



# 41 Heat illness prevention

This chapter is split into two parts:

- **Part 1: Directive.** This part provides direction that you **must** follow to help you comply with (keep to) health and safety law, Government policy or Defence policy.
- **Part 2: Guidance.** This part provides the guidance and best practice that **should** be followed and will help you to keep to this policy.

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This part is made up of the following annexes, which are available as separate documents on the JSP 375, Volume 1, Chapter 41 Defnet page:

Annex A – Commander’s guide to preventing heat illness

Annex B – Individual’s guide to heat illness

Annex C – Work/rest tables

Annex D – Procurement, maintenance and training in the use of QT34 wet bulb globe temperature (WBGT) monitor

Annex E – Heat acclimatisation for deployment to hot climates

Annex F – Hydration guidance

Annex G – Examples of policy compliance

Annex H – Basic guidance for all personnel during extreme heat.

## Amendment record

This chapter has been reviewed by the Health, Safety and Environmental Protection (HS&EP) Directorate together with relevant subject matter experts and key HS&EP stakeholders. Any suggestions for amendments should be sent to [HSEP-GroupMailbox@mod.gov.uk](mailto:HSEP-GroupMailbox@mod.gov.uk)

Version No	Date	Text affected	Authority
1.0	Oct 20	First edition.	D HS&EP
1.1	Jan 22	Annual review and revision.	D HS&EP
1.2	Aug 22	HS&EP update to include extreme weather warning. Additional Policy Statement 7 on assurance and updates to Policy Statements 4 and 6. New Annex H.	D HS&EP
1.3	Aug 22	Update to Policy Statement 7	D HS&EP
1.4	Mar 23	Update to DAIB telephone number	D HS&EP

## Terms and definitions

The following table sets out definitions of some of the key terms used in this chapter. Definitions for other JSP 375 health and safety terms are given in the master glossary on the JSP 375 Defnet or GOV.UK page.

Acclimatised	When personnel in hot environments have undergone a graded supervised programme of increasing exercise to adapt to the conditions. All personnel in the UK and Northern Europe, and those in hot environments who have not undergone a graded supervised programme of increasing exercise to adapt to the environment, are to be considered to be not acclimatised.
Alternative acceptable means of compliance	An alternative way of meeting a requirement of this policy, as approved by the Director of Health & Safety and Environmental Protection (Director HS&EP).
Assurance	Assurance is an assessment of whether the requirements set out in this chapter have been complied with. The assessment is based on evidence.
As low as reasonably practicable (ALARP)	When risk has been reduced to a level where applying further controls would be grossly disproportionate to the benefit that would be gained.
Commander	A military person responsible for planning activities, supervising activities, and making sure personnel under their area of responsibility are safe. This term refers to a role rather than the rank of Commander, and it can be a permanent or temporary role (for example, lasting for the duration of a training exercise). In parts of Defence this person could be referred to as a 'responsible person'.

Competent person	A person who has the training, skills, experience and knowledge necessary to perform a task safely, and is able to apply them. Other factors, such as attitude and physical ability, can also affect someone's competence. See <a href="http://www.hse.gov.uk/competence/what-is-competence.htm">www.hse.gov.uk/competence/what-is-competence.htm</a> for more information on competence.
Control measures	Measures that can be taken to reduce the possibility of a risk arising or reduce the effect of any risk that arises. The control measures are 'elimination, substitution, engineering controls, administrative controls and personal protective equipment (PPE)'.
Defence	This refers to the Ministry of Defence (MoD).
Defence organisation	This refers to Military Commands, Top Level Budgets (TLBs), Defence Nuclear Organisation (DNO) and Enabling Organisations (EOs) collectively.
Dynamic risk assessment	A risk assessment that is carried out before or while an activity is underway and builds on existing risk assessments.
Hazard	An item, event, activity or situation with the potential to cause: <ul style="list-style-type: none"> <li>• injury, ill-health or death;</li> <li>• damage to or loss of equipment or property; or</li> <li>• damage to the environment.</li> </ul>
Manager	A person responsible for managing or supervising staff, planning activities and making sure personnel under their area of responsibility are safe. This could be a permanent or temporary role, and in parts of Defence this person could be referred to as a 'line manager', a 'responsible person', or a 'delivery manager'.
Risk assessment	A systematic process of identifying hazards and evaluating any risks associated with those hazards.
Wet Bulb Globe Temperature (WBGT)	A combined estimate of the effect of temperature, humidity, wind speed (wind chill), and visible and infrared radiation (usually sunlight) on humans. A WBGT can be provided as a forecast or a current reading from a QT34 monitor. See Annex D for detailed guidance on QT34 monitors.
Work/rest table	A table giving maximum durations of continuous exercise and alternative work/rest schedules for a four-hour period. The figures are based on work rate, dress and WBGT reading. Different tables are used for acclimatised personnel and personnel who are not acclimatised.

