance were seen. Fire Safety Management across Defence is therefore assessed as **LIMITED** assurance, largely unchanged from last year's assessment.

Fire & Rescue

Fire & Rescue is assessed as **LIMITED** assurance. Fire & Rescue audits of Aerodrome Rescue Firefighting (ARFF) capabilities have seen a significant improvement since last year, though there are still areas of concern that need addressing as a priority. These include: the shortage of suitable training infrastructure and facilities; inadequate support and maintenance of the existing training infrastructure; inability to capture firefighting effluent; and deterioration in safety-critical competencies across the Fire & Rescue Service. There was a small reduction in Fire & Rescue enforcement activity this year. Although reduced audit activity is a factor, the improvements in the delivery of fire & rescue services is the main driver in these reductions. There has also been a significant

⁶⁷ The role of Accountable Person is a legal duty of appointed Heads of Establishment (HoE) or project leads for proposed building works. The Defence terminology of Accountable Person (AP) is used in this AAR is the same as the fire safety legislative terminology that cites the Responsible Person (RP).

⁶⁸ [The Regulatory Reform \(Fire Safety Order\) 2005](#), Article 45; and [The Building \(Scotland\) Regulations 2004](#), Regulation 11.

⁶⁹ In conjunction with the Defence Accident Investigation Branch for major incidents.

⁷⁰ Broadly compliant is NFCC terminology defined as few deficiencies found during audit and those minor in nature only.

increase in the number of enforcement actions being rectified in the timescales provided which shows the importance organisations, and Accountable Persons in particular, are taking to improve their Fire & Rescue safety cultures.

The Defence Fire Rescue Project (DFRP) has moved into the Mobilisation, Migration and Transformation phase and commenced transition of fire and rescue services delivery to Capita Fire & Rescue. DFRP has seen several key milestones achieved:

- Initial Operating Capability for Service Delivery;
- Transfer of staff from MOD to Capita Fire & Rescue;
- Relocation of the centralised Defence Fire Training from Manston to the Fire Service College in Moreton-in-Marsh and the closure of Manston as a fire training establishment; and
- Commencement of the rollout of the new fleet of fire and rescue vehicles.

SQEP

Although the appointment of competent persons has improved, there is still concern about the level and availability of fire safety management SQEP within the areas of responsibility. Assurance activity continues to identify failings in performance and compliance against many of the key regulatory articles.⁷¹

SLA

After a review in November 2020 the recommendations of the 2018 DSA-led review of Fire Safety in Single Living Accommodation (SLA) were closed.⁷²

Infrastructure

The Government has recently asked the Health and Safety Executive (HSE) to establish a new Building Safety Regulator⁷³ in the wake of the Grenfell Tower fire and following recommendations in the 'Building a Safer Future' report by Dame Judith Hackitt.⁷⁴ The new Building Safety Regulator will see the functions of Building Control, Health & Safety and the Fire Safety Regulator being brought together. The DSEC has agreed to a Defence Joint Competent Authority (DefJCA) utilising a regulatory framework model that mirrors

⁷¹ Among common factors observed are the ability of occupants of SLA to silence and reset fire alarm panels before a full, or any, investigation has been completed to determine the cause of the fire alarm, and failure to manage sources of ignition such as use of candles in rooms, tumble dryers and cooking appliances resulting in fire incidents. Failure to recognise and report faulty fire doors is also common. This could result in fires and smoke spreading rapidly from the room of origin into escape routes; thus, placing all the occupants at risk when a fire occurs. Failure to control and check the contractors' scheduled maintenance visits to initially confirm the check has taken place and secondly to gain confirmation that the systems are in working order. Failure to request a review of the FRA when something has changed, or a matter of concern is raised that requires SME advice.

⁷² MOD, [Fire Safety Review – Defence Single Living Accommodation](#), 2018.

⁷³ HSE, www.hse.gov.uk/building-safety/index.htm, accessed 10 May 2021

⁷⁴ Hackitt, [Building a Safer Future](#), 2018

that of the Building Safety Regulator. Work within Defence has commenced to align processes and procedures to the Building Safety Regulator. The DFSR Duty to Consult model was reviewed and now sees more responsibility resting with Building Control Advisors.

There have been improvements to the fire safety consultation system which will aid cross-regulatory collaboration and support the development of 'Safety Cases' and 'Fire Safety Files' which will become a legislative requirement in the near future.⁷⁵ The amended procedure retains the benefits of the Duty to Consult process but will eradicate weaknesses and simplify the process for those who fulfil a function to provide verifiably safe buildings for Defence purposes. DIO Building Standards and DFSR remain engaged with HSE, Ministry of Housing, Communities & Local Government and members of the NFCC as the Building Safety Regulator is developed.

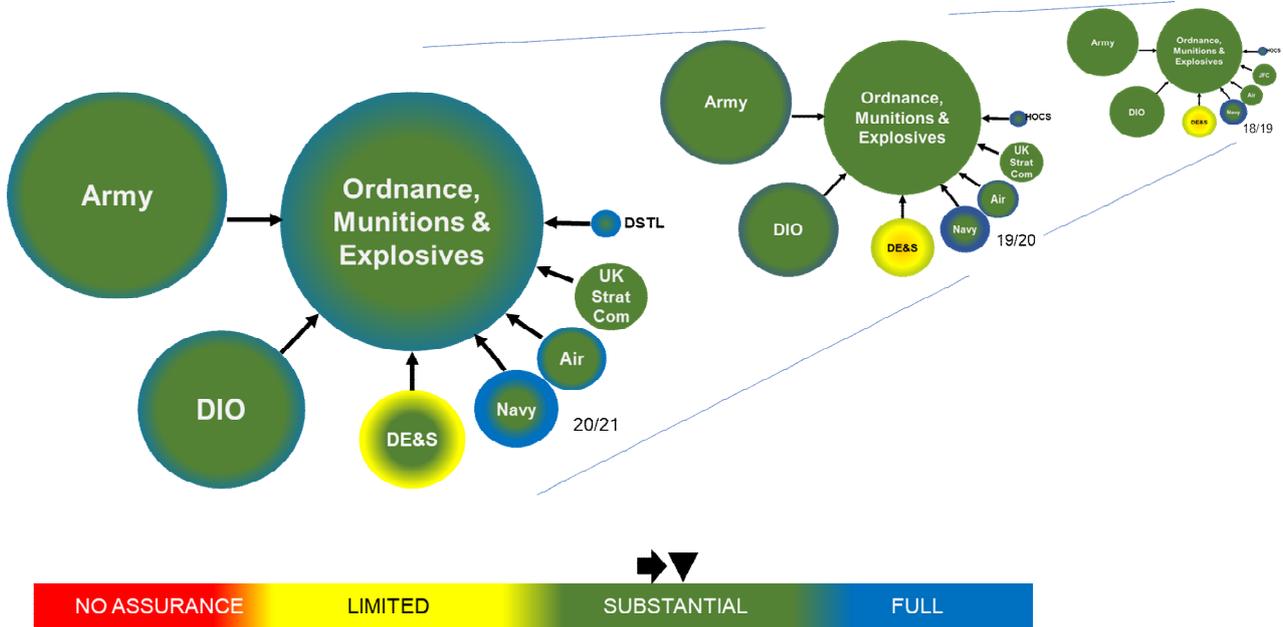
The DFSR continues to deliver 'inform and educate' sessions with DIO Project Managers (PM) to help improve the understanding of the fire safety duties associated with infrastructure. These sessions continue to have a positive effect on compliance with fire safety regulations; particularly in the overseas and visiting forces areas where unique challenges sometimes exist. This has resulted in fewer instances where PMs have failed to follow due process.

⁷⁵ [Draft Building Safety Bill](#), 2020

3.6 – Ordnance, Munitions & Explosives

3.6.1 Ordnance, Munitions & Explosives Summary

SUBSTANTIAL Assurance – similar to last year, with notable improvement in DE&S assurance of acquisition



The arrangements for the management of in-service and operational safety of Ordnance, Munitions & Explosives (OME) at Explosives Establishments, the safety of Defence Ranges, and compliance with Major Accident Control (MACR) are robust and provide Substantial assurance. Arrangements for management of OME acquisition has improved significantly and provide Substantial assurance, improved from Limited assurance reported last year.⁷⁶ SQEP shortages in the niche OME cadre, maintenance of infrastructure and the effects of change all continue to present challenges. There is some evidence of an improving safety culture in managing OME on operations, with a better understanding of the risks being articulated through the recently introduced DOSR waiver process. Overall, the OME domain continues to demonstrate **SUBSTANTIAL** assurance of HS&EP.

