

Background Quality Report

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MOD Health and Safety Statistics: Annual Summary & Trends Over Time, 2018/19 – 2023/23

The purpose of a background quality report is to inform users of the statistics about the quality of the data used to produce the publication, and any statistics derived from that data. It also discusses existing uses of the statistics and user requirements.

This assessment relates to the 'MOD Health and Safety Annual Statistics' published by Defence Statistics Health.

1. Contact

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2. Introduction & Statistical Presentation

These annual MOD Health and Safety Official Statistics have been developed to inform internal and external users of the numbers of MOD health and safety incidents and to identify trends in health and safety incidents over time. Providing additional statistics on demographic groups, and the types of events and activities increases the amount of information readily available, therefore reducing the burden of requests for such information.

This report provides summary statistics on UK Armed Forces personnel, Ministry of Defence (MOD) Civilian personnel, Other Civilians, and Cadet Forces personnel with reported injuries, ill health, near miss or dangerous occurrences incidents on duty at MOD property or injured in or by MOD vehicles.

The following information is provided:

- Numbers of safety related deaths, by cause between 2018/19 and 2023/23.
- Summary of reported injury and ill health incidents for UK Armed Forces (by Service) and civilians in 2023/23, including demographic breakdowns.
- Time trend charts presenting the numbers and rates per 1,000 of all reported injury incidents between 2018/19 and 2022/23.
- Summary of incidents categorised as 'minor', 'serious' and 'specified' as defined by the Health and Safety Executive (HSE).
- Summary of reported injuries for Regular and Reserve Armed Forces in 2022/23 by type of event and type of activity.
- Summary of ill health incidents reported on MOD health and safety systems in 2022/23.
- Summary of reported near misses and dangerous occurrences reported on MOD health and safety systems in 2022/23.
- Supplementary tables in MS Excel provide additional information on the numbers and rates per 1,000 personnel at risk of reported injury.

This Statistical Bulletin is published as an Official Statistic, adhering to the UK Statistics Authority (UKSA) protocols on pre-release access.

3. Statistical processing

3.1 Source data

Health and Safety data sources

Health and Safety incidents are currently compiled using data provided from the following Top Level Budget (TLB) reporting areas and systems:

- *Army Safety Centre Incident Notification System (INS)* – 1 April 2018 to 31 March 2023
- *Accident and Incident Recording System (AIRS)* – 1 April 2018 to 30 June 2020
- *RAF Functional Safety Information Management System (FSIMS)* – 1 May 2020 to 31 March 2023
- *Defence Equipment and Support Cell (DINC)* – 1 April 2018 to 31 March 2023
- *Defence Infrastructure Organisation (DIO)* – 1 April 2018 to 31 March 2023
- *Defence Unified Reporting and Lessons Management System (DURALS)* – 10 January 2022 to 31 March 2023
- *Head Office and Corporate Services (HOCS)* – 1 April 2018 to 31 March 2023
- *UK Strategic Command (UK Strat Comm)* – 1 April 2018 to 31 March 2023
- *Naval Service Information Management System (NLIMS)* – 1 April 2018 to 31 March 2023

Deaths data sources

Defence Statistics receives weekly notifications of Armed Forces deaths from the Joint Casualty and Compassionate Centre (JCCC) in accordance with the Joint Service Publication 751: Joint Casualty & Compassionate Policy & Procedures. The JCCC provides a focal point for casualty administration and notification. Defence Statistics also receive cause of death information from military medical sources in the single Services, death certificates and coroner's inquests.

Defence Statistics regularly checks all deaths for information on coroner's verdicts (England and Wales) and the results of investigations by the Crown Office and Procurator Fiscal Service (COPFS) for Scotland. For Northern Ireland, Defence Statistics liaise with the Northern Ireland Statistics and Research Agency (NISRA) who handle the official information on behalf of the Northern Ireland Office. There is an obligation for all accidental deaths and those resulting from violent action to be referred to these officials. Inquests are usually held within a few months of the death, but occasionally a few years may elapse. Therefore, some recent deaths may not have clearly defined cause information.

Administrative Data Sources

The Joint Personnel Administration (JPA) System and the Human Resources Management System (HRMS and MyHR) are used to capture people and military characteristic information for Armed Forces personnel and MOD Civilian staff respectively.

3.2 Data collection

Figures are based on TLB data recorded by each individual TLB within their own notification cells. Defence Statistics have direct access to four of the datasets (DURALS, FSIMS, INS, NLIMS) for which weekly extracts are now obtained. Weekly datasets are also provided by

Defence Infrastructure Organisation and Defence Equipment and Support. UK Strategic Command and Head Office provide monthly extracts.

