

# Guide to Road Tunnel Safety Documentation

## Safety Documentation Objectives



March 2003

## Foreword

**The road tunnel safety documentation is intended to give the players involved a common understanding of the way in which these structures work, their environment and the action required in order to ensure safety.**

**The compilation of this safety documentation marks the beginning of a continuing feedback policy to be followed throughout the life of a tunnel.**

**As regards some of the tunnels in operation, the diagnosis performed for the purposes of the safety documentation may result in a major upgrade programme.**

Interministerial circular 2000-63 of 25 August 2000 concerning the safety of tunnels in the national road network **requires the owner (jointly with the operator in the case of tunnels in operation)** to compile **safety documentation** for all tunnels in the national road network of over 300 metres in length.

Circular 2000-82 of 30 November 2000 supplemented the above circular in regard to regulations governing dangerous goods transport vehicles in road tunnels belonging to the national network.

The implementing order for the Law of 3 January 2002, which has yet to be finalised, is designed to confirm this statute and extend it to all local authority tunnels of over 300 metres in length.

**The guide to the safety documentation<sup>1</sup> is intended for all persons having to do with tunnel safety** (prefects, owners, operators, engineering and design offices, surveyors and repair and emergency teams) to enable them to understand the purpose of the regulations and make a serious commitment to the care and attention required at each stage of design.

**The objectives of the tunnel safety documentation are these:**

- \* to serve as a reference dossier in regard to safety which will provide the players, the operators in particular, with the official documents governing operation of the structure under all circumstances;
- \* to carry out surveys to evaluate the safety of the structure and the impact of the measures that the owner wishes to implement;
- \* to submit the dossier to the prefect, who will refer it to the CESTR (Comité d'Evaluation de la Sécurité des Tunnels Routiers / road tunnel safety assessment committee) for its opinion.

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<sup>1</sup> This guide enlarges on and replaces the document entitled *Specific hazard investigations of Tunnels in the Road Network: Guide to Methods, Provisional Version*, issued July 2001.

At the request of the CESTR, the CETU (Centre d'Études des Tunnels / Tunnel Study Centre) set up a working party to put together a guide intended for all persons to whom road tunnel safety documentation applies.

The working party was made up of representatives from the CETU, the land transport department's dangerous goods transport unit (DDT-MTMD), the national industrial environment and hazards institute (INERIS), of owners and operators, some members also belonging to the CESTR. The scientific management centre of the École des Mines in Paris provided methodological and operational assistance to the working party.

The working party's activities were based chiefly on a detailed analysis, conducted by the Docalogic Inflow engineering and design office, of the methods of organising and the content of specific hazard investigations carried out on a number of typical road tunnels in France.

*A list of those attending the working party meetings is given below.*

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## 1 OBJECTIVES OF THE DOCUMENT

**This document, "Safety Documentation Objectives", is intended for prefects, owners and operators responsible for major decisions regarding the organisation of road tunnel safety. It explains the general purport of the approach recommended together with the structuring of the different documents making up the dossier.**

The document is accompanied by five booklets intended for the **persons responsible for compiling the documents making up the safety documentation** (those in charge of the management and follow-up of studies and engineering and design offices). These booklets describe in detail the points requiring further technical elucidation.

- \* Booklet 1: Practical method of compiling the safety documentation
- \* Booklet 2: From the existing condition to the reference condition
- \* Booklet 3: Comparative risk analyses
- \* Booklet 4: Specific hazard investigations
- \* Booklet 5: Emergency response plans

## 2 ROAD TUNNEL SAFETY ISSUES

**In French road tunnels taken as a whole<sup>2</sup>:**

- **several vehicles break down every day (usually either engine failure or out of fuel);**
- **there are several serious accidents every week;**
- **there are one or two fires every month.**

The fire in the Franco-Italian Mont-Blanc tunnel in March 1999; the accident while work was going on in the Austrian Tauern tunnel in May 1999; and the accident in the Swiss Saint-Gotthard tunnel in October 2001: regrettably, all these accidents showed that fires in a tunnel, whether caused by an accident or not, can have disastrous consequences for the people involved. Not only public opinion and the media were made extremely aware of this, but also the authorities and decision-makers concerned, who are especially mindful of the safety issues at stake at every stage of tunnel design and use.

Among the host of minor incidents occurring in tunnels, some can have drastic consequences due to a combination of circumstances. These need to be detected sufficiently early so as not to turn into disasters.

The risk factors are the vehicles and their loads, the characteristics of the infrastructure, the operator's ability to make effective use of the facilities made available to him, and lastly tunnel-user behaviour.

