Ministry of Defence

COMMANDER'S GUIDE TO HEAT ILLNESS PREVENTION

JSP 375 Vol 1 Ch 41 (V1.4 June 24)

FOREWORD

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"We should be in no doubt that heat illness kills. We should also be in no doubt that our first duty as leaders is to place the wellbeing of those, we lead at the forefront of everything we do.

The Armed Forces continue to live and operate in very demanding conditions and climates across the world. As leaders, each of us has a responsibility to prevent heat illness, and this task begins with education.

This excellent policy document is written with this in mind. It equips us with the information to help deal with the challenge of heat illness in a practical and pragmatic manner. Ensure you read it, understand it, and implement it accordingly. Our goal is to eliminate deaths from heat illness."

CONTEXT

Heat illness can affect members of the armed forces and civilians performing physical activity (operational, training and day-to-day work) and can be life-threatening. So, it is essential that all personnel understand the cause and effect of heat illness. You and others planning activities **must** assess and control the risks of heat illness.

In the military environment, most cases of heat illness result from physical exertion. This guide sets out seven policy statements that **must** be met and guidance on how to assess and manage the risk of heat illness as part of the Defence standard 5-step risk-assessment process.

The application of the policy **must** be assured (that is, its use **must** be guaranteed). As part of their overall assurance activity, the commander or manager **must** make sure that this policy is followed and put into practice effectively. Assurance **must** be carried out in accordance with JSP 815 (Defense Safety Management System) Volume 2, Element 12 – Assurance.

This guide applies to **all those employed by Defence** (military and civilian), including those under the age of 18 (for example recruits and apprentices) as well as to those working on behalf of, or under the supervision of Defence (for example, contractors and visitors). It applies to all Defence activities carried out in any location (UK or overseas) and at all times of the year.

Climate change has made heatwaves more likely and more severe. Temperatures in the UK can exceed 40°C. At these temperatures the Met Office issues 'red' weather warnings for heat. 'Amber' weather warnings are issued for temperatures exceeding 30°C. The UK population **must** not be considered to be acclimatised to these heatwaves.

A red weather warning issued by the Met Office means that there is a risk to life and action **must** be taken to keep yourself and others safe. Action **must** also be considered and appropriate action taken for amber weather warnings. This reinforces Defence's obligations to protect our people during extreme temperatures.

If a non-essential physically demanding activity, or an activity that would lead to prolonged exposure to the heat, is planned during the period of a red weather warning you **must** seriously consider postponing the activity. Plans may need to be reconsidered during amber warnings. If postponing the activity is not an option, the direction and guidance in this chapter **must** be strictly followed.

For more detailed guidance refer to the main chapter of **JSP 375, Volume 1, Chapter 41 - Heat illness prevention.**

PLANNING

You have a duty of care, so you **must** make sure that the activities you are responsible for are safe. This includes making sure that risk assessments are carried out and that controls (mitigations) to reduce the risk are identified and communicated to relevant personnel. Heat illness is a significant hazard and **must** be considered during the planning phase, before an activity is carried out. Specialist advice and guidance can be provided by medical staff and training staff.

Policy Statement 1:

A commander or manager **must** be appointed to command or supervise Defence activities and they **must** make sure that heat illness is considered when planning those activities. Personnel taking part in these activities **must** know (by name) who the commander or manager is before the activity begins.

Commander's action:

Identify who is responsible for planning the activity and it being performed. Make sure you are qualified, authorised and able to act, control measures are in place communicated to relevant personnel and complied with; and everyone taking part in that activity **must** know (by name) who the commander or manager is before the activity begins. The identity of the commander **must** be communicated effectively and in accordance with any communications plan that was developed as apart if the risk assessment for the activity.

Policy Statement 2:

The risk of heat illness **must** be considered in the risk assessment for Defence activities. The risk assessment **must** as a minimum consider the following heat illness risk factors and control measures.

a. Medical plan
b. Acclimatisation
c. Clothing and equipment
d. Expected work rate
e. Environment
f. Individual risk factors
h. Education and training
i. Fluid requirements
j. Body-worn heat illness monitoring equipment.

Commander's action:

Heat illness is a significant hazard and **must** be considered during the planning phase before an activity starts. All exercises and deployments need to consider the risk associated with heat illness.

If you are responsible for performing or supervising an activity, you **must** make sure that a risk assessment is carried out (and recorded so that there is evidence that it was carried out). The risk assessment **must** include an evaluation of the risk of heat illness and identify ways to control the risks.

If there is already a recorded risk assessment, you **must** apply the control measures in that risk assessment and actively assess the risk. You **must** make sure that the control measures identified in the risk assessment are implemented to make sure the risks are reduced to as low as is reasonably practicable (ALARP) and are communicated to all personnel taking part in that activity.

Medical staff and training staff can help you with risk assessments by providing specialist medical and training advice and guidance. You **must** consider any advice or guidance they provide, including if they recommend pausing an activity.

THE FIVE-STEP RISK ASSESSMENT PROCESS

When carrying out risk assessments, the Defence five-step risk-assessment process **should** be followed. MOD Form 5010 is the recommended template for recording the risk-assessment process, but alternatives specified by the Defence orgainsation may be used.