## Must and should

Where this chapter says '**must**', this means that the action is a compulsory requirement.

Where this chapter says '**should**', this means that the action is not a compulsory requirement but is considered best practice to comply with the policy.

## Part 1: Directive

This part provides direction that you **must** follow to help you comply with (keep to) health and safety law, Government policy or Defence policy.

### Introduction

'Heat illness' refers to a range of medical conditions including heat exhaustion and heat stroke. It is difficult to distinguish between the conditions and they may exist at the same time. In this chapter, the term heat illness refers to a person becoming ill as a result of a rise in their core body temperature.

1. Heat illness is a serious, potentially **life-threatening condition**. It can affect members of the armed forces and civilians performing a range of Defence activities (operational, training and day-to-day tasks), both at home and overseas.
2. The purpose of this chapter is to improve awareness and management of risk, with the aim of eliminating deaths from heat illness. It provides policy and guidance on preventing heat illness. In the military, **exertion is the leading cause of heat illness that could lead to death**. The guidance in this chapter relates to assessing and managing the risk of heat illness as part of Defence's standard risk-assessment process, which is detailed in Chapter 8 of JSP 375, Volume 1. If an individual Military Command or Defence organisation chooses to introduce stricter guidance, that guidance **must** be followed within that Military Command or Defence organisation.
3. Climate change has made heatwaves more likely and more severe. There is an increased incidence of temperatures in the UK going over 40°C, leading to the Met Office issuing 'red' weather warnings. The UK population **must** be considered to not be acclimatised to these heatwaves.
4. A red weather warning means that it is very likely that there will be a risk to life and action **must** be taken to keep yourself and others safe. This reinforces Defence's obligations to protect our people during extreme temperatures.
5. 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. If postponing the activity is not an option, the direction and guidance in this chapter **must** be strictly followed.
6. JSP 539 has been withdrawn from the JSP index and the guidance on preventing heat illness is now contained in this chapter. The guidance on preventing cold injury has been transferred to JSP 375, Volume 1, Chapter 42. Guidance for the medical community on treating heat illness and cold injury is now in JSP 950 (Medical policy).
7. **What is in this chapter.** Part 1 contains the following.
  - a. A list of the heat illness prevention policy statements
  - b. Full details of the policy statements.

8. Part 2 contains guidance which **should** be followed to keep to this Heat illness prevention policy.
- a. Annex A (Commander's guide to preventing heat illness) gives general guidance for those planning and supervising activities. It is written for military personnel but the principles also apply to civilians in Defence.
  - b. Annex B (Individual's guide to heat illness) contains guidance for everyone in Defence who may be at risk of heat illness.
  - c. Annex C (Work/rest tables) contains tables which can be used to calculate the safe duration of activities and the balance of work and rest, based on specific factors.
  - d. Annex D (Procurement, maintenance and training in using the QT34 wet bulb globe temperature (WBGT) monitor) contains guidance on the QT34 wet bulb globe temperature (WBGT) monitor that is used in connection with the work/rest tables.
  - e. Annex E (Heat acclimatisation for deployment to hot climates) contains guidance on acclimatising to hotter environments.
  - f. Annex F (Hydration guidance) contains detailed guidance on hydration requirements.
  - g. Annex G (Examples of policy compliance) contains examples of how to keep to heat illness policy in various circumstances.
  - h. Annex H (Basic guidance for all personnel during extreme heat) contains basic precautions to take during periods of extreme heat.

