



Ministry  
of Defence

Air Command Secretariat  
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Headquarters Air Command  
Royal Air Force  
High Wycombe  
Buckinghamshire  
HP14 4UE

Ref: FOI2022/15233

[redacted] [by e-mail]  
[redacted]

10 March 2023

Dear [redacted],

Thank you for your e-mail of 20 December 2022 requesting the following information:

*"Please can I request a copy of the OSI AVM 22 Group refers to in the disclosure you made."*

I am treating your correspondence as a request for information under the Freedom of Information Act 2000 (FOIA)

A search for the information has now been completed within the Ministry of Defence (MOD), and I can confirm that some information in scope of your request is held.

A Public Interest Test has been conducted against the exemption to determine whether, in all circumstances of the case, the public interest in maintaining the exemption outweigh the public interest in disclosure. I have found that, under s36(2)(b)(i) and (ii) (prejudice the effective conduct of public affairs), the balance lies in favour of releasing the information requested.

I can advise that some of the information in scope of your request falls entirely within the scope of the exemption provided for at Sections 40 (Personal Data) of the FOIA and has been redacted. Section 40(2) has been applied to some of the information in order to protect personal information as governed by the Data Protection Act 2018. Section 40(2) requires the Department to conduct a balancing exercise, this exercise involves balancing the rights and interests of individuals against the legitimate interests in disclosure, this is not the same as carrying out the public interest test associated with certain exemptions in FOIA. The balancing exercise is carried out in order to decide whether the exemption in section 40(2) is engaged. In particular, there is no assumption of disclosure in the legitimate interests test, as there is with qualified exemptions. The outcome of the balancing exercise lay in withholding the third-party personal data identified in the attached information.

Please find a copy of the Occurrence Safety Investigation, dated 22 September 2022 and titled: RIAT 22 – Reports of Air Cadet Heat Related Illness at Annex A.

I apologise for the delay in returning a response to you and thank you for your patience and understanding during this time.

If you have any queries regarding the content of this letter, please contact this office in the first instance.

If you are not satisfied with this response or wish to complain about any aspect of the handling of your request, then you should contact me in the first instance at the address above. If informal resolution is not possible and you are still dissatisfied then you may apply for an independent internal review by contacting the Information Rights Compliance team, Ground Floor, MOD Main Building, Whitehall, SW1A 2HB (e-mail [CIO-FOI-IR@mod.uk](mailto:CIO-FOI-IR@mod.uk)). Please note that any request for an internal review must be made within 40 working days of the date on which the attempt to reach informal resolution has come to an end.

If you remain dissatisfied following an internal review, you may take your complaint to the Information Commissioner under the provisions of Section 50 of the Freedom of Information Act. Please note that the Information Commissioner will not normally investigate your case until the MOD internal process has been completed. The Information Commissioner can be contacted at: Information Commissioner's office, Wycliffe House, Water Lane, Wilmslow, Cheshire, SK9 5AF. Further details of the role and powers of the Information Commissioner can be found on the Commissioner's website at <https://ico.org.uk/>

Yours sincerely

[signed electronically]

Air Command Secretariat

Enc:

Annex A - Occurrence Safety Investigation, dated 22 September 2022 and titled: RIAT 22 – Reports of Air Cadet Heat Related Illness.



