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Fire safety — Overview of national fire statistics practices

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National foreword

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The UK participation in its preparation was entrusted to Technical Committee FSH/9, Fire terminology.

A list of organizations represented on this committee can be obtained on request to its secretary.

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Published by BSI Standards Limited 2014

ISBN 978 0 580 83763 0

ICS 13.220.20

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This Published Document was published under the authority of the Standards Policy and Strategy Committee on 31 May 2014.

Amendments/corrigenda issued since publication

Date	Text affected

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TECHNICAL REPORT

ISO/TR 17755

First edition
2014-04-15

Fire safety — Overview of national fire statistics practices

Sécurité incendie — Aperçu général sur les pratiques nationales de collecte de données sur les incendies

Reference number
ISO/TR 17755:2014(E)

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 92, *Fire safety*.

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Introduction

This Technical Report assembles data on national fire statistics practices. Such practices are highly relevant to the estimation of model parameters in standards developed by ISO/TC 92. In the absence of any proposals for international standards on such practices, it is useful to ISO/TC 92 to have an overview of existing practices and their implications for existing fire statistical data.

This Technical Report is an overview of national fire statistics practices. A general call was issued to all nations participating in ISO/TC 92, and 10 countries completed a survey instrument prepared and distributed by TG1 of ISO/TC 92, WG 8:

— Australia

— Canada

— China

— France

— Japan

— Kenya

— (Republic of) Korea

— Russia

— United Kingdom

— USA

The survey instrument is included as Annex A.

In this Technical Report, the analysis is organized into four sections:

— Basic Aspects of Data Collection and Analysis (Clauses 1 to 7)

— General Characteristics of Fires (Clauses 8 to 10)

— Characteristics Related to Cause of Ignition (Clauses 11 to 20)

— Characteristics Related to Mitigation of Fire Severity (Clauses 21 to 25)

There is no analysis of Question 11c on three types of equipment used by fire departments (fire brigades), because there were too few responses for any meaningful analysis. There is no Question 13 due to a numbering error. There is no analysis of Question 15, which contained two general questions inviting uncoded responses on matters not covered in the survey.

Annex B is reserved for references, including published coding manuals for fire reporting for those nations that publish such manuals and websites providing national statistics and related analyses for many countries.

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Fire safety — Overview of national fire statistics practices

1 Methods of estimation (Questions 1-3)

1.1 Summary comments on methods of estimation

Only two countries – Japan and the U.S.A. – reported use of statistical projection in addition to counting. The survey did not ask how statistical projection is used. Fire statistics based on the national fire database are used for Annual Report of Fire Statistics and White Book on Fire Service annually in Japan. All other countries treat their database as a census, but it is not known whether any of these countries calculate or publish the percentage completeness of their database (for example, by calculating the percentage of total national population represented by reporting jurisdictions). In the U.S.A., the National Fire Incident Reporting System (NFIRS) is voluntary and is known to fall well short of complete capture. Accordingly, tallies based on counting are projected to "national estimates" by statistical projection, using a second database that is based on a statistically valid stratified random sample survey.

An option used in the U.S.A. for a national non-fire-related incident database may be useful in other countries that do not want to shift to U.S.A.-style statistical projection for all statistics. The national crime database, maintained by the Federal Bureau of Investigation (FBI), is translated into statistics almost entirely by counting alone. However, for each major crime, there is also a calculation of the crime rate relative to population, based on the combined population of reporting jurisdictions, and the percentage of national population reporting is also reported.

1.2 Methods of estimation by country

Table 1 provides a summary of national responses on methods of estimation.

Table 1 — Methods of estimation, by country

Australia	The Australian Incident Reporting System (AIRS) is based on separate reports on each incident requiring a response by a fire brigade. There is a national standard for coding of incidents, overseen by the National Data Management Group. All fire brigades are participants, and all are required to report on all incidents regardless of size of loss or other characteristics; therefore, the design is a census and there is no adjustment for missing data. Not all fire services in Australia contribute to the national database. Of the fire services that do contribute, some do not include responses from the rural component of their service. Also, not all fires that occur in the community are included in the AIRS National Database. Analysis is by counting only. Most reports are completed by firefighters who lack extensive training in fire investigation and who obtain most of their information from non-professionals such as the owners and occupants of places where fire occurred.
Canada	Canada's databases begin as individual-incident databases at the local fire department level. Data may be aggregated before passing from provincial level to national level. The national level is a council of provincial fire commissioners. There is no mention of any adjustments for missing fire departments or other missing data. There is no mention of an incident-specific database at the national level. Analysis is by counting only. All or nearly all reports are completed by firefighters who lack extensive training in fire investigation.

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Table 1 *(continued)*

China	China's databases begin as individual-incident databases at the local fire department level. A national standard for coding is implemented through a computerized data entry system. There is no mention of any adjustments for missing fire departments or other missing data. Analysis is by counting only. All or nearly all reports are completed by firefighters who lack extensive training in fire investigation.
France	Undetermined
Japan	Every fire incident report should be submitted to the central government (Fire and Disaster Management Agency) from municipalities by legal basis. This agency makes and maintains a National Fire Incident Database with these data. A national standard for coding exists and some parts of these are translated from Japanese in separate sheets. Analysis is by counting and statistical projection is used for Annual Report of Fire Statistics and White Book on Fire Service annually in Japan. Most reports (60-89%) are completed by firefighters who lack extensive training in fire investigation, but some (11-40%) are completed by professionals with extensive training.
Kenya	Analysis is by counting only. Roughly half of all reports are completed by personnel with extensive training in fire investigation.
(Republic of) Korea	Korea uses individual-incident and summary information databases. Analysis is by counting only. Most reports (60-89%) are completed by firefighters who lack extensive training in fire investigation, but some (11-40%) are completed by professionals with extensive training.
Russia	Official statistics on fires and their consequences in the Russian Federation is the Federal Fire Service of the Ministry of the Russian Federation for Civil Defense, Emergencies and Disaster Relief (hereinafter - the Ministry of Emergency Situations of Russia) directly and through appropriate structural units of organs specially authorized to solve the problems of civil defense and the task of preventing and dealing with emergencies on the subjects of the Russian Federation, within the scope of which includes the organization and implementation of the state fire supervision.

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Table 1 *(continued)*

United Kingdom	The United Kingdom's Incident Reporting System (IRS) is based on separate reports on each incident requiring a response by a fire brigade. There is a national standard for coding of incidents. All fire brigades are participants, and all are required to report on all incidents; therefore, the design is a census and there is no adjustment for missing data. Analysis is by counting only. Most reports are completed by firefighters who lack extensive training in fire investigation, but an estimated 10% of reports are completed by personnel with extensive training in fire investigation. The U.K. also conducts periodic household surveys, which provide regular estimates of the percentage of all home fires reported to fire brigades. The U.K. estimates that brigades are called to 1/5 of home fires.
USA	The National Fire Incident Reporting System (NFIRS) is based on separate reports on each incident requiring a response by a fire department and each casualty associated with a reported incident. There is a national manual for coding of incidents, overseen by the U.S. Fire Administration, which administers NFIRS. Fire department participation is voluntary, which means a significant fraction of fire departments do not participate, and some participating fire departments do not report every year. Therefore, NFIRS data is projected using a second database, the NFPA fire experience survey, which is based on summary information reported from a stratified random sample of fire departments. The methods used by most analysts to combine these databases for analysis are documented, but there is no national standard for analysis. Most reports (60-89%) are completed by firefighters who lack extensive training in fire investigation, but some (11-40%) are completed by professionals with extensive training.