1 **Identify the hazard**
2 **Decide who might be harmed and how**
3 **Evaluate the risks and identify suitable and sufficient control measures**
4 **Record and implement findings**
5 **Review the risk assessment and update as necessary**

The heat illness risk planning tool and its associated tables illustrate how to consider the risk of heat illness in the five-step risk assessment process.

The risk assessment **must** as a minimum consider the following factors.

Medical plan

As part of the overall risk assessment, commanders or managers **must** make sure that a medical plan has been developed in consultation with the appropriate medical staff. The medical plan **must** identify an appropriate response to any casualties or medical incidents. The commander or manager **must** make sure that the following elements have been considered as part of the medical plan.

- Exertional heat illness – acute treatment, in line with JSP 950 Leaflet 2-4-4
- The level of medical cover (staffing) needed for the activity.
- The type and amounts of medical equipment needed for the activity (for example, equipment to optimise the 'strip, spray, fan' process) or equipment for Ice-Cold Water Immersion Therapy (ICWIT) if available and with the appropriately trained medical staff.
- The need for all service personnel to be able to 'strip, spray and fan' casualties vigorously at the point of collapse and not to rely on the attendance of the medical staff who may not be located in the vicinity of the occurrence. This is explained in more detail in Annex B.
- How any heat illness casualties will be evacuated, and where they will be evacuated to.
- If physical activities are planned to take place during the period of a red weather warning (or up to 48 hours afterwards) then medical advice **must** be sought.

Note: Further medical guidance is given in Chapter 5 (First Aid) of JSP 375, Volume 1, JSP 950 Leaflet 2-4-4, and Defence organisation policy.

Acclimatisation

The risk of heat illness in hot climates (dry or humid) can be reduced, but not eliminated, by acclimatisation. All personnel performing an activity in the UK or Northern Europe **must** be considered as not acclimatised because the climate is temperate with only occasional heatwaves. Acclimatisation may not be possible for tasks carried out at short notice or for limited periods (for example, for air travel from a temperate climate to a hot climate), or if long periods are spent in air-conditioned buildings. Guidance on acclimatisation is set out in Annex E.

Clothing and equipment

Clothing affects a person's ability to shed excess heat and, along with carrying equipment, may put extra strain on the body. Particular attention is needed when an activity requires the use of specialist clothing or equipment (for example, waterproofs, body armour, ceremonial dress, firefighting equipment, Explosive Ordnance Disposal (EOD) suits or Chemical, Biological, Radiological and Nuclear (CBRN) suits). Clothing **must** be carefully considered to make sure that it is appropriate for the activity and can be adjusted as required (for example, by removing layers of clothing).

Expected work rate

The rate the human body generates heat is determined by the work rate. In the UK, the primary cause of heat illness casualties from exertion has been physically demanding military activities, particularly endurance events such as loaded marches, log runs, stretcher races and fitness tests. It is critical to assess the work rate so the potential risk can be reduced by applying control measures. The expected work rate can be determined by using the work / rest tables that are set out in policy statement 3 and in Annex C. The 'rate of perceived exertion' (RPE) scale assesses individual work rates based on physical effort. During group activities, the work rate of the activity **should** be determined by the highest individual RPE maintained for more than three minutes.

Environment

The main way that a body loses heat is through sweat evaporating. The environmental factors that affect the efficiency of sweating are temperature, humidity and wind speed. Body temperature can also increase due to heat radiating from hot surfaces (for example, tarmac and vehicles). Physical exertion is affected by the nature of the activity, the environment and the terrain, particularly changes in level and the steepness of climbs.

Individual risk factors

People's responses to heat vary greatly. Personnel **must** inform the commander or manager of any known physical or medical condition (for example, a known heart condition, breathing difficulties, sickle cell trait and so on) that could affect the information the risk assessment was based on and their ability to undertake the activity safely. Individual risk factors to consider are as follows.

LIFESTYLE FACTORS
Individual drive and determination
Low or reduced physical fitness
Being overweight or obese
Smoking
Alcohol within the past 24 hours
Excessive motivation (for example, in pass or fail tests)
Use of sport supplements
Use of ilicit drugs

WORK FACTORS
Inexperienced personnel
Not acclimatised
Long-term fatigue
Lack of sleep
Air travel within the past 24 hours
Poor nutrition or diet, or a missed meal in the previous 24 hours

HEALTH FACTORS
Previous heat illness
Previous poor performance in a fitness test
Previous collapse from physical exertion
Risk of exertional collapse due to sickle cell trait (ECAST)
Asthma
Recent or current illness (for example, a cold, fever or diarrhoea)
Medication (prescription or over the counter)
Recent vaccinations (for example, for COVID-19 vaccinations, personnel are recommended to keep to light duties for 72 hours if they experience any adverse symptoms)
Dehydration

AGE AND YOUNG PEOPLE

A child's ability to thermoregulate (control their core body temperature) is not the same as, or as effective as, an adults. So, cadets and other young persons may be at increased risk of heat illness and extra precautions **must** be considered in the risk assessment.

