	REGULATION 28 REPORT TO PREVENT FUTURE DEATHS **THIS REPORT IS BEING SENT TO:** The Right Honourable Ben Wallace MP Secretary of State for Defence
1	**CORONER** I am Mrs Louise Hunt HM Senior Coroner for **Birmingham and Solihull**
2	**CORONER'S LEGAL POWERS** I make this report under paragraph 7, Schedule 5, of the Coroners and Justice Act 2009 and regulations 28 and 29 of the Coroners (Investigations) Regulations 2013.
3	**INVESTIGATION and INQUEST** On 26/10/2018 I commenced an investigation into the death of Joshua John Hoole. The investigation concluded at the end of an inquest on 25th October 2019. The conclusion of the inquest was Josh had an unpredictable susceptibility to sudden cardiac death from a previously unknown cardiac arrhythmia. The trigger for his collapse was a combination of the very high cardiovascular workload incurred during the AFT which includes exercise and heat stress coupled with his inherent drive to succeed pushing forward just before his collapse causing an adrenaline rush. The AFT should not have gone ahead as the WBGT was above the acceptable limit at 06.45 and was inevitably going to be above the WBGT limit throughout the AFT. Josh would not have died when he did had the AFT not gone ahead as the triggers for his death would not have occurred. The WBGT was not known to those in charge of the AFT because they were not familiar with the relevant guidance and they did not check the WBGT or request a reading. In any event the incorrect placement of the WBGT by the gym staff meant that even if a reading had been requested it would have been inaccurate and lower than the true WBGT. There was a failure to train those in command of the AFT properly on guidelines to apply to an AFT and when they should and should not go out. Those in command of the AFT were unaware of the applicable guidelines through a combination of lack of training and a lack of individual awareness. The applicable guidelines were lengthy and confusing and difficult to interpret and the key document relating to heat illness, JSP539 failed to address specifically the acceptable WBGT levels for an AFT. The lack of awareness of heat illness and the provisions within JSP539 and MATT2 was a very serious failure. Lack of training and the structure of the RTT meant they did not receive and were unaware of essential updates. Lack of training and awareness on risk assessments meant the risk assessments were not fit for purpose however the risk assessment in place did specify that a WBGT reading should be undertaken and it was a very serious failure not to follow this. During the AFT 2 students dropped out with heat illness and ought to have been treated as suspected heat casualties. There was inadequate assessment, understanding and communication of the reasons for these drops outs which meant that those in command of the AFT were unable to reassess the situation and stop the AFT as required by JSP539 and MATT2. Had the AFT been stopped at either of the times these students dropped out then Josh would not have died when he did.
4	**CIRCUMSTANCES OF THE DEATH** Joshua Hoole was undertaking a pre course in preparation for a promotional Platoon Sargeant's Battle Course (PSBC). The course was run by the Rifles Training Team (RTT). The RTT was a team put together to provide centralised training for infantry soldiers from the various Rifles Battalions to help prepare them for promotional courses. It was not formally resourced, did not sit formally in the army structure and had inadequate IT support. This affected the information available to the RTT. Josh arrived at Chepstow Barracks on Sunday 17/07/16 and the course started on Monday 18/07/16. On the Monday there was an introduction briefing from the RTT and some classroom teaching. The students were due to do an annual fitness test (AFT) on Tuesday 19/07/16 starting at 11am on a route starting from Dering Lines Barracks in Brecon. It had been reported on the news that the 19/07/19 was to be the hottest day of the year and the RTT were aware of this. The RTT contacted the gym at Dering Lines and were told to bring forward the AFT to 07.00. The directing staff (DS) assisting with the AFT had a briefing on the Monday lunchtime but the medic was not present and they did not adequately discuss how, when and what information would be communicated during the AFT. Josh slept overnight in a porta cabin. Whilst some other students said they did not sleep well due to a combination of poor facilities and a weapons stag (watch) there is no evidence Josh had a poor night's sleep. The students woke early on 19/07/16 at around 04.00 and had breakfast and then travelled to Dering Lines Barracks in Brecon arriving at around 06.30. There was a warm up undertaken by the Physical