2 Fires subject to reporting (Question 4)

2.1 Summary comments on fires subject to reporting

All countries limit reporting to fires that received a fire department response. Some countries incorporate a minimum-loss threshold for reporting, but far more countries recognize that reporting of very small fires often does not occur, even though there should be reporting under the rules. Some countries permit separate, more limited reporting of certain types of very small fires in order to encourage complete reporting of the existence of these fires.

Countries differ on the inclusion of vehicle fires, vegetation fires, and other outdoor fires in their reporting. (This fact was not determined from the survey but has been determined by the authors of the International Technical Committee for the Prevention and Extinction of Fire, now recognized as the International Association of Fire and Rescue Services (CTIF) annual reports on national fire statistics.)

When comparing fire statistics from one country to another, it is important to determine any differences in treatment of vehicle fires, vegetation fires, or well-defined categories of very small fires.

Some countries take special care in the reporting of certain damaging non-fire events that often but not always are associated with damaging fires, such as explosions, lightning strikes, and vehicle collisions.

2.2 Fires subject to reporting by country

Table 2 provides a summary of national responses on fires subject to reporting.

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Table 2 — Fires subject to reporting, by country

Australia	Fires not responded to by fire crew are not required to be reported to the national database. The data on fires and emergencies do not represent 100 percent coverage. An AIRS report is required whenever a fire brigade resource responds to an incident regardless of the size of the incident or the method of notification. Most fires are not reported to fire services. These are usually small fires in the home or in workplaces which go out by themselves or are extinguished by an occupant. We do not have sufficient information to be able to estimate the number of unreported fires.
Canada	All fires that result in Fire Department (FD) response should be reported.
China	Based on the document called "Provisions on the Administration of Fire Statistics" Clause 5, all fires, regardless of loss, should be included in the scope of fire statistics. But in practice, a fire with no property loss or loss less than a defined threshold will not be considered, such as a rubbish fire with no fire damage.
France	Undetermined.
Japan	Basically all fire incidents should be reported. The definition of a fire that should be reported is as follows: *"A phenomenon of combustion that is generated or spread against human intention or generated by arson and that requires extinguishment by use of fire control equipment or something with similar effects or is a phenomenon of spread explosion."* As for more concrete examples, some very small fires, such as a cigarette smoldering fire within a wastebasket, which can be easily extinguished with a cup of water or a similar method, would be excluded, even if it is unwanted. Some small fires may not be reported unless they are noticed and reported by neighbors. This is because people in Japan usually have the culture to regard having fire in their property as a social stigma.
Kenya	Fires should be reported if they exceed the threshold for minimum damages.
(Republic of) Korea	No matter how small the fire is, almost all fires can be either recognized by fire station or reported.
Russia	Official statistical accounting is required for all fires, for the elimination of which fire brigades were dispatched, as well as fires in the elimination of which fire brigades did not participate, but information of which came from individuals and legal entities.

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Table 2 *(continued)*

United Kingdom	A fire is an incident, attended by a local authority, of uncontrolled burning involving flames and/or heat and/or smoke. An unknown number of departments employ truncated/reporting thresholds. These thresholds are determined on a department by department basis. Fire does *not* include the following except when they cause fire or occur as a consequence of fire: — Explosions * — Lightning — Electrical discharge * Fireworks/petrol bombs which extinguish themselves and do not cause damage are not reportable as a fire incident, but instead as a False Alarm, unless firefighting action is required, in which case, it will be a fire incident. All fires included in the official definition, given in the document named "Incident Recording System (IRS) Help and Guidance – version 2.3", should be reported. Fires are categorized for analysis and reporting purposes according to major incident type in the following way: — Primary fire: includes all fires in buildings, vehicles and most outdoor structures or any fire involving casualties, rescues or fires attended by five or more pumping appliances. — Secondary fire: an incident that did not occur at a Primary location, was not a chimney fire in an occupied building, did not involve casualties (otherwise categorised as a Primary incident) and was attended by four or fewer pumping appliances (otherwise categorized as a Primary incident). — Chimney fires: any fires in buildings where the fire was contained within the chimney structure and did not involve casualties, rescues or attendance by five or more pumping appliances.
USA	All fires that result in a fire department response should be reported. An unknown number of departments employ truncated/reporting thresholds. These thresholds are determined on a department by department basis. Fires are categorized for analysis and reporting purposes according to major incident type in the following way: — Structure fire: includes building fire, fire in structure other than a building, four types of mobile properties used as a fixed structure, such as a manufactured home, and six types of "confined" fires, such as a chimney or flue fire, for which detailed reporting is not required — Vehicle fire: includes nine categories of vehicles — Outside rubbish or trash fire: includes six categories of trash fires, which also do not require detailed reporting, including outside trash receptacle and two types of landfills — Vegetation fire: includes four types of cultivated vegetation and four types of other natural vegetation — Special outside fire: includes outside storage, outside equipment, outside explosion without sustained fire, outside mailbox, and unclassified special outside fire — Unclassified (other) The other database used for calibration does not estimate property damage for non-cultivated natural vegetation, which is a problem for estimates of wildland fire damages.

3 Fire deaths subject to reporting (Question 5)

3.1 Summary comments on fire deaths subject to reporting

Countries differ regarding their use of reports from fire departments and medical records, as well as on their efforts to coordinate both sources into a comprehensive database using consistent definitions.

Countries differ regarding the length of time after injury when a death is formally recognized as a fire death. Regardless of the formal length of time defined by a country, actual reporting may depend on

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the country's ability to capture developments occurring after the victim leaves the fire scene. A delayed death may not become known to the fire authorities and may not be recognized as originating with a fire injury by medical authorities.

Countries differ in their treatment of fatal injuries received in an incident involving fire and non-fire harm to the victim, such as an automobile collision followed by fire or a building collapse following fire.

3.2 Fire deaths subject to reporting by country

Table 3 provides a summary of national responses on fire deaths subject to reporting.

Table 3 — Fire deaths subject to reporting, by country

Australia	The Australian Incident Reporting System (AIRS) Standard defines fire fatalities as "***those people who died from injuries that are attributable to the incident or the action of handling the incident***". The number recorded is based on data which is the best available at the time of the incident. However, in recent years, fire fatality information has been sourced from the Australian Bureau of Statistics for reporting to Government and fire brigade databases. Annual fire death rate represents all deaths where the underlying cause of death is fire related to smoke, fire and flames including all (structure and landscape) fires — as recorded in *Causes of Death, Australia* (ABS cat. no. 3303.0). Fire deaths are identified from cause of death information supplied by the medical practitioner certifying the death or by a Coroner. Fire deaths are reported by year of registration of death at State and Territory Registrars of Births, Deaths and Marriages.
Canada	The Canadian definition of a fire fatality is "***a person who dies as a result of injuries sustained during a fire incident***". Examples of fire-related deaths that are likely to be recorded as non-fire deaths and not included in the database include people who die by fire resulting from vehicle accidents and deaths from a fire that is otherwise controlled (e.g. death by CO poisoning) and so does not receive a fire department response. As for fire deaths likely to be missed, as opposed to captured but not reported under fire, some jurisdictions in Canada (ON) count a death as a result of injuries sustained that must occur within one year and one day of the incident. There are differences between jurisdictions.
China	The Chinese official document called « Provisions on the Administration of Fire Statistics », clause 7, defines that "***all of the deaths due to burn, throwing, smashing, fried, suffocation, poisoning, electric shock, high temperature, radiation and other causes during fire and fire-fighting, should be considered into fire statistics***". The fire deaths taken into account are those which occurred within 7 days after the fire. If a fire is followed by an explosion or by any other incident, and identified as another safety incident, the death(s) should not be included into the input data of a fire death. Furthermore, if the fire is suspected to be an arson fire, and if it is proved, after investigation, that it is an arson fire, the death(s) should not be included in the input data of a fire death.