SUNBURN

Sunburn increases the risk of heat illness. Minor sunburn causes reduced performance, while severe sunburn may require personnel to be hospitalised. You will need to consider restricting the duties of personnel who are sunburned. Sunburn can be prevented by:

- wearing appropriate clothing and headwear;
- working in the shade; and
- applying water-resistant sunscreen.

Education and training

Inexperienced personnel are typically more vulnerable to heat illness as a result of them:

- being less aware of the causes, signs and risks;
- having less experience of the conditions which may give rise to heat illness; and
- having less physical conditioning (for example, nutrition, training, mental and physical resilience).

Hydration

Personnel **should** drink fluid regularly to make sure their urine remains pale yellow. Water requirements can increase from two to four litres a day to as much as eight to 12 litres a day in extreme conditions. Water intake **should** be staggered over each hour. Hydration 'bladders' can help personnel get a regular intake of water during an activity. (There is further guidance on hydration, which can be found later in this Commander's Guide).

Body-worn heat illness monitoring equipment

Defence has been developing 'physiological status monitoring' (PSM) technology to monitor the potential risk of heat illness through Project Salamander. Currently PSM technology is not widely available across Defence, however Project Salamander will determine when and where the PSM technology can be made available, its use in those circumstances would be strongly recommended as an additional control measure to be put in place as part of a risk assessment. The use of PSM **will not** replace the need for personnel to still check for signs and symptoms of heat illness.

Policy Statement 3:

When planning Defence activities and conducting the risk assessment, a Met Office weather forecast and the work/rest tables **must** be used to determine the safe activity parameters.

When delivering physically demanding activities, a QT34 monitor wet bulb globe temperature (WBGT) reading at the activity location (or that is representative of the activity location) **must** be used to dynamically risk assess and make sure that the activity is conducted within safe parameters.

When delivering other activities, a Met Office WBGT forecast or a QT34 monitor WBGT reading at the activity location (or that is representative of the activity location) **should** be used to dynamically risk assess and make sure that the activity is conducted within safe parameters.

Commander's action:

Confirm if the activity is a physically demanding military activity such as selection event, arduous training, fitness tests, (for example, an annual fitness test), marching under load and other endurance events.

- **Physically demanding military activities**, such as selection events, arduous training and routine physical training, fitness tests, marching under load and other endurance events have resulted in the more serious cases of heat illness. Risk assessments in the planning stage **must** consider the heat illness risk factors in policy statement 2 and use the work / rest tables in JSP 375 (Volume 1, Chapter 41, Annex C) to determine the safe activity parameters. When planning activities in the UK 6 or more days in advance, a long range Met Office weather forecast **should** be used to estimate the temperature or if within five days of the activity a more accurate Met Office WBGT forecast **should** be used.
- **When delivering the activities.** Where the risk of heat illness can reasonably be expected, the activity **must** be dynamically risk assessed. As part of the dynamic risk assessment a QuestTemp 34 (QT34) monitor (the **only** Defence approved WBGT monitor) WBGT reading **must** be taken at the activity location, (or that is representative of the activity location) immediately before the activity starts and whilst the activity is underway: to ensure that the activity is conducted with safe parameters. The QT34 WBGT readings **should** also be relayed to the Directing Staff (DS) by the Officer in Charge (OIC). The Met Office forecasts and QT34 WBGT readings **should** be kept with the risk assessment.
- **Other activities**. Risk assessments for delivering other activities where the risk assessment has determined the risk of heat illness is not reasonably expected, the activity **must** be dynamically risk assessed. As part of the dynamic risk assessment a Met Office WBGT forecast or a QT34 monitor WBGT reading **should** be taken.
  Note: To obtain a Met Office WBGT forecast, access to the Met Office Military Information Distribution System (MOMIDS) is required, details on how to access MOMIDS is set out in Chapter 41 and Annex C.

Commander's action continued

- **Organised sport and adventurous training should** be in line with any National Governing Body guidelines. If such guidelines do not address and manage heat illness, this policy statement **must** be applied.
- The Work/rest tables provide guidance to plan periods of rest during physical activity in order to reduce the risk of heat illness.
- It is good practice for you to review the data from previous occurrences to assist you when planning similar types of activities and to enable you to consider implementing the control measures that were previously successful for that activity.

What is a QuestTemp 34 (QT34) monitor?

- The QT34 is the **only** monitor approved by Defence for measuring WBGT outdoors and indoors
- The WBGT is a combined measure of the dry-bulb temperature (the air temperature), wet-bulb temperature (the temperature the air can be cooled to through wind speed and the effect of evaporation) and globe temperature (a temperature that takes account of the effect of radiation such as sunlight). It is measured in degrees Celsius.
- You can use the QT34 monitor to check the difference between the dry-bulb temperature and the wet-bulb temperature. When the two numbers are close, the humidity is high and the risk of heat illness is increased. This is because the higher humidity prevents sweat from evaporating.

Policy Statement 4:

The commander or manager **must** review the risk assessment immediately before an activity starts to make sure it is still valid, that all the control measures are still in place and to re-assess the risk if necessary.

Where there are changes to the activity whilst it is underway or to the surrounding circumstances (for example, a change in the weather), which could increase the risk of heat illness, then a dynamic risk assessment **must** be carried out.