3.6.2 Ordnance, Munitions & Explosives Scope

Defence has a range of Derogations, Exemptions and Disapplications from statute requiring regulation of all Defence Ordnance, Munitions & Explosives (OME) activity from acquisition to disposal. This also includes regulating all MOD explosives storage sites and facilities involving explosives activities, ranges used for live firing, laser safety and Major Accident Control (MACR) establishments. This is conducted by the Defence OME Safety Regulator (DOSR). All Military Commands and most of the Enabling Organisations in Defence have some activity or involvement in the OME area.

⁷⁶ This was due to shortfalls in 2nd Party Assurance, with evidence to assure the inherent safety of OME items being procured not being subject to proper independent scrutiny.

3.6.3 Regulator Activity

During the reporting period the DOSR conducted 468 audits and inspections across Defence: 441 of its ranges, 20 of its explosives' establishments and seven of its MACR sites, spanning the seven major Defence organisations. This year DOSR continued assurance activity on the acquisition of OME systems in Defence, with 1038 of 1296 items (80%, an improvement of 12% on last year) meeting the requirements for assurance during acquisition. As a result of audit and assurance activity, this year DOSR issued five new Prohibit Notices and two new Improvement Notices. Two previously issued Improvement Notices and three Prohibit Notices have been lifted during this reporting period. In addition, DOSR provided advice and assistance for Operations SHADER, TORAL and NEWCOMBE, and to the Joint Counter Terrorist Training Advisory Team. DOSR continues to work with NATO committees and groups on common standards and methodology for Explosives Safety Cases (ESCs). It also provided OME safety management advice and briefings to the Ukraine Ministry of Defence in collaboration with the NATO Project Office.

3.6.4 Findings

The overall assessment for OME HS&EP across Defence activities is **SUBSTANTIAL** assurance, the same level reported last year. For OME Acquisition the assessment is now also Substantial, changed from Limited assurance reported last year. This is due to DE&S implementing a robust 'return to green' plan to address the previous lack of 2nd Party Assurance in Defence as a result of inadequate use of OME Safety Review Panels (OSRP) for independent peer review of documentary evidence to assure the inherent safety of OME items being procured. The proportion of OME assets compliant with the requirement to have a valid OSRP Assurance Statement (OAS) varied between DE&S Operating Centres, and overall there are now 80% of items in the Defence OME inventory that are OME Acquisition compliant. This represents a 12% increase since last year (20% increase over two years), when the deficiencies in OME Acquisition were first highlighted. Disappointingly, the two Operating Centres with OME assets in Director General Air's domain remain at No Assurance as reported last year. For In-Service and Operational Safety, the picture remains positive, with an overall assessment of Substantial assurance and three Defence organisations maintaining Full assurance as per last year. The assessment for Defence Ranges is also Substantial assurance, with all Defence organisations achieving this level. Compliance with MACR regulations across the 27 Defence MACR sites is assessed as Substantial assurance, with four Defence organisations maintaining Full assurance for their sites compared to none two years ago. DOSR has refined its understanding of the number of Explosives Establishments and Defence Ranges in its scope, reducing the total number of Ranges recorded by 50 and making changes to the way explosives quantities are represented. As a result, while Heads of Establishments hold licences for individual explosives facilities/buildings and a single establishment may have multiple licences and registered locations (for small arms ammunition/low risk items), the establishment is the area under control of one person, with the authorisation to hold licences, and has a separate and individual Unique Identification Number (UIN). Inspections are required every two years for licences and three years for registered locations, with DOSR independent sampling carried out on a risk-based approach. These changes have led to a more accurate assessment of OME assurance across Defence, with better electronic record-keeping and incremental improvements in analysis and exploitation of data for a risk-based approach to assurance.

Safety Data Management

One area where there is evidence of a potential increase in safety threats is in the management of safety information; specifically the identification, obtaining, updating, configuration control and review of safety related documents and information. Examples include upkeep and review of Safety and Environment Case Reports (SECR) in DE&S and submission of such information to the OSRP for 2nd Party Assurance. DOSR is currently reviewing the statutory requirements for safety-data management in relation to explosives and any applicable DEDs for the MOD with a view to introducing proportionate regulatory oversight.

HS&EP Challenges for UK StratCom

Early engagement with the right people is key to reducing unnecessary risk referral and ensuring OME safety is seen as an enabler to operational capability, not an obstruction. UK StratCom now recognises this and has made significant improvements to their approach. One such example is the recent deployment of the UK Support Node (Africa) Ammunition Technician who has been deployed since January 2021. This post has already done much to improve OME safety, ammunition management and efficiency in these remote locations and is an excellent indicator that Operational OME Safety has a higher profile within UK StratCom. It is encouraging that UK StratCom are considering establishing their own Inspector of Explosives.

Certification of Equipment

A joint DSA, DE&S and SDA Tiger Team was tasked with arguing for the introduction of a proportionate certification process for Defence OME that will reduce overlaps and inefficiency in the current arrangements for assurance of OME, whilst simultaneously reducing both safety and project risk. This will be a process overseen by DOSR and will ensure that a competent and independent Defence OME Certifying Body (DOMECEB) determines the level of compliance of Defence OME against defined safety and environmental standards. This will also include an assessment of the safety management arrangements and limitations of use across the entire Manufacture to Target or Disposal Sequence (MTDS) resulting in the issue of a Certificate of Safety and Suitability for Service (OME) (CSOME). This certificate will be issued by a new Defence OME Certification Board to the OME Delivery Team Leader (DTL). It is anticipated that the Approval Authority and DTL shall obtain a DOMECEB recommendation and concurrence during the OME system safety case development and implementation as one of the exit criteria for a project completing an acquisition phase and advancing beyond the Key Decision Point (Outline Business Case Approval) and the Major Commitment Point (Full Business Case Approval). The certification project will enter its Demonstration Phase on 1 June 2021, with the aim to apply the process to a limited number of OME projects to prove feasibility, identify where the greatest return on investment would be realised, and to test whether the resource estimates and the accessibility to technical design data are sufficient to support a more widely applied process.

Culture and Behaviours

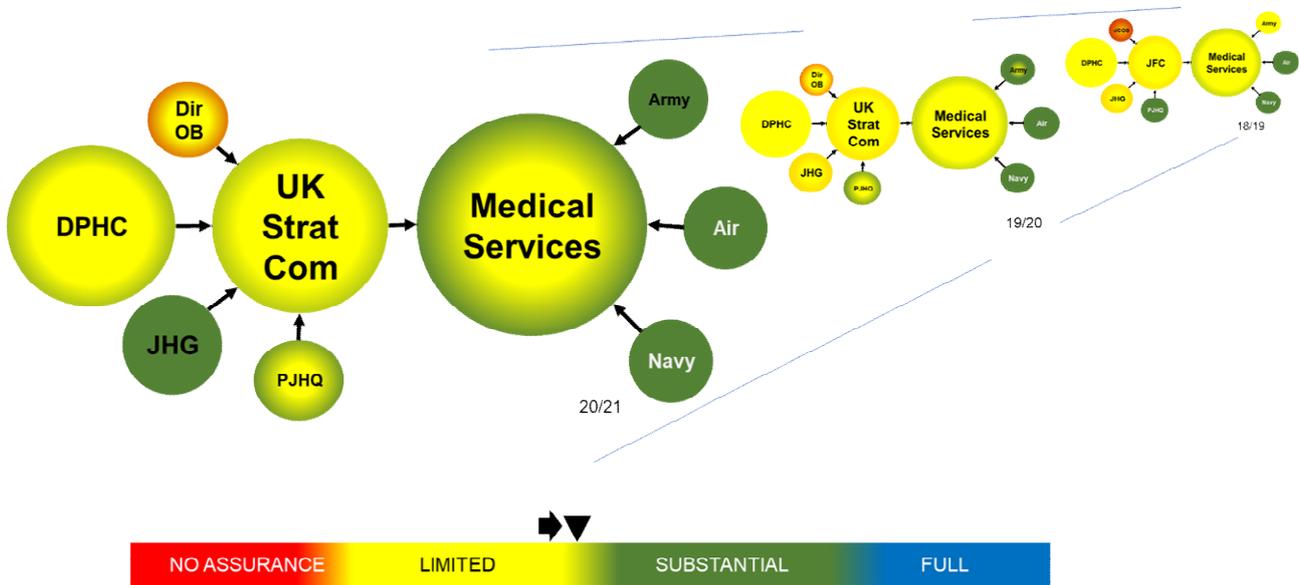
DOSR has expressed concern of what is considered to be an unjust perception that the culture of OME SQEP involved with making safety recommendations is over-cautious. It was noted (backed by an independent review) that extreme pressure on these individuals

used to be rare but now it is quite common and if the safety advice they provide is seen as 'bad news' the behaviours can get 'quite sour'. This could be an indication of the culture and level of SQEP and understanding of those receiving the advice, rather than those involved with making such recommendations being over-cautious. With increased levels of Commercial-of-the-Shelf procurement—such as with AMRAAM 120-C which was purchased using the Direct Commercial Sales process—there is often reduced design disclosure and therefore evidence. In the absence of that evidence, the result should be that the precautionary principle is applied when providing advice on service life or Air Carriage Hours. This is a basic tenet of UK law. It is for these reasons that advice is often seen as being conservative; not because of flawed science, incompetence or the culture of those providing safety advice to Delivery Teams and Duty Holders.