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Table 3 *(continued)*

France	Officially undetermined (No survey returned). But actually there are two different fire fatality databases in France: one is realized by the Home Ministry-DGSCGC and the other by the INSERM- CepiDc. The database realized by the Home Ministry - DGSCGC is implemented by the fire services. All the deaths which occurred on the scene of a fire are taken into account. Deaths (due to acute fire effects) of firefighters, fire officers, fire brigade personnel and other emergency responders are also reported. This database does not take into account the fire casualties which will die at the hospital or during their transportation to the hospital by EMS. Some elements of this database are published every year by DGSCGC through a special document. The 2012 edition (for 2011) detailed the number of French fire services which have contributed to the national database and the number of fire fatalities which occurred on the scene of fires. This publication does not detail the age, gender, ethnicity (strictly forbidden by the law), activity when injured, type and severity of injury, behaviors that contributed to injury, part of body injured. It just specifies the type of fire during which the death occurred, such as home building, public building, forest fire. The database realized by the INSERM- CepiDc is compiled from the medical death certificates completed by physicians. Since 2000, the causes of death are coded according to the tenth revision of the International Classification of Diseases of WHO. The data are based on the underlying causes of death selected by the WHO rules. This database includes all the fire deaths which occurred in France (Metropolitan and ultramarine): on the scene of the fire, during the transportation and at the hospital. Suicides by fire are also included in this database. INSERM-CepiDc uses CIM 10 codes: X00-X009, X01-X019, X02-X029, X03-X039, X04-X049, X05-X059, X06-X069, X08-X089, X09-X099, W35-W409, X97-X979.
Japan	Fire brigade, who handled casualties at the fire, confirms whether or not a death was caused by fire. "***The death within 48 hours after fire***" is regarded as fire death by definition in Japan. But, at the same time, for the purpose of reporting the number of fire deaths to WHO, fire deaths within one month are also recorded. The deaths by fire in a report are confirmed by fire brigade after listening to the medical doctor who treated the fire casualties.
Kenya	The Kenyan definition of a fire fatality is a death which is caused by "***accidental fires and fires caused by non-fire conditions e.g. lightning, electrocutions and natural fires***". Lightning, negligence, arson, and scalding are examples of circumstances that can result in a death being recorded as a non-fire death.
(Republic of) Korea	The Korea definition of a fire fatality is "***a death occurred within 24 hours from a fire***".
Russia	For the Russian Federation, a fire fatality is a "***person who died from exposure to hazards of fire and/or related manifestations of the hazards of fire, falling from a height of panic***", except when the death occurred during a road traffic accident, air and rail disaster force-majeure circumstances, and in sites enjoying the right of extraterritoriality.

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Table 3 *(continued)*

United Kingdom	For United-Kingdom, the definition of a fire fatality is given in the document named "Incident Recording System (IRS) Help and Guidance – version 2.3" **question 3.5**: "***Killed/ Fatality - a person who has died as a direct or indirect result of injuries received at the incident***" and specified at **question 9.21**": "***in general, fire-related deaths are those that would not have otherwise occurred had there not been a fire***".
USA	For United States of America, a fire fatality is "***a person who is killed as a result of a fire, including death from natural or accidental causes sustained while involved in the activities of fire control, attempting rescue, or escaping from the dangers of the fire***". Independent of fire incident data collection, a fire related death will be captured when exposure to fire, fire products, or explosion was the underlying cause of death or was a contributing factor in the chain of events leading to death, as reported on the death certificate through vital records reporting channels. Examples of circumstances that can lead to exclusion of a death, include automobile collision resulting in fire, in which the fire caused death may not be identified as fire deaths. Deaths captured through coroners/vital records reporting channels are dependent upon recording personnel ability to determine original cause of a fire-related condition that contributes to death. Examples of deaths that may be missed include deaths that occur after the fire incident report is completed – not necessarily just due to extended time lag. Closing the loop between medical and fire reporting systems requires a degree of coordination that does not happen in an unknown number of instances. Although not common, there may be some fire departments that do not report fire deaths on NFIRS records. Governmental and Non-Governmental Organizations (NGOs) may choose specific ICD-10 codes for inclusion in analysis of vital records data, depending upon the scope of the study. United States Fire Administration (USFA) uses ICD-10 codes F63.1, W39-W40, X00-X09, X75-76, X96-97, Y25-26, and Y35.1 to define fire deaths.

4 Fire injuries subject to reporting (Question 6)

4.1 Summary comments on fire injuries subject to reporting

Countries differ regarding their use of reports from fire departments and medical records, as well as on their efforts to coordinate both sources into a comprehensive database using consistent definitions.

Countries differ in their treatment of injuries received in an incident involving fire and non-fire harm to the victim, such as an automobile collision followed by fire or a building collapse following fire.

4.2 Fire injuries subject to reporting by country

Table 4 provides a summary of national responses on fire injuries subject to reporting.

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Table 4 — Fire injuries subject to reporting, by country

Australia	The Australian Incident Reporting System (AIRS) Standard defines injuries as those people who received injuries that are attributable to the incident or the action of handling the incident. For the purposes of incident reporting, an injury is defined as requiring: — treatment by a medical practitioner or; — at least one day of restricted activity immediately following the incident. However, for reporting purposes in recent years fire injury information has been sourced from the Australian Institute of Health and Welfare. Fire injuries are represented by hospital admissions (excluding emergency department non-admitted casualties) and are reported by the State or Territory where the admission occurs. A person injured by fire may be treated more than once, and in more than one State or Territory. Deaths from fire injuries after hospitalization are removed from the fire injury data for the time series because these are counted in the fire death rate. In fire department systems, fire injuries where the victim has been transported to hospital prior to brigade arrival may be missed in fire injury reporting.
Canada	A fire injury is a person who is injured as a result of a fire incident.
China	The definition of fire injury refers to the clause 7 of "Provisions on the Administration of Fire Statistics" as follows: all of the fire injuries due to burn, throwing, smashing, fried, suffocation, poisoning, electric shock, high temperature, radiation and other causes during fire and firefighting, should be considered into the fire statistics. The statistical standards for injuries are identified by the relevant provisions of the Ministry of Labor.
France	Officially undetermined (No survey returned). But actually the database realized by the Home Ministry - DGSCGC is implemented by the fire services. The database realized by the Home Ministry - DGSCGC is implemented by the fire services. All the injuries which occurred on the scene of a fire are taken into account. Injuries (due to acute fire effects) of firefighters, fire officers, fire brigade personnel and other emergency responders are also reported. Some elements of this database are published every year by DGSCGC through a special document. The 2012 edition (for 2011) detailed the number of French fire services which have contributed to the national database and the number of fire injuries which occurred on the scene of fires. This publication does not detail the age, gender, ethnicity (strictly forbidden by the law), activity when injured, type and severity of injury, behaviors that contributed to injury, part of body injured. It just specifies the type of fire during which the injury occurred, such as home building, public building, forest fire.
Japan	Fire brigade, who handled casualties at the fire, confirms whether or not an injury was caused by fire. The cause of injuries in an automobile collision where there was also a fire is confirmed by fire brigade after listening to the medical doctor who treated the casualties in order to make sure of whether or not the injury is attributed to fire. An example of injuries that could be missed would be someone who suffers minor burns caused by ignition on apparel by flame of a cooking stove, but the burn is not so serious for him or her to go to hospital.
Kenya	Shock, smoke inhalation, body damage, fire injuries due to fire effects.
(Republic of) Korea	An injury which needs medical care within 1 year or needs emergency room care at least for 1 day.
Russia	All people injured on the scene of fire from exposure to hazards of fire and/or related manifestations of the hazards of fire, such as falling from a height of panic, are to be recorded.