As part of the dynamic risk assessment the commander or manager **must** consider pausing or stopping the activity, applying further control measures or elevating the risk.

Commander's action:

Make sure you review the risk assessment immediately before an activity starts to make sure it is still valid and that the control measures identified in the original risk assessment still apply and are in place. As part of the review consider any further control measures that may be needed, before re-approving it. Once the risk assessment has been approved, it **must** be followed.

If when delivering the activity, the control measures in the risk assessment cannot be met, or anyone shows signs of heat illness, you **must** carry out a dynamic risk assessment. A dynamic risk assessment **must** also be carried out if an unexpected hazard arises, this could be as a result of a change to the activity or surrounding circumstances (for example, a change in the weather), which could increase the risk of heat illness. The recommended template for dynamic risk assessment is MOD Form 5010A.

As part of the dynamic risk assessment, you **must** consider the following actions.

a. **Pausing or stopping the activity** – The dynamic risk assessment may determine that the activity needs to be paused or stopped. However, there are a very limited number of activities that may need to continue without pausing or stopping. Examples include combat operations and other instances where pausing could cause a greater risk to life than continuing. The original risk assessments for these activities **must** indicate that a greater level of risk is acceptable for the task to be achieved. When this is the case, the level of risk **must** be elevated in line with your Defence organisation's elevation process and approved at the appropriate level in the chain of command before the activity starts.

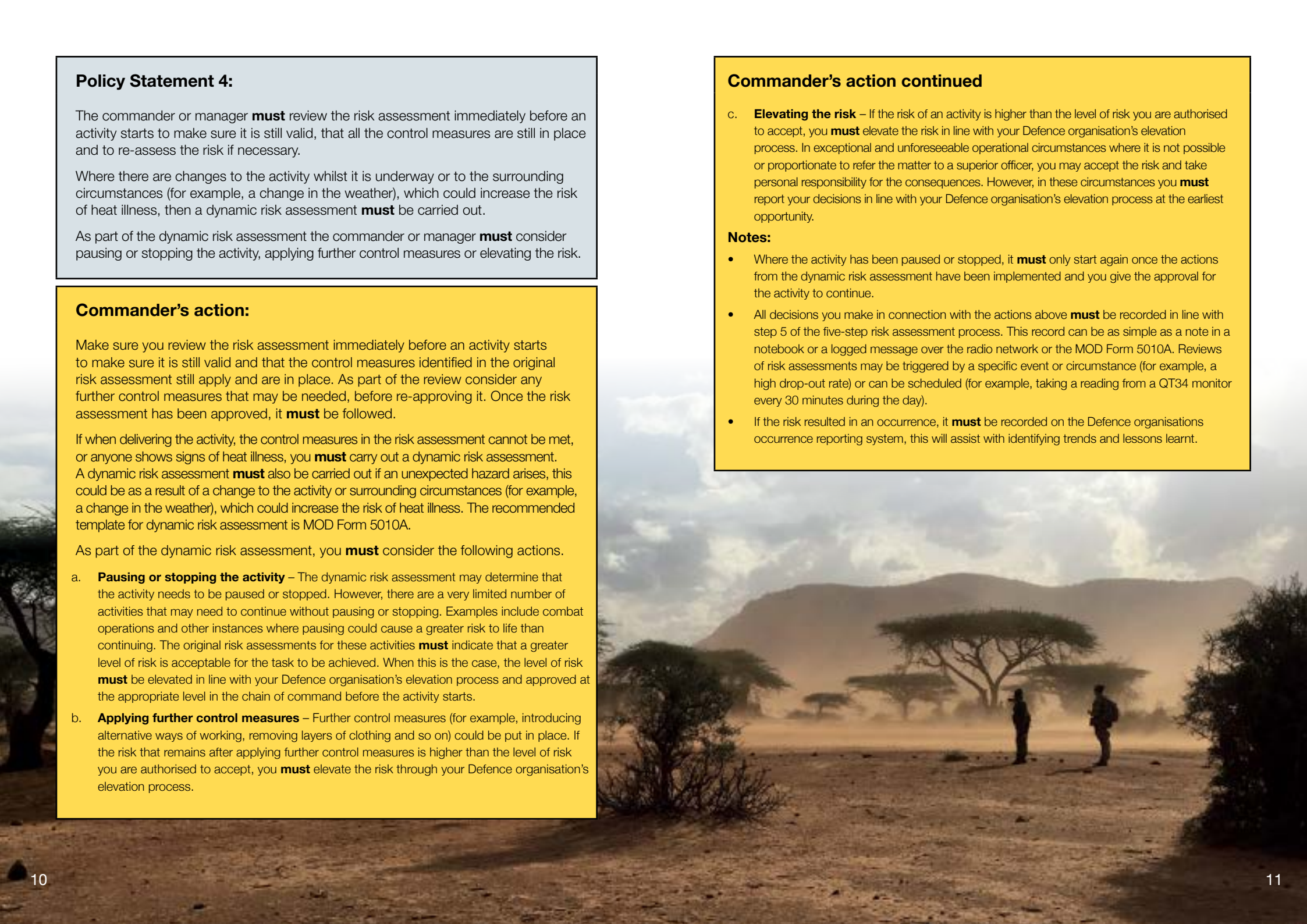
b. **Applying further control measures** – Further control measures (for example, introducing alternative ways of working, removing layers of clothing and so on) could be put in place. If the risk that remains after applying further control measures is higher than the level of risk you are authorised to accept, you **must** elevate the risk through your Defence organisation's elevation process.