Each individual TLB is responsible for ensuring the quality of data supplied to Defence Statistics. Defence Statistics Health carry out basic consistency and validation checks to ensure data integrity. Where inconsistencies are identified, Defence Statistics contacts the data provider to inform them of any issues found to attempt to get them resolved.

3.2 Data validation

Defence Statistics checks the integrity of source data by running checks to verify that the data is complete, accurate and free of errors or inconsistencies. This includes checking for missing values, data format errors, and logical inconsistencies in the dataset. Where any of the above issues remain, Defence Statistics carries out a number of steps to resolve them. Please read the section below to see the method used to populate missing data fields.

Further validation checks are carried out after the data have been processed to ensure that all processes and calculations have been carried out correctly and that final numbers are an accurate reflection of the data received from TLBs. Manual checks are then carried out on the final report to ensure that the figures quoted in the commentary reflect those in the tables and that the numbers sum to the totals provided.

3.3 Data compilation

The data is compiled together by using key fields that exist in all datasets which uniquely identify each record across all the sources. The structure, format and data types are reviewed and aligned to ensure the datasets are compatible for merges. If necessary, transformations are performed to align formats and data types.

Defence Statistics carries out processing of the data by taking the information entered in both raw data fields and free text to create new fields of reporting categories. These reporting categories are used in the Official Statistic and other internal reports. Additional fields are created to provide extra groupings and breakdowns of the data supplied. This includes the *type of incident*, *activity* and *type of event*.

Prior to April 2016, Defence Statistics manually coded the health and safety data and categorised the incidents into what activity caused the health and safety incident, this field was known as Mechanism of Injury. For example, if someone fell over on a wet floor whilst on Adventure Training it would have been categorised as Built Estate Infrastructure not Adventure Training. From 1 April 2016 Defence Statistics has altered this process by creating an automated code to improve consistency and remove manual bias. In doing this, two additional categories have been added to provide further clarity to 1) the activity a person was doing whilst the incident occurred and 2) the circumstances of that particular incident.

Incidents with insufficient detail in the source data fields are categorised into one of the main four activities using an automated process where free text information is used to identify the type of activity and type of event. Defence Statistics relies on free text entered by the individual reporting the incident, if the information provided in the data is incorrect or ambiguous then the resulting categorisation is also incorrect. This is a data quality issue which is the responsibility of each TLB. Defence Statistics are continually working with the TLB's to improve health and safety data quality.

Demographic information (e.g. Service, gender, date of birth) is not captured within the source data. For records where service/staff numbers are provided they are matched with the JPA and HRMS/MyHR systems in order to complete the demographic information. Where

no information is available on the personnel databases (after matching) or a service/staff number is not recognised or not provided, information from free text on the original incident record is used where possible to complete the demographic information. Please note, it may only be possible to identify the service and assignment type from the free text if this has been included. Free text does not contain information of gender or age.

Methodology

Rates

Rates enable comparisons between groups and over time, taking account of the number of personnel in a group (personnel at risk) at a particular point in time. **The number of events (i.e. reported injuries and ill health incidents) is divided by the number of personnel at risk per annum and multiplied by 1,000 to calculate the rate per 1,000 personnel at risk.**

Percentage

Percentages are calculated in the same way as the rate per 1,000 but multiplying by 100 instead of 1000, i.e. **The number of events (i.e. reported injuries and ill health incidents) is then divided by the number of personnel at risk per annum and multiplied by 100 to calculate the percentage of personnel affected.**

Statistical significance

The statistical significance tests used within this report uses the Z test. The Z test is used to test the difference between two proportions was used to identify if there was a significant difference between the rates of two different groups e.g. males and females. The significance test provided the confidence to state that an observed difference between the rates was a real difference. A significance level of 0.05 has been used throughout this report.

Population data

Reliable denominator data were not available for all populations in these statistics and therefore some groups were excluded from rate calculations. Denominator data were not available for Other Civilian groups including Contractors, Foreign Forces, directly employed labourers and members of the public including external visitors on MOD property. There are no centrally held data on the numbers of civilians within these groups that have resided / visited MOD sites. Therefore, these populations were excluded from the overall rates/percentages presented. Due to late publication of the MOD sponsored cadet forces statistic this year, it was not possible to obtain the 22/23 populations for the Cadets subgroup of Cadet Forces, the figures used to calculate rates are for the year previous 21/22. In addition, the numerator and denominator for the age of the Cadets sub-group of Cadet Forces were not available, and therefore it was not possible to calculate rates by age group.