## Scope

9. This policy applies to all personnel in Defence or under the supervision of Defence personnel, both regular and reserve, military and civilian, at home and overseas. The policy applies to **all Defence activity**, at all times of the year and in any location, including (but not limited to) the following.
- a. All forms of exercises, fitness tests, training, and organised sport.
  - b. Physically demanding selection events for those already in the armed forces who are aiming to progress in their career.
  - c. Preparing for and taking part in all operations (including combat, humanitarian aid, defence activities, training foreign forces and providing military aid to civilian authorities).
  - d. Activity onboard and within all Defence vessels, aircraft, and vehicles.
  - e. Ceremonial duties, practice, and events.
  - f. Recruitment and engagement activities involving civilians under the supervision of Defence personnel.
  - g. Routine business (including in office environments) where factors increase the risk of heat illness.

10. **Alternative acceptable means of compliance.** Keeping to this policy is mandatory across Defence. However, it is recognised that a small number of military units may be permanently unable to comply with (keep to) parts of the policy. In such circumstances, the head of the relevant Military Command or Defence organisation **must** send a detailed request to apply an 'alternative acceptable means of compliance' for specific parts of the policy, giving the reasons for the request, to Director HS&EP.

## Heat illness prevention policy statements

11. The following heat illness prevention policy statements have been established and **must** be followed.

a. **Policy Statement 1.** A commander or manager **must** be appointed to command or supervise any activity where the risk of heat illness exists. Those taking part in an activity **must** know who the commander or manager is.

b. **Policy Statement 2.** The risk of heat illness **must** be considered in the risk assessment for all Defence activities. The risk assessment **must** as a minimum consider the following risk factors.

- (1) Acclimatisation.
- (2) Clothing and equipment.
- (3) Expected work rate.
- (4) Environment.
- (5) Individual risk factors.
- (6) Education and training.
- (7) Medical plan.
- (8) Fluid requirements.
- (9) Body-worn heat illness monitoring equipment.

c. **Policy Statement 3.** In the case of physically demanding selection events and fitness tests, as well as considering the factors at Policy statement 2, the following factors **must** also be considered.

- (1) When planning an activity, a WBGT forecast and the work/rest tables **must** be used to inform the risk assessment.
- (2) When delivering the activity, a QT34 dynamic reading that is representative of the location of the activity **must** be used.

For all other Defence activities, as well as the factors at Policy statement 2, the following factors **should** also be considered.

- (1) When planning an activity, a WBGT forecast and the work/rest tables **should** be used to inform the risk assessment.
- (2) When delivering the activity, a QT34 dynamic reading that is representative of the location of the activity **should** be used.

- d. **Policy Statement 4.** The control measures in the risk assessment **must** be complied with. If the control measures in the risk assessment or any other aspect of this heat illness prevention policy cannot be complied with, the commander or manager **must** pause or stop the activity. However, if the activity must still go ahead, the commander or manager **must** consider applying additional control measures and, if required, elevate the risk through their chain of command for approval.
- e. **Policy Statement 5.** All activity **must** be dynamically risk managed. If heat illness symptoms are observed.
- (1) The activity **must** be paused, **must** be dynamically risk assessed and further control measures **must** be applied.
  - (2) The activity **must** only be restarted once further control measures have been applied and with the approval of the commander or manager at Policy statement 1.
  - (3) All suspected and confirmed heat illness casualties **must** be reported and investigated in accordance with Defence organisation policy.
- f. **Policy Statement 6.** Those involved in planning or undertaking activities which involve risk of heat illness **must** receive suitable training.
- g. **Policy Statement 7.** The commander or manager, together with their chain of command, **must** make sure that this policy is followed and provide assurance of this.