Commander's action continued

c. **Elevating the risk** – If the risk of an activity is higher than the level of risk you are authorised to accept, you **must** elevate the risk in line with your Defence organisation's elevation process. In exceptional and unforeseeable operational circumstances where it is not possible or proportionate to refer the matter to a superior officer, you may accept the risk and take personal responsibility for the consequences. However, in these circumstances you **must** report your decisions in line with your Defence organisation's elevation process at the earliest opportunity.

Notes:

- Where the activity has been paused or stopped, it **must** only start again once the actions from the dynamic risk assessment have been implemented and you give the approval for the activity to continue.
- All decisions you make in connection with the actions above **must** be recorded in line with step 5 of the five-step risk assessment process. This record can be as simple as a note in a notebook or a logged message over the radio network or the MOD Form 5010A. Reviews of risk assessments may be triggered by a specific event or circumstance (for example, a high drop-out rate) or can be scheduled (for example, taking a reading from a QT34 monitor every 30 minutes during the day).
- If the risk resulted in an occurrence, it **must** be recorded on the Defence organisations occurrence reporting system, this will assist with identifying trends and lessons learnt.



HEAT-ILLNESS RISK PLANNING TOOL

Step 1: Identify the hazard
Step 2: Decide who might be harmed and how
Step 3: Evaluate the risks and identify suitable and sufficient control measures

Activity	Identify and evaluate the risks of the activity	Results	How do I control the risks of the activity?	Notes/control measures
Operations Specific tasks	There may be a greater risk from personnel pushing themselves too far to make sure they complete the task. This may mean that they continue the activity even at the point when the risk is highest, so greater levels of monitoring and responses are required. Control measures will need to be authorised from higher authority.		Improve response times and increase the level of medical support. Use stricter scrutiny and monitoring to make sure there can be an immediate response.	
Training	Untrained or less-experienced personnel can present a greater risk.		Can the training be rescheduled or more time allowed? Adjust the criteria to reduce intensity.	
Test Selection Assessment	Is it a 'pass or fail' exercise or a selection process? Activities that personnel consider to be more important present a greater risk.		If feasible, consider rescheduling the activity if the risk factors cannot be controlled or offering other opportunities. Restrict to light exercise the day before fitness assessments, to minimise the risk of illness or injury.	
Role	Assess the work rate.		Can work be broken down or breaks introduced? Share the tasks - use a team or substitutes?	
Duration	The longer the duration, the greater the risk. Is it a continuous activity or does it need scheduled rests? Conditions (environmental and personal) may change over the duration of activity. Unplanned extensions of the activity will need to be dynamically risk assessed.		Plan when to carry out dynamic risk assessments and elevate the risk if the activity goes beyond the planned duration. Use other people to help with monitoring the activity. Can the activity be changed if conditions change?	

Environment	What are the environmental conditions?	Results	How do I control the environmental risks?	Notes/control measures
Type	Temperate (moderate), tropical, desert, polar etc? All activity in the UK and northern Europe is considered to be not acclimatised.		Understand the effects of the environmental conditions - Theatre specific orders will provide more detail.	
Weather	Identify the weather factors – typical temperature and humidity. Is there an expected change? UK weather forecasts can be obtained from the Met Office and UK WBGT forecasts from the Met Office Military Information Distribution System (MOMIDS). Further details in Annex C. For overseas forecasts, contact the JOMOC (Joint Operational Meteorology and Oceanography Centre) 24-hour phone line – military: 9360 58112, civilian: (+44 (0)1923 958112) .		Adjust the time the activity starts, the duration and the appropriate clothing.	
WBGT	Do you have access to a QT34 WBGT reading? Is a reading a 'must' for your activity? If you do not have a WBGT forecast, how do you manage the activity (approval from the chain of command or from referring to Met Office or JOMOC)?		Make sure you know the WBGT forecast for the duration of the activity. Make sure it is available appropriately and you can access that and the QT34 readings.	
Topography (landscape)	For overseas forecasts, contact the JOMOC (Joint Operational Meteorology and Oceanography Centre) 24-hour phone line – military: 9360 58112, civilian: (+44 (0)1923 958112) .		Plan and recce routes to reduce the steepness and height gained and maximise shade. Avoid difficult terrain if reasonably possible for the activity.	
Operating space and vehicles	Is the operating space confined or a controlled environment (for example, a vehicle cabin, an air-conditioned space, a tunnel or an confined space)?		What if the device controlling the environment breaks? Can the personnel use other cooling methods or move out of the confined space?	