Training Instructor (PTI) and a motivational brief from the Officer Commanding (OC) of the RTT. It was unclear who was in charge of the AFT with the PTI and OC both thinking the other was in charge even though MATT 2 specifies the PTI as being in charge. The formal brief in MATT2 (the publication setting out what is required for an AFT) was not given. The DS staff were not further briefed. They had all done many AFT's and there were assumptions made that staff knew what to do and what information to communicate. There was no specific brief about the temperature or the risk of heat illness. The standards applicable to the AFT stated that it should not go ahead if the Wet Bulb Globe Temperature (WBGT) was above 20. The WBGT was not checked by the RTT. The members of the RTT were unfamiliar with the relevant standards in MATT2 and JSP539 as they had not been adequately trained and did not check themselves what was required and they did not understand the importance of undertaking a WBGT before the AFT despite it being clearly stated in the risk assessment. In any event the gym at Dering lines set up the WBGT outside the gym that morning at 07.00 in the wrong position which produced an incorrect WBGT reading of 17.1. The AFT stepped off at 07.00 and was an 8mile 25kg loaded march with 4 pre-arranged water stops lasting 1-2 minutes each. The AFT course involves a 2 mile uphill section between about the 2.5 and 4.5 mile points and during this uphill section several students dropped out of the AFT.

At 07.57 one student collapsed into the hedge by the side of the road and was found to have a tympanic temperature of 40 and to be confused in that he did not recognise his friend and had signs and symptoms of heat illness as specified in the relevant publication JSP539 applicable to climatic injuries. JSP539 specified that a case of suspected heat illness indicated there was a risk to others and the activity should be stopped and a dynamic risk assessment undertaken. The information regarding this soldier was not communicated to those commanding the AFT and no dynamic risk assessment was undertaken. The AFT was followed by a safety vehicle (SV) which should stay in contact with the AFT. The SV dropped behind up the hill whilst collecting several drop outs and spent 20mins dealing with the soldier who dropped out at 07.57. At the top of the hill at the third water stop 3 other students dropped out and one complained to a member of the DS of feeling dizzy. It was not appreciated by the DS that dizziness was a sign and symptom of heat illness in the recognised publication JSP539 and this information was not passed onto the staff running the AFT.

At the 6 mile point a soldier collapsed at the 4th water stop with clear signs of heat illness. He was sweating profusely, disorientated and confused and was very unwell. This soldier had previously had an ankle injury and due to his confusion he may have touched his ankle at this time. The DS present with him failed to appreciate he was in fact suffering from heat illness and incorrectly communicated his problem to one of the senior DS as being an ankle injury. This was not recognised by DS present. When the SV arrived at 08.34 there was no handover from the DS to the medic who immediately recognised this soldier as having heat illness. Arrangements were made to take him back to Dering lines straight away, leaving some other drop outs at water stop 4 as there was insufficient room on the SV. Neither the medics view that the soldier had heat illness nor the information that he was being evacuated to the medical centre were communicated to those commanding the AFT.

On arrival back at Dering lines the (SV) came across Josh who had collapsed at 08.52 on the road near the Petrol oil and lubricant point. Josh had been towards the front of the AFT throughout however another student had noted Josh had abnormal breathing, panting like a dog, following the uphill phase at water stop 3. At the final water stop Josh was noted to be irritable by another soldier who had asked him to help with his water bottle. This was out of character for Josh. As the soldiers came into Dering Lines Josh was noted to drop back behind the main group and then try to push himself forwards before complaining of cramp and then collapsing. DS staff were with him immediately and tried to remove his day sack and clothing. As the SV was just entering the camp the medic jumped out to treat Josh. The medic started CPR and requested an AED which was obtained from the SV and was put onto Josh at 08.58 (1-2min after SV dropped of the AED). The AED never indicated a need to shock. Two further medics arrived from the medical centre at Dering Lines and assisted. The paramedics arrived at 09.04 and the air ambulance arrived at 09.23 but despite all efforts Josh was declared deceased at 09.39..

Following a forensic post mortem and based on medical evidence the medical cause of death was determined to be:

1a. Sudden arrhythmogenic cardiac death of unknown aetiology associated with high cardiovascular workload due to exercise and heat stress and adrenaline burst from individual drive.

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CORONER'S CONCERNS

During the course of the inquest the evidence revealed matters giving rise to concern. In my opinion there is a risk that future deaths will occur unless action is taken. In the circumstances it is my statutory duty to report to you.

The **MATTERS OF CONCERN** are as follows. –

General

1. In 2013 three Soldiers died from the effects of the heat whilst on a training exercise in the Brecon Beacons. Their inquests concluded on 26/06/15 and a report to prevent future deaths was sent to the Secretary of state for defence on 20/07/15 (copy attached). Within that report were the following concerns:
   - Commanding officers were unaware of the JSP539 and there was no clear system in place either to disseminate information or to check those commanding had the requisite knowledge.
   - Commanding officers had not been trained on completing risk assessments.
   - The system for reporting heat illness cases was disjointed and cases were not reported giving incorrect data.
   - There was no system in place to ensure WBGT readings were taken before training exercises.