Local authorities can forbid or regulate certain traffic such as that of vehicles carrying specified dangerous goods.

As regards tunnel characteristics, in addition to their geometry, the engineering works and in particular the emergency exits, consideration must be given to their support facilities (power supply, lighting, adequate ventilation ensuring proper air quality, detection, signalling, radio-communications, etc.) as any malfunction can adversely affect user comfort and put the user at risk in the event of a fire.

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<sup>2</sup> In the national road network, there are 103 tunnels of over 300 metres in length in use (including cross-border structures) representing a total length of 194 kilometres. As regards local authority road systems, 77 structures are potentially affected by the new provisions of the Law of 3 January 2002, representing a total length of 65 kilometres (Situation as at the end of 2002).

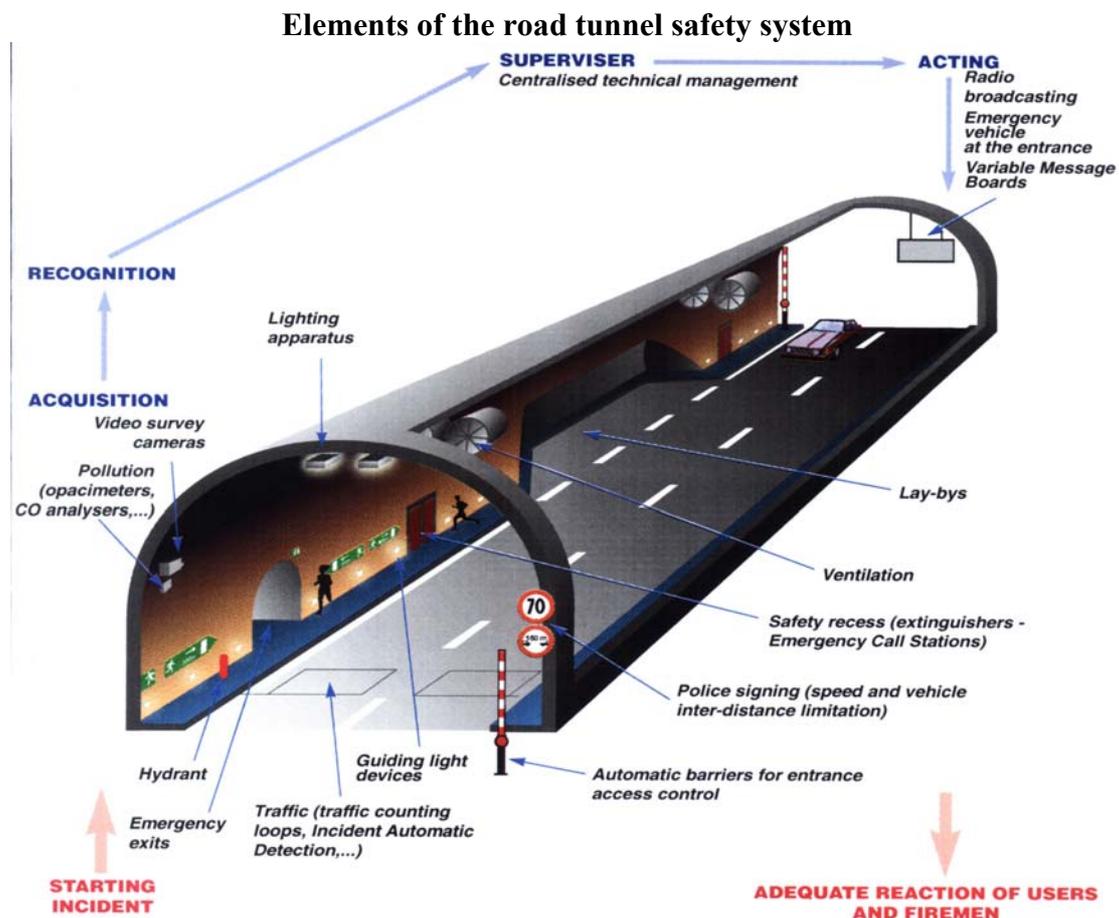
The consequences of occurrences giving rise to risks, such as breakdowns, various incidents, accidents and fires are exacerbated by the confined nature of the tunnel. The vast majority of fires are caused by the spontaneous combustion of vehicles due to a technical fault, although all the rare fires that have resulted in death have been the result of an accident, with the exception of the fire in the Mont-Blanc tunnel in 1999.