People	Who is taking part?	Results	How do I control the risks to individuals?	Notes/control measures
Numbers and experience of personnel	Can you manage the number of personnel taking part? How did the individuals perform during previous or similar activities? Have you identified individuals at a greater risk?		Make sure you have adequately trained staff to support personnel. Identify the individuals at most risk and allocate a 'buddy'. Hold pre-training and raise awareness of heat illness.	
Health, fitness and lifestyle	Are any individuals in a poorer condition than usual (for example, after a recent injury or loss of fitness)? Does anyone have a known health condition?		Make sure there is a graduated return to an appropriate level of fitness. Know your people and check the health and fitness of those taking part. If the fitness of individuals is not fully known, the risk assessment must take account of this.	
Clothing and equipment	Do the personnel have appropriate layers, equipment, load and so on? Can these change?		Make sure clothing and equipment is appropriate. Provide the opportunity for personnel to take action to cool down (for example, by taking off layers, soaking or resting in the shade). Provide the correct safety equipment.	
Hydration, nutrition and rest	Will personnel be able to have water and nutrition before, during and after activity? Have they missed meals? Are individuals rested or have they experienced recent fatigue or loss of sleep, or taken part in high-exertion activity?		Make sure enough water is available throughout the activity. Restrict social events, gatherings and so on involving alcohol in the 24 hours before the activity. Can you factor in periods of rest?	
Travel	Avoid activity in the 24 hours after air travel if this is feasible.		Apply acclimatisation measures and adjust the work rate. (All personnel performing an activity in the UK or Northern Europe are considered as not acclimatised.) Introduce longer or more frequent rest periods.	

Medical	What if there are casualties?	Results	What is my plan for dealing with cases of heat illness?	Notes/control measures
Response when there are casualties	What do you need to do? Where and Why? With whom? What will you do if it all goes wrong?		Conduct medical briefs and education events to raise awareness of heat illness (signs, symptoms and treatment). Make sure you have enough medics, first-aid training and emergency vehicles, and have rehearsed responses (for example, evacuations). Check your procedures (for example, that you have emergency phone numbers, know opening hours and so on).	

Step 4: Record and implement findings	
Action	**Comment**
Record	Record the heat risks as part of the overall risk assessment, and make sure the risk assessment is authorised by a named commander.
Report and elevate	Report additional risks and elevate risks that you cannot control, or that have not been authorised, up the chain of command.
Communicate	Make sure everyone taking part and all support staff understand the risks, control measures and medical plan. Use orders, briefs, exercise instructions and so on.
Training	Carry out pre-activity training if appropriate or necessary. Make sure you identify and monitor the individuals at greater risk. Use qualified staff to carry out the training.
Consider the balance of risk and reward	Does the reward for taking the risk reflect the level of risk taken? Would a greater risk arise from pausing the activity (for example, if not taking part in the later stages of pre-deployment training would transfer the risk from training to operations)? There are times when greater risk is acceptable (for example, when preparing for operations, to make sure personnel are operationally ready).
	A risk assessment must be approved by the activity commander.

Step 5: Review the risk assessment and update as necessary

Ask yourself the following and confirm higher up the chain of command.

- What is the consequence of stopping, or not going ahead with, the activity? Can alternatives be found?
- Have I identified all the risks and the individuals at greater risk?
- How often do I need to review the situation?
- Have I recorded any extra control measures?

Notes

EXAMPLE WORK RATES including 'ratings of perceived exertion' (RPE).

	Easy work (RPE of 1, 2 or 3)	Moderate work (RPE of 4, 5 or 6)	Hard work (RPE of 7 or 8)	Very hard work (RPE of 9 or 10)
CONDITION	**Feels like you can keep going for hours** **Easy to breathe and carry a conversation**	**Breathing heavily, can hold a short conversation** **Still quite comfortable but becoming noticeably more challenging**	**Borderline uncomfortable** **Short of breath, can speak a sentence but not maintain a conversation**	**Very difficult or not possible to maintain exercise intensity** **Can barely breathe and unable to speak or only able to speak a few words**
EXAMPLE	Office work under normal conditions. Light manual labour such as cleaning and maintenance. Basic operation of a vehicle or aircraft, including routine embarking and disembarking. Weapon training. Static guard or sentry duty. Chemical, biological, radiological and nuclear (CBRN) sentry duty.	Office work in a difficult environment. Moderate manual labour involving some lifting and use of machinery or equipment. Light manual labour in a difficult environment or within a time limit. Marching at normal walking speed. Moderate operation of a vehicle or aircraft. Ceremonial events. Mobile guard or sentry duty. Defence decontamination lane, CBRN recces and surveys. A deliberately controlled steady state run where all participants remain comfortable throughout.	Hard manual labour involving lifting and using heavy machinery or equipment. Moderate manual labour in a difficult environment or within a time limit. Annual or role fitness tests and physically demanding selection events. Obstacle courses, circuit training, stretcher runs and speed marching. Demanding operation of a vehicle or aircraft (combat operations or high G-force manoeuvres). Patrolling in CBRN personal protective equipment (PPE). A steady state run at a high pace where participants cannot maintain a conversation.	Hard manual labour in a difficult environment or within a time limit. Firefighting and emergency response (including handling casualties). Vehicle or aircraft emergency-response procedures. Guard or sentry duty in an emergency, including fire and manoeuvre. Evacuating a casualty while wearing CBRN PPE.

