



SCOTTISH

FIRE AND RESCUE SERVICE

Working together for a safer Scotland

# GUIDANCE NOTES ON FIRE AND RESCUE INCIDENT STATISTICS (SCOTLAND) 2018-19

31 October 2019

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# Notes on statistics used in this publication

## Introduction

This publication presents fire and rescue incident statistics for Scotland and includes information on fires, non-fire incidents, casualties and false alarms. We publish commentary in the [main bulletin](#) as well as statistical tables in [downloadable workbook](#). This statistical series was formerly produced by the Scottish Government and they continue to host historic publications on their [website](#).

## Downloadable workbook

One of the most notable areas of change this year is in the layout and management of the downloadable workbook of tables and charts. Rather than producing a workbook each year with some figures maintained and revised from previous years while other figures such as local authority breakdowns are not included, we now maintain only one workbook which contains all statistics from this series along with the most up to date charts. Consequently we have archived historic workbooks and infographics.

Due to the changes in content and to facilitate the addition of statistics in future, we have removed the table numbers and instead introduced unique table reference codes. We now reference tables in the contents page using the topic of the table.

We have also changed our approach to statistical revisions this year; formerly we revised only two years on each publication date however we have found that in practice this timeframe is too short to capture all revisions which are in the public interest. For example in 2017-18 we chose to extend the revisions period as the count of fire related fatal casualties in 2014-15 had changed as new information came to light. We believe it is preferable to revise all statistics based on our live administrative data system in order to keep the public record as accurate as possible. The Home Office Fire Statistics publications for England use a similar policy.

## Status of the publication

Prior to October 2015, these statistics were produced by the Scottish Government and accredited by the United Kingdom Statistics Authority as National Statistics (signifying full compliance with the Code of Practice for Statistics). Subsequently they have been produced by SFRS in voluntary compliance with the Code of Practice for Statistics. However, as SFRS are not currently named in legislation as producers of Official Statistics, it was no longer possible for these statistics to be designated as National Statistics. SFRS are continuing to work towards becoming named as producers of Official Statistics with a view to regaining accreditation as National Statistics for this series. SFRS has agreed to being named as producers of Official Statistics in upcoming legislation and anticipate that this will occur in the next calendar year.

## Consultation and engagement

We are committed to providing relevant, useful and timely statistics and would like your feedback on what we publish. This would give us a clearer view of who uses our statistics and what our statistics are used for. To this end we are running a consultation from 30th August 2019 to 30th November 2019. We will publish a response in January 2020.

Currently we send out notifications to those who may use our statistics through the Scottish Governments [ScotStat](#) service. We are looking at other methods of user engagement, including the use of our website to provide news and notifications for our statistics. We are committed to improving access to our statistics and aim to provide means to keep up to date in the next year. We participate in the [Fire and Rescue Statistics User Group](#) which has been a useful user engagement platform for us and may be of interest to those who use a range of fire statistics or are involved in the production of fire and rescue related statistics.

## Data Source

Each time the Scottish Fire and Rescue Service (SFRS) attends an incident in Scotland, details of that incident are uploaded to the Incident Recording System (IRS) run by the Home Office. The IRS is a continually updated database with incidents added on a daily basis.

Figures based on the live IRS have been used by the Service throughout the year and reported to the SFRS Board on a quarterly basis. It is possible therefore that some of these statistics will match management information which is in the public domain.

The IRS was introduced across Great Britain in April 2009 and extended statistical reporting to cover all incidents attended by Fire and Rescue Services. This increased the amount of information available about incidents attended and ensured that all incidents have a distinct record. More information on the IRS can be found [here](#). A number of different software packages are in use across Great Britain to capture this information before sharing it with the Home Office IRS, while these systems can look different they capture the same essential information meeting standardised definitions. There have been two such systems in use in Scotland since the IRS launched in 2009-10. In 2019-20 a single IRS system will be launched for Scotland which will be used as the source for future publications in this series. As with the various systems currently in use in Great Britain, this system will capture the same key data meeting the same definitions. We do not anticipate any adverse impact on comparability of statistics.

Prior to 1st April 2009, the 'fire damage report' form - FDR1 (94) was the main source providing information on all fires involving casualties and all fires in buildings, vehicles and outdoor structures. The FDR3 form collected aggregated data on 'secondary' and 'chimney' fires, consequently analysis of these types of fire prior to 2009 is limited.