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Table 4 *(continued)*

United Kingdom	For United-Kingdom, the definition of a fire injury is given in the document named "Incident Recording System (IRS) Help and Guidance – version 2.3" **question 3.5**: "***Injured/Non fatal - a person injured as a direct result of the incident (but not fatally injured) who required first aid (provided by anyone) at the scene or more medical treatment than could be given at the accident. This includes any person advised to attend hospital or see a doctor, whether or not they actually follow up the advice***". All should be recorded. Completeness is believed to be good including all physical injuries, not just burns and smoke.
USA	A fire injury is a person who is injured as a result of a fire, including injuries from natural or accidental causes sustained while involved in the activities of fire control, attempting rescue, or escaping from the dangers of the fire. Injuries are also captured by a sample survey of hospital emergency rooms and reported to the Consumer Product Safety Commission (National Electronic Injury Surveillance System, NEISS). Fire injuries that occur in a combination of injuries from an overarching event, such as earthquake or automobile accident, may not be recorded as fire injuries, and non-fire injuries in such circumstances may be recorded as fire injuries when they were not fire injuries. Other injuries that may be missed include injuries discovered after fire department has closed report, injuries masked by pre-existing conditions, and injuries noticed and treated only by the victim. Also, some fire departments may not report fire injuries on NFIRS records, and far more fire injuries occur in (typically small) fires not reported to fire departments than in reported fires.

5 Victim characteristics (Question 12)

5.1 Summary comments on victim characteristics

Most countries collect information on victim age and gender, and many collect information on other characteristics.

5.2 Recording of victim characteristics, by country

Table 5 provides a summary of national responses on reporting on victim characteristics.

Table 5 — Reporting on victim characteristics by country

Australia	**Not included in reporting.**

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Table 5 *(continued)*

Canada	In the Canadian databases, on the basis of the document named "Canadian Code Structure (CCS) on Fire Loss Statistics", the following characteristics are reported: **Age** (if exact age is not known, give an estimate to the nearest 10 years), **Gender** **Status**: — Firefighter — Civilian **Nature (severity) of casualty** — Death — Minor injury (less than 1 day hospital or off work) — Light injury (1-2 days hospital or 1-15 days off work) — Serious injury (3 days and more hospital or 16 days and more days off work) **Probable/possible cause of casualty:** — Smoke inhalation — Burn — Physical injury — Other **Condition of casualty:** — Asleep at time of fire — Bedridden or other physical handicap — Impairment by alcohol, drugs or medication — Awake and no physical or mental impairment at the time of fire — Under restraint or detention — Too young to react to fire emergency — Mental handicap – includes senility — Child left unattended — Condition of casualty - unclassified

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Canada	**Action of casualty:** — Injured while attempting to escape — Over-exertion, heart attack — Entered or remained for rescue purposes — Entered or remained for fire-fighting — Entered or remained to save personal property — Loss of judgment or panic — Received delayed warning — Did not act — Action of casualty – unclassified **Cause of failure of escape:** — Trapped by rapid spreading of fire/smoke – through vertical openings, stairways, elevators — Trapped by rapid spreading of fire/smoke – through horizontal openings — High flame spread of combustible interior finish — Building collapse — Falling debris — Explosion — Exit blocked, locked, or obstructed — Outdoor fire – includes forest/brush fires — Cause of failure to escape – unclassified

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Table 5 *(continued)*

Canada	**Ignition of clothing or other fabrics:** **Type of clothing or other fabric** — Outer clothing — Sleepwear — Underclothing — Costume — Bedding or bed linen (includes pillow) — Mattress — Rugs — Unclassified fabric — Unknown type fabric **Type of material ignited:** — Cotton — Wool — Other natural fibre — Other synthetic fibre — Mixture of fibres — Rubber — Plastics or plastics foam — Unclassified fabric — Unknown type fabric
China	Not included in reporting.
France	The only information available in the two different fire French databases (Home Ministry-DGSCGC and INSERM- CepiDc) is the number in each type of building (home, public building).

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Table 5 *(continued)*

Japan	**Age** **Gender** **Status**: — Firefighter — Civilian **Nature (severity) of casualty:** — Death — Minor injury (not hospitalized) — Light injury (1 day to 3 weeks hospital treatment) — Serious injury (3 weeks and more hospital treatment) **Probable cause of fatality:** — Intoxication by carbon monoxide or asphyxiation — Burn — Bone fracture or bruise — Incendiary suicide — Others **Probable cause of injured:** — Smoke inhalation — Burn by touch to hot materials — Burn by radiation from plumes — Physical injury — Others

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Table 5 *(continued)*

Japan	**Physical condition of fatality at the fire:** — Asleep or awake at time of fire — Bedridden or not — Impairment by alcohol, drugs or medication — Too young to react to fire emergency — Handicap – includes physical, eyesight, hearing, etc. — Left unattended — Condition of casualty - unclassified **Activity when injured:** — During fire-fighting — During escaping — During sleeping — During working — Action of casualty – unclassified **Cause of failure of escape resulting in fire death:** — Trapped by rapid spreading of fire - through explosion, combustion of hazardous materials, etc. — Delay of fire detection – through deep sleep, heavy drunk, physical handicap, etc.. — Lack of judgment capability – too young to act, too old to act, heavy drunk, physical handicap, etc. — Untimely escape – in confusion, too stick to belongings, while notifying fire to others, trying to suppression, trying to rescue others, etc. — Failure to escape – physical handicap, rapid fire spread, wrong selection of egress route, exit locked, re-entering, etc. — Incendiary suicide — Cause of failure to escape – unclassified
Kenya	Not included in reporting
(Republic of) Korea	**Age** **Gender** **Location** **Activity when injured** **Type and severity of injury** **Behaviors that contributed to injury or escape** **Part of body injured**