Work/rest tables

Use 'work/rest tables' to plan periods of rest during an activity in order to reduce the risk of heat illness. The tables are in JSP 375 (Volume1, Chapter 41, Annex C). You can get access to the tables through your headquarters or controlling station.

There are known WBGT upper limits for some specific activities, such as annual fitness tests. Details on specific activities can be found in Military Command or Defence organisation policy.

Active management and rapid responses to changing conditions or signs of risk are vital for avoiding serious cases of heat illness. The **RAPID** checklist below is intended as a guide for commanders to use just before and during a planned activity, to make sure the key elements of the safe system of work and training are in place. It does **not** replace the Defence five-step risk-assessment process used to carry out a formal risk assessment of the activity.

What to do		Comment
R	Assess, understand and control the **R**isks	• Make sure there is an up-to-date risk assessment? • Make sure the risk assessment is checked and signed by the person responsible for the activity. • Do you understand the controls set out in the risk assessment?
A	What are the specific considerations relating to the **A**ctivity?	• Does the activity increase risk? Do you understand the intensity of the activity? What clothing and equipment is needed? • Is it a test? What is the duration? Do you have the correct equipment? • How would you manage an emergency?
P	Are the **P**ersonnel prepared and competent for the activity?	• Consider acclimatisation, education and training, experience, fitness, injuries, and the effect of other activity (flight or social event). • Are those taking part rested, fed and hydrated, wearing the right clothing and carrying the right kit? • Do you have enough personnel with the necessary 'knowledge, skills, experience and behaviours' (KSEB) for the activity?
I	Has the correct **I**nformation been supplied to the participants?	• Does everybody understand the control measures? • Do those taking part understand the causes, signs and symptoms of heat illness and know what to do if they have or witness them? • Does the medical plan have adequate resources (both staff and equipment) and have staff been adequately briefed? Are the casualty procedures rehearsed and agreed with all staff?

D	**D**ynamically risk manage the activity	• All activity **must** be 'dynamically' risk managed, with risk assessments carried out while the activity is underway as well as before it starts.
		• How will you manage a situation and prevent an emergency?
		• What could trigger a review of the risk assessment?
		  • Difficulty – is the activity more difficult than you thought (terrain, intensity and so on)?
		  • Duration – is the activity lasting longer than planned?
		  • Casualty – has there been a heat-illness casualty?
		  • Environmental – has there been a change to the weather forecast or WBGT (a measure of heat stress in direct sunlight, which takes account of factors such as temperature, humidity, cloud cover, wind strength and the height of the sun)?

CONDUCT

Policy Statement 5:

Commanders and managers **must** monitor the activity to identify and immediately treat any cases of heat illness.

All suspected and confirmed heat illness cases **must** be reported and investigated in accordance with their Defence organisation's safety occurrence reporting procedures.

The Defence Accident Investigation Branch (DAIB) **must** be notified immediately of all heat illness cases which have led to hospitalisation or have been formally diagnosed by a medical professional. Additionally, the DAIB **must** be notified where there are four or more suspected cases of heat illness during the same activity.

Commander's action:

You **must** monitor the activity whilst it is underway and liaise with junior commanders, safety staff and medical providers, to identify any signs of heat illness. Act quickly if you do identify suspected heat-illness casualties to make sure that effective treatment is delivered immediately.

Defence tasks can often be extremely demanding. To adequately prepare military personnel for operations, the training and selection activities **must** be robust and realistic. They will sometimes push people beyond what is comfortable for them, but in a controlled and safe environment.

No life should be risked by pushing on through life-threatening conditions during training or assessment.

All suspected and confirmed (clinically diagnosed) cases of heat illness **must** be reported within 48 hours and in line with your Defence organisation's reporting procedures and the responsibility for doing so rests with the chain of command. Cases **should** be reported as suspected until formally diagnosed as heat illness by a doctor.

The Defence Accident Investigation Branch (DAIB) **must** be notified immediately of all heat illness cases which have led to hospitalisation or have been formally diagnosed by a medical professional. Additionally, the DAIB **must** be notified where there are four or more suspected cases of heat illness during the same activity. The DAIB **should** be contacted on their duty phone line - 01980 348622- which is available 24 hours a day, seven days a week.

Unit medical centres **must** be told about all suspected or confirmed cases of heat illness, through the chain of command, to make sure appropriate medical follow-up action (see JSP 950 leaflet 2-4-4), formal diagnosis and recording takes place

As a minimum, reports **should** specify the time, location, QT34 WBGT reading, Met Office weather forecast (if available) and type of activity being undertaken. Personal details of the casualty **should** include their name, rank, service or staff number and a description of the illness or injury.

TRAINING

Policy Statement 6:

Those involved in planning or undertaking activities which involve risk of heat illness **must** receive suitable training.

Commander's action:

Make sure that:

- you have received sufficient training to confidently apply this policy statement;
- those under your command have a basic awareness of heat illness; and
- you have access to medical advice to help with planning and undertaking activities.