## Comparability

The change of data collection with the introduction of the IRS in 2009-10 caused discontinuities in some of the longer-term time series. These include: non-fatal casualties and smoke alarms.

### **Non-Fatal casualties**

There is a significant discontinuity in the number of non-fatal casualties between 2008-09 and 2009-10. Non-fatal casualty data from after 2009-10 should not be compared with figures from before the discontinuity in 2009-10. The change in recording of precautionary checks significantly contributed to this discontinuity, under the FDR system officers could select this outright whereas under the IRS system officers must first select a nature of injury before precautionary checks can be selected. Consequently the change in inclusion criteria impacts the total count causing a notable decrease. Removing precautionary checks does not fully resolve the issue and comparisons without this category should not be drawn from before and after the introduction of IRS. A new category, 'First aid given at scene', impacted recording practice which caused an increase in the total even when excluding precautionary checks.

### **Smoke alarms**

The IRS introduced 'don't know' in addition to the existing 'yes' and 'no' in gathering data on the presence of smoke alarms. This has affected the trend data and as such we recommend that smoke alarm data after 2009-10 is not compared with data prior to 2009-10.

## Quality Assurance and Potential Errors

The officer in charge of an incident enters data to the IRS using software forms with inbuilt validation rules. The SFRS Data Services team then run exception checking scripts on the IRS database to identify potential errors which are subsequently manually checked. Further quality assurance is completed by cross checking incidents details with control room logs. We prioritise this work according to the category of incident with dwelling fires being most frequently cross-checked.

After the most severe fire incidents the SFRS fire investigation team complete a report on the details of the incident. Following these reports the IRS record is amended to reflect the findings where necessary. SFRS Data Services use these reports to crosscheck the IRS records.

Presently there are differences in quality assurance of casualty data as a result of the three Control centres using differing practices resulting from legacy provision. With the launch of a single IRS system for Scotland in 2019-20, there will be further standardisation of quality assurance efforts and a streamlined data pipeline. We intend to provide more detail on our data capture and quality assurance processes and will do so in our publication next year once these planned changes are completed.

As quality assurance is an ongoing process and we currently have no automated means to cross check the IRS logs with control room logs, it is difficult to accurately estimate the 'true' error margin, either at the time of publication or following revision, of the subcategories of incidents or casualties. There may be some miscategorisation which has yet to be addressed, or is not possible to address without access to another data source.

We believe that the high level totals for primary fires, secondary fires, chimney fires, false alarms and non-fire incidents have a very low margin of error (below 1%) as categorisation issues would largely effect subcategories.

The total and category breakdowns of fatal casualties are cross checked against records kept by the fire investigation team and are believed to be as complete and accurate as possible. Should a revision take place as a result of new information coming to light it could make a relatively large proportional difference due to the number of fatal casualties recorded. It is possible that a casualty currently recorded as a non-fatal casualty may later die from injuries sustained in the fire and would then be recorded as a fatal casualty; in such a case a revision to the statistics would occur at the next opportunity.

Non-fatal casualty figures for those who received first aid at the scene or attended hospital following the incidents are believed to have a low error margin as when crosschecking has been possible, we have found that it is rare for such a casualty to be missed from the IRS record. Non-fatal casualty figures for those who were encouraged to have a precautionary check with a doctor are believed to have a larger error margin as there is some underreporting that is difficult to consistently crosscheck. There may also be variance in the judgement of officers at a scene in whether to recommend a precautionary check. Consequently the total for non-fatal casualties with precautionary checks included is believed to have a larger error margin.

## Definitions

Providing general definitions to the main terms used in the bulletin and workbook, for further guidance please refer to the Incident Recording System – Questions and Lists document published [here](#).

## Fire Categories

**Primary fire:** A fire which involved a casualty or rescue, or which was attended by five or more fire appliances simultaneously, or which took place at designated locations (non-derelict buildings, vehicles and most outdoor structures).

**Secondary fire:** A fire which is not a Primary fire or a Chimney fire. They take place either outdoors or in derelict buildings and include grassland fires and refuse fires.

**Chimney fire:** A fire where the flame was contained within the structure of a chimney and did not result in any casualties or rescues, or require attendance by five or more appliances, or take place in an industrial chimney.

**Late fire calls:** Fires which were known to be extinguished at the time the fire service became aware of them (by call or other means) and which were subsequently attended.