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Table 5 *(continued)*

Russia	**Age** **Gender** **Race** **Disabilities, limitations and impairments** **Activity when injured** **Behaviors that contributed to injury** **Social position** **Education** **Cause of death** **Injury conditions**
United Kingdom	**Age** **Gender** **Ethnicity** **Where was the victim when the fire started?** — Room, cabin or compartment of origin — Different room, cabin or compartment on floor of origin — Floor above origin (includes mezzanine above floor of origin) — Two or more floors above origin — One floor below origin – includes stairway leading down from floor — Two or more floors below origin — Outside building, vehicle etc. of origin — Seat of fire unknown or multi-seated (and above non applicable) — Location of person unknown — Not applicable — Other location **Where was the victim found?** — Room, cabin or compartment of origin — Different room, cabin or compartment on floor of origin — Floor above origin — Two or more floors above origin — One floor below origin — Two or more floors below origin — Outside building, vehicle etc. of origin — Seat of fire unknown or multi-seated (and above non applicable) — Location of person unknown — Not applicable — Other location

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United Kingdom	**What role did the victim play in the incident?** — Firefighter on duty — Other emergency service personnel — Resident/occupant — Passer by — Driver — Passenger — Visitor — Employee in workplace — Customer in shop — Other FRS personnel on duty — Other **Was victim rescued?** — Yes — No **If rescued, where was the victim rescued from?** — Room, cabin or compartment of origin — Different room, cabin or compartment on floor of origin — Floor above origin (includes mezzanine above floor of origin) — Two or more floors above origin — One floor below origin – includes stairway leading down from floor — Two or more floors below origin — Roof — Outside building of origin — Not applicable — Other **Circumstances of fatal casualty** — Thought to be already dead when firefighter arrived — Unable to resuscitate, confirmed dead at scene

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United Kingdom	— Unable to resuscitate, confirmed dead at hospital — Alive on leaving scene, but died later — Not known **Has the casualty been reconciled against the appropriate death certificate?** **Was the death/injury fire related?** — Yes (in general, fire related deaths are those that would not have otherwise occurred had there not been a fire) — No — Don't know **What is your understanding of the cause of the death?** — Overcome by gas, smoke or toxic fumes; asphyxiation — Burns – severe — Combination of burns and overcome by gas/smoke — Shock/anaphylactic shock — Other medical condition — Fracture — Other physical injury — Cuts/lacerations — Impalement — Drowning — Hypothermia — Heat exhaustion — Back/neck injury (spinal) — Head injury — Chest/abdominal injury — Chest pain/Heart condition/Cardiac arrest — Other — Unknown

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United Kingdom	**What were the circumstances of the victim?** — Bedridden — Chair-ridden — Other immobility — Suspected under influence of alcohol — Suspected under influence of drugs — Discovering fire — Fell onto fire — Fighting fire (including attempts) — Trapped by fire because unaware (e.g. asleep) — Trapped by fire other than unaware — Trapped by collapse of structure — Trapped by smoke — Injured escaping — Injured rescuing person — Injured rescuing property or animals — Injured being rescued — Injured by blast — Return to fire — Intentionally sustained at start of fire (e.g. suicides and attempts) — Injury accidentally sustained at start of fire — Not applicable — Other — Unknown

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Table 5 *(continued)*

USA	**Gender** **Age** **Race** **Ethnicity** **Severity** — Minor — Moderate — Severe — Life threatening — Death — Undetermined **Cause of injury** — Exposed to fire products — Exposed to hazardous materials other than smoke — Jumped in escape attempt — Fell, slipped or tripped — Caught or trapped — Structural collapse — Struck by or contact with object — Overexertion or strain — Multiple causes — Other (unclassified or unknown type) cause of injury — Undetermined **Human factor contributing to injury** — Asleep with no known impairment — Unconscious — Possibly impaired by alcohol — Possibly impaired by other drug or chemical — Possibly mentally disabled

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USA	— Physically disabled — Physically restrained — Unattended or unsupervised person — No factor **Factor contributing to injury** — Crowd situation or limited exits — Mechanical obstacles to exit — Locked exit or other problem with exit — Problem with quick-release burglar or security bar — Burglar or security bar or intrusion barrier — Window type or size impeded egress — Other (unclassified or unknown type) egress problem — Exit blocked by flame — Exit blocked by smoke — Vision blocked or impaired by smoke — Trapped above fire — Trapped below fire— Other (unclassified or unknown type) fire pattern — Unfamiliar with exits — Excessive travel distance to nearest clear exit — Chose inappropriate exit route — Re-entered building — Clothing caught fire while escaping — Other (unclassified or unknown type) escape — Roof collapse — Wall collapse — Floor collapse — Other collapse — Trapped in or by vehicle — Vehicle collision or rollover

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Table 5 *(continued)*

USA	— Other (unclassified or unknown type) vehicle-related factor — Unvented heating equipment — Improper use of heating equipment — Improper use of cooking equipment — Other (unclassified or unknown type) equipment-related factor — Clothing burned not while escaping — Overexertion — Other (unclassified or unknown type) factor — No factor **Activity when injured** — Escaping — Rescue attempt — Fire control — Returning to vicinity of fire before control of fire — Returning to vicinity of fire after control of fire — Sleeping — Unable to act — Irrational act — Other (unclassified or unknown type) activity — Undetermined **Location at time of incident** — In area of origin and not involved in starting the fire — Not in area of origin and not involved in starting the fire — Not in area of origin and involved in starting the fire — In area of origin and involved in starting the fire — Other location — Undetermined

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Table 5 *(continued)*

USA	**General location at time of injury** — In area of origin — In building of origin but not in area of origin — Outside but not in area of origin — Undetermined **Specific location at time of injury – Same choices as for Area of Origin of fire** **Primary apparent symptom** — Smoke inhalation — Hazardous fumes inhalation — Breathing difficulty or shortness of breath — Burns and smoke inhalation — Thermal burn only — Scald burn — Chemical burn — Electric burn — Cut or laceration — Stab or puncture wound — Gunshot or projectile wound — Contusion or bruise — Abrasion — Dislocation — Fracture — Strain or sprain — Swelling — Crushing — Amputation — Cardiac symptoms — Cardiac arrest — Stroke

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Table 5 *(continued)*

USA	— Respiratory arrest — Chills — Fever — Nausea — Vomiting — Numbness or tingling — Paralysis — Frostbite — Other (unclassified or unknown type) sickness — Miscarriage — Eye trauma or avulsion — Drowning — Foreign body obstruction — Electric shock — Poison — Convulsion or seizure — Internal trauma — Hemorrhaging — Disorientation — Dizziness, fainting, or weakness — Exhaustion or fatigue — Heat stroke — Dehydration — Allergic reaction — Drug overdose — Alcohol impairment — Emotional stress — Mental disorder — Shock

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Table 5 *(continued)*

USA	— Unconscious — Pain only — Other (unclassified or unknown type) primary apparent symptom — Undetermined **Primary area of body injured** — Head — Neck or shoulder — Thorax — Abdomen — Spine — Upper extremities — Lower extremities — Internal — Multiple body parts There are additional, more detailed choices for firefighter casualties

6 Property damage subject to reporting (Question 7)

6.1 Summary comments on property damage subject to reporting

All countries limit reporting to fires that received a fire department response. Some countries incorporate a minimum-loss threshold for reporting, but far more countries recognize that reporting of very small fires often does not occur, even though there should be reporting under the rules. Some countries permit separate, more limited reporting of certain types of very small fires in order to encourage complete reporting of the existence of these fires.

Some countries provide no national reporting of monetary damages but defer to reporting by insurance companies. Some companies (like the U.S.A.) have annual published reports with estimated fire losses calculated separately and independently by fire departments and by insurance companies. Some fire departments may take steps to coordinate their own fire damage monetary reports for individual incidents with those of the responsible insurance company.