The effects of a fire make themselves felt in the following order:

- \* the smoke, being opaque, reduces visibility and impedes the evacuation of the users to the tunnel heads or the shelters;
- \* the smoke is toxic and can therefore inconvenience or asphyxiate any users unable to be evacuated;
- \* the heat released by the fire produces very high temperatures.

Tunnel surveillance varies according to the tunnel, ranging from no surveillance at all to highly sophisticated surveillance enabling the operator, using among other things the data reported by the automatic incident detection (AID) system, to take very rapid action: telling the user how best to behave, alerting the emergency services, activating his various facilities (closing the tunnel, smoke extraction, etc.), calling out the specialist operational units for work on site.

The diagram below shows the safety system which following an incident enables the users and the firemen to take the appropriate action.



Users are required to comply with the general rules of caution as in the open air. Furthermore, if a fire should break out, it will be a few minutes before the firemen arrive. Consequently, the users, even if in touch with the operator by radio, are alone in the tunnel and have to take care of their own evacuation.

Below is an extract from an information leaflet issued by the safety and road traffic department.

## When driving in a tunnel

### Que faire en cas d'incendie ?

> Si votre véhicule prend feu :

> Quittez le tunnel avec votre véhicule.

> Si ce n'est pas possible, donnez l'alerte grâce aux téléphones de secours situés dans des niches régulièrement espacées.

> Éteignez le début d'incendie avec un extincteur, situé dans la niche du téléphone de secours.



> Si une fumée dense se répand devant vous :

> Coupez le moteur de votre véhicule et laissez en place la clé de contact.

> Quittez votre véhicule et rejoignez, avec vos passagers, une issue de secours.

> Une fois engagés dans l'issue de secours, ne revenez pas en arrière dans le tunnel, sauf si vous y êtes invités par les services de secours ou d'exploitation du tunnel.



En cas d'urgence, n'utilisez pas votre téléphone portable. Il ne permet pas aux secours de vous localiser dans le tunnel. Utilisez le téléphone de secours.

### Que faire en cas de panne ?



> Allumez les feux de détresse de votre véhicule.

> Quittez le tunnel avec votre véhicule, si vous pouvez le faire sans risques pour les autres usagers.

> Sinon, roulez dans la mesure du possible jusqu'à l'emplacement d'arrêt d'urgence le plus proche. Certains tunnels sont équipés d'emplacements implantés à intervalles réguliers.

> À défaut, garez votre véhicule au plus près du bord droit de la chaussée.

> Demandez de l'aide grâce aux téléphones de secours.



### Que faire en cas d'embouteillage ?



> Lors d'un fort ralentissement, allumez les feux de détresse de votre véhicule.



> Même à l'arrêt, conservez votre distance de sécurité.

> Allumez votre autoradio et écoutez les informations relatives aux conditions de circulation.



Des flashes d'information réguliers sur les conditions de circulation (fluidité du trafic, conditions météo à la sortie du tunnel, accident) sont diffusés sur la fréquence indiquée par les panneaux de signalisation.

### Des règles de sécurité impératives



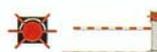
> Respectez la vitesse prescrite.

> Allumez systématiquement vos feux de croisement, même si le tunnel est éclairé.

> En roulant ou à l'arrêt, maintenez la distance de sécurité indiquée. Celle-ci permet de localiser la fumée si un incendie se déclare et facilite l'accès des secours.



> Respectez les signaux d'affectation des voies.



> Respectez l'arrêt absolu au feu rouge fixe ou clignotant, comme aux barrières d'arrêt.

### 3 AIMS OF THE SAFETY DOCUMENTATION

**Compulsory documentation, but above all an opportunity for the owner and the user:**

- **to examine together with the other persons concerned all of the factors involved in user safety;**
- **to implement the most appropriate measures**

The aims of the safety documentation are described below. Advice is also given to assist with its compilation. This advice reflects **the experience of the CESTR** which, in its first two years of activity (2001 and 2002), examined the safety documentation of some forty tunnels. It is also based on the experience acquired by the owners, operators, emergency services, engineering and design offices, experts and prefectural services involved in the compilation of this type of dossier. The advice is often very similar to the principles of the Safety Management Systems, which have already proved their worth in other areas of hazardous activity<sup>3</sup>.

#### 3.1 Documents for the operator

**The safety documentation is first of all a set of documents designed to provide support to the operator.**

The operation of a tunnel comprises all of the tasks required in order to ensure it functions without interruption, to prevent accidents and to keep the users safe. This cannot be achieved by makeshift solutions, only by method and organisation.