3.7 – Medical Services

3.7.1 Medical Services Summary

LIMITED – systems of internal control are established and demonstrate some evidence of maximizing patient safety and quality improvement, with significant areas of weakness



This year has been dominated by the response to COVID-19, which has presented challenges but also opportunities to both the Defence Medical Services (DMS) and DMSR. It has also highlighted key areas of focus for assurance and regulation and led to the development, refinement and evaluation of remote assurance methodologies that will have far reaching effects in terms of providing 2nd and 3rd Party Assurance beyond the UK firm base. Despite the challenges and operational tempo, the DMS have made progress in developing their assurance capabilities, but there are areas where improvement is required.

3.7.2 Medical Services Scope

The Defence Medical Services Regulator (DMSR) is responsible for the regulation, assurance and enforcement of healthcare delivered by the DMS to Service Personnel and Entitled Civilians. Through inspection, oversight and continuous surveillance, DMSR aims to provide the necessary assurance that appropriate standards of patient and Defence Medical Services (DMS) staff safety are maintained in the delivery of healthcare across Defence activities.

The DMSR is limited currently to 3rd Party Assurance of Defence Primary HealthCare (DPHC) provision of UK primary health, rehabilitation and dental care. It is conducted on the DMSR's behalf by the Care Quality Commission (CQC).

3.7.3 Regulator Activity

The ongoing coronavirus pandemic has had a marked impact on the delivery of healthcare during this reporting period. The DMS has provided both support to the nation in its

response to the pandemic as well as maintaining the delivery of healthcare to its own population. This has included the emergence of new and novel healthcare facilities and technology including: mobile Dental Readiness Preparedness Teams; Defence COVID Bedding Down Facilities (DCBDF) and the rapid deployment of healthcare technology including Attend Anywhere and eConsult. The DMSR has continued to provide regulatory oversight of healthcare where possible. This included working with the CQC to develop, pilot and deliver remote assurance audits to provide a level of 3rd Party Assurance of healthcare facilities in lieu of the pre-pandemic formal inspection programme. The same methodology was also utilised to undertake a virtual assurance audit of a DCBDF. This audit was undertaken by DMSR personnel and DMS Specialist Advisors, with the CQC operating in an advisory capacity, and represents a significant step forward in the ability of DMSR to provide assurance remotely. The assurance of these facilities and virtual healthcare provision is variable, and DMSR is considering the requirement for additional regulations to cover innovation and new clinical capabilities.

This reporting period has seen the lifting of four enforcement notices, with two Corrective Action Required notes and one Prohibit Notice in place. The lifting of the Prohibit Notice has been extended by unforeseen and unavoidable infrastructure issues such as the discovery of asbestos. The Safety Review Panel has matured and has had a positive impact in developing DMSR's relationship with the regulated community, embedding a strong advice and guidance model.

3.7.4 Findings

Based on DMSR's assurance activity and assessment of Defence organisation evidence presented, the overall assurance level for the DMS remains at **LIMITED** assurance. While there has been significant progress in some areas, many of the policies, procedures and key controls that should be operating within the DMS are not yet fully embedded and the evidence to demonstrate how they help the organisation manage its key safety risks is still being developed.

COVID-19

Provision of assurance in the absence of physical inspections, without which the CQC are unable to award a rating, has been challenging. This has led to the development of remote assurance audit methodology. This is undergoing further refinement and will enable DMSR to broaden its assurance capability beyond UK DPHC facilities, enabling a more robust future picture of operational and deployed healthcare safety.

There is substantial evidence to demonstrate that safety has remained an area of focus for the DMS during the Pandemic. There have been no formally reported cases of workplace transmission of COVID-19 to DMS personnel. Good practice has seen the development of auditing tools to monitor the availability of Personal Protective Equipment (PPE) for healthcare personnel, and organisational agility to respond to urgent safety notices for below standard PPE has ensured that staff and patient safety has been maintained.

As the effects and impacts of the COVID-19 pandemic on Defence start to recede, it must be appreciated that across all areas of the DMS will take time to recover, recuperate and regenerate the workforce and outputs following such a prolonged and intense period of operational healthcare activity. The broader Defence community must appreciate the direct

and indirect impact of COVID-19 with respect to the ability of the DMS to meet the outputs expected of the organisation as Defence returns to Business as Usual.

1st and 2nd Party Assurance

Understanding the scope and quality of 1st Party Assurance across Defence healthcare facilities is limited due to the variability of completion of self-assessments by Military Commands using the electronic Common Assurance Framework. Ensuring that the completion of these self-assessments are conducted by Military Commands will maximise the availability of assurance data to inform their overall safety picture and 2nd Party Assurance.

The coronavirus pandemic has further brought the issue of 2nd Party Assurance into sharp relief. The cessation of much 2nd Party Assurance activity has led to a reliance on 1st Party Assurance as a key intelligence source for assurance across healthcare. Although there is 2nd Party Assurance activity in most areas, the reduction in activity is acute and has been exacerbated by a lack of SQEP in key assurance roles. This situation is now improving as a result of active recruiting within DPHC and HQ DMS.

To enable the DMSR to reach Full Operating Capability in December 2020, the remaining 2nd Party Assurance activities were transferred to HQ DMS. HQ DMS has taken positive steps in fusing 2nd Party Assurance and the management of cross-cutting DMS issues with the establishment of a Healthcare Assurance Team, the Defence Authority Assurance Working Group (DAAWG) and the DMS Quality Assurance Committee (QuAC), these provide collective platforms for improved engagement cross-DMS.

Personnel

The availability of Suitably Qualified and Experienced Personnel (SQEP) is a perennial issue that features in almost all of DMSR's regulated community's assurance reports. Focused attention within this area is crucial for the DMS to retain its ability to deliver world-class medical care across the spectrum of the Operational Patient Care Pathway. There have been several advances within the DMS in this reporting period, the results of which will not be measurable for some time.

The release of the HQ DMS People Strategy, the HQ DMS People Plan, and the HQ DMS Communication and Engagement Strategy in late 2020 are welcomed. These core documents provide a framework within which HQ DMS's strategic people objectives can be articulated, measured, assured and communicated throughout the workforce.

Alongside issues surrounding SQEP, clinical currency is a further perennial issue featuring in many bi-annual assurance reports. Accessing quality clinical placements remains problematic, particularly within the Combat Medical Technician (Cbt Med Tech) population.

The availability and delivery of formal healthcare governance training remains a concern and should be prioritised and delivered as soon as possible.

Force Generation / Force Preparation

Permanent Joint Headquarters (PJHQ) Medical Branch have for a second year raised concerns regarding the lack of compliance with Force Health Protection requirements,

such as out-of-date vaccinations and deployment of personnel without appropriate medical risk assessments in place. This has required personnel to be returned to the UK from Operational Theatres, presented possible health and safety risks to those individuals deploying, and could add unnecessary pressure to deployed medical systems. The root cause of these Force Generation failures is not currently understood, and it is not clear if they are being reported as a health and safety concern outside of the Medical system. There remains a requirement for Force Generation Authorities and Commanders of deploying forces to conduct assurance activity to ensure that there is compliance with the relevant Force Health Protection Directives and to understand if they are carrying health risks.

Organisational Change

Headquarters DMS Group has three ongoing major change programmes: Programme CORTISONE; Defence Healthcare Delivery Optimisation (DHDO) programme; and Unified Career Management (Medical). Whilst all have been affected by COVID-19, they still continue at pace as do other broader change programmes impacting upon the DMS (for example, the Defence Estates Optimisation Programme). These programmes provide a continued backdrop of turbulence within the DMS and any potential safety impacts need to be understood and mitigated. Although acknowledgement and engagement has occurred, progress to complete Organisational Safety Assessments remains slow.