Most countries also collect data on property damage using measures other than monetary damages. These may be counts of damaged objects (such as buildings, rooms, floors, or vehicles), area damaged, percentage of area damaged, or a qualitative confinement scale (such as confined to object or room of origin).

6.2 Property damage subject to reporting by country

Table 6 provides a summary of national responses on property damage subject to reporting.

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Table 6 — Property damage subject to reporting, by country

Australia	Australian fire departments define damage to property as the estimated monetary value of the damage to property and contents caused by fire and fire fighting operations. They don't include land value. Measures used are: — Monetary value of loss — Percentage of total area that was damaged, estimated separately at arrival of fire brigade and at extinguishment — Other: confinement rate Some other comments related to dollar loss, source limitations and quality. Recently, one Australian fire department conducted a review of the dollar loss data. They found: a) 17% of building fires had a recorded value of zero fire dollar loss, and an additional 18% had no dollar loss value reported. It is unclear as to what a zero value for dollar loss means: it could mean no or minimal fire dollar loss or it could mean that the dollar loss cannot be determined. Of the building fires categorized as medium to large where the confinement rate extended beyond the room of origin 3% fires had a recorded value of zero fire dollar loss, and an additional 14% had no dollar loss value reported. b) A comparison of dollar loss data with dollar loss data from insurance companies and other external sources revealed significant variability in the estimated dollar loss values reported by fire-fighters. Feedback from focus group workshops with fire-fighters revealed widely varying practices and inconsistencies in estimating and reporting the dollar loss some firefighters included direct and indirect losses; some included relocation and business disruption costs others did not. Firefighters felt it easier to estimate damage for white goods and small household items than for items such as art, jewelry and other high value items.
Canada	Loss shall be recorded as the estimate of the damage caused by the fire. The loss includes damage to property and contents. Loss shall only include direct loss caused by the fire, including salvage, but not indirect loss due to "use and occupancy" or business interruption. Measures used are: — Monetary value of loss Damage likely to be missed includes damage present but not reported by fire departments and damage that is not visible during investigation and reporting.
China	Fire losses include two categories of direct and indirect losses. Until now, just only the fire direct losses should be considered according to the national standard named "Statistical methods for fire direct losses", which is applicable to fire statistics for various types of housing, constructions, facilities and other properties, not apply to the fire loss statistics of currency and securities. Fire losses include two categories of direct and indirect losses. Until now, just only the fire direct losses should be considered according to the national standard named "Statistical methods for fire direct losses", which is applicable to fire statistics for various types of housing, constructions, facilities and other properties, not apply to the fire loss statistics of currency and securities. Measures used are (based on national standards "Statistical Methods for Direct Fire Property Loss"): — Monetary value of loss — Indoor area damaged (for example, square meters in a building) — Number vehicles damaged (vehicles moving fire is regarded as a transportation accident, not a fire. The fire brigade just concern about the transport tool fire, just like in parking).
France	Undetermined.

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Table 6 *(continued)*

Japan	The items of following property loss should be recorded in a report for each fire incident regardless the size of fire: — Extent of fire (very small, partially burned, burned roughly half, totally burned) — Area of burned total floor area in m^2 — Area of burned total surface area in m^2 — Number of burned structures — Number of suffered households from fire — Monetary loss (loss of fixed asset, loss of movable asset, and the total) in 1000 yen The loss items in a fire incident report should be recorded for every case. Even if there is no loss or damage, it is filled in with "zero".
Kenya	Not included in national reporting. Damages are reported to insurance companies. Measures used in reporting below national level are: — Monetary value of loss — Indoor area damaged (for example, square meters in a building) — Outdoor area damaged (for example, acres in a wildfire) — Percentage of total area that was damaged — Number of rooms damaged — Number of floors damaged — Number of buildings, structures or vehicles damaged
(Republic of) Korea	Because every fire is reported, any damage related to fire scene will be counted as fire damage. Measures used are: — Monetary value of loss — Indoor area damaged (for example, square meters in a building) — Outdoor area damaged (for example, acres in a wildfire) — Percentage of total area that was damaged Losses are determined by specific rules which calculate monetary amounts. In this process there might be an error on the monetary amount, but there is no omission. Even a zero amount is included in report.
Russia	Fire losses include two categories of direct and indirect losses. — Monetary value of loss — Number of buildings destroyed and damaged by fire — Residential apartments or rooms — Floor area — Automotive vehicles and other equipment — Cereals and grain legumes — Feed — Industrial crops — Cattle and sheep, or animals — Birds

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Table 6 *(continued)*

United Kingdom	From the document named "Incident Recording System (IRS) Help and Guidance – version 2.3" part "On attendance –Damage (page 105 to), the damages are the total loss to the structure and contents, including contents damaged by fire, heat, smoke, water. Monetary damages are not included in national analyses, which defer to insurance companies. Measures used at the national level are: **— Indoor area damaged (for example, square meters in a building):** - Should be reported as required in the document named "Incident Recording System (IRS) Help and Guidance – version 2.3" **question 8.20**, "the estimated flame and/or damage on arrival". - Should be reported as required in the document named "Incident Recording System (IRS) Help and Guidance – version 2.3" **question 8.24**, "the horizontal area damaged by flame and/or heat at stop". - Should be reported as required in the document named "Incident Recording System (IRS) Help and Guidance – version 2.3" **question 8.25**, "the horizontal area damaged by flame and/or heat and/or smoke and/or water at stop". **— Outdoor area damaged (for example, acres in a wildfire):** - Should be reported as required in the document named "Incident Recording System (IRS) Help and Guidance – version 2.3" **questions 8.35 and 5.16a**, "the estimated outdoor fire damage by flame and/or heat and/or smoke". **— Number of rooms damaged:** - Should be reported as required in the document named "Incident Recording System (IRS) Help and Guidance – version 2.3" **question 8.20**, "the estimated extent of flame and/or heat damage on arrival". - Should be reported as required in the document named "Incident Recording System (IRS) Help and Guidance – version 2.3" **question 8.22**, "the extent of flame and/or heat damage at stop".

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Table 6 *(continued)*

United Kingdom	**— Number of floors damaged:** - Should be reported as required in the document named "Incident Recording System (IRS) Help and Guidance – version 2.3" **question 8.20**, "the estimated extent of flame and/or heat damage on arrival". - Should be reported as required in the document named "Incident Recording System (IRS) Help and Guidance – version 2.3" **question 8.22**, "the extent of flame and/or heat damage at stop". Spread from one primary property to another primary property (or a secondary property) will only show the damage for the first property damaged. Only the distance, in meters, between the incident location and the neighboring property(s) will be shown. Spread from 'secondary' (e.g. some outdoor structure types) property to a primary property (including all vehicles & buildings that are not derelict) will only show the damage to the primary property.
USA	Rough estimation of the total loss to the structure and contents, in terms of the cost of replacement in like kind and quantity. This estimation includes contents damaged by fire, smoke, water and overhaul. Data exclude indirect loss, such as business interruption, temporary housing for displaced residents, and loss of use of equipment. Some individual FDs use reporting thresholds based on direct dollar loss. Measures used are: — Monetary value of loss — Outdoor area damaged (for example, acres in a wildfire) — Percentage of total area that was damaged — Number of buildings, structures or vehicles damaged — In a structure, qualitative confinement of fire (such as confined to object of origin, confined to room of origin) Damage not readily apparent at time of investigation/reporting may not be reported. Some damage may be present but not reported by fire departments. Also, there may be some fire departments that do not report direct property damage at all on NFIRS records.