22 Sep 22

HQ 22 Gp - S40

**OCCURRENCE SAFETY INVESTIGATION – RIAT 22 - REPORTS OF AIR CADET HEAT RELATED ILLNESS**

**SUMMARY OF INVESTIGATION:**

1. On 17 Jul 22, the RAF Air Cadets (RAFAC) S40 for RIAT 22 emailed the Defence Accident Investigation Branch (DAIB) to provide an RAFAC Heat Related Injuries Summary Report, which notified over 70 cases of Heat Stroke. Some two days later, S40 DAIB wrote to AOC 22 Gp, to draw his attention to the reporting and to express his view that 'we were fortunate that there was no serious incident'. Following AOC 22 Gp's discussion with Air Commodore RAF Air Cadets (RAFAC), an Occurrence Safety Investigation (OSI) was identified as the most appropriate and expedient means to identify any outcomes, cause and causal factors that led to the reported incidents. It also provides the investigators with the opportunity to explore broader planning and management issues unrelated to the heat illness concerns with these being captured within the observations section of the report.
2. A copy of the Terms of Reference (TOR) for the investigation were issued on 5 Sep 22 and are attached. A lead investigator was appointed from the RAF's National Air Safety Investigation Team who was supported by a second investigator with expertise relating to heat injury regulations and, the management and supervision of training during periods of high ambient temperatures.
3. Strategic and Operational oversight of RAFAC activity falls to a mix of full time RAF, Civil Service and Full Time Reservist Service (FTRS) personnel with routine management at the Tactical Level falling primarily to Cadet Force Adult Volunteers (CFAV) ranging in rank from Wg Cdr to Sgt. These dedicated individuals generally enjoy full time professions including roles such as paramedics, fuel bowser drivers, food testers, company directors, civil servants, and middle managers. The RAFAC also enjoy support from volunteers who have retired from professions such as the Metropolitan Police. Therefore, while the interview process with HQ personnel was straightforward, contact with the volunteer cadre was generally more difficult and involved interviews that took place outside normal working hours and in line with volunteer availability. In total, the investigators spoke to S40 personnel, S40 from HQ AC and S40 from the CFAV cadre that were directly involved with RIAT 22. All interviews took place via video conference and were noteworthy for the positive and open approach, particularly from those unfamiliar with a potentially daunting investigation process.
4. Although investigators considered speaking to individual air cadets, it was agreed that any small benefit would be outweighed by the complexities of contacting individual cadets, the requirements for safeguarding and the risks of both misunderstanding and consequential unhelpful media reporting.



5. The lead investigator was given access to BADER, the RAFAC standalone national information management system which is used to retain records and to share information for both adult volunteers and air cadets. In addition, HQ AC staffs provided a detailed first aid record of the heat-related incidents.

6. Report and Recommendation Handling: As this report does not fit within the normal framework of DASORs or FSIMS, it is recommended that following review, the findings and recommendations are subject to a suitable tracking and review process to ensure proper consideration and action in time for future national events.

#### SEQUENCE OF EVENTS

7. As part of a joint venture between the Royal Air Force Charitable Trust Enterprise (RAFCTE) and HQ Air Cadets (HQAC), a mix of Cadet Force Adult Volunteers (CFAV) and Air Cadets (AC) provide approximately 1000 personnel to assist with the running of the Royal International Air Tattoo (RIAT) that sees RAF Fairford in Gloucestershire open its gates to the public in July. Following an enforced 2-year break in activity caused by the COVID pandemic, RIAT 22 saw the resumption of an air show and static displays over a 3-day period from 15 to 17 July. Preparations before and during the Tattoo involve AC camping in tents at Fairford between 6<sup>th</sup> and 21<sup>st</sup> July. Coincident with RIAT 22, the UK fell under the influence of a sustained period of dry and hot weather culminating in a series of Amber Heat warnings issued by the Meteorological Office for the 3-day period of the Air Show.

8. The event was also an opportunity for the HQ RAFAC staff to build upon transformational activity by ensuring scrutiny of risk associated with an event that in the past, appeared to have 'run itself with little or no crown employee oversight'. Overarching management of AC activity employs a 3-tiered system with the S40 responsible for planning and risk mitigation at the national level; he calls upon Regional Commandants (RAF FTRS Gp Cpts) to coordinate regional activity, while local Wing and Sqn activities are generally managed by a mix of CFAV and Executive Officer grade civil servants.

9. The 3-tier system of risk management aligns quite closely to the Defence Aviation Duty Holder Model (DADHM) with Air Cdre RAFAC assuming the role of Functional Delivery Duty Holder. While acknowledging that Functional Risk cannot be transferred/elevated as with the Air Domain, many of the principles of risk management are similar. However, it was clear that this revised model was not well understood by staff involved with earlier iterations of RIAT delivery. Moreover, visibility of how risk was assessed and managed for RIAT 22 was limited with many CFAV unaware of the details. This concern was overcome, in part, by those full-time employees benefitting from considerable levels of professional risk management. In the case of RIAT 22, it appears that the production of Risk Assessments fell to one individual whose output, while approved by the CFAV Camp Commander, was not underpinned by any evidence of mandatory 'crown employee' scrutiny in the form of 2<sup>nd</sup> Party Assurance.