The rates and percentages calculated for this Statistical Bulletin are based on headcounts as the denominators (the actual number of people within a group) which is in line with the Health and Safety Executive's (HSE) methodology for calculating rates presented within their Annual reporting injury in the workplace for all UK Annual Health and Safety Statistics.

The estimate of personnel at risk required for the denominator value is derived using a thirteen-month average of strengths figures (e.g. the number of personnel in the UK Armed Forces) at the first of every month between March 2018 and March 2019 divided by thirteen for 2018/19).

4. Quality management

4.1 Quality assurance

The MOD's quality management process for Official Statistics consists of three elements: (1) Regularly monitoring and assessing quality risk via an annual assessment; (2) Providing a mechanism for reporting and reviewing revisions/corrections to Official Statistics; (3) Ensuring BQRs are publishing alongside reports and are updated regularly.

The latest Quality Assurance assessment of the H&S statistic identified that some improvements were possible with limitations identified due to definitional differences between TLB sources and the reliance on free text to create some of the reporting categories.

4.2 Quality assessment

New reporting system:

Launch of the new Defence Unified Reporting and Lessons System (DURALS), which is currently used by the Army and Strategic Command, has impacted the quality of the data collection in different ways:

DURALS is an agile system and is constantly being developed to improve reporting. Completeness and accuracy of personal information for military personnel has improved due to the new system linking to the personnel database (JPA).

The legacy Army system was reliant on the Army Safety Centre coordinating the entry of incident reports. The new system which is menu-driven allows users direct access to submit occurrence reports without safety centre intervention. This may affect the accuracy of reported injury severities, with a greater proportion being reported as minor. This may reflect improved reporting of minor events, however a review of the narrative text of these incidents suggests an estimated error rate of around 5-10%, where an incident should have been categorised as serious or specified. Work is underway to automate the process of recording some elements of injury severity to improve accuracy.

The new system better distinguishes between injury and ill health by providing the user with more options to specify the type of injury sustained or symptoms of ill health. This improvement has resulted in a more accurate identification of ill health incidents, previously reported as injuries. Increases in the reports of ill health may be due to better reporting of this instances or may be more accurate categorisation of incidents that had previously been categorised as injuries.

The new system has better delineated categories of activity due to users being able to select types of activity from drop down menus, resulting in more accurate identification of the types of activities undertaken (mainly Physical Training (PT), Training and Adventure Training). Therefore, automated coding processes used in other systems is not used for the majority of incidents entered into DURALS to assign incidents to these categories. Where type of activity was not listed, users are able enter free text via the "Other" option. To identify the activity reported through "Other", Defence Statistics continues to use an automated code to categorise the incidents as one of the four main activities referred to elsewhere in the report (Adventure Training; Training/Exercise; Sport/Recreation; Normal Duties/Routine Activity).

Within the system, users can report incidents which occurred during "Routine Activity", this aligns with activity type "Normal Duties". Wording within this Statistic has been updated to reflect these changes.

5. Relevance

5.1 User needs

The MOD Health and Safety statistics have been published in response to user demand. Interest has come from internal MOD policy makers, Government Departments, the media, and the general public.

These statistics also plays an important part in ensuring the Department's accountability to the British public.

5.2 Strengths and Weaknesses in Relation to User Needs

A key weakness is that Defence Statistics relies on the level of detail recorded on the health and safety data for each incident. A great deal of the information can be recorded in free text fields, or at the time of the incident when not all details may be known, and is therefore subject to change. Some incidents may be reported at a later date and some details are updated which can result in revisions to previously published data.

Defence Statistics Health encourage users to provide feedback on the publication itself. Feedback is also welcomed from any other internal and external customers.

6. Accuracy and reliability

6.1 Overall accuracy

MOD civilian demographics have only been provided for a limited group of people and therefore numbers and rates should be interpreted with caution. Out of all personnel identified as MOD Civilians, the type of personnel (whether industrial or non0industrial) was missing for 32% (344), gender information was not available for 49% (522) of the sample, age information for 69% (740).

6.2 Coverage

The data in this report include all UK Armed Forces personnel, MOD Civilian personnel, Other Civilians, and Cadet Forces personnel with reported injuries, ill health, or near miss incidents on MOD property or injured in or by MOD vehicles.

The injured person or a witness to the incident will report the incident to the relevant TLB notification cell. The severities of incidents are aligned with the HSE definitions.

Due to the wide range of statistics presented, the Statistics Bulletin is presented in five sections for reported health and safety incidents, with supplementary tables in MS Excel provide further breakdowns and details.

6.3 Data Revisions

Data revisions are handled in accordance with the [MOD's Official Statistics Revisions and Corrections Policy](#).