7 Other losses subject to reporting (Question 8)

7.1 Summary comments on other losses subject to reporting

Nearly all countries collect data on firefighter deaths and injuries due to acute fire effects, and most collect data on other firefighter deaths and injuries sustained while on-duty. Only Kenya reports data collection on chronic illness and related death for firefighters.

Kenya is also the only country to report data collection on indirect property damage (also called consequential damage, including business interruption and temporary housing), environmental damage, or damage to cultural heritage.

7.2 Other losses subject to reporting by country

Table 7 provides a summary of national responses on other losses subject to reporting.

Table 7 — Other losses subject to reporting, by country

Australia	Not included in reporting.
Canada	— Deaths and injuries of firefighters, fire officers, fire brigade personnel, and other emergency responders due to acute fire effects.

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Table 7 *(continued)*

China	— Deaths and injuries of firefighters, fire officers, fire brigade personnel, and other emergency responders due to acute fire effects. Indirect fire loss refers to any fees caused by the business interruption, on-site rescue, recovery and disposal (including medical, funeral, pension, subsidies and relief costs) due to fire. In past years, we did statistics for consequential damage, but it is very difficult to quantify, and now it isn't considered when we conduct fire statistics. We will restart this work item when a better method can be found.
France	— Deaths and injuries of firefighters, fire officers, fire brigade personnel, and other emergency responders due to acute fire effects.
Japan	— Deaths and injuries of firefighters, fire officers, fire brigade personnel, and other emergency responders due to acute fire effects. — Other fatal or non-fatal injuries or illnesses of firefighters, fire officers, fire brigade personnel, and other emergency responders sustained while on-duty.
Kenya	— Deaths and injuries of firefighters, fire officers, fire brigade personnel, and other emergency responders due to acute fire effects. — Other fatal or non-fatal injuries or illnesses of firefighters, fire officers, fire brigade personnel, and other emergency responders sustained while on-duty. — Fatal or non-fatal injuries or illnesses of firefighters, fire officers, fire brigade personnel, and other emergency responders due to chronic illness or other possible effects of long-term exposure to fire effects. — Costs of business interruption, including business closure and other loss of mission continuity. — Costs of temporary housing or other arrangements made necessary while permanent repair or replacement of fire-damaged property is underway. — Environmental damage. — Damage to cultural heritage. — House hold losses, damage caused by fire on house hold items (e.g. carpet, television).
(Republic of) Korea	— Deaths and injuries of firefighters, fire officers, fire brigade personnel, and other emergency responders due to acute fire effects.
Russia	— Deaths and injuries of firefighters, fire officers, fire brigade personnel, and other emergency responders due to acute fire effects. — Other fatal or non-fatal injuries or illnesses of firefighters, fire officers, fire brigade personnel, and other emergency responders sustained while on-duty.

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Table 7 *(continued)*

United Kingdom	— Deaths and injuries of firefighters, fire officers, fire brigade personnel, and other emergency responders due to acute fire effects. — Other fatal or non-fatal injuries or illnesses of firefighters, fire officers, fire brigade personnel, and other emergency responders sustained while on-duty.
USA	— Deaths and injuries of firefighters, fire officers, fire brigade personnel, and other emergency responders due to acute fire effects. — Other fatal or non-fatal injuries or illnesses of firefighters, fire officers, fire brigade personnel, and other emergency responders sustained while on-duty. — Deaths and injuries… acute fire effects: Scope of NFIRS includes all injuries, deaths, or exposures to fire service personnel, including casualties that occur in conjunction both with incident responses and with non-incident events such as station duties or training; similar scope for NFPA survey. — All on duty firefighter fatalities are captured in a separate firefighter fatality database maintained by the USFA, which claims essentially 100% coverage of the nation. This includes deaths temporally distant from the original incident. Note: there are other federal agencies and non-governmental organizations that collect and report various disparate fire loss data, that go beyond the scope of this survey.

8 Location of fire (Question 9)

8.1 Summary comments on location of fire

Nearly all countries collect data so as to distinguish the broad categories of locations used in the survey.

— Buildings

— Structures other than buildings (for example, bridge, tunnel)

— Vehicles

— Crops, commercial forests, or other outdoor vegetation areas for which the vegetation has commercial value

— Other outdoor locations with commercial value (for example, outdoor storage, recreational areas and tourism sites outside structures)

— Outdoor vegetation areas with no commercial value (for example, brush-lands in a developed area)

— Other outdoor locations with no value (for example, trash bins, loose rubbish).

Several countries also provided coding categories for identifying specific types of buildings and structures and for identifying specific rooms or areas within buildings.

8.2 Location of fire by country

Table 8A provides a summary of national responses on type of property where fire occurred, noting any breakdowns provided for residential properties and any deviation in reporting from the broad categories cited in the survey.

Table 8B provides specific types of buildings and structures, for building and structure fires, for countries that provided that detail in attachments to the survey. Canada provides many sub-categories shown in section B2 of *Canadian Code Structure on Fire Loss Statistics*, 2002 edition, accessible at http://www.ccfmfc.ca/pdfs/code_structure_2002.pdf. However, these categories are somewhat inconsistent with the categories provided on the survey. It is not clear whether the more detailed categories are still in use.

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Table 8C provides specific rooms or areas within buildings, for building and structure fires, for countries that provided that detail in attachments to the survey. Canada provides many sub-categories shown in section F1 of *Canadian Code Structure on Fire Loss Statistics*, 2002 edition, accessible at http://www.ccfmfc.ca/pdfs/code_structure_2002.pdf. It is not clear whether the more detailed categories are still in use.

Table 8A — Locations of fires based on survey responses, by country

Australia	Separate reporting of single family dwellings, buildings with multiple private housing units, and commercial residential properties, such as hotels, dormitories.
Canada	— Separate reporting of single family dwellings, buildings with multiple private housing units, and commercial residential properties, such as hotels, dormitories — All residential properties reported together but distinguished from other buildings — All buildings with private housing units reported together but distinguished from other buildings
China	China does not indicate that they collect data on properties other than buildings, other structures, and vehicles. Detailed breakdowns of residential properties are not included in reporting.
France	Undetermined.
Japan	Japan collects data on properties other than buildings such as vehicles, vessels, forest, aircraft. Separate reporting of single family dwellings, buildings with multiple private housing units, and commercial residential properties, such as hotels and dormitories, are reported but distinguished from other buildings.
Kenya	Separate reporting of single family dwellings, buildings with multiple private housing units, and commercial residential properties, such as hotels, dormitories.
(Republic of) Korea	— Separate reporting of single family dwellings, buildings with multiple private housing units, and commercial residential properties, such as hotels, dormitories — All residential properties reported together but distinguished from other buildings — All buildings with private housing units reported together but distinguished from other buildings. Since the creation of the 3-degree location categories, all above distinction can be recognized.
Russia	Russia does not indicate that they collect data on properties other than buildings, other structures, and vehicles. Detailed breakdowns of residential properties are not included in reporting.
United Kingdom	The U.K. has 295 categories, including 21 dwelling categories (private residential), 18 other residential, and 160 non-residential buildings. The complete list can be downloaded from https://www.gov.uk/government/publications/incident-recording-system-for-fire-and-rescue-authorities.
USA	— Separate reporting of single family dwellings, buildings with multiple private housing units, and commercial residential properties, such as hotels, dormitories — All residential properties reported together but distinguished from other buildings — All buildings with private housing units reported together but distinguished from other buildings.