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<sup>3</sup> Safety management systems are based on a general risk management method designed to:

- \* identify the functions that are important for safety and the operations and facilities associated with these functions;
- \* define the means and structures ensuring the ongoing control of these functions;
- \* provide the appropriate feedback;
- \* ensure safety levels in line with the operator's safety policy and facilities through a system of continuous improvement.

The characteristics of the tunnel and its facilities together with the volume of traffic call for different degrees of surveillance and tunnel manning (four degrees are defined in paragraph 5.1.1 of the technical instruction appended to Circular 2000-63).

Operation of the tunnel must of course be based on a **precise and unambiguous description of the tunnel and full knowledge of the traffic using it**. This might appear self-evident, but, to take just one example, a recent safety exercise revealed confusion over exactly where an incident had occurred because the operator's teams and the emergency teams were not using the same system of location.

Moreover, the following documents should be included in all safety documentation applicable to a tunnel in service:

- **traffic regulations** defining the types of vehicles forbidden, the maximum admissible speeds and if necessary the minimum distances between vehicles; these regulations are drawn up by the **authority in charge of policing** (the prefect or the mayor);
- the **emergency and safety plan** and operating instructions defining all the organisational measures governing the tunnel (human resources, equipment, surveillance, alarm and tunnel closing procedures, minimum operating requirements). These documents also define incident, accident and fire procedures; these are drawn up by the **operator in collaboration with the outside emergency services** (the gendarmerie, the police, fire brigade, ambulance services, etc.)<sup>4</sup>. See **Booklet 5** for further details;
- the definition of a **maintenance** policy and how it is to be applied<sup>5</sup>;
- the **skills** maintenance and upgrade programme for the operating and emergency personnel.

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<sup>4</sup> In the case of long tunnels (see section 5.2.2. of the technical instruction), the emergency services are an integral part of general tunnel operation.

<sup>5</sup> For tunnels in the non-franchised road network, refer to the ITSOA (Instruction Technique pour la Surveillance et l'Entretien des Ouvrages d'Art / technical instruction for the surveillance and maintenance of civil engineering works) of 19 October 1979 and Section 40 thereof, which is currently being revised.

### 3.2 Feedback

**The safety documentation must be updated following analysis of the annual safety exercises and all incidents and accidents.**

Feedback is based on observation of the actual conditions of use, analysis of incidents and accidents<sup>6</sup>, the lessons learnt from the **annual exercises**<sup>7</sup> and any changes in the tunnel, the way it is operated, the traffic using it, its environment and so on. This is the system used to update as often as necessary the documents described in paragraph 3.1.

Safety is a shared issue; under no circumstances can it be the job of a single player. That is why it is highly advisable that debriefings following incidents or exercises should be attended by all the different services (operator, emergency services, police, representatives from the prefecture, etc.) and not simply by individual services for their own particular reasons.

### 3.3 Risk surveys

**The safety documentation includes a comparative risk analysis and a specific hazard investigation that form the basis of the provisions of the documents governing tunnel operations.**

The prohibition or authorisation, conditionally or otherwise, of dangerous goods transport vehicles comes under the authority of the traffic police. Circular 2000-82 asks for the decision to be clarified by means of a **comparative risk analysis** comparing the route that includes the tunnel with the alternative route(s).

It is advisable to define the tunnel speed of dangerous goods transport vehicles in the survey document prior to the Public Interest Declaration (for further details, see Booklet 3).

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<sup>6</sup> Extract from technical instruction, section 5.3.2 – Feedback – The operator shall make a report on all significant incidents and accidents as soon as they occur in the tunnel and will analyse them in order to determine whether it is necessary to amend the current safety measures or to introduce further measures.

<sup>7</sup> Technical instruction, section 5.3.1 – Exercises – At least once a year, the operator shall organise an internal exercise designed to test the operating instructions and their application by his personnel, and shall take any necessary corrective action (updating the instructions, personnel training, etc.). After each exercise, a report shall be made out describing the circumstances and course of the exercise; if applicable, lessons will be drawn and further action recommended. These provisions do not interfere in any way with exercises organised by the police responsible for safety under a Special Safety Programme.

The events likely to occur in a given tunnel are extremely varied and cannot be limited solely to an analysis of previous events in the tunnel; there are of course no previous events in the case of a tunnel which has yet to be put into operation.

That is why the owner must, in accordance with Circular 2000-63, submit a **specific hazard investigation** "describing those accidents, whatever their cause<sup>8</sup>, which could occur once the tunnel is operational together with the nature and extent of any consequences; this survey details and explains the measures designed to reduce the probability of such accidents and their consequences". It is of the utmost importance to ensure that the above survey involves all of the players concerned with safety. The scenarios examined in the survey may be used as themes for safety exercises (for further details, see Booklet 4).

