

32 Legionella

This chapter is split into two parts:

Part 1: Directive. This part provides the direction that **must** be followed to help you comply with (keep to) health and safety law, Defence policy and Government policy.

Part 2: Guidance. This part provides the guidance and good practice that **should** be followed and will help you to keep to this policy.

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Amendment record

This chapter has been reviewed by the Directorate of Defence Safety (DDS) together with relevant subject matter experts and key stakeholders. Any suggestions for amendments **should** be sent to DDS-GroupMailbox@mod.gov.uk

Version No	Date Published	Text Affected	Authority
1.2	Oct 2020	Interim update post-handover of policy from DSA to D HS&EP.	Dir HS&EP
1.3	5 May 2023	Release of two-part structure.	DDS

Key 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.

Accountable Person	The person whose terms of reference state that they are responsible for making sure there are suitable and sufficient systems in place to control health and safety risks in their unit, estate (site) or platform. This term is used in place of CO, HoE, OC, Station Commander and so on, or as decreed by the Defence organisations. Please read Paragraphs 12 and 13 which provide further explanation (applicable to this chapter only).
Approved Code of Practice L8 (HSE ACOP L8)	HSE Approved Code of Practice for the control of legionella bacteria in water systems.
Area of Responsibility (AoR)	The physical area, activities, or operational parameters for which an individual or organisation has direct control over or delegated authority for financial matters.
Commander	A military person responsible for planning activities, supervising activities, and making sure that 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'.
Duty holder	The person to whom the statutory duty falls referred to as the "duty holder" in legislation, in this chapter is the Accountable Person (AP).
Legionella	Bacterium Legionella Pneumophila and related bacteria. Legionella bacteria can cause Legionellosis, the most serious of which is Legionnaires' disease.
Manager	A person responsible for managing or supervising staff, planning activities, and making sure that 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'.
Occurrence	Refers to the terms Accident / Incident, Near Miss, Unsafe Act, Unsafe Condition and Dangerous Occurrence.
Procurement or acquisition teams and local procurement	Those responsible for activities which relate to the ordering and receiving of goods, materials, supplies, equipment, and services. This may include sourcing, negotiation, contracting, the monitoring of supplier's performance and making sure of compliance with operational protocols.
Responsible Person (Legionella)	A person appointed by the Accountable Person to provide them with advice and take day-to-day managerial responsibility for the implementation and monitoring of the Legionella Management Plan (LMP); and provide assurance to the Accountable Person that their responsibilities are being discharged.

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.

Scope

This policy applies to all those employed by Defence (military or civilian) as well as those working on behalf of Defence (for example, contractors). It applies to all Defence activities carried out in any location (UK or overseas).

Part 1: Directive

Introduction

1. This chapter sets out the direction and guidance for Defence personnel involved in work activities and or who manage facilities where water is used or stored and where there is a reasonably foreseeable risk of an accumulation of legionella bacterium.

Background

2. Legionnaires' disease is a potentially fatal form of pneumonia which can affect anybody, but which principally affects those who are vulnerable because of age, illness, immunosuppression, smoking and so on. It is caused by the bacterium Legionella Pneumophila and related bacteria. Legionella bacteria can also cause less serious illnesses which are not fatal or permanently debilitating. The collective term used to cover the group of diseases caused by legionella bacteria is Legionellosis, the most serious of which is Legionnaires' disease.

3. Legionellosis is normally contracted by inhaling legionella bacteria, either in tiny droplets of water or droplet nuclei (particles left after water has evaporated) contaminated with legionella, deep into the lungs.

4. Legionella bacteria are common and can be found naturally in environmental water sources such as rivers, lakes and reservoirs. Usually in low concentrations, the risk of inhalation of the bacteria from these sources is very low.

Key health and safety legislation

5. Employers have a general duty under the Health and Safety at Work etc. Act (HSWA) to maintain safe working arrangements for their employees. There is a further duty on employers under the [Management of Health and Safety at Work Regulations 1999](#) to carry out a risk assessment of the hazards to which their employees are exposed.