To help all personnel understand the causes and effects of heat illness, an introduction to heat illness prevention training is available on the Defence Learning Environment (DLE) and **must** be completed as follows.

a. **Module 1** training **must** be completed by all military personnel at the earliest opportunity (for example at phase 1 training for new entrants) and then **at least** every two years thereafter for the rest of their career.

b. **Module 1** training **must** be completed by all personnel (military and civilian) that are taking part in, supervising or planning any activity where a risk of heat illness could reasonably be expected. and then at least every two years thereafter if they regularly take part in this type of activity.

Commanders, managers and those planning activities **must** assess the risks of heat illness and take action to reduce and prepare for those risks. To support this, a more detailed package of heat illness prevention training courses for commanders or managers are available on the DLE as Modules 2 and 3.

Module 2 **must** be completed by all commanders or managers in advance of them supervising, or planning any activity where a risk of heat illness could reasonably be expected. Once completed, the training will be valid for two years, after which point the currency expires. The course would only need to be completed again if two years has expired and the commander or manager was supervising or planning another activity where a risk of heat illness could reasonably be expected.

Module 3 is a standalone course to make sure acclimatisation for deployment is managed effectively. This module **must** be completed by all commanders or managers in advance of them commanding, managing or planning deployments where a risk of heat illness could reasonably be expected. This module **should** also be completed by all personnel before deployment if a risk of heat illness could reasonably be expected.

Module 4 has been developed to provide personnel with a better understanding of what the QT34 wet bulb globe temperature (WBGT) monitor is, how it works and how it can be used to monitor environmental conditions. This may assist commanders or managers when carrying out risk assessments. Module 4 is available on the DLE, it is not a mandatory course and **will not** replace the existing in-depth specialist training courses (for example, those completed by operators of the QT34 monitor) as set out in Annex D.

Commanders, managers and those planning activities **must** be able to confirm that personnel are sufficiently trained and equipped for any activities where the risk of heat illness could reasonably be expected. As a minimum this can be achieved by checking personnel systems (for example the Joint Personnel Administration (JPA) for service personnel and MyHR for civilian personnel) for HIP training competencies before any planned activity. Contactors will need to check on their own systems.

HEAT ILLNESS - RECOGNITION, PREVENTION AND TREATMENT

Preparation

The **universal training precautions (UTP)** help with preparing individuals and reducing the risk of a collapse due to exertion. The precautions include the following.

- Acclimatise to heat or altitude.
- Progressively increase the duration and intensity of activity.
- Have enough hydration to maintain clear, light-yellow urine.
- Avoid stimulants, diuretics, energy drinks, antihistamines, decongestants, non-steroidal anti-inflammatory drugs (NSAIDs), opioids, methylphenidate and weight-loss or performance-enhancing supplements before and during exercise.
- Avoid alcohol before exercise.
- Follow cycles of work and rest.
- Observe personnel for at least 10 minutes after exertion.
- Make sure medical facilities are available and provide prompt medical attention when early signs of distress are observed

Signs and symptoms

The symptoms of heat illness are varied, and each casualty will display symptoms differently. The list below is of common symptoms, but other symptoms may be seen.

- Agitation
- Nausea or vomiting
- Staggering or loss of co-ordination
- Cramps
- Disturbed vision
- Confusion
- Collapse or loss of consciousness (including fainting)
- Dizziness

Actions

At the first sign of symptoms, do the following.

- Immediately pause the activity for everyone (you do not need authorisation through the chain of command).
- Start treatment and summon medical help if medics are not already present.
- Check the group to see if others are struggling.
- Assess the situation and evaluate the seriousness.

While exercising, fatigue and muscle discomfort is normal and does not need to be reported. Encourage individuals to report unusual discomfort or physical distress when exercising, or if they have a current illness, and to get immediate medical attention if necessary.

If anyone has concerns about another person, they **must** be encouraged to report it.

Commanders and medics have a responsibility to protect highly motivated personnel from themselves. If in doubt, do not hesitate to sit an individual out, even if they want to continue.

Treatment

- **Move the casualty to the shade and start to cool them down.**
- **Strip** off heavy clothing and boots, raise their feet if they are conscious.
- **Spray** or drizzle water over the remaining light clothing.
- **Fan** air over the casualty.
- If the casualty is conscious, get them to drink cool water. If unconscious, carry out CABC (Catastrophic haemorrhage, Airway, Breathing and Circulation) checks.
- Alert the commander or manager, if they are not already aware, and alert medical cover.
- Consider evacuation – moderate and severe cases **must** be safely evacuated, if reasonably possible, for professional medical care.

If the casualty recovers within a 30 minute period, they **should** be monitored for 4 hours and where operationally allowable, avoid activities that increase the risk of heat illness for a minimum of 48 hours.

Reporting

All suspected and confirmed heat illness cases **must** be reported in line with Military Command or Defence organisation occurrence-reporting procedures and the responsibility for doing so rests with the chain of command. As a minimum, reports **should** specify the time, location, QT34 WBGT reading, weather forecast (if available) and type of activity being undertaken. Personal details of the casualty **should** include their name, rank, service or staff number and a description of the illness or injury.

ANNEX A TO JSP 375, VOLUME 1, CHAPTER 41 (V1.4 JUNE 2024)

ADR012054 Creative Media Design

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