Incident numbers have been updated to account for late reporting. Figures updated are represented with an 'r'.

The statistics are subject to routine revisions as all notification cells receive updates on incidents already reported or new reports of incidents that happened in the past (late reporting). These figures can be identified by a revision marker ('r'). Due to ongoing data validation and the existence of late reporting, figures for the latest financial year are provisional ('p') and may also be subject to change in future releases.

7. Timeliness and Punctuality

7.1 Timeliness

Data are provided to Defence Statistics on a routine basis from each health and safety reporting system individually. The official statistic is produced on an annual basis.

7.2 Punctuality

The Official Statistics have all been published on time to meet pre-announced release dates. Future publication dates will also be announced on the [Gov.UK website](#) at least one month in advance.

8. Coherence and Comparability

There are eight current reporting systems run by different TLBs that the Health and Safety official statistic uses to calculate the numbers and rates. To improve the coherence of the data received from the TLBs, each report against a minimum data set, although there may be definitional differences between them.

MOD uses the same severity categories as HSE to enable comparisons. The HSE's severity categorisations have been applied to all events in this statistic, even those events which do not meet RIDDOR criteria, such as those that occur off duty or overseas.

Defence Statistics limit changes to methodology to enable comparisons over time, however any methodology changes are clearly shown. Where data processing errors are identified, where appropriate, historic trend information is corrected and provided in the accompanying Excel tables.

In January 2022 the Army and UK Strategic Command launched a new safety reporting system (the Defence Unified Lessons and Reporting System) which was designed to be more user-friendly and encouraged the reporting of safety related incidents. Increases in the number of Armed Forces incidents over the latest year may be due to improvements in reporting rather than an increased number of events.

9. Accessibility and Clarity

9.1 Accessibility

These statistics are published the GOV.UK website at the following link: <https://www.gov.uk/government/collections/defence-health-and-safety-statistics-index>

24 hour pre-release access to the report was available to a limited distribution list within MOD. The full list can be found in the pre-release access list available on the Gov.UK website: <https://www.gov.uk/government/statistics/defence-statistics-pre-release-access-list>.

MS Excel versions of all Health and Safety report tables are also available on the Gov.uk website alongside each published report.

A glossary of key terms is provided in the report to aid understanding.

9.2 Clarity

Users with an interest in the key findings can read a short summary of main messages within the Introduction. The report is then split into distinct sections to help users navigate their way through the publication.

9.3 Additional supporting glossary

Human Resources Management System (HRMS) is a personnel system used by Defence Business Services to capture information on all MOD civilians, to include personal and job information.

Joint Casualty and Compassionate Cell (JCCC) - provides a focal point for casualty administration and notification and requests for compassionate travel (for those personnel serving overseas) in respect of members of the British armed forces.

Joint Personnel Administration (JPA) - is the system used by the Armed Forces to deal with matters of pay, leave and other personnel administrative tasks.

MyHR is a personnel system used by Defence Business Services to capture information on all MOD civilians, to include personal and job information. This system replaced HRMS in January 2023.

Royal Fleet Auxiliary (RFA) - is a civilian manned fleet owned by the MOD, which supports Royal Navy ships around the world, supplying warships with fuel, ammunition and supplies. Although all RFA personnel are MOD civilians, in addition to their civilian status, since 2007, a large proportion of RFA personnel have also become Royal Naval Reserve sponsored reserves. In a combat situation, this sponsored reserve status is activated to ensure that personnel are protected by the Geneva Convention. RFA personnel on sponsored reserve contracts are reported in this publication as a subset of the RNR sponsored reserve. These RFA sponsored reserve personnel are also reported in the Quarterly Civilian Personnel Report, which publishes statistics on the whole of the RFA population.

Royal Marines - (RM) Royal Marines are sea-going soldiers who are part of the Naval Service.

Royal Navy - (RN) The sea-going defence forces of the UK but excludes the Royal Marines and the Royal Fleet Auxiliary Service (RFA). From 1 April 2000 the Royal Navy incorporated Queen Alexandra's Royal Naval Nursing Service (QARNNS).

RIDDOR Reportable Occupational Diseases –

The Reporting of Injuries, Diseases and Dangerous Occurrence Regulations 2013 (RIDDOR) puts duties on employers, the self-employed and people in control of work premises to report certain serious workplace accidents, occupational diseases and specified dangerous occurrences.