6. The principles of this legislation is extended worldwide by [Secretary of State for Defence policy statement on health, safety and environmental protection](#).

7. The [Control of Substances Hazardous to Health \(COSHH\) Regulations 2022](#) provides a framework of actions designed to control the risk from a range of hazardous substances, including legionella.

8. [The Reporting of Injuries, Diseases and Dangerous Occurrence Regulations \(RIDDOR\)](#) require reporting of exposure to legionella bacteria as an occupational disease (biological agent) to the Health and Safety Executive (HSE).

9. There are also legal duties under [The Health Protection \(Notification\) Regulations 2010](#) which are applicable to laboratories and medical practitioners requiring them to notify local authorities when cases of Legionnaires' disease are identified.

Policy statements

10. Defence has established the following policy statements to provide direction on the management of legionella, which **must** be followed.

- a. **Policy Statement 1.** Accountable Persons (APs) **must** appoint a Responsible Person (RP) to provide them with advice and take day-to-day managerial responsibility for the control of legionella. The RP **must** provide assurance to the AP that their responsibilities are being discharged.
- b. **Policy Statement 2.** APs **must** identify all sources within their Area of Responsibility (AoR) that present a risk of inhalation of legionella bacteria.
- c. **Policy Statement 3.** On completion of a suitable and sufficient risk assessment of the legionella risk, the AP **must** make sure that a Legionella Management Plan (LMP) defining all management arrangements and lines of communication for the control of the risks of legionella bacteria spread in water systems is put in place, maintained and reviewed.
- d. **Policy Statement 4.** The AP, when notified of an occurrence, **must** take immediate action to identify and isolate the source of legionella bacteria from Defence premises or assets within their AoR which may lead to, or has resulted in, a person(s) contracting Legionellosis due to exposure to legionella bacteria.
- e. **Policy Statement 5.** Personnel **must** make sure that they comply with all safety control measures and bring any health and safety concerns that they may have about the workplace or work activity to the attention of their commander, manager, RP or AP.
- f. **Policy Statement 6.** APs **must** make sure arrangements are in place to monitor the health and safety control measures that have been put in place and make sure that any safety improvements are made when identified and approved.

Accountable Person (AP)

11. Legionella bacteria is most commonly associated with infrastructure systems such as cooling towers, showers and so on. However, legionella bacteria can also be found in equipment and services not covered by the normal infrastructure management systems.

12. The infrastructure asset owner or manager (referred to as the “duty holder” in legislation but hereafter referred to as the AP) to whom the statutory duty falls for the management of the risk of exposure to legionella bacteria is defined by the [HSE ACOP L8 2013](#) as the person who has control of the premises or systems (responsible for its maintenance). The responsibility of an AP is dependent on how the infrastructure or asset is managed but duties will normally fall within one of the following constructs:

- a. Defence owned premises and estate - the Defence contract manager for the Maintenance Management Organisation (MMO) contract;
- b. Defence managed mobile and portable or transportable assets (ships, water bowzers, mobile showers and so on) - Commanding Officer and or the military chain of command they report to; and

c. PFI owned or managed premises and assets – Leaseholder.

13. [DIO Policy Instruction \(PI\) 2019/007](#) provides detail of the management arrangements and the roles and responsibilities placed on Defence APs and the DIO and its contractors by HSE ACOP L18 where there is a foreseeable risk of Legionellosis from DIO provided and or maintained assets; including Service Family Accommodation. PI 2019/007 **must** be read in conjunction with this chapter.

Policy Statement 1

Accountable Persons (APs) **must** appoint a Responsible Person (RP) to provide them with advice and take day-to-day managerial responsibility for the control of legionella. The RP **must** provide assurance to the AP that their responsibilities are being discharged.

14. APs have duties placed on them for having suitable management arrangements in place to make sure all statutory and policy requirements are met within their AoR. This requirement is not limited to establishment, unit and site infrastructure, but includes ships, and equipment such as water bowsers, mobile showers and so on.