10. Formal approval for RAFAC support to RIAT 22, followed a Decision Conference, initiated by HQ AC staff, to review activity and preparations. While the content and record keeping of the Decision Conference is reviewed within the observations section of this report, the model did provide a discussion forum for HQ and Camp supervisory staffs. The approval process referred to DADHM risk terminology, using the following phrases in the



order: Tolerable and As Low as Reasonably Practicable (ALARP). Although assumed, there was no recorded reference to Risk to Life (RtL).

11. Once participation was approved, HQ RAFAC staff visited Fairford to view AC life support infrastructure and other facilities – RAFAC S40 produced a comprehensive visit report the following day. A second visit by one HQ AC staff officer followed the promulgation of a Meteorological Office Amber Heat Warning for the weekend of the show. While the local mitigations and briefed considerations were assessed as effective, only verbal assurance was given to senior HQ AC staff and no written visit report was submitted.

12. Figure 1 details how during the 10-day (6 to 15 Jun 22) period covering the lead up to the Air Show, there was a total of 15 instances of AC heat related illness. Over the 3 days of the Air Show (16 to 18 Jun) when the Amber Heat warning was in place, heat related illness reports totalled 58. However, prompt CFAV monitoring and treatment from RAFAC First Aid staff, ensured that interventions were timely, and no cadets were diagnosed as suffering from heat illness.



Figure 1

All heat-related health problems were reported to Defence Air Incident Branch (DAIB) during the air show bringing the total number of reports to 73 for the entire 2 weeks. The direct reporting to DAIB<sup>1</sup> used a range of terms from 'mild suspected heat injuries' to 'mild Heat Stroke' rather than using more accurate terminology such as 'suspected' heat illness<sup>2</sup>. Critically, heat illness must be diagnosed by a medical doctor recording patient core temperature readings taken from a rectal thermometer. During RIAT 22, such invasive assessments were not deemed necessary for any air cadets. In addition, reference to 11 repeat occurrences of mild heat stroke was misleading with only 6 unwell with repeat symptoms. Therefore, based upon both the lack of substantive medical evidence and the imprecise nature of the reporting, concerns regarding AC heat illness could have been better

<sup>1</sup> Emails from S40 RIAT 22 to DSA-DAIB-LAND-SO1 dated 16 & 19 Jul 22.

<sup>2</sup> A suspected broken leg may only be a bruise unless formally diagnosed.



articulated as young people who were "Hot and Bothered" (H&B). Indeed, during interviews with all CFAV staff, the term H&B was generally used to describe any short-term deterioration in cadet well-being.

13. In sum, of the approximately 1000 cadets at daily risk from extreme heat over the 3-day Air Show period of RIAT 22, a combined total of fifty-eight either sought or were referred to first aid treatment. When including the 6 recurring incidents, no one was diagnosed as suffering from Heat Illness/Stroke nor were there any reports of further ill-effects.

**Outcome:** The RIAT 22 Heat Related Injuries Summary Report, which identified over 70 cases of Heat Stroke was misleading.

**Cause:** Incorrect taxonomy from the reporting officer was not challenged.

The lead S40 Officer provided accurate daily verbal reports of suspected heat illness to DAIB staff and erroneously used incorrect language in his subsequent summary report.

**Causal Factor 1:** The S40 was not privy to daily First Aid reports.

**Causal Factor 2:** The final summary report was submitted directly to DAIB without any scrutiny from other senior Camp Staff.

**Causal Factor 3:** The accuracy of the final summary report which appeared to detail an escalation of cadet injury from suspected heat illness to heat stroke was not challenged by DAIB staff.

**Causal Factor 4:** HQ AC staff were not part of either the daily or summary reporting process.

**Recommendation:**

14. It is recommended that AOC 22 Gp direct HQ RAFAC staff to:
  - a. Establish an incident/injury reporting system that provides alerts/notifications and controlled access to essential staff from DAIB, HQ AC and CFAV Executives in time for the next RAFAC National event such as Nijmegen or RIAT.
  - b. Note the observations contained within this report and establish staff action using a tracking and a review process to ensure proper consideration in time for future national AC events.