### **Policy Statement 1**

A commander or manager **must** be appointed to command or supervise any activity where the risk of heat illness exists. Those taking part in an activity **must** know who the commander or manager is.

12. The appointed commander or manager **must** make sure that all those taking part in an activity under their area of responsibility are safe. Everyone taking part in an activity **must** know (by name) who that commander or manager is. That commander or manager **must** make sure that:
- a. heat illness is considered when any activity is being planned;
  - b. risk assessments are carried out and are approved before they are relied upon;
  - c. controls to lower the risk are identified, communicated to relevant personnel and complied with; and
  - d. when an activity has been paused because symptoms of heat illness have been observed, a dynamic risk assessment is carried out and the activity does not start again until further controls have been put in place.

### **Policy Statement 2**

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

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

13. Commanders and managers are responsible for making sure that risk assessments are carried out and that the control measures identified in the risk assessment are communicated to the personnel taking part in the activity.

14. The commander or manager may delegate responsibility for carrying out a risk assessment to a competent person, but they would still be responsible for approving it. Once the risk assessment has been approved, it **must** be followed.

15. Heat illness is a significant hazard and **must** be considered during the planning phase before an activity starts.

16. Medical staff and training staff can help with risk assessments by providing specialist medical and training advice and guidance. Any advice they give **must** be considered, including if they recommend pausing an activity.



17. MOD Form 5010 **should** be used to record risk assessments, but alternatives specified by a Military Command's or Defence organisation's Safety and Environmental Management Systems (SEMS) may be used. Risk assessments **should** be kept for audit and investigation purposes, as set out in Chapter 39 of JSP 375, Volume 1.

18. The risk of heat illness **should** be considered as part of the wider risk assessment for the activity. All exercises and deployments need to consider the risk associated with heat illness. If a risk of heat illness has been identified, operation orders, exercise instructions and other instructions relating to the activity **must** make clear the control measures identified by the risk assessment and the need for dynamic risk assessments and controls during the activity.

19. This chapter provides guidance for heat illness risk assessments and follows the five-step risk assessment process, as set out in Chapter 8 of JSP 375, Volume 1.

a. **Step 1 - Identify the hazard.** The hazard is heat and exertion leading to an uncontrolled rise in core body temperature. This is usually related to the work rate of the activity, so the hazard is present throughout the year and in all environments.

b. **Step 2 - Decide who might be harmed and how.** The intensity of the activity and the rate of work causes an increase in body temperature, and the external temperature and humidity, along with clothing and equipment, affects the rate at which the body can cool itself. When the rate of heating is higher than the rate of cooling, body temperature will increase, sometimes to dangerous levels. All personnel involved in the activity are at risk. Some are more at risk than others, depending on individual risk factors (for example, physical fitness) so medical advice may be needed.

c. **Step 3 - Evaluate the risks and identify suitable and sufficient control measures.** The Commander's guide to preventing heat illness (Annex A) provides guidance on identifying risk factors, evaluating the risks and identifying suitable and sufficient control measures. In order to decide which controls **should** be put in place, the risk assessment needs to consider the realistic likelihood and severity of the risk. If a risk is still assessed as 'high' after controls are put in place, consideration **must** be given to introducing further control measures to reduce the risk. Commanders and managers **should** get medical advice at this point to start putting together a medical plan to prevent casualties and for dealing with those who have become casualties.

d. **Step 4 - Record and implement findings.** Once the planning has been completed it is time to act. The risk-assessment form **should** be used to record the whole risk assessment for the activity, including the assessed risk of heat illness. The controls identified during the risk assessment **must** be included in the instructions for the activity. Where relevant, before starting any activity personnel **must** be briefed on the controls they should be aware of (for example, what action to take if a case of heat illness is identified). If the risk that remains after applying controls is higher than the level of acceptable risk delegated to the commander or manager, then the risk **must** be elevated through the Military Command's or Defence organisation's elevation process.