### 3.4 Procedures

**The composition of the safety documentation changes according to the different stages in the life of the tunnel; the dossier is submitted to the prefect, who refers it to the CESTR for its opinion.**

The exact composition of the safety documentation depends on the stage in the life of the structure. For tunnels **at the project stage**, the safety documentation must be compiled when the project is finalised. Thus it is still not very detailed as regards operating arrangements. Six months before the tunnel is **put into operation**, the description of the tunnel, the traffic forecasts, the comparative risk analysis and the specific hazard investigation are all updated. The dossier also includes more operational details as it contains the operating instructions and the emergency response plan. For further details, see **Booklet 5**.

For safety documentation concerning tunnels **in operation**, see paragraph 3.5. below and **Booklet 2**, which explain the specific aspects of the procedure.

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<sup>8</sup> And therefore including accidents involving dangerous goods transport vehicles.

On completion of the various surveys, before the dossier is sent to the prefect the owner calls in an **expert**, as required by Circular 2000-63, in order to obtain the opinion of a person or body that:

- has a general road tunnel safety qualification and is therefore able to make an informed comparison between the tunnel and other tunnels (in this regard see the specifications describing the role of the expert, given in **Booklet 1**);
- has not taken part in the surveys carried out on the tunnel concerned or in drawing up any other documents in the safety documentation, and thus brings an independent opinion to bear on the technical and organisational decisions made by the owner, the project manager and their subcontractors.

**The expert's opinion** concerns the safety documentation as a whole and is appended to it.

The owner acts on all or some of the conclusions in the specific hazard investigation and the expert's observations and makes out a report whereby he concludes the safety documentation and describes the measures that he proposes to apply<sup>9</sup>. The owner submits the dossier to the prefect, who refers it to the CESTR for its opinion. This committee is made up of government representatives and persons qualified by virtue of their experience of tunnels.

Once informed of the committee's opinion, the prefect acts as follows:

- **with a tunnel at the project stage, informs the owner of his opinion** with a view to its inclusion in the decision regarding project approval;
- **with a tunnel to be put into operation, decides whether or not to give his approval**, possibly subject to certain restrictions, to open the tunnel to public traffic and informs the owner accordingly. A copy of his decision is sent to the traffic police concerned if they are separate from the prefecture.

Approvals or otherwise granted by the CESTR and the prefect **can under no circumstances replace the inspections** that must be organised by every owner and project manager (notably those conducted by the inspection authorities) to ensure the works are compliant with the provisions of the contracts.

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<sup>9</sup> If the owner has envisaged a number of alternatives, he must choose between them: The CESTR and the prefect are required to give an opinion on the technical and organisational measures decided on, not to steer the owner towards one of the alternatives envisaged.

The CESTR checks that the **safety issues have been comprehensively taken into account**, i.e. that the geometric and technical characteristics of the tunnel and its layout, the traffic, the traffic regulations, the operational facilities and organisation and the environment are fully consistent with one another and that the persons concerned know precisely what their responsibilities are.

As indicated in paragraph 3.2, maintaining the required safety level is an ongoing process. The procedure whereby the CESTR and the prefect are consulted should not have the perverse effect of preventing any later modifications which would be a matter of local initiative. Another detrimental effect would be the setting of objectives that are too ambitious to be achieved (e.g. a degree of surveillance that could obviously not be achieved due to insufficient human resources).

The decree specifying the measures required to enforce the law of 3 January 2002 in regard to tunnels, which is still in the pipeline, will specify the procedures governing a routine inspection following the first referral to the CESTR.

### **3.5 Particularities of tunnels in operation**

**In the case of tunnels in operation, compilation of the safety documentation requires a diagnosis report which may mean defining a safety upgrade programme (works and organisational modifications) the feasibility of which would have to be examined.**

Compilation of the safety documentation also requires surveys additional to those required for new tunnels.

This will necessitate:

- an existing condition report (technical and organisational): sometimes a thankless task in the case of old tunnels, this involves the retrieval of data, drawings and reports, collating the different items in a summary document available to all, and comparison in the field with the actual condition of the structure;
- identifying departures from the provisions of the technical instruction, with a view to prioritising them;
- drawing lessons from the exercises and the feedback, with the participation of the various players concerned.

**Booklet 2** describes the scope of the surveys required, according to the case, for the existing condition report, together with the recurrent procedure taking the existing condition to a reference condition (also technical and organisational). The reference condition is initially made out in temporary form. At this stage, it is a question of which report the owner takes as a working hypothesis for the tunnel after upgrading. The specific hazard investigation is used to check the report from a safety point of view. Depending on the results, the owner either accepts the provisional reference condition or amends it.