S40  
National Air Safety Investigation Team  
RAF Cranwell

**Attachments:**

1. TOR's



## OBSERVATIONS

In line with the OSI reporting model, the following 15 observations, while having no bearing on the event outcome are intended to highlight issues that could be addressed to improve the overall management, organisation, and accountability for future national RAFAC events such as RIAT.

- 1. Orders:** On 27 Jun 22, ACAS (Strat) staffs issued the overarching direction for RIAT 22 in the form of HQ Air Operation Order 26-22: Royal International Air Tattoo (15-17 JUL 22). While acknowledging the Operational direction contained with the Op Order, it is noteworthy that while the order addresses small details such as the provision and release from duty of individuals, HQ 22 Gp's provision (via HQ Air Cadets) of approximately 1000 volunteers (CFAV and AC) is not recorded and shared in a similar manner. Discussion with ACAS (Strat) staffs could resolve this issue.
- 2. Activity Planning:** A review of the preparations for RIAT 22 highlighted the challenges that affect many organisations relying on a mix of full-time personnel, civil servants, and volunteers. In this regard, investigators found that specific preparations for RIAT 22 lacked coherence and was complicated by the S40 [REDACTED] of the S40 [REDACTED] responsible for RIAT. Therefore, and in part due to miscommunication/staff performance issues within RAFAC HQ, the strategic planning process stalled with large parts of the work appearing to fall to CFAVs. This left a risk of reversion to the pre-pandemic planning model when a S40 [REDACTED] was allowed to approve a 1000 strong AC activity.
- 3. Review, Authorisation & RtL Assessments:** Intervention from RAFAC HQ staff, saw the initiation of a video Decision Conference to review AC involvement in RIAT. This conference involved top and middle tier risk owners and the discussions were framed around a slide presentation. However, the framework lacked consequential detail and left investigators without evidence to validate the process. The slides provided some detail about policy and logistics while key areas such as Safety, Safeguarding, Personnel Provision and Risk Management appeared only as headline issues. It was not possible to find any additional detail or records in this regard. This concern was reinforced when investigators examined records of HQ AC RIAT 22 management activity which are retained on BADER. The records linked to RIAT 22 did not appear to provide an audit trail that would meet statutory requirements such as those of a coroner's court. As an example, the event approval and countersigning statements do not directly address signatories' personal assessments regarding RtL. Equally, use of RtL related terminology within the slide briefings appears both without a clear trail of evidence and presents conclusions using incorrectly terminology. RtL is not mentioned, and risk was presented as Tolerable and ALARP rather than ALARP and Tolerable. The ongoing initiative to employ Bowtie Risk Management methodology provides the AC organisation with an opportunity to improve the collective understanding of risk management. However, given the mix of staff, the early work and implementation could benefit from assistance provided by experienced RAF risk managers.
- 4. Air Cadet Joining Instructions:** A review of the Joining Instructions for the RAF AC detachment dated 14 May 22, highlights at Annex A Para 21 the eligibility criteria for AC attendance. Specifically, it states:



Cadets must be over 14 years old and be at least first-class classification at the start of the camp. All cadets must be medically and physically fit for the duties they are likely to undertake.

Investigators were unable to find any similar medical or physical attendance requirements for CFAV creating situations where Flt Cdr's were unable to provide adequate support and supervision<sup>3</sup>. Similar eligibility criterion for CFAV participation at RIAT could be defined and articulated.

5. Wet Bulb Globe Thermometer (WBGT) Guidance: Ahead of RIAT 22 and mindful of the risks associated with heat illness, the investigators were referred to a range of documentation sets including Joint Service Publications, Army Documents and Air Cadet Internal Briefing Notes that, while containing guidance, appeared to lack any credible reference to a temperature monitoring system that could be applied to persons under the age of 18 and for use by local commanders/trainers. Suggestions to extrapolate from WBGT adult guidance are occasionally presented without cross reference to any authoritative research or evidence to underpin the health and safety needs of young people. It is not clear how the MoD could defend any heat related RtL assessments in the context of a coroner's court. It is also noteworthy that the adult WBGT reference charts pay no regard to gender or to the varying rates of physical development of young people as they reach adulthood. This is a whole force problem that requires a solution that must address the MoD's duty of care responsibilities as detailed under Health & Safety legislation.