e. **Step 5 - Review the risk assessment and update as necessary.** The risk assessment **must** be reviewed before an activity starts to make sure it is still valid and that all the controls are still in place. Once an activity has started, commanders and managers **must** 'dynamically' risk manage it. This means that further risk assessments (dynamic risk assessments) need to be carried out while the activity is underway to consider whether the risk assessment and controls need to be changed. If something has changed (for example, the WBGT or the duration of the activity has increased), further control measures **must** be considered. The dynamic risk assessment **must** be recorded so that there is evidence that it took place. This record can be as simple as a note in a commander's notebook or a logged message over the radio network. 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). Further guidance is included in the heat illness risk planning tool in the Commander's guide to preventing heat illness (Annex A).

20. The commander or manager is responsible for reviewing and approving the risk assessment for the activity and **must** consider any additional controls that are needed before they approve the risk assessment.

21. The heat illness risk planning tool and its associated tables in Annex A illustrate how to consider heat illness in the five-step risk assessment process. The following factors **must** be considered as part of that process.

a. **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 to a hot climate) or if long periods are spent in air-conditioned buildings. Guidance on acclimatisation is given in Annex E.

b. **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).

c. **Expected work rate.** The rate the human body generates heat is determined by the work rate. In the UK, the primary cause of heat casualties from exertion has been endurance activities (for example, 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 controls. 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.

d. **Environment.** The main way that the 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.

e. **Individual risk factors.** People's responses to heat vary greatly. Personnel **must** inform the commander or manager of any 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.

(1) Lifestyle factors – individual drive and determination, being overweight or obese, low or reduced physical fitness, smoking, alcohol within the past 24 hours, use of illicit drugs and use of sports supplements.

(2) Health factors – previous heat illness, recent or current mild illness (for example, a cold, fever or diarrhoea), medication (prescription or over the counter), recent vaccinations, dehydration.

(a) In the risk assessment, particular attention **should** be paid to the potential risk of heat illness resulting from physical exertion following 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.

(b) In the risk assessment, particular attention **should** also be paid to personnel at risk of exertional collapse due to sickle cell trait (ECAST), and the commander or manager **should** get medical advice relating to those considered at risk.

(3) Work factors – inexperienced personnel, poor nutrition or diet, or a missed meal in the previous 24 hours, lack of sleep, air travel within the past 24 hours and lack of acclimatisation.

(4) 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 adult's. So, cadets and other young people may be at increased risk of heat illness and extra precautions **must** be considered in the risk assessment.

(5) 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:

(a) wearing appropriate clothing and headwear;

(b) working in the shade; and

(c) applying water-resistant sunscreen.

f. **Education and training.** Inexperienced personnel are typically more vulnerable to heat illness as a result of them:

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

g. **Medical plan.** As part of the overall risk assessment, commanders or managers **must** make sure that a medical plan has been developed. 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.

- (1) Exertional heat illness - acute treatment, in line with JSP 950 [Leaflet 2-4-4](#)
- (2) The level of medical cover (staffing) needed for the activity
- (3) The type and amounts of medical equipment needed for the activity (for example, equipment to optimise the 'strip, spray, fan' process)
- (4) How any heat illness casualties will be evacuated, and where they will be evacuated to

See Chapter 5 (First aid at work) of JSP 375, Volume 1, and Military Command or Defence organisation policy, for medical guidance.

h. **Fluid requirements.** Adequate hydration is essential to maximise heat loss through sweating. Commanders or managers **must** make sure that personnel taking part in an activity drink an adequate amount of water before, during and after the activity. The water **should** be cool (if possible) and from a guaranteed safe source. Care **should** be taken to avoid overhydration and to maintain salt levels. There is more detailed hydration guidance in Annex F.

i. **Body worn heat illness monitoring equipment.** Physiological status monitoring technology is currently being developed by Defence to monitor the potential risk of heat illness. When this technology is approved and made available it can be considered as an additional control measure as part of a risk assessment.

### Policy Statement 3

In the case of physically demanding selection events and fitness tests, as well as considering the factors at Policy statement 2, the following factors **must** also be considered.