If the reference condition finally decided on differs significantly from the initial existing condition, a safety upgrade programme is required.

With the oldest tunnels, such a programme may mean a heavy investment and also affect operating costs. It could be combined with structural repair works, either preventive or remedial, designed essentially to ensure the permanence of the property but whose beneficial effect on safety may well be far from negligible; To what extent this would supplement the safety upgrade programme would need to be examined in detail.

Before deciding on the reference condition, even in its provisional form, the owner must satisfy himself, by means of special surveys if necessary, as to the feasibility, working constraints and cost of the safety upgrade programme.

Some structures have characteristics that cannot easily be modified without considerable expense or major inconvenience to the users. Additionally, and more so than with tunnels at the project stage, the principle of compensation can be applied between different safety systems (principle set out in the technical instruction)<sup>10</sup>, in particular with the help of the results provided by the specific hazard investigation.

The preliminary planning of the necessary works must be very precise and if necessary include irreducible timescales resulting from invitations to tender to subcontractors.

The financing of the works is governed by rules specific to each owner, the state, franchise holders and public authorities. The owner must comply with the procedures governing programme approval, funding and the assignment of qualified operating personnel.

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<sup>10</sup> Extract from the foreword: Strict compliance with the provisions of this text may therefore not always be required if it can be shown that the proposed provisions ensure at least an equivalent overall safety level, by reinforcing, for example some aspects so as to compensate for the lower safety level attaching to other aspects. In the absence of recognised methods of showing that such compensatory measures ensure at least an equivalent overall safety level, the provisions applied to similar cases may be taken as a basis.

Thus the owner has a major responsibility as regards his decisions concerning the provisions proposed by the CESTR and the prefect. He may decide to outsource a major part of the compilation of the safety documentation, right up to its coordination by an assistant to the owner (see **Booklet 1** on the selection of subcontractors and subcontracting specifications). Nevertheless, it is the owner who defines, or at any rate approves, the provisional reference condition, and finally decides, in his report, which reference condition he proposes to attain after considering all of the above mentioned factors.

Lastly, the procedure given in Circular 2000-63 specifies a timescale for submission of the safety documentation regarding tunnels in operation to the CESTR, which has drawn up the appropriate dossier examination programme. It gives priority to dossiers to be examined with a view to upgrading the tunnel concerned. In the meantime, the tunnels continue to be operated in their current condition without the need for a formal inspection. However, it is still incumbent on the owners to make very effort to ensure that operating conditions comply with safety requirements, and to compile the relevant safety documentation without delay.

## 4 COMPOSITION OF THE SAFETY DOCUMENTATION

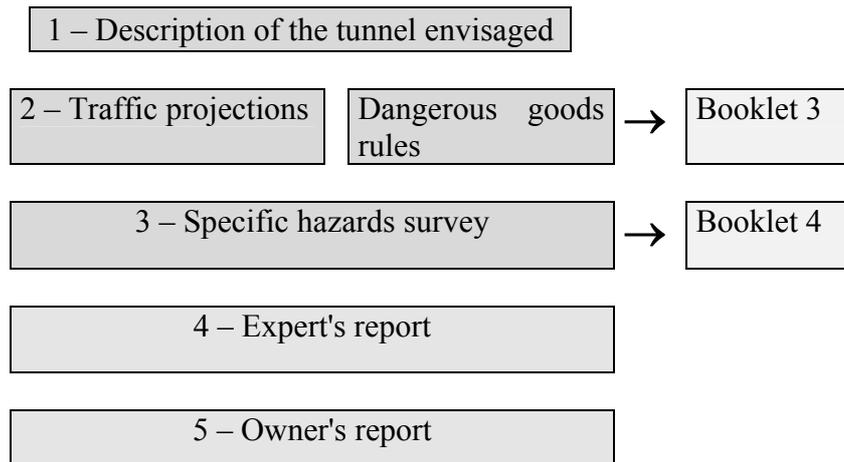
To illustrate the principles described in Chapter 3, this chapter gives details of the composition of the safety documentation for both new tunnels and tunnels in operation.

### 4.1 New Tunnels (Phase 1, Project Stage)

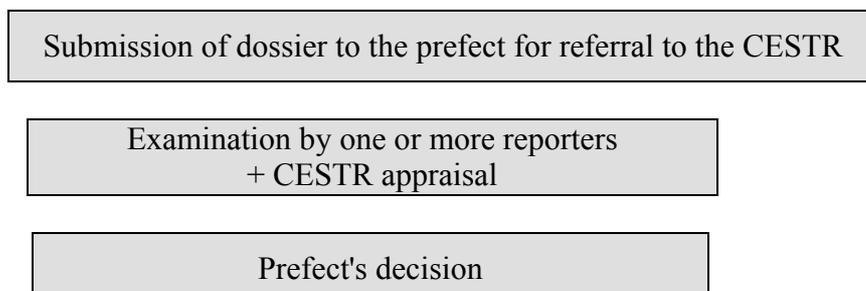
#### Step 1:

Definition of the tunnel envisaged and its operating principles

#### Step 2: Documents issued for the safety documentation



#### Step 3: Administrative procedures

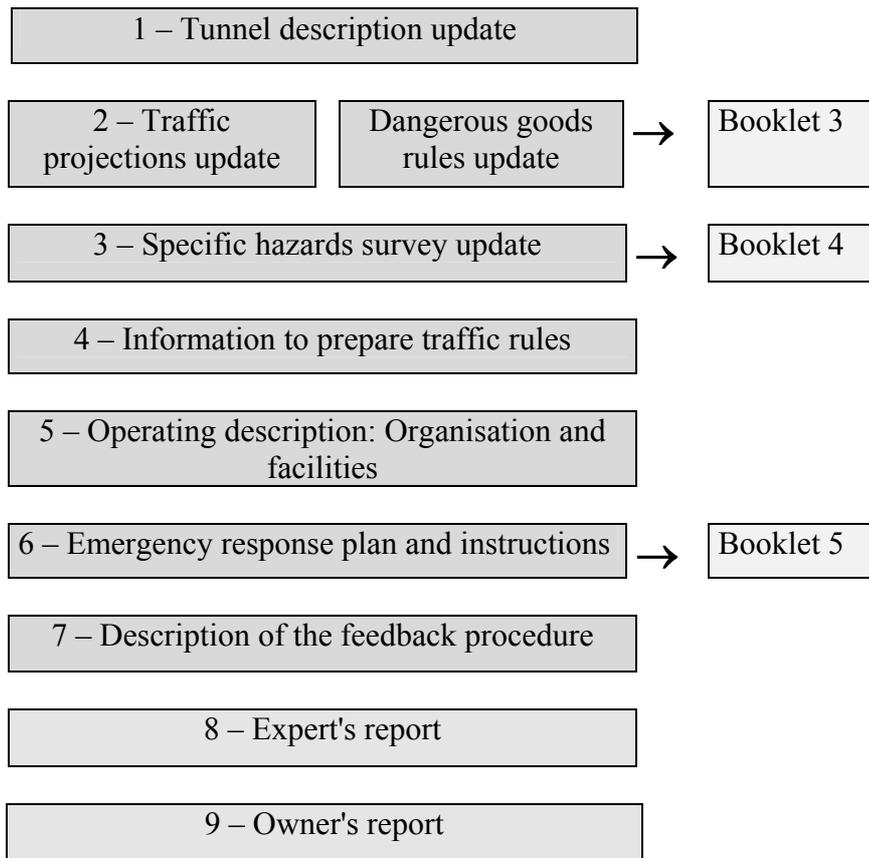


## 4.2 New Tunnels (Phase 2, 6 months prior to opening)

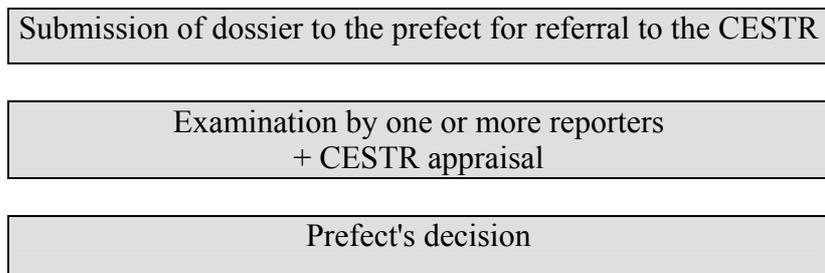
### Step 1:

Definition of the tunnel to be put into operation and operating and service procedures

