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## Fire safety — Overview of national fire statistics practices

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



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Fax + 41 22 749 09 47  
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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](http://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*.

## 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.

# 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	<p>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.</p> <p>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.</p> <p>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.</p>
Canada	<p>Canada's databases begin as individual-incident databases at the local fire department level.</p> <p>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.</p> <p>All or nearly all reports are completed by firefighters who lack extensive training in fire investigation.</p>