Despite a response confirming these issues would be rectified (copy attached) This report to prevent future deaths raises concerns about the same and additional issues. There is a serious concern that lessons have not been learnt from past tragedies and there appears to be a failure to address serious safety concerns on the part of the MOD.

JSP539

2. I heard evidence at the inquest that Commanders were unaware of the provision of JSP539 and how they should apply to an annual fitness test (AFT). Several said they have not been trained on the publication and those that had seen it confirmed they did not understand the full effects of it and had not been trained on it.
3. Evidence at the inquest confirmed that the version of JSP539 in place at the time was difficult to read and understand. The latest version remains long and complex and difficult to understand. There should be consideration to providing commanders with shortened advice on the key messages from the publication – an aide memoire or fact sheets for example – to allow them to understand at a glance the messages being given.
4. The current JSP539 states at annex A page 2A that the activity should be "paused" if there is a suspected case of heat illness. MATT 2 states the activity should be stopped. The publications need to be consistent with each other and the guide should be clearer.
5. The current JSP539 has several annex "A's" which could be confusing if commanders reference the wrong annex.
6. Individual risk factors were an important part of understanding how a soldier would react to a situation and how best to mitigate any associated risk. At present there is no clear system in place to ensure those conducting activities have the necessary information about an individual to enable them to carry out an appropriate risk assessment.
7. The current JSP539 does not set out explicitly that it is the role of the medic on an activity to pass on medical information.
8. The AFT is being phased out and new tests have been introduced namely GCC (Ground Close Combat) and RFT (Role Fitness Test). The current JSP539 does not provide guidance for the acceptable work rates for these activities yet the activities have already been introduced. JSP539 is therefore inconsistent with the new MATT2.
9. The two cases of heat illness in the AFT were not formally reported in accordance with JSP539. There needs to be a robust system in place to ensure cases are properly referred and recorded.

MATT2

10. At pages 1.1, 1.3 it fails to refer to JSP539 as a relevant publication.
11. At pages 2.7/2.8 it does not mention the need to use a WBGT
12. Currently MATT2 states the medic on a fitness test is to be MATT3 trained. Given that these medics only receive basic training as per MATT3 consideration needs to be given to have a better qualified medic who can properly identify the signs and symptoms of HI. The Inquest was told by those who were MATT3 or team medic trained did not feel confident to diagnose HI and deferred to the CMT.
13. MATT2 states that commanders should use a generic risk assessment as a starting point to risk assess a particular activity however there is no generic risk assessment within MATT2. Fitness tests are usually run over pre-set courses so it would be sensible to have generic risk assessments for each venue with clear instructions that they need to be tailored to the day and time of the activity and the prevailing environmental factors.

Training

14. Witnesses at the inquest stated they were unaware of publications and had not received adequate training on those publications they were aware of. There needs to be a clear system of training for key tasks and updated publications. There needs to be measures in place to ensure all commanders are provided with the necessary information and a mechanism for annual updates and monitoring of awareness and training.

WBGT

15. It was established by the Coroner's appointed expert that the WBGT at Dering Lines was in the wrong place on the 19/07/16 leading to an incorrect reading. A RPFD was raised regarding this however the inquest heard that the steps said to have taken place in the response (copy attached) have not been done. WBGT's do not have stickers and the YouTube video does not specify that the WBGT should be in sunlight. In addition the WBGT update does not specify it should be in sunlight.
16. Each venue with a WBGT needs to have a clear policy for its placement depending on the time of year and day.
17. The YouTube video does not play on MOD laptops.
18. No further training has been provided for gym staff.

Risk Assessments

19. The senior commanders at the inquest confirmed they had not received training on the production of risk assessments for the activities they were conducting. There needs to be a robust approach to training and management of risk assessments ensuring those who are required to complete them have the necessary skills and training.

6	**ACTION SHOULD BE TAKEN** In my opinion action should be taken to prevent future deaths and I believe you have the power to take such action.
7	**YOUR RESPONSE** You are under a duty to respond to this report within 56 days of the date of this report, namely by 27 December 2019. I, the coroner, may extend the period. Your response must contain details of action taken or proposed to be taken, setting out the timetable for action. Otherwise you must explain why no action is proposed.

8	**COPIES and PUBLICATION** I have sent a copy of my report to the Chief Coroner and to the following Interested Persons: [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] HSE DPP SPA I am also under a duty to send the Chief Coroner a copy of your response. The Chief Coroner may publish either or both in a complete or redacted or summary form. He may send a copy of this report to any person who he believes may find it useful or of interest. You may make representations to me, the coroner, at the time of your response, about the release or the publication of your response by the Chief Coroner.
9	1/11/2019 Signature Mrs Louise Hunt Senior Coroner **Birmingham and Solihull**