### Step 2: Documents issued for the safety documentation



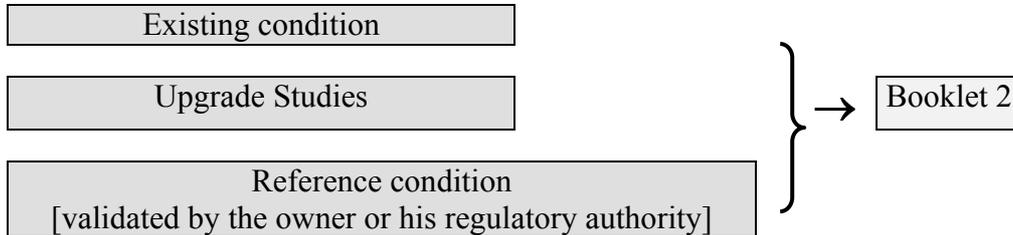
### Step 3: Administrative procedures



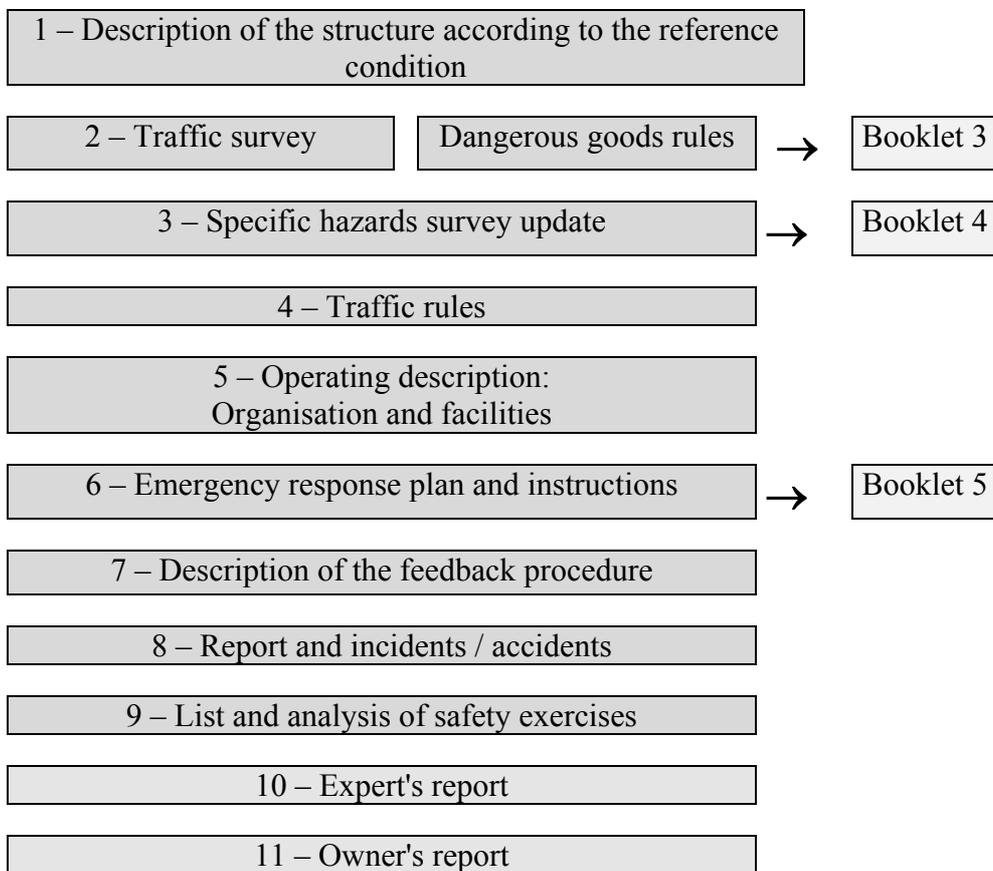
### 4.3 Tunnels in operation

#### Step 1: Definition studies

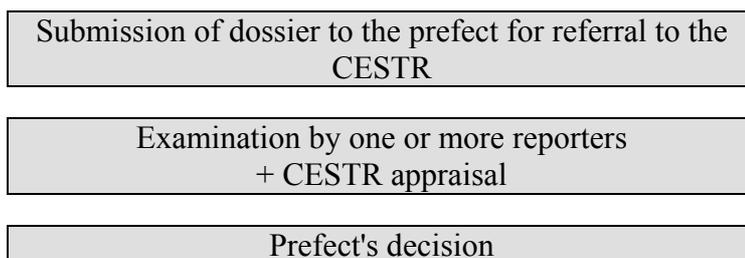
##### Reference condition



#### Step 2: Documents issued for the safety documentation



#### Step 3: Administrative procedures



Tunnel refurbishment project (if necessary)

## 5 CESTR EXAMINATION PROCEDURES (REFERENCE: APPENDIX 1 TO CIRCULAR 2000-63)

Date	Procedure
2001	For