15. APs **must** appoint a RP to take responsibility for controlling any identified risk from exposure to legionella bacteria and help meet statutory and policy health and safety duties.

16. The RP **must** have sufficient authority, competence, necessary skills, knowledge of the system, and experience. The appointed RP could be one, or a combination of:

- a. the AP;
- b. one or more employees; or
- c. someone from outside Defence.

17. If the AP decides to employ a contractor to conduct the RP duties, the AP **must** make sure that the contractor is competent to do so; see DIO Policy Instruction (PI) 2019/007.

18. The RP **must** make sure that the AP is informed of any problems or issues associated with the management of legionella.

Policy Statement 2

APs **must** identify all sources within their Area of Responsibility (AoR) that present a risk of inhalation of legionella bacteria.

19. The RP on behalf of the AP **must** identify all sources of risk, this includes consideration of whether conditions will encourage bacteria to multiply. For example, if the water temperature is between 20° - 45°C, if there is a means of creating and disseminating breathable droplets, such as the aerosol created, by cooling towers, showers and spa pools and so on.

Policy Statement 3

On completion of a suitable and sufficient risk assessment of the legionella risk, the AP **must** make sure that a Legionella Management Plan (LMP) defining all management arrangements and lines of communication for the control of the risks of legionella bacteria spread in water systems is put in place, maintained and reviewed.

20. The RP, on behalf of the AP, **must** make sure that suitable and sufficient risk assessments of all systems that may present a risk of legionella have been conducted. Risk assessments **must** be conducted in accordance with Defence policy; JSP 375, Volume 1 [Chapter 8](#) – Safety risk assessment and safe systems of work and [Chapter 11](#) – Management of hazardous substances.

21. On completion of the risk assessment, if a requirement for legionella management is identified the RP, on behalf of the AP, **must** make sure that a LMP identifying the management arrangements and lines of communication to control the risks is put in place, signed as appropriate by the AP and RP, maintained and reviewed.

22. The LMP and associated risk assessments **must** be communicated by the RP to all Defence personnel, visitors and contractors, who may be exposed to the legionella bacteria risk.

23. Block leave arrangements, deployments and increased remote working can significantly impact the risk of legionella bacteria risk and negatively impact the control measures that are already in place. The risk of legionella bacteria can increase following periods of shut down or non-use. The RP on behalf of the AP **must** make sure the LMP is reviewed and updated prior to systems being brought back into use. Control measures **must** be reviewed by the RP to adequately cover periods of shut down and non-use to make sure the risks are being controlled so far as is reasonably practicable.

Policy Statement 4

The AP, when notified of an occurrence, **must** take immediate action to identify and isolate the source of legionella bacteria from Defence premises or assets within their AoR which may lead to, or has resulted in, a person(s) contracting Legionellosis due to exposure to legionella bacteria.

24. The AP **must** have procedures in place to make sure that immediate action to identify and isolate the source can be taken following notification of an occurrence which may result or has resulted in an exposure to legionella bacteria or persons contracting Legionellosis. The RP **must** be consulted to make sure the procedures are suitable, sufficient and workable.

25. As a RIDDOR reportable disease (biological agent), any occurrence, with the assistance of the RP, **must** be reported using the relevant Defence organisation safety occurrence reporting system for onward notification to the HSE. Once reported an investigation proportional to the severity / potential severity of the occurrence **must** be undertaken in accordance with JSP 375, Volume 1, [Chapter 16](#) Safety occurrence reporting and investigation.

Policy Statement 5

Personnel **must** make sure that they comply with all safety control measures and bring any health and safety concerns that they may have about the workplace or work activity to the attention of their commander, manager, RP or AP.