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Table 8B — Specific types of buildings and other structures, by country providing detailed attachment

Australia	**CLASS 1** Class 1a - a detached house Class 1a - (i) one or more attached dwellings, each being a building, separated by a fire-resisting wall, including a row house, terrace house, town house or villa unit; or (ii) two attached dwellings, neither of which is located above the other or above or below another Class of building other than its appurtenant private garage Class 1b - (i) a boarding house, guest house, hostel or the like with a total floor area not exceeding 300 m^2 and in which not more than 12 persons would ordinarily be resident which is not located above or below another dwelling or another Class of building other than a private garage; or (ii) a boarding house, guest house, hostel or the like with a total floor area not exceeding 300 m^2 in which not more than 12 persons would ordinarily be resident, which is not located above or below another Class or building other than a private garage **CLASS 2** A building containing 2 or more sole-occupancy units each being a separate dwelling Class 2 **CLASS 3** A residential building, other than a building of Class 1 or 2, which is a common place of long term or transient living for a number of unrelated persons A boarding house, guest house, hostel, lodging house or backpackers accommodation A residential part of an hotel or motel A residential part of a school Accommodation for the aged, disabled or children A residential part of a health care building which accommodates members of staff A residential part of a Detention Centre for the accommodation of the inmates of the center **CLASS 4** A dwelling in a building that is Class 5,6,7,8 or 9 if it is the only dwelling in the building **CLASS 5** An office building used for professional or commercial purposes excluding buildings of Class 6,7,8 or 9

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Table 8B *(continued)*

Australia	**CLASS 6** A shop or other building for the sale of goods by retail or the supply of services direct to the public An eating room, cafe, restaurant, milk or soft drink bar A dining room, bar, shop or kiosk part of a hotel or motel A hairdressers or barbers shop, public laundry, or undertakers establishment A market or sale room, showroom, or service station **CLASS 7** A public car-park Storage, or display of goods or produce for sale by wholesale **CLASS 8** Factories, or a building in which a handicraft or process for the production, assembling, altering, repairing, packing, finishing, or cleaning of goods or produce is carried on for trade, sale or gain Laboratory other than in health care buildings **CLASS 9** A health care building, including those parts of the building set aside as a laboratory An assembly building, including a trade workshop laboratory or the like in primary or secondary school, but excluding any other parts of the building that are of another Class **A non-habitable building or structure:** Class 10a - a non habitable building being a private garage, carport or shed Class 10b - a structure being a fence, mast, antenna, retaining or free-standing wall, or swimming pool

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Table 8B *(continued)*

Canada	Assembly use: — Auditorium, theatre, arena, cultural center (7 sub-categories) — Amusement park, exhibition and fair ground, stadium (9 sub-categories) — Educational institution (Non residential) — Church, funeral parlor — Recreation, sports facilities, sports club, social club — Food and beverage establishment Institutional use: — Prison, penitentiary, jail, detention center, correctional facility, reformatory — Hospital, medical center, clinic, sanatorium Residential use: — Residential – row, garden, town housing, condominium — Residential – apartment, tenement — Hotel, motel, lodge, hostel, boarding house, dormitory — Residential – single detached — Residential – duplex, 3-plex, 4-plex, semi-detached — Educational Institution (residential) — Camp site/RV park — Residential – mobile home/ trailer park — Residential- with business/mercantile, up to 3 stories Business use: — Office building Mercantile use: — Commercial center including fuel dispensing (may include restaurant, stores, etc.) — Commercial center, shopping center — Department store, variety store Manufacturing store: — Industrial manufacturing

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Table 8B *(continued)*

Canada	Storage use: — Grain elevator — Industrial storage facility, bulk storage tanks Other special use: — Parks (federal, provincial or city) (includes history sites) — Motor vehicle transportation use (includes bus terminal) — Harbor, waterfront property, marine terminal — Railway terminal, yard (excludes subway) — Car park — Air transportation use — Subway — Property occupies its own building, structure or facility (excludes residential) — Laboratory — Farm, agricultural use — Multiple use (no overriding use) — Utility — Mine — Communications — Nucleonic complex — Not applicable Miscellaneous unknown: — Undetermined — Building/structure unclassified
Japan	Japan records the classification of occupancy in regard to regulation; there are 32 categories (see Annex C). They also record the type of use and the type of business of the building of origin, in three-digit and four-digit coding numbers, respectively; Japan considered those categories too numerous to include in this report.
(Republic of) Korea	Korea indicates on their survey form that they have 370 more specific categories.

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Table 8B *(continued)*

Russia	— Industrial building — Storage buildings — Open storage places materials, and other agricultural lands open area — Residential buildings and outbuildings — Under construction buildings — Construction, plants for industrial use — Vehicles — Buildings, construction and premises business trade — Building, room training and educational purpose — Building, room of health and social services of the population — Building, room service population — Administrative building — Buildings and rooms for temporary stay people — Other public building — Unexploited building — Clothes on a person — Other objects of fire

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Table 8B *(continued)*

USA	**Assembly** — Bowling establishment — Billiard center or pool hall — Electronic amusement center — Ice rink — Roller rink — Swimming facility — Other fixed-use recreation place — Ballroom or gymnasium — Convention center or exhibit hall — Stadium or arena — Playground — Amusement center — Other variable-use recreation place — Place of worship — Funeral parlor — Other place of worship or funeral parlor — Athletic or health club — Clubhouse — Yacht club — Casino — Other club — Library — Museum — Memorial structure — Courthouse — Other public or government — Restaurant or cafeteria — Bar, nightclub, tavern, pub — Other eating or drinking place

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Table 8B *(continued)*

USA	— Airport passenger terminal — Bus station — Rapid transit station — Other passenger terminal — Live performance theatre — Auditorium or concert hall — Movie theatre — Radio or television studio — Film/movie production studio — Other studio or theatre — Other assembly **Educational** — Preschool — Elementary school — High school, junior high school, middle school — Other non-adult school — Adult education center, college classroom — Day care in commercial property — Day care in residence, licensed — Day care in residence, unlicensed — Other educational **Health care or correctional** — Licensed nursing home — Mental retardation/development disability facility — Alcohol or substance abuse recovery center — Asylum or mental institution — Hospital — Hospice — Clinic — Doctor or dentist office

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Table 8B *(continued)*

USA	— Hemodialysis unit — Other clinic or doctor's office — Jail or prison — Reformatory — Police station — Other health care or correctional **Residential** — One- or two-family dwelling, including manufactured home — Multi-family dwelling — Boarding or rooming house — Hotel or motel — Residential board and care — Dormitory — Sorority or fraternity house — Barracks — Other residential **Mercantile or business** — Convenience store — Food and beverage sales — Textile, wearing apparel sales — Households goods sales, repairs — Specialty shop — Personal service — Recreational store — Laundry, dry cleaning — Professional supplies, service — Service station, gas station — Motor vehicle or boat sales, service, repair — Department store — Other general retail

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