RIDDOR defined injuries to civilian employees and incidents leading to the hospitalisation or death of members of the public are reportable to Health and Safety Executive (HSE). Equivalent injuries and diseases to armed forces personnel on duty are not reportable under RIDDOR but MOD has undertaken to notify any Work-Related Death, Major Injury, Disease or Dangerous Occurrence, to HSE as if they were RIDDOR reportable. Defined Dangerous Occurrences are reportable.

During the Covid-19 pandemic, HSE made Covid-19 reportable if there was a likelihood it was caught at work. Workers report incidents on Covid-19 which they believe may have been from exposure at work, however reliably identifying the source of exposure for COVID-19 is difficult and self-reports may under- or overestimate the true scale

In the case of a fatality within the defined geographic limits, HSE expects the Commanding Officer/Head of Establishment or other responsible person within the relevant command to notify HSE within the time periods as laid down in RIDDOR.

MOD defines the severity of injuries and illness as follows:

a. Specified injuries and illnesses – aligned with the HSE definition as work-related incidents which include:

- a fracture, other than to fingers, thumbs and toes;
- amputation of an arm, hand, finger, thumb, leg, foot or toe;
- permanent loss of sight or reduction of sight;
- crush injuries leading to internal organ damage;
- serious burns (covering more than 10% of the body, or damaging the eyes, respiratory system or other vital organs);
- scalpings (separation of skin from the head) which require hospital treatment;
- unconsciousness caused by head injury or asphyxia;
- any other injury arising from working in an enclosed space, which leads to hypothermia, heat-induced illness or requires resuscitation or admittance to hospital for more than 24 hours.

b. Serious injuries and illnesses – aligned with the HSE category of ‘over seven-day incapacitation of a worker’ and are those that are not defined as ‘specified’ according to the above criteria but which could result in a person being unable to perform their normal duties for more than seven days.

c. Minor injuries and illnesses - are those that are not classified as ‘serious’ or ‘specified’.

Top Level Budget (TLB) - Most Defence activity is managed through Top Level Budget (TLB) holders. The Permanent Secretary grants each TLB holder extensive delegated powers over personnel, infrastructure and budget.

10. Trade-offs Between Output Quality Components

Defence Statistics minimise the cost to Government of producing these statistics by using data already collated for internal reporting to the MOD Defence Board. Since data are returned by individual TLBs, data between datasets are of varying quality and completeness. This limits the information available.

11. Cost and Respondent Burden

Annual updates of the health and safety statistics take two members of staff approximately 8 weeks to prepare, including data preparation, validation and report writing.

The Health and Safety report uses administrative data sources which are already collected by the MOD. Therefore, the main operational cost to production of the statistics is liaison with the health and safety reporting systems, for quality assurance and data interpretation.

12. Confidentiality and Security

12.1 Confidentiality – Policy

Prior to analysis data sources have been linked using a pseudo-anonymisation process. The individual identifiers were stripped from datasets and replaced by a pseudo-anonymiser, generated, effectively, by an automated sequential numbering system. The key to the system is that it recognises previous occurrences of a given Service number and allocates the same pseudo-anonymiser on each occasion. This also enables the data to be linked with the other data sources, which have also already been pseudo-anonymised. The tables in the report are scrutinised to ensure individual identities are not revealed inadvertently.

The MOD Health and Safety Statistics: Annual Summary & Trends Over Time is an Official Statistic and is produced in line with the UK Code of Practice for Official Statistics and comply with the pre-release access arrangements. The Defence Statistics Pre-Release Access lists are available on the GOV.UK website

12.2 Confidentiality – data treatment

In line with the directives of the JSP 200, disclosure control is conducted on all statistical information provided by the MOD to safeguard the confidentiality of individuals. Within these statistics a risk of disclosure has been considered to be high where numbers presented are fewer than three. In cases where a risk of disclosure exists, one of two appropriate disclosure control methods have been applied:

- a) Figures have been suppressed: In most cases where there may be a risk of disclosure, numbers fewer than three have been suppressed and marked as '~'. Where there is only one cell in a row or column that is fewer than three, secondary suppression has been applied where the next smallest number has also been suppressed so that numbers cannot simply be derived from totals.
- b) Where numbers fewer than three have been presented, each occurrence has been scrutinised and the risk of disclosure has been assessed as low.

12.3 Security

Defence Statistics Health has data access agreements with all health and safety reporting systems with respect to obtaining the health and safety data extracts. All Defence Statistics Health staff involved in the production of the casualty statistics have signed a declaration that they have completed the Government wide Responsible for Information- General User training and they understand their responsibilities under the Data Protection Act and the Official Statistics Code of Practice. All MOD, Civil Service and data protection regulations are adhered to. The data is stored, accessed and analysed using the MOD's restricted network and IT systems.