26. All personnel **must** comply with the safety control measures implemented following risk assessment. Personnel **must**:
- a. take reasonable care for their own health and safety and that of anyone else who might be affected by their acts or omissions;
 - b. co-operate with their commanders, managers and APs as necessary to allow compliance with statutory and policy requirements;
 - c. make sure they report any occurrence or ill-health to their commander, manager or AP in accordance with their parent establishment, unit or site and Defence safety occurrence reporting procedures;
 - d. inform their commander, manager, RP or AP of any health, safety or welfare concerns without delay; and
 - e. not deliberately or recklessly interfere with, or misuse, anything provided in the interests of health, safety and welfare.
27. Defence personnel **must** report any suspected or confirmed cases of Legionellosis to their commander, manager, RP or AP, co-operate in any investigation and contact their Medical Officer (Service personnel) or their General Practitioner (civilian personnel) for further advice.
28. Defence personnel with specific duties for operation and maintenance of water systems **must** be competent, having sufficient training, experience and knowledge, have appropriate supervision and understand their own responsibilities and limitations. DIO Policy Instruction (PI) 2019/007, Management of Legionella Bacteria in DIO maintained Infrastructure, provides guidance on appropriate training requirements.

Policy Statement 6

APs **must** make sure arrangements are in place to monitor the health and safety control measures that have been put in place and make sure that any safety improvements are made when identified and approved.

29. The RP, on behalf of the AP, **must** make sure that a suitable, sufficient and effective system is put in place to monitor the LMP, risk assessments and all systems that have been identified as a potential legionella risk.
30. Commanders, managers, APs and the RP **must** review risk assessments and make sure that the workplace and work activities remain safe and that all control measures and welfare arrangements are suitable and being maintained.
31. If anyone considers or identifies that the control measures being applied are ineffective or additional control measures are required, the RP and the commander, manager, or AP **must** be informed.

32. The RP **must** make sure the risk assessment is reviewed and, where necessary, the control measures amended or additional control measures implemented. The RP **must** amend the LMP to reflect these changes. These actions **must** also be taken following an occurrence or near miss. In these circumstances the commander, manager or AP, in consultation with the RP, **must** decide if restricting, stopping or pausing the activity is required.

Part 2: Guidance

This part provides the guidance and best practice that **should** be followed using the Plan, Do, Check, Act approach and will help you to keep to this policy.

PLAN - identify problems and opportunities

Policy Statement 1.

Accountable Persons (APs) must appoint a Responsible Person (RP) to provide them with advice and take day-to-day managerial responsibility for the control of legionella. The RP must provide assurance to the AP that their responsibilities are being discharged.

1. The RP **should** make sure they maintain their competency and knowledge of all water systems.
2. The RP as custodian of the LMP **should** make sure it remains current and accessible to all who might be at risk.
3. Regular and effective contact between the AP and RP **should** be maintained to make sure the legionella risk is being adequately managed and problems are identified in a timely manner.

Policy Statement 2.

APs must identify all sources within their Area of Responsibility (AoR) that present a risk of inhalation of legionella bacteria.

4. When identifying systems that have the potential to expose personnel to legionella bacteria, the following **should** be considered:
 - a. the water temperature in all or some parts of the system is between 20–45 °C;
 - b. water is stored or re-circulated as part of the system;
 - c. there are sources of nutrients such as rust, sludge, scale, organic matter and biofilms;
 - d. the conditions are likely to encourage bacteria to multiply;
 - e. it is possible for water droplets to be produced and, if so, whether they can be dispersed over a wide area, for example, showers and aerosols from cooling towers and so on; and
 - f. if it is likely that any employees, residents, contractors or visitors are more vulnerable to infection due to age, illness, a weakened immune system and so on; and whether they could be exposed to any contaminated water droplets.
5. The following water systems commonly found in Defence present a potential risk for inhalation of legionella bacteria (not an exhaustive list):
 - a. cooling towers;
 - b. evaporative condensers;
 - c. hot and cold water services;
 - d. showers (particularly emergency showers);

- e. eye wash sprays;
- f. sprinklers and hose reel systems;
- g. lathes and machine tool coolant systems;
- h. swimming pools;
- i. hydrotherapy units;
- j. vehicle wash systems;
- k. high pressure hose systems;
- l. fountains and water features; and
- m. dental equipment.

6. The RP **should** consult with Defence personnel, Trades Union and employee safety representatives on the identified risks and on the measures and actions taken to control the risks.