- a. When planning an activity, a WBGT forecast and the work/rest tables **must** be used to inform the risk assessment.
- b. When delivering the activity, a QT34 dynamic reading that is representative of the location of the activity **must** be used.

For all other Defence activities, as well as considering the factors at Policy statement 2 the following factors **should** also be considered.

- a. When planning an activity, a WBGT forecast and the work/rest tables **should** be used to inform the risk assessment.
- b. When delivering the activity, a QT34 dynamic reading that is representative of the location of the activity **should** be used.

22. In the recent past, the more serious cases of heat illness have been caused during physically demanding selection events and fitness tests. The risk assessment carried out at the planning stage of such activities **must** take account of a WBGT forecast. Dynamic risk assessments **must** take account of QT34 readings that represent the conditions in the area where the activity takes place. These forecasts and readings **should** be kept with the risk assessments.

23. For all other Defence activities, risk assessments carried out at the planning stage **should** include a WBGT forecast and dynamic risk assessments **should** include QT34 readings. These activities include operations, routine business, ceremonial events, organised sport and adventurous training. Organised sport and adventurous training **should** be in line with any national governing body guidelines. If those guidelines do not specifically deal with heat illness, this policy **must** be followed.

24. **Wet Bulb Globe Temperature (WBGT)**. A WBGT reading is the best way of factoring environmental conditions into a risk assessment, as it takes account of temperature, humidity, wind speed and sunlight. 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 the effect of evaporation) and globe temperature (a temperature reading that takes account of the effect of sunlight, air temperature and wind speed). 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. The WBGT reading **must** be taken locally in order to represent the environmental conditions where the activity is taking place. The QT34 monitor is the only Defence-approved equipment for taking WBGT readings.

25. **Work/rest tables.** Annex C contains guidance on the safe continuous duration activity, and the appropriate periods of rest, depending on acclimatisation, state of dress, work rate and WBGT. If the activity takes place at **lower** WBGT levels (below 20°C) than those shown in the work/rest tables in Annex C, the risk assessment **should** focus on other controls using the work/rest tables as guidance.

26. When an activity exceeds any of the figures in the work/rest tables (work rate, WBGT forecast or duration) the responsible commander **must** reassess the risk and consider stopping or pausing the activity, applying additional control measures and, if required, elevating the risk through their chain of command for approval.

27. **Young people.** A child's ability to thermoregulate (control core body temperature) is not the same as, or as effective as, an adult's. So cadets and other young people may be at increased risk of heat illness. The work/rest tables in Annex C apply only to risk assessments for people aged 18 and over. A risk assessment **must** still be carried out to assess and control the risk of heat illness in any activity involving cadets and other people under 18, and that assessment **should** focus on the other heat illness risk factors. Further guidance on health and safety considerations when working with young people is given in Chapter 19 (Young persons) of JSP 375, Volume 1.

#### **Policy Statement 4**

The control measures in the risk assessment **must** be complied with. If the control measures in the risk assessment or any other aspect of this heat illness prevention policy cannot be complied with, the commander or manager **must** pause or stop the activity. However, if the activity must still go ahead, the commander or manager **must** consider applying additional control measures and, if required, elevate the risk through their chain of command for approval.

28. The commander or manager is responsible for reviewing and approving the risk assessment for the activity and **must** consider any extra control measures before approving the risk assessment. If any extra control measures are put in place, these **must** be recorded in line with step 4 of the five-step risk assessment process.

29. Once the risk assessment has been approved by the commander or manager, it **must** be followed.

30. If at any stage of the activity, including before it starts, the guidance in this policy cannot be followed or the controls in the risk assessment cannot be met, the responsible commander **must** assess the risk.

They **must** then consider the following actions.