6. Supervisory Ratios – On & Off Duty: Interviews with CFAV pointed to the RAFAC RIAT Staff Handbook for advice on supervisory ratios between staff and cadets. Although no such advice could be found, the common expectation for RIAT was for a ratio of 1:6 due to the demanding and complex nature of the environment. However, the absence of formal guidance allowed for staff to make assumptions about varying ratios for off-duty activity. In one specific instance, investigators discussed an indirect supervision ratio of 1:10 that involved cadets departing in groups, failing to meet at an agreed rendezvous and separating into elements that included a single cadet before gathering some 4 hours later. In this case, the entire flight of AC suffered a reaction to the heat requiring a recall and intervention from RAFAC first aid staff. Although there was no reported harm to AC, a subsequent senior staff review of the supervision did not appear to find anything untoward. From a parenting perspective, children are released to the care of the RAF with a reasonable expectation that loco parentis legislation applies. In this case, there appeared to be a gap in both regulatory advice and CFAV understanding regarding this responsibility, and this should be addressed. The same requirement applies to how and if staff/cadet ratios vary between on and off duty time.

7. Incident Reporting: It is not clear how the requirement to provide daily suspected heat illness reports to DAIB<sup>4</sup> helped with local risk management. Toward the end of each day S40 [redacted] phoned the DAIB S40 [redacted] to report the number of heat-related illnesses. This resulted in the same DAIB S40 [redacted] speaking to the detachment S40 [redacted] – an CFAV SO3 – for assurance regarding mitigations and AC RtL. Subsequently, the DAIB S40 [redacted] advised via email both the need for awareness of risk mitigations and that S40 [redacted] DAIB had

<sup>3</sup> In one instance, the S40 [redacted] of XXXX Flight S40 [redacted] and was unable to accompany cadets during their off duty visit to Air Side. This left one Flt Cdr to supervise 8 cadets.

<sup>4</sup> Para 6i of 2022DIN06-005 Refers



decided not to deploy<sup>5</sup>. The DAIB concerns could have been shared directly with the S40 [REDACTED]. However, investigators could find no evidence of communication from the DAIB S40 to Camp Executives such as the S40 [REDACTED] or his S40 [REDACTED]. Moreover, within the confines of the CFAV leadership, while there was clear evidence that additional and effective mitigations were put in place to deal with the Amber Heat Warning, the S40 [REDACTED] did not appear to have any visibility of the increasing number of heat related illnesses. Indeed, it is not clear that the S40 [REDACTED] was aware of the overall high demand from CFAV and AC for first aid<sup>6</sup>. Although there were plans for a system for dual reporting that also involved HQ RAFAC, that did not occur. Recommendations regarding this issue are largely addressed by the primary recommendation.

8. Functional Risk Assessments: There was evidence of considerable effort to produce a comprehensive set of Functional Risk Assessments (FRA) for RIAT 22. Indeed, the detachment S40 [REDACTED] took ownership of RIAT FRA's and spent considerable time reviewing and amending documents. Without visiting Fairford at the time of RIAT, it was not possible for investigators to provide a credible review of their quality and content. It is noteworthy, that the FRA's were only subject to approval by CFAV, namely, the S40 [REDACTED]. At no point could investigators find any evidence of 2<sup>nd</sup> party assurance by those responsible for approving the event. A review of how both assurance activity and FRAs are developed, reviewed, and recorded for all AC activity appears essential.