### **Property types**

**Dwellings:** Buildings that are a place of residence, typically occupied by households, excluding hotels, hostels and residential institutions. Mobile homes are specifically included in the dwelling count. In 2000, the definition of a dwelling (for the purpose of reporting fires) was widened to include any non-permanent structure used solely as a dwelling, such as a caravan, houseboat etc.

**Other Buildings:** All buildings, including those under construction, but excluding those meeting the definition of dwelling, and excluding derelict buildings or those under demolition.

**Road Vehicle fires:** All fires which take place in cars, vans and other road vehicles including abandoned vehicles but excluding derelict vehicles.

**Refuse fires:** Secondary fires which take place in a rubbish container (such as a wheelie bin or skip) or where the burning material is loose rubbish (including bonfires).

### **Motive**

**Accidental:** Fires where the fire was ignited by accident, or where the cause was not known or unspecified.

**Deliberate:** Fires where the motive was thought or suspected to be deliberate regardless of ownership of the materials and regardless of whether the intent was malicious. Deliberate fires includes fires caused by the crime of wilful fire-raising but is not exclusive to this.

### **Fire Casualties**

**Fatal casualty:** A person who has died as the direct or indirect result of injuries caused by a fire incident. Even if the fatal casualty dies subsequently, any fatality whose cause is attributed to a fire is included.

**Non-fatal casualty:** A person who was referred to hospital for injuries, or who received first aid at the scene of an incident, or who was advised to see a doctor for a precautionary check regardless of whether they did so.

**Physical injuries:** This is an aggregate category under 'nature of injuries' and includes the following IRS injury categories: fractures, cuts and lacerations, back and neck injuries, head injuries, chest and abdominal injuries and other physical injuries. Other specified: This is an aggregate category under 'nature of injuries' and includes the following IRS injury categories: choking, collapse, chest pain or heart condition or cardiac arrest, impalement, drowning, hypothermia, heat exhaustion, concussion, bruising, unconscious or fitting or unresponsive (no other evident significant injury), other medical conditions, and other breathing difficulties.

### **False Alarms**

**Fire false alarms:** An event in which SFRS believe they have been called to a reportable fire and there is no such incident.

**Non-fire incident false alarms:** An event in which the SFRS believe they have been called to a reportable non-fire incident and there is no such incident.

**Malicious:** The call was made with the intention of causing SFRS to attend a non-existent incident.

**Good intent:** The call was made in good faith in the belief that there was an incident for SFRS to attend.

**Due to apparatus:** The call was initiated by a fire alarm or the operation of other alerting equipment such as break glass call points.

### ***Non-fire incidents***

**Non-fire incident:** Formerly called special services, these cover incidents requiring the attendance of an appliance or officer and where there was no fire. The Fire (Scotland) Act 2005 placed a statutory duty on the fire and rescue service to make provision for firefighting and road traffic accidents. It also included an additional function order that covers non-fire incidents such as rescues from collapsed buildings and serious flooding.

### ***Other***

**Smoke alarms:** This is a catch-all term used in these statistics for smoke alarms and heat detectors.

**Ignition source:** The source material giving rise to the fire. The subcategories used in the bulletin are aggregate categories defined under Question 8.4 in the above noted IRS – Questions and Lists document.

**Time of call:** For the purpose of these statistics, this refers to the hour in which SFRS were first alerted to the incident determined by truncation i.e. a call received at 1:53am would be reported as 1am. In practice SFRS log timestamps for all calls to the nearest second.

**Rescue:** Where a person has received physical assistance to get clear of the area involved in the incident.

## Related Statistics

The Home Office publish a range of fire statistics for England: <https://www.gov.uk/government/collections/fire-statistics>

The Welsh Government publish fire statistics for Wales:  
<https://gov.wales/statistics-and-research/fire-statistics/?lang=en>

We do not present a link for Northern Ireland Fire and Rescue Service statistics as they do not use the IRS system and do not publish comparable statistics.

Transport Scotland publish statistics on road traffic collisions in Scotland. Since SFRS attend incidents where they are required, the Transport for Scotland statistics provide a more complete picture of road traffic collisions and casualties: <https://www.transport.gov.scot/publications/>

# A Statistics Publication from the Scottish Fire and Rescue Service

## Correspondence and enquiries

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