- a. **Pausing or stopping the activity** - If the activity needs to be paused or stopped, a dynamic risk assessment **must** be carried out in line with policy statement 5. 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 and approved at the appropriate level in the chain of command before the activity starts.

b. **Applying further control measures** - Further control measures could be, for example, alternative ways of working, removing layers of clothing and so on. If the risk that remains after applying further control measures is higher than the level of risk the commander or manager is authorised to accept, the risk **must** be elevated through their Military Command's or Defence organisation's elevation process.

c. **Elevating the risk** - If the risk of an activity is higher than the level of risk the commander or manager is authorised to accept, the risk **must** be elevated in line with their Military Command's or 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, the commander or manager may accept the risk and take personal responsibility for the consequences. However, in these circumstances the commander or manager **must** report their decisions up through their chain of command at the earliest opportunity.

**Note:** all decisions made in connection with the actions above **must** be recorded in line with step 4 of the five-step risk assessment process during the planning stage, and in line with step 5 once the activity has started.

#### **Policy Statement 5**

All activity **must** be dynamically risk managed. If heat illness symptoms are observed:

- a. the activity **must** be paused, **must** be dynamically risk assessed and further control measures **must** be applied;
- b. the activity **must** only be restarted once further control measures have been applied and with the approval of the commander or manager at Policy statement 1; and
- c. all suspected and confirmed heat illness casualties **must** be reported and investigated in accordance with Defence organisation policy.

31. Commanders and managers **must** monitor the activity, liaise with junior commanders, safety staff and medical providers, and make sure that effective treatment is delivered to any suspected heat illness casualties. When heat illness is suspected, the activity **must** be **paused**. The commander or manager **must** carry out a dynamic risk assessment and **must** put further control measures in place to prevent other cases of heat illness. These extra control measures **must** be recorded, in line with step 5 of the five-step risk assessment process.

32. The activity can only start again once the actions from the dynamic risk assessment have been applied and the commander or manager gives the approval for the activity to continue.

33. A rapid, local, easy-to-use alert mechanism, to make all local units performing similar activities aware of all cases of heat illness as they arise, should be part of the dynamic risk assessment process. Unit medical centres **must** be told about all reported cases of heat illness, through the chain of command, to make sure appropriate medical follow-up and recording takes place.

34. 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. Cases **should** be reported and recorded as suspected until formally diagnosed as heat illness by a doctor. As a minimum, reports **should** specify the time, location, 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.
35. The chain of command **must** report all suspected or confirmed (clinically diagnosed) cases of heat illness to the Defence Accident Investigation Branch (DAIB) within 48 hours and, where appropriate, a preliminary investigation **must** be carried out. Cases can be reported to DAIB on their Duty phone line (01980 348622).
36. Suspected heat illness cases **must** be investigated locally to identify lessons that can be learnt. Confirmed cases of heat illness **must** be investigated in line with the following paragraphs.
37. There are three categories of heat illness.
- a. **Mild heat illness** – heat illness with no other illness (for example, gastroenteritis), and the casualty does not need to go to hospital or is discharged from the Emergency Department.
  - b. **Moderate heat illness** – heat illness which requires the casualty to go to hospital and be admitted from the Emergency Department. Examples include a change of consciousness for more than 15 minutes, seizure, or evidence of organ damage or rhabdomyolysis.
  - c. **Severe heat illness** – heat illness requiring the casualty to be admitted to intensive care.

For details of reporting requirements refer to Chapter 16 of JSP 375, Volume 1.

38. For cases of mild heat illness (where there is not cause for immediate concern):
- a. A Unit Investigation **must** be carried out.
  - b. The Unit Investigation **should** use an appropriate investigation method to identify causal and contributory factors (the factors that contributed to the case and the action needed to avoid those factors in the future).
  - c. The actions **should** be tracked until the investigation has been completed.
39. For cases of heat illness that are classified above mild:
- a. A Military Command or Defence organisation non-statutory enquiry (NSI) **must** start, in line with the Defence organisation's investigation procedures.
  - b. The Military Command or Defence organisation NSI **should** use an appropriate investigation method to identify casual and contributory factors (the factors that contributed to the case and the action needed to avoid those factors in the future).
  - c. The actions **should** be tracked until the investigation has been completed.



### Policy Statement 6

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

40. All Military Commands and Defence organisations are responsible for making sure that commanders and managers can manage the risks associated with heat illness and react in line with this policy.

41. **Defence leaders.** All commanders and managers have a duty of care, meaning that they are legally responsible for the health and safety of others and **must** be appropriately trained so that they have the necessary skills, knowledge, experience and behaviours (SKEB) to consider heat illness as part of any Defence activity. They **must** have a sound understanding of this policy. Commanders and managers **must** be able to continuously manage the risk of heat illness and make sound judgments and decisions in all eventualities.

42. **Individuals.** All Defence personnel **should** have a basic level of knowledge relating to heat illness and this policy. The minimum requirement is for personnel to understand what causes heat illness, what the signs and symptoms are, and what they can do as an individual to help reduce the risk and what control measures to take if they notice signs of heat illness in themselves or others. Further information and guidance is set out in the Individual's guide to heat illness (Annex B).

43. 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) as Module 1. The training **must** be completed by all military personnel at the earliest opportunity (phase 1 training for new entrants) and then at least every two years for the rest of their career. For all non-military personnel, Module 1 training **must** be completed before any activity where a risk of heat illness could reasonably be expected.

44. 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.

a. Module 2 **must** be completed by all commanders or managers in advance of them commanding, managing or planning any activity where a risk of heat illness could reasonably be expected.

b. 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.

c. Module 4 (The Wet Bulb Globe Temperature (WBGT): Monitoring the Environmental Conditions) is not a mandatory course and will not replace the existing in-depth specialist training courses (for example, those completed by specialist users of the QT34 WBGT monitor). Module 4 has been developed following a training needs analysis and a recommendation that there should be a training package for personnel as 'occasional users' who want to know more about what the QT34 monitor is and how it works. This module may, for example, be used by commanders or managers to gain a better understanding that will help them in carrying out risk assessments.

### **Policy Statement 7**

The commander or manager, together with their chain of command, **must** make sure that this policy is followed and provide assurance of this.

45. The application of this policy **must** be assured (that is, its use **must** be guaranteed). Assurance **must** be carried out as set out in JSP 815.

46. As part of their overall assurance activity, the commander or manager, together with their chain of command, **must** make sure that this policy is being followed and put into practice effectively.

### **Retention of records**

47. Risk assessments and associated documents should be kept for at least three years after they expire, and in line with Chapter 39 of JSP 375 Volume 1.

### **Related documents**

48. The following documents are related to this chapter.

- a. [JSP 815 - Defence Safety Management System](#)
- b. [JSP 375 Volume 1](#)
  - (1) Chapter 5 - First Aid at Work
  - (2) Chapter 8 - Safety risk assessment and safe systems of work
  - (3) Chapter 16 - Safety occurrence reporting and investigation
  - (4) Chapter 19 - The health and safety of young persons
  - (5) Chapter 39 - Retention of records
  - (6) Chapter 42 - Cold injury prevention
- c. [JSP 950 - Medical Policy](#)
- d. Legislation and guidance
  - (1) Management of Health and Safety at Work Regulations
  - (2) [HSE-INDG163](#) - Risk assessment: a brief guide to controlling risks in the workplace
  - (3) [HSE-HSG268](#) - The Health and Safety Toolbox: How to Control Risks at Work

## Part 2: Guidance

This part provides the guidance and best practice that **should** be followed and will help you to keep to this policy.

This part is made up of the following annexes which are available as separate documents on the JSP 375, Volume 1, Chapter 41 Defnet page.

Annex A – Commander’s guide to preventing heat illness

Annex B – Individual’s guide to heat illness

Annex C – Work/rest tables

Annex D – Procurement, maintenance and training in the use of QT34 wet bulb globe temperature (WBGT) monitor

Annex E – Heat acclimatisation for deployment to hot climates

Annex F – Hydration guidance

Annex G – Examples of policy compliance

Annex H – Basic guidance for all personnel during extreme heat.