Innovation in clinical delivery concepts and technological advances are areas that need to be better understood to ensure that safety is considered, and the correct regulatory and assurance processes are in place prior to implementation. Work is ongoing by HQ DMS to identify the Clinical Safety provision required to support live health information services across the DMS both now and long-term.

Infrastructure

The maintenance of a safe and compliant healthcare estate that is fit for purpose is a crucial determinant for patient safety. There has been a marked effect on the delivery of infrastructure improvements across the DMS estate due to COVID-19, with many projects being delayed. This has resulted in many projects falling behind schedule or slipping into the next Financial Year.

Medicines Management

There have been a variety of recurring and long-term issues within the medicine management space, such as medication errors, an unresponsive supply chain, and a lack of training. The effect of COVID-19 has only compounded these issues which continue to be highlighted within CQC inspection reports and evidenced within bi-annual assurance reports. The DAAWG are establishing a working group to review issues and prepare an action plan for future endorsement by the QuAC.

Data Exploitation

The availability and consistency of key data and the subsequent analysis/exploitation of data remains a key issue in assuring safety in DMS healthcare. Despite some advances in this area, including planned programme developments in CORTISONE and DHDO and the

establishment of a DMS Chief Digital Information Officer, this shortfall in intelligence remains a key area of risk.

Medical Logistics and Acquisition

Defence assurance processes for the movement of medicines and their ability to meet Good Distribution Practice standards, particularly overseas, were again identified as an area for improvement. The coronavirus pandemic has brought the situation into focus, with cold chain management, training and human factors all being identified as factors.

Safety cases for Commercial-off-the-Shelf equipment used in the DMS, and statutory regulatory compliance for Medical Information Systems, are areas where there is a need to understand both the processes and assurance mechanisms to ensure safety compliance. Headquarters DMS have engaged with UK StratCom, DLSR and DMSR to discuss their plans to review and assure the Acquisition Safety Environmental Management System for medical equipment.

Medical Planning

The appropriate assurance to support Medical Planning is not yet fully in place, as evidenced by the findings and recommendation of two Service Inquiries. While the release of an updated policy by HQ DMS on the Competent Medical Authority (CMA) provides guidance on the role, its responsibilities, the knowledge, skills and experience required to undertake it, the appointment process, and the extent to which Defence organisations have implemented the role varies and further guidance is required by Defence organisations to ensure the interface between the CMA and the Duty Holders is properly articulated.

Overseas Healthcare

The shortfall in UK StratCom assurance capabilities for overseas capabilities continues and the lack of effective 2nd Party Assurance continues to be evidenced through self-reporting. In this area, 2nd Party Assurance is predominantly delivered through ad hoc reliance on other organisations.

A centralised Healthcare and Operational medical capability assurance team that coordinated all UK StratCom Healthcare Assurance assets would strengthen 2nd Party Assurance capability significantly.

Section 4 – DSA Maturity

4.1 – Context

The DSA provides a single independent focus for the regulation, assurance and investigation of Health, Safety & Environmental Protection (HS&EP) in Defence by bringing together the Defence Safety Regulators for seven distinct regulated domains and functions, the Defence Accident Investigation Branch (DAIB) and other supporting business units.⁷⁷ These Defence Regulators and functions have evolved independently alongside their statutory peers⁷⁸ for many years, in most cases predating the DSA, and have developed different approaches and cultures aligned to their regulated domains and functional areas. As the DSA has operational independence from Defence command chains it is well placed to identify cross-cutting issues and best practice, improve and simplify regulation, strive for parity across domains and highlight their relative importance to the Department. This report uses the same Defence Internal Audit-derived assessment grades as it does for the regulated domains to assess the maturity of the DSA.

The definition of DSA regulator and/or team maturity associated with each grade is shown in Table 4-1.

Regulator Maturity Levels	Definition
Full	Regulator has robust, effective regulations and processes. <i>Sufficient SQEP to deliver the full range of regulatory and risk-based assurance functions and have capacity to innovate. 3rd Party Assurance delivered is robust across all areas.</i>
Substantial	Regulator has effective regulations and processes but may have minor weaknesses. <i>Sufficient SQEP to deliver all essential regulatory and risk-based assurance functions. 3rd Party Assurance delivered is effective across all areas that are subject to audit.</i>
Limited	Regulator has effective regulations and processes but may have some major weaknesses/deficiencies. <i>May have SQEP deficiencies which necessitate prioritisation of outputs. 3rd Party Assurance delivered is supportive where audited.</i>
No Assurance	Regulator has ineffective regulations and processes or several major weaknesses. <i>Insufficient SQEP to deliver essential functions. 3rd Party Assurance ineffective and unreliable.</i>

Table 4-1 – DSA Regulator Maturity Levels

Understanding the capability and maturity of the regulating body provides a degree of confidence in the DSA’s assessment of assurance in each of its regulated domains. It also indicates the contribution Regulators make towards their Regulated Communities through

⁷⁷ Business Services Team for workforce, finance, facilities and infrastructure, Knowledge and Information Management, security and Occupational Health & Safety and Estates across 3 main DSA sites. Command Support Team for direct support to DG DSA, secretariat, communications, support to Service Inquiries and legal advice.

⁷⁸ The Health & Safety Executive (HSE), Civil Aviation Authority (CAA), Maritime & Coastguard Agency (MCA), Care Quality Commission (CQC), Vehicle & Operator Standards Agency (VOSA), Air Accidents Investigation Branch (AAIB), etc.

the quality and effectiveness of the 3rd Party Assurance they provide. The assessment covers the maturity of their regulations, use of Risk-based Assurance (RBA), alignment with the principles of the Regulators' Code,⁷⁹ relationship with their statutory peers, whether they have sufficient SQEP to deliver their full range of roles, ability to discharge those roles effectively and capacity to innovate.⁸⁰

4.2 – Summary

Overall, the DSA is assessed at **LIMITED** maturity. The assessed maturity level of each of the Regulators and the DSA's overall investigative and policy capability, with indications of changes since last year, is summarised in Figure 4-1 and described in the rest of this section.

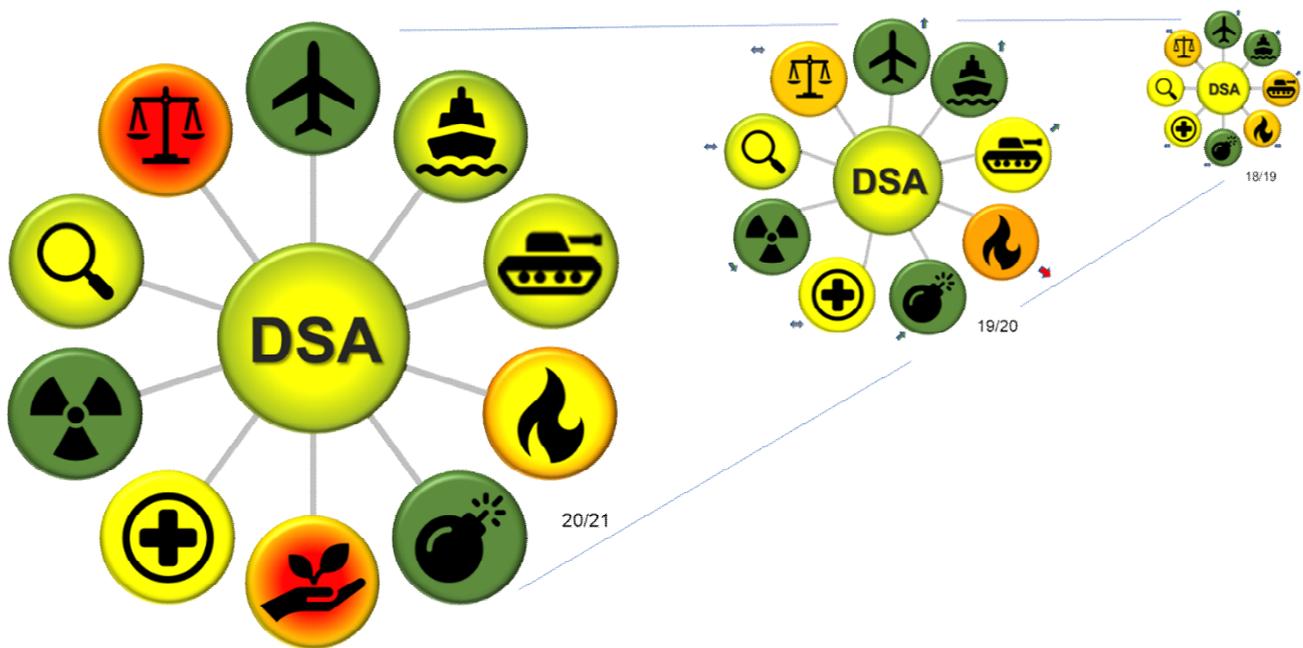


Figure 4-1 – Defence Safety Authority Maturity Assessments 2018/19 to 2020/21

Incremental improvement continues within the DSA, however there are several areas that limit improvement and keep the assessment at Limited:

- Four of the DSA's seven regulators and the DAIB remain at Limited maturity, predominantly due to a gap between their current capability and their full remit.
- Two new capabilities, introduced to cover gaps in DSA capability, have been established but will take time to reach maturity.
- The continued evolution of roles and responsibilities between Head Office and the DSA (both HS&EP and corporate) create ambiguity for Defence organisations and prevent a stable base from which to develop and resource the DSA and D HS&EP. This will be a focus for the early part of 2021/22.

⁷⁹ Department for Business Innovation and Skills, [Regulators' Code](#), 2014.

⁸⁰ In assessing DAIB and DSPA maturity 'regulations' is substituted with 'policy'.

4.3 – DSA Overall Maturity

In addition to routine regulatory activity, the DSA consolidated the governance changes made in the last reporting period and supported the work led by Director HS&EP to establish the HS&EP Function. The DSA also established two important new capabilities—an Environmental Protection Coordination Team, and the Strategic Safety & Environmental Management System and Themed Assurance (SSTA) Team. Activities of note include:

- Contributed to the Director HS&EP led development of the HS&EP Functional Strategy.⁸¹
- Contributed to the Director HS&EP led development of the HS&EP Operating Model, which is due to be finalised in 2021/22.
- Reviewed and handed Joint Service Publications 375 *Management of Health and Safety in Defence*, 392 *Management of Radiation Protection in Defence* and 418 *Management of Environmental Protection in Defence* to Director HS&EP and supported their subsequent re-publication.
- Progressed the development of the Defence Legislation Support Tool.
- Delivered five General Duty Holder Courses, including the delivery of virtual courses for the first time.
- Passed the responsibility for the HS&EP Head of Profession role to Director HS&EP.
- Conducted an audit of asbestos (hazardous materials SEMS) in DE&S and a desk review of the conduct of assurance using 2nd Party Assurance in DIO.
- Contributed to an audit of the Navy Command SEMS.
- Established an Environmental Protection Coordination Team in the Headquarters to cohere development of environmental protection across DSA (regulation, assurance and reporting), with focus on areas outside the established remit of the DSA's Defence Regulators to cover gaps and to draw together knowledge into an overall picture of Defence environmental compliance and assurance. 
- Established the SSTA team to assist in assuring compliance with Defence policies worldwide, including the application of UK HS&EP law. It will fuse information and analysis from across the DSA and other sources to target priority Defence organisations for Safety & Environmental Management Systems (SEMS) audit and to identify 

⁸¹ MOD, [Health, Safety and Environmental Protection Functional Strategy](#), 2020

candidates for themed assurance, according to risk. A five-year rolling assurance programme is due to commence in 2021/22.⁸²

While there was significant progress with the development of the HS&EP Operating Model, there still remains work to do in clarifying roles and responsibilities, particularly with regards to assurance. There is also work that needs to be undertaken in 2021/22 to develop the DSA's relationship with Head Office. Once both elements are agreed and stabilised, the DSA can re-develop and publish its own Operating Model.

4.4 – Environmental Protection (EP)

The DSA's assessment that it is not able to provide adequate assurance of environmental policy and regulation remains extant, though positive steps have been made toward bringing EP frameworks up to the same standard as safety. DSA recruitment, training and internal development on environmental protection has progressed, with posts dedicated to EP established and filled within the DSA Headquarters and 80 staff provided with environmental training at an awareness level.

An internal review of existing Defence Regulations has highlighted where there is existing EP regulation and where there are gaps, identified where there may be opportunities to develop improved assurance, and identified areas which are common to multiple DSA Regulators. The cross-cutting nature of environmental topics remains a challenge, and while there remains a spectrum of maturity across DSA, all areas have placed additional focus on EP. Activities of note include:

- **DAIB.** A Capability Review considered the need to apply an environmental lens to safety investigations, and a third of investigators have attended EP awareness training.
- **MAA.** A small EP team has been established to understand the requirement within the aviation regulatory domain.
- **DMR.** DMR remain the most mature. The assurance findings of DMR, from environmental baselining and specific audits, have identified risks in: environmental SQEP; environmental compliance and management in some parts of the shipping (maritime) domain; and hazardous waste management. These concerns are unlikely to be unique to the maritime regulatory domain and the DSA will need to look closely at other areas.
- **DLSR.** Staff were loaned to support review of JSP418, and each sub-regulator reviewed their regulations to strengthen the EP aspects and consider gaps for new regulation. This included topics such as waste, biosecurity, pollution control and spill response.
- **DFSR.** Fire and Rescue assurance now includes EP, particularly for wastewater and fire-fighting foam.
- **DOSR.** There was focus and resolution of long-standing issues with the quality of Environmental Risk Assessments (ERA) under the Major Accident Control

⁸² The role of the SSTA Team has since been transferred to Director HS&EP.

Regulations, and recognition that restricted access to defence ranges and explosives areas benefits biodiversity in allowing species to flourish undisturbed.

- **DMSR.** A baseline review was conducted, but as no healthcare specific EP DEDs were identified, no new regulations are planned. The DMSR are aiming to maintain equivalence with the NHS who have committed to environmental sustainability targets.
- **DNSR.** EP focus has been prominent, with refreshed agreements with statutory regulators and maintaining the Defence Regulation set following changes resulting from EU exit.
- **SSTA.** SSTA have committed to EP integration in the future assurance programme.

4.5 – Defence Accident Investigation Branch (DAIB)



The Defence Accident Investigation Branch (DAIB) provides Defence with an independent accident and incident investigation capability. The core function of the DAIB is to investigate safety-related fatalities, injuries, near misses and equipment capability loss.

The DAIB is staffed with highly trained air and land investigators, with a well-established network of scientific, technical and industrial advisors available to provide specialist advice and support. It is acknowledged that experience and currency is proportional to the number of safety investigations undertaken and deployment rates, which vary significantly across the domains. Additionally, the higher churn rates of the Regular military personnel present unique challenges in gaining, retaining and re-investing investigative expertise. The DAIB continues to engage with the single Service workforce agencies to reduce dilution of expertise and maximise return on investment through extended tour lengths and/or subsequent re-employment of qualified personnel within the Branch to maintain its overall level of SQEP.

The DAIB continues to respond to Maritime accidents, where the most significant capability gap resides, and is restructuring to address this recognised shortfall. A Civil Servant maritime lead (ex-Royal Navy) has been recruited and re-allocation of existing staff will provide each domain⁸³ with an SO1 lead. Further workforce adjustments are required to establish a full operating capability.

The MOD renewed the General Agreement with the Health and Safety Executive (HSE) in December 2020 and a revised appendix detailing the DAIB's investigative interaction with the HSE is being drafted. A Memorandum of Understanding with the National Police Chiefs Council is also being finalised. In parallel with these activities, revision of statute

⁸³ Air, Land and Maritime

regulations⁸⁴ to provide DSA convened safety investigations with similar legislative protocols as those conducted by equivalent civilian bodies⁸⁵ continues to be progressed.

The gap in Maritime and Environmental Protection investigation capabilities result in an assessment of **LIMITED** but increasing maturity

4.6 – Military Aviation Authority (MAA)



The MAA's maturity is **SUBSTANTIAL**, which it continued to build upon using a Risk Based Assurance (RBA) approach. Despite restrictions experienced due to COVID-19, engagement with the Regulated Community continued through a combination of virtual meetings and physical engagement. This has ensured the level of assurance, while potentially slightly degraded in the early stages, continued to build and the risk-based approach enabled the focus to remain on the most beneficial areas. The MAA's training delivery was also challenged by restrictions on face-to-face instruction and large gatherings⁸⁶ however the rapid development of blended learning and virtual instruction minimised the loss of training.

The MAA continued to highlight good practice to the Regulated Community who welcome the guiding and mentoring focus that RBA enables. Combined with the continued development of conduct end-to-end auditing,⁸⁷ RBA continues to help identify issues and provide clear input to a coherent Air Safety Rich Picture across the whole enterprise. The MAA workforce requirements are well understood by the Service manning agencies, ensuring SQEP is at the forefront of assignment planning. The themes that require continuing oversight (in order of priority) are: Remotely Piloted Air Systems SQEP; Parachuting SQEP; and Cyber/Software SQEP.

The MAA's relationship with the Civil Aviation Authority (CAA) has continued to mature, with a Memorandum of Understanding agreed and the CAA now represented at the MAA's Risk Exposure Forum. This enables the identification of risks common to both the civil and military sectors, and of emerging risks that the MAA may wish to consider. The development of a 'sandbox' approach to enable information exchange and joint assessment of emerging technologies such as increased drone usage, space and greater emergence of Artificial Intelligence and Machine Learning has been extremely beneficial.

Internationally, the MAA continued to strengthen relationships with other national military aviation authorities and partner nations such as the initiation of a joint UK, Australian and Italian auditing team for combined audit activity of the F35 Joint Programme Office. The MAA continued to reinforce the UK position within NATO and the Five-Eyes Air Force

⁸⁴ The Armed Forces Act 2006 and The Armed Forces (Service Inquiries) Regulations 2008.

⁸⁵ Air Accident Investigation Branch and Maritime Accident Investigation Branch.

⁸⁶ The annual conference and symposia were unable to be completed this year but should be held again in 21/22.

⁸⁷ Internal 'Deep Dives' and Multi-Disciplinary Teams have been focused upon this year. COVID restrictions initially limited the ability to conduct complete End-2-End (E2E) audits and no platforms have approached the MAA for a complete E2E audit.

Interoperability Council (AFIC), including key advances such as reinvigorating the concept of inter-nation aircraft cross servicing⁸⁸.

4.7 – Defence Maritime Regulator (DMR)



The overall maturity of the DMR is **LIMITED**, reduced from last year's assessment of Substantial. The DMR provides high levels of assurance and oversight to core maritime activity, however it now needs to develop further to create the capacity to provide improved assurance across the entire domain and to be able to react to changes which may affect the nature of the risks being managed and potentially the regulatory framework. The DMR's operating model continued to be refined and work is required to further develop and implement internal business improvements. In addition to generating improved planning, business support and horizon scanning, and in line with wider DSA HQ initiatives, there is a need for a Quality Management System to be established in DMR in the coming year. There is also work required to ensure that the DMR Regulation Set and the Defence Shipping Register fully reflect the operating model and activity within the domain. This work will be progressed during the next reporting period but will not be complete until the end of 2021/22. It must however be conducted at pace and in conjunction with the key statutory regulators. Of note, the Maritime & Coastguard Agency are moving ahead with regulations relating to Maritime Autonomous Systems; an area that is increasingly challenging.

4.8 – Defence Land Safety Regulator (DLSR)



Notwithstanding in-year improvements in both resources and within Regulators, the overall maturity of the DLSR remains **LIMITED**. There are three issues of significance that stand between the DLSR and an assessment of Substantial in 2021/22:

- **Delivery of effective 3PA across all sub-regulators.** Historically the DLSR assessed the effectiveness of 2nd Party Assurance in Defence organisations through licencing inspections and audits that mirror (and in some cases duplicate) 1st Party Assurance activity. This approach has been a key source of disagreement between the DLSR and Defence organisations. In some areas it has obscured the work being done by Defence organisations at the same time as leaving them blind to the areas that they are not currently assuring.
- **LSSR clarity of function.** The LSSR has grown from a historical base with a tight focus on vehicles. This reflects the reality that vehicles represent a significant source of risk in the Land Environment, However it has caused the LSSR to overly focus on an area that matches their specific expertise and has in turn reduced the overall effectiveness of the team and discouraged a broadening of their remit.
- **Continuing lack of resource.** DG DSA accepted the risk to the DLSR's assurance capacity and several posts, including a 1* Head DLSR, have been

⁸⁸ Development of Airworthiness Principles of Aircraft Cross Servicing and an Information Publication. This has allowed UK/German technicians to successfully service each other's aircraft during a recent NATO Mission. The Carrier Strike Group will present the same opportunity for UK/US Marine Corps personnel.

recruited.⁸⁹ This additional resource is welcome but has already been consumed by extant and emerging tasks such as certification of Land Vehicles. The resource burden will likely increase as the Integrated Review identified growth in novel technology areas which the DLSR is as yet un-equipped to manage.

In 2021/22 the DLSR will implement a new 3rd Party Assurance process across all sub-regulators, will strengthen the central pillar to remove stovepipe activity and will review the LSSR focus areas in conjunction with DE&S and the Military Commands to provide a more even and effective regulatory output. Successfully addressing these issues should see the DLSR reach Substantial assurance by March 2022. Full assurance will be contingent on reducing the resource deficit in coming Annual Budget Cycle discussions.

4.9 – Defence Fire Safety Regulator (DFSR)



The DFSR is considered to be at **LIMITED** maturity. Assurance capability has been constrained this year due to COVID-19 restrictions. For example, delays to the training of four new Fire Safety Inspectors has resulted in them taking nearly a year to achieve appropriate competence, which has significantly impacted on the DFSR's ability to meet its planned fire safety Risk Based Audit (RBA) schedule.⁹⁰ The limited resources available to the DFSR to audit and assure Fire & Rescue activity also restricts the development of regulatory maturity. However, the recruitment of another inspector in this area will significantly improve maturity once competent. Staff retention remains a challenge, often as a result of the DFSR's age demographic and compounded by a national fire safety SQEP shortage. The DFSR continues to lose experienced staff to a combination of retirement and more lucrative employment prospects in the private Fire & Rescue sector. Many key personnel are close to retirement, potentially in the next 12 months, and this could reduce the workforce by 20%.⁹¹ However, despite these difficulties the DFSR was able to sustain its regulatory activities, albeit in a restricted manner. The DFSR has also taken action to improve its fire safety consultation process and review its Standard Operating Procedures and Supporting Documents which now place more responsibility on Building Control Advisors and more aligned to the processes of Local Government.

4.10 – Defence Ordnance, Munitions & Explosives Safety Regulator (DOSR)



The overall maturity of the DOSR remains at **SUBSTANTIAL**. The DOSR Team continued its high levels of support to operations and its commitment to working closely with stakeholders to provide advice, guidance and support wherever necessary. To further develop the DSA's Safety Assurance and Enforcement Frameworks, the DOSR plans to deliver improvements such as: a simplified Range Authorisation

⁸⁹ An increase in rank from Colonel (OF5).

⁹⁰ Accounting for the drop in Risk Based Audits from 154 to 72.

⁹¹ Historically, DFSR has also lost on average two staff per year and this coupled with a depleting internal resource following transfer of DFRS staff to Capita after DFRP has created an imminent risk. DFSR have now commenced external recruitment, however the Defence salary offer is far less than Local Authority fire safety inspectors and now substantially lower than private sector salaries in the post-Grenfell fire safety environment.

procedure; an effective Waiver process for Defence OME Regulations which provides risk owners with clearer advice to enable them to make appropriate decisions on risk acceptance; and a more efficient electronic system for application and handling of requests for classification of military explosives. The DOSR will support the DSA initiative to simplify safety and aims to introduce a new product certification process for OME in July 2021. This has been developed in consultation with stakeholders from the MOD delivery organisations involved in the procurement of OME. The DOSR is also working in consultation with Defence organisations to scope the number of Fieldcraft Training Areas in use to close a significant gap in safety assurance by introducing proportionate and appropriate Regulation and Assurance by early 2022.

4.11 – Defence Medical Services Regulator (DMSR)



The DMSR transitioned to full operating capability on 31 December 2020 with the transfer of the remaining Defence Medical Services (DMS) Inspector General 2nd Party Assurance outputs which completed the organisational separation of the DMSR and Headquarters DMS. Significant progress has been made during the last year with the refinement and development of new processes. Despite this, the DMSR remains at **LIMITED** maturity and has some major weaknesses in its ability to provide robust 3rd Party Assurance across the scope of DMS healthcare provision. The only 3rd Party Assurance healthcare inspection activity currently being carried out by the DMSR is within Defence Primary HealthCare (DPHC); most of which is delivered by the Care Quality Commission (CQC) via a Service Level Agreement.

The COVID-19 pandemic has enabled the DMSR to develop a remote assurance audit methodology utilising CQC expertise in a supporting capacity. This methodology is undergoing further refinement and will enable the DMSR to broaden its assurance capability beyond UK based DPHC facilities and enable a more robust picture of operational and deployed healthcare safety. One of the key areas constraining the DMSR in developing its scope of assurance and progress towards a Risk Based Model is the need to build a clear data picture and the subsequent analysis of that data. DMSR also lacks any Environmental Protection expertise.

4.12 – Defence Nuclear Safety Regulator (DNSR)



The DNSR is an established regulator, with a mature Regulatory Management System based upon that of the Office for Nuclear Regulation (ONR) and an integrated and internationally recognised Technical Support Organisation (TSO) on contract. An International Regulatory Review Service (IRRS) style third party independent review of DNSR capability was conducted in 2020. The conclusions of the report were positive, with all recommendations for continuous improvement accepted and taken forward as part of the DNSR's Regulatory Development Programme.

The DNSR updated the current Joint Service Publications and associated guidance.⁹² Following consultation with the regulated community it plans to issue the new rationalised Regulations and Guidance in the DSA 02/03 series format early in the next reporting year.

⁹² MOD, [JSP 518 Regulation of the Naval Nuclear Propulsion Programme](#), 2014; and MOD, [JSP 538 Regulation of the Nuclear Weapons Programme](#), 2014

To accommodate expanding nuclear activity across the Defence Nuclear Enterprise, additional staff were recruited in 2020. There may be a need for additional resources as the Replacement Warhead Programme evolves. During 2020/21 a part time secondment from ONR was initiated, as well as making full use of partial retirees, graduate placements and development posts. The TSO provides a significant proportion of DNSR safety case assessment capability. Action is in hand to ensure the follow-on commercial arrangement is in place well before the current contract expires at the end of March 2022.

The DNSR supported the MOD/ONR working group in response to an ONR Vires Review. The group made positive and steady progress toward achieving mutually agreed outcomes which can subsequently be incorporated into an updated General Agreement.

The DNSR remains at **SUBSTANTIAL** maturity, however, sustaining this level will be dependent on successfully letting a new contract for technical support before April 2022 and will most likely require additional staff to accommodate the increased nuclear safety activity in the Defence Nuclear Enterprise.

Section 5 – Discussion – Overview and Themes

5.1 – Overview

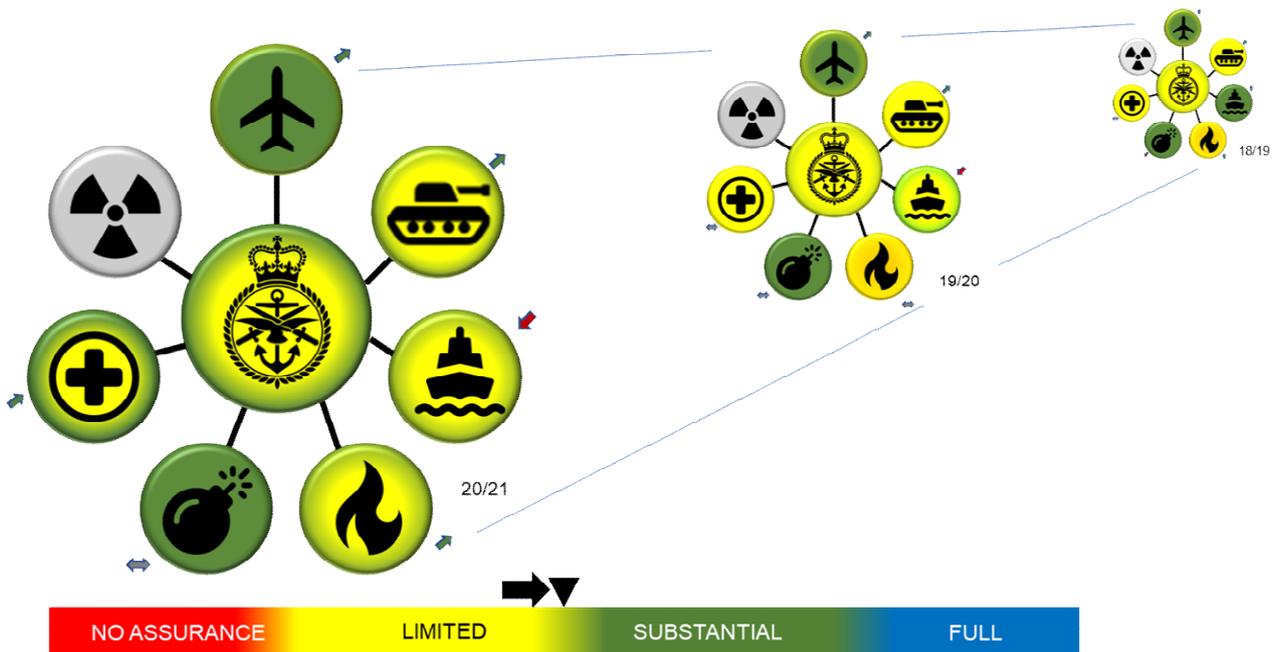


Figure 5-1 Defence Regulatory Assurance Assessments 2018/19 to 2020/21

The overall assessment for Defence HS&EP assurance remains **LIMITED** based on the Defence Regulators' assurance assessments of each domain and functional area (set out in Section 3 and shown in Figure 5-1) and supported by submissions from Defence organisations. There were encouraging improvements and increases in HS&EP focus in many areas leading to broad but cautious optimism that the regulated communities can achieve Substantial levels of assurance by the end of March 2022 within the areas that the DSA regulates. The systems for, and the SQEP resources required to deliver, 2nd Party Assurance remain the key issue and will need continued focus to reach the target of Substantial, and then Full, assurance.

This section discusses cross-cutting risks, threats and themes that have been raised in several domains.

5.2 – COVID-19

There was little reported impact on Defence HS&EP performance in the areas where the DSA regulates, and it was assessed that this was mainly due to a reduction in Defence activity. There was a slowdown in progress toward Substantial levels of assurance initially, however progress did resume as people became more comfortable with the changes to the work environment. In some cases, performance improved due to increased communication and better use of the available technology. The HSE did identify several breaches of COVID-19 regulations and a lack of a consistent approach to assuring compliance with these regulations.

There was some impact on the DSA's ability to regulate—mainly in the ability to conduct physical assurance activities and in the Medical Services domain where there was a high

demand on DMSR's small team. The pandemic also highlighted the need for improved methods for assuring temporary facilities and facilities where the use has changed at short notice.⁹³ Alternative measures were developed to maintain regulatory oversight and a number of these new measures were deemed effective enough to be continued. This included: increased virtual engagement such as improved use of video conferencing software to not only conduct meetings and interviews, but to conduct inspections remotely; electronic evidence gathering where possible; and increased use of self-assessments followed by targeted verification. These measures have the potential to improve the efficiency, effectiveness and reach of both 2nd and 3rd Party Assurance.

5.3 – Legislative Compliance

There were two main organisational level themes identified in relation to legislative compliance: awareness of the requirements, and compliance management systems. These themes were often, but not always, identified together. Examples included:

- Areas of the Maritime regulatory domain where little evidence of compliance management could be seen (Section 3.3.4).
- Projects in the Land Equipment Operating Centre with a lack of capacity and understanding of aspects of legislative compliance with some projects holding out of date Legislative Compliance cases (Section 3.4.4).
- The outcomes from Asbestos audits and investigations where it was found that organisational change, poor record keeping, and personnel churn meant that the law regarding the use of asbestos material within equipment components was not complied with (Section 2.2.3).
- Breaches of COVID-19 regulations (noted above and in Section 2.2.4).
- Fire safety breaches in working or living accommodation (Section 3.5.4).
- Feedback from attendees of the Generic Duty Holder Course indicating that many felt that this training was the first time they had been exposed to Defence's (and their) responsibilities under the Health & Safety at Work Act 1974.

2nd Party Assurance regimes need to be checking compliance with UK legislation, Defence regulation, HMG and Defence policy, and the associated guidance. There is also a requirement to train and educate people in their HS&EP responsibilities both in general (such as under the Health & Safety at Work Act 1973) and for specific situations (such as project record keeping). By design, 3rd Party Assurance regimes are not all-encompassing and are not to be relied upon to cover gaps in 2nd Party Assurance. As the DSA is only making observations where the DSA Regulates and where incidents have already occurred (such as asbestos, COVID-19), the above could be the extent of the legislative compliance picture or may only be part of a wider HS&EP compliance problem; of which we will know more once the HS&EP Operating Model matures.

⁹³ Such as the Defence COVID Bedding Down Facilities where there were both Medical Services and Fire regulatory impacts.

5.4 – Autonomous systems and emerging technologies

There are signs that autonomous systems and emerging technologies are starting to have an impact on the regulated community and the DSA, particularly in the Air and Maritime domains. In all cases, there is a need for robust and proportionate safety and environmental management systems to be in place for trials and the operation of equipment, for Accountable Persons to be appointed, for correctly articulated roles and responsibilities, and for documentation and evidence to be in place at the appropriate development milestones. The novel nature of these systems means that, while the underlying principles and methodologies may be the same, the existing safety and environmental management systems will need to be adapted. This is also true for the regulatory framework. Statutory regulators such as the Maritime & Coastguard Agency are moving ahead with regulations relating to autonomous systems and the DSA is working closely with statutory regulators in this regard.

Of particular note is the SQEP requirement—for the system owners, users and for the regulators. New systems ordinarily require new skills. While SQEP for autonomous systems, particularly Remotely Piloted Air Systems (RPAS) and Maritime Autonomous Systems (MAS), are the immediate and obvious growth areas, other areas such as land systems and ordnance, and the less visible areas such as the cyber defence and software requirements that underpin much of the emerging technologies, will also require new SQEP.

5.5 – Integrated Review and Command Paper

The DSA is studying the impact of the Integrated Review,⁹⁴ and the associated Command Paper,⁹⁵ on HS&EP within the Defence Regulatory environment. Initial assessment is that the impact appears to be largely due to both the introduction of autonomous systems and emerging technology (see above) and the volume and pace of activity that will be required to bring about change.

The consolidation of equipment types is positive in the long run (and something that the DSA has commented on previously), however there will be short term challenges. Sunsetting capability and introducing new capabilities both require a surge of effort. The concurrency of these surge efforts and the introduction of new SQEP requirements to meet the new and emerging technologies, whilst maintaining old capabilities during the overlap period, will need to be managed carefully.

5.6 – 2nd and 3rd Party Assurance

The systems for, and the SQEP resources required to deliver, 2nd Party Assurance remain the key to progressing from Limited to Substantial, and then to Full, assurance. 2nd Party Assurance has been a theme across every DSA Annual Assurance Report, and it is worth highlighting that the areas that have reached Substantial levels of assurance have good 2nd Party Assurance regimes. DMR, DLSR, DMSR and DFSA all cite weaknesses in 2nd Party Assurance within their regulatory areas.

⁹⁴ HM Govt, [Global Britain in a competitive age](#), 2021

⁹⁵ MOD, [Defence in a competitive age](#), 2021

There are also improvements to be made in 3rd Party Assurance. There is work ongoing to improve assurance of Medical Services as well as both OME and Land Systems certification. Importantly, the DSA and D HS&EP are working to develop the methodology for providing a complete picture of Defence's HS&EP performance – including compliance with UK legislation, Defence regulation, HMG and Defence policy, and associated guidance.

5.7 – Change and SQEP

The management of change and a lack of SQEP are perennial issues and easy headlines. As seen above, change is a constant and the SQEP requirements ever evolving. However, there is evidence of progress in both cases in the areas that the DSA regulates. Sustaining that progress whilst adjusting to the new demands will be a challenge and an area that the DSA will continue to monitor.

Director HS&EP's drive to develop a framework for career pathways, accreditation, and training for the development of HS&EP professionals within Defence is a positive initiative. Having an improved 'offer' for HS&EP staff, particularly in the areas required for HS&EP oversight, should make the Civil Service and Military career field more attractive, keep people in Defence's HS&EP profession for longer and build capacity and capability.

Safety-Related Inquiries and Investigations April 2020 – March 2021

New and ongoing Defence Safety Service Inquiries: April 2020 – March 2021

25 March 2021	736 NAS Hawk accident, RNAS Culdrose. An SI will be convened on 7 April 2021 to investigate the circumstances of the accident involving Hawk T Mk 1A XX189 which crashed on recovery to RNAS Culdrose following an engine emergency. Both crew members ejected safely, and the aircraft crashed into wooded farmland approximately 4 miles South East of the airfield perimeter.
4 March 2021	Fatality during a night live firing exercise, Castlemartin. An SI was convened in March 2021 into the circumstances surrounding the death of an Army sergeant during a night live firing exercise at Castlemartin Ranges. The sergeant was a safety supervisor and died from a gunshot wound. The SI is ongoing.
16 November 2020	Fatality during a Royal Navy leadership course at HMS COLLINGWOOD, Portsmouth. An SI was convened in December 2020 into the circumstances surrounding the death of an Acting Petty Officer during a scheduled physical training activity on the first day of a leadership course. The casualty collapsed shortly after starting the warm-up. Immediate first aid was administered but was unsuccessful in resuscitating the casualty. The SI is ongoing.
21 January 2020	Fatality during an amphibious training exercise, Cornwall. An SI was convened in February 2020 into the circumstances surrounding the death of a Royal Marine recruit during an amphibious training exercise in Cornwall. The SI has completed and the report will be published in due course.
17 and 27 November 2019	Two fatalities at the Army Assessment Centre, Lichfield. An SI was convened in December 2019 into the circumstances surrounding the deaths of 2 potential Army recruits at the Assessment Centre, Lichfield. Both collapsed following a run; the first on 17 November and the second on 27 November 2019. Both subsequently died later in hospital. The SI has completed and the report will be published in due course.
5 May 2019	Fatality in Malawi. An SI was convened in May 2019 into the circumstances surrounding the death of a soldier who had been seriously injured by an elephant during an anti-poaching patrol in the Liwonde National Park, Malawi. The casualty was evacuated by vehicle but died of his injuries before reaching hospital. The SI report was published on 30 October 2020.
31 January 2019	Jackal vehicle accident, Catterick Driver Training Area. An SI was convened in February 2019 into the circumstances surrounding the death of a soldier following the roll-over of a Jackal High Mobility Tactical Vehicle. The SI report was published on 14 January 2021.
14 November 2018	Diving fatality, Portland Harbour. An SI was convened in November 2018 into the circumstances surrounding the death of a Royal Marine during combat swimmer diving training in Portland Harbour. The SI was completed on 7 July 2020.

New and ongoing Non-Statutory Inquiries: April 2020 – March 2021

WATCHKEEPER 044 Runway excursion. On 15 October 2020 a Watchkeeper, tail number 044, suffered a total loss of control link and recovered autonomously to the airfield at RAF Akrotiri. During the landing the Unmanned Air Vehicle departed the runway surface to the right, colliding with several items of runway furniture before coming to rest in scrubland to the north of the runway. A Non-Statutory Inquiry was convened and will conclude by summer 2021.

Autonomous jet ski collision with catamaran. On 21 September an unmanned Tactical Watercraft (jet ski) collided with a moored civilian catamaran on the west side of the river Torridge near Instow, Devon. A civilian occupant of the catamaran was unhurt. Both craft were recovered and secured on the east side of the river. The jet ski had been operating in autonomous mode between 2 waypoints when control was lost. A Non-Statutory Inquiry was convened and will conclude by summer 2021.

Left-Hand Drive Vehicles. Following a number of road traffic accidents involving Left-Hand Drive vehicles in the preceding 15 months, the DG DSA directed that a Non-Statutory Inquiry (NSI) be conducted into the risks associated with using such vehicles on UK public roads. The NSI report has been completed.

Fatality during Basic Sea Safety Course, Horsea Island. On 18 October 2019, a member of the Royal Fleet Auxiliary collapsed and died whilst taking part in the sea survival element of the Basic Sea Safety Course at Horsea Island. The DG DSA directed that a NSI be conducted into the incident. The NSI has been completed and the report will be published in due course.

Asbestos in Defence equipment. On 5 February 2020, as part of work directed by the Secretary of State for Defence to examine the management of asbestos in Defence, the DG DSA directed that a NSI be initiated into why any failings in the management of asbestos in Defence equipment have occurred and to advise on what further steps need to be taken to ensure statutory compliance is maintained thereafter. The NSI is complete.

Civilian fatalities involving Defence activity: April 2020 – March 2021

There was one civilian fatality on the Defence estate, although not directly associated with Defence activity, where a contractor was killed by a falling roof structure during construction works.

Defence Nuclear Domain Safety Assurance (Limited Distribution)

Issued under separate cover.