9. HQ AC Staff Assurance visit to RAF Fairford: Prior to commencement of RIAT 22, HQ AC staffs visited Fairford to gain an understanding of the infrastructure, facilities, environment et al. The findings of the visit were effectively summarised in an extremely comprehensive, upbeat, and positive internal HQ RAFAC email dated 12 July<sup>7</sup>. However, use of terms such as 'safety risks are ALARP' were imprecise and were not conditioned with important terms such as 'RtoL' and 'Tolerable'. Following the issue of the Amber Heat warning, a subsequent visit by one HQ staff officer took place. In both instances, staffs focused upon Camp facilities with no evidence of attention toward the cadet's main working environment, i.e., Air Side. In that regard, there was general agreement that the Air Side First Aid facilities while appropriately equipped, lacked screening to provide patient privacy. Assurance visits to RAF AC facilities must ensure that all working locations are assessed

10. Post Event Reporting: CFAV were happy to share post event reports that they submitted to the RIAT 22 hierarchy. These included a report from the S40 [REDACTED]<sup>8</sup> and one from a retired S40 [REDACTED]. Both reports provided important narratives and observations which were not translated into clear recommendations. These and any other reports could be collated to inform the washup for RIAT 22 which is scheduled for October.

11. First Aid Equipment: The core of the CFAV first aid team are full-time professional paramedics and interviews confirmed that they bring with them vital additional medical equipment and supplies such as oxygen. Anecdotal reports described how at an earlier RIAT

<sup>5</sup> Email from: DAIB to S40 [REDACTED] dated 17 Jul 22 at 1258.

<sup>6</sup> Total number of First Aid cases treated by AC staff - 326

Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) for non Heat Illnesses: 19

Number of cases sent to hospital: 7

Heat illnesses (non-serious) declared to DAIB: 73

<sup>7</sup> Email from HQ AC S40 [REDACTED] dated 12 Jul 22 at 0803.

<sup>8</sup> RIAT H&S Report for Commandant Air Cadets dated 21 Jul 22



event (2018?) a young cadet S40 and that the urgent and successful treatment relied upon the emergency equipment provided by volunteers. It was not possible for the investigators to identify a mandated equipment scale for the Air Side First Aid Facility. A review of all RAFAC First Aid equipment scaling and provision for both the AC Camp and Air Side Facility could ensure appropriate and funded resource for the benefit of all those involved.

12. Flight Cdr Appointments: Discussion with CFAV Flt Cdrs highlighted an apparent haphazard allocation of responsibilities. There was a sense that any experience of RIAT was discounted and that cadet Flt Cdr duties appeared to be allocated at random. Equally, those allocations were also subject to short notice change putting at risk the ability to manage cadets in a safe and coherent manner. Aligned to this concern was the lack of a mandated fitness requirement for cadet Flt Cdrs leading to an inability to provide adequate (loco parentis) supervision for the entirety of the camp. A structured system for appointing CFAV to key appointments would allow for more effective cadet supervision.

13. Cadet Health Tracking: Once a cadet either was directed to attend or privately reported to First Aid, Flt Cdrs reported that while careful not to interrupt medical staff, they had difficulty tracking the well-being and location of cadets. The problem was complicated by safeguarding regulations that do not allow staff to access cadet tents/sleeping area.

14. Communications: The system of off duty AC supervision appeared to rely on mobile phone communications. Reports suggest that Flt 'WhatsApp' Groups were commonplace and along with individual mobile phone contact, appeared to be the only medium for cadet supervision when released from direct care. Of note, the RIAT 22 Joining Instructions, issued in May 22 did not mention the need for a mobile phone. Notwithstanding, the capacity of the local mobile phone coverage did not match that of previous events such that options for direct messaging/contact were unreliable. The commonplace use of WhatsApp contravenes direction laid out in ACP4 regarding CFAV use of instant messaging services. Moreover, the guidance also states that CFAV must never give personal or work telephone numbers or other contact details to cadets who are not under direct control. If groups of cadets are to be allowed to wonder without close supervision such as in the case of off-duty visits to Air Side, alternative and compliant supervisory/communications solutions need to be developed.

15. Task Supervision: Over 70% of the CFAVs attended RIAT for the first time, a considerable challenge for senior supervisors. Notwithstanding, the investigators found clear evidence of effective mitigation planning and an associated reduction in tasking with an appropriate focus on cadet well-being and supervision. Comprehensive documents such as the Staff Handbook helped to underpin direction from daily briefings although those interviewed left investigators with an impression that Task Supervisors appeared unable to respond to changing circumstances preferring instead to align rigidly with initial briefings. The requirement to defer absolutely to direction from Task Supervisors meant that Flt Cdrs felt unable to implement local/short-term mitigations for the heat.