7. Procurement and acquisition teams, and local purchase officers **should** make sure that equipment and platforms procured which incorporate water systems, are engineered to minimise the risk of exposure to legionella bacteria. Information for the safe use and maintenance of water systems **should** be provided to the RP and commander, manager or AP for further cascade to the personnel who will operate and maintain it.

DO - implement potential solutions

Policy Statement 3.

On completion of a suitable and sufficient risk assessment of the legionella risk, the AP must make sure that a Legionella Management Plan (LMP) defining all management arrangements and lines of communication for the control of the risks of legionella bacteria spread in water systems is put in place, maintained and reviewed.

8. The risk assessment **should** include, but not be limited to, the following:
- a. management responsibilities, including the name of the RP and a description of the system or systems covered;
 - b. competence and training of key personnel;
 - c. any identified potential risk sources;
 - d. how the contaminant gets into the air;
 - e. any vulnerable persons, such as;
 - (1) people over 45 years of age;
 - (2) smokers and heavy drinkers; and
 - (3) people suffering from chronic respiratory or kidney disease, or impaired immune systems.
 - f. any means of preventing the risk or control measures in place to control risk;
 - g. monitoring, inspection and maintenance procedures;

- h. records of the monitoring results and inspection and checks carried out; and
- i. arrangements to review the risk assessment regularly in accordance with JSP 375 Vol 1 Chapters 8 and 11, particularly when there is reason to suspect it is no longer valid.

9. The RP **should** make sure that all the appropriate control measures are applied (for example, engineering controls, cleaning protocols), monitored for effectiveness, any weaknesses identified are corrected and immediate action taken to report any serious issues to the AP. Regular inspections **should** be undertaken to monitor the condition of the water systems and any revised actions recorded in the LMP.

10. When assessing if the control measures are appropriate, consideration of hierarchy of controls will be required:

- a. Elimination.
- b. Substitution.
- c. Engineering controls.
- d. Administrative controls.
- e. Personal protective equipment.

11. The primary objective is to avoid conditions which permit legionella bacteria to proliferate and to avoid creating a spray or aerosol which can then be inhaled.

12. Example of control measures include:

- a. maintenance of water temperature (avoid temperatures between 20°C and 45°C);
- b. avoidance of water stagnation; and
- c. avoid use of material in the system which can harbour or provide nutrients for bacteria and other organisms.

13. The AP with the help of the RP is responsible for completion and review of the LMP, covering the totality of each establishment, unit, site or vessel that comes within their AoR. Including any areas, systems or equipment that come under the responsibility of other Defence personnel, MMOs or third parties (for example, tenants). The LMP **should** identify all control measures to be taken to make sure all risks are properly managed. The RP **should** manage the LMP on behalf of the AP. Further guidance on the production and maintenance of a LMP is contained in DIO Policy Instruction (PI) 2019/007.

14. The AP **should** lead regular consultation with all parties to make sure that any changes of use, occupancy and so on, that may impact on the required legionella control measures, are identified, managed and recorded in the LMP.

15. All personnel engaged in the management of legionella and all personnel operating or working with water systems are required to be competent. DIO Policy Instruction (PI) 2019/007, Management of Legionella Bacteria in DIO maintained Infrastructure, provides guidance on appropriate training requirements.

16. Health and Safety Advisers can be consulted to provide help and guidance on the best way to manage legionella, maintain competency and produce and maintain an LMP.
17. Annex A - Legionella Risk Management Flowchart, provides further guidance on what needs to be done and when.

Policy Statement 4.

The AP, when notified of an occurrence, must take immediate action to identify and isolate the source of legionella bacteria from Defence premises or assets within their AoR which may lead to, or has resulted in, a person(s) contracting Legionellosis due to exposure to legionella bacteria.

18. To be effective, commanders and managers responsible for a system that might present a legionella risk, and the personnel who might be exposed to that risk, **should** be familiar with the symptoms of Legionellosis, in particular Legionnaires' disease. The following are examples of considerations and symptoms:
- a. The incubation period for Legionnaires' disease ranges between two and ten days and usually begins with a headache, muscular pain and a general feeling of being unwell.
 - b. These symptoms are followed by high fever (with temperatures often greater than 39.5°C) and shaking chills. Nausea, vomiting and diarrhoea may occur.
 - c. On the second or third day dry coughing develops and is often accompanied by breathing difficulties.
 - d. Effective treatment may be achieved by the use of antibiotics.
 - e. There have been no reports of person to person transmission of Legionnaires' disease.
19. Following an occurrence which may result or has resulted in an exposure to legionella bacteria or persons contracting Legionellosis, the RP on behalf of the AP **should** inform any Defence personnel, visitors and contractors who may be at risk and advise them to consult either their Medical Officer (Service personnel) or their General Practitioner (civilian personnel). Trades Unions and employee safety representatives **should** also be informed.

Policy Statement 5.

Personnel must make sure that they comply with all safety control measures and bring any health and safety concerns that they may have about the workplace or work activity to the attention of their commander, manager, RP or AP.

20. It is essential that all personnel co-operate with their commander, manager, RP and AP bringing to their attention any concerns that they may have about any workplace or work activity health, safety or welfare issues, in particular any new hazards.
21. All personnel **should** make sure they report any occurrence to their commander, manager, RP or AP in accordance with parent establishment, unit or site and Defence safety occurrence reporting procedures.

CHECK - assess the results

22. The RP as custodian of the LMP **should** develop, maintain and bring it to the attention of all stakeholders and those at risk. The LMP **should** be reviewed at regular intervals (at least 6 monthly) to confirm the information remains accurate, the arrangements are effective and any changes are recorded.

ACT - implement improved solutions

Policy Statement 6.

APs must make sure arrangements are in place to monitor the health and safety control measures that have been put in place and make sure that any safety improvements are made when identified and approved.

23. Where safety improvements are identified, either through inspection, communication with those conducting the activity, changes to legislation or policy, changes in available equipment or technologies or following an occurrence, RPs **should** review and update the risk assessment control measures and the LMP at the earliest possible time.

Retention of records

24. Risk assessments and associated documents (including LMPs) **should** be kept in accordance with the requirements of JSP 375 Volume 1 [Chapter 39](#) (Retention of records).

Related documents

25. The following documents are related to this chapter:

a. **JSP 375, Volume 1**

- (1) Chapter 02 – Military and civilian workplace safety
- (2) Chapter 04 – Workplace inspections
- (3) Chapter 08 – Safety risk assessment and safe systems of work
- (4) Chapter 11 – Management of hazardous substances
- (5) Chapter 16 – Safety occurrence reporting and investigation
- (6) Chapter 39 – Retention of records

b. **Other Defence Publications**

- (1) JSP 815 Defence Safety Management System (SMS)
- (2) [DIO Policy Instruction \(PI\) 2019/007 Management of Legionella Bacteria in DIO maintained Infrastructure](#)
- (3) Service Personnel Policy – Service Conditions documents
- (4) Policy, Rules & Guidance documents (civilian personnel)
- (5) Royal Navy BRd 820: Potable Water Management

c. **Legislation and Guidance**

- (1) [Health and Safety at Work etc. Act 1974 \(legislation.gov.uk\)](#)
- (2) [Management of Health and Safety at Work Regulations 1999](#)
- (3) [Control of Substances Hazardous to Health \(COSHH\) Regulations 2002](#)
- (4) [HSE Approved Code of Practice Legionella ACOP L8 2013](#)
- (5) [HSE Legionnaires' disease - Technical guidance HSG 274](#)
- (6) [HSE INDG458 - Legionnaires' disease: A guide for duty holders](#)
- (7) [HSE L8 - Legionnaires' disease: The Control of Legionella bacteria in water systems](#)
- (8) [The Reporting of Injuries, Diseases and Dangerous Occurrence Regulations \(RIDDOR\)](#)
- (9) [The Health Protection \(Notification\) Regulations 2010](#)

Legionella Risk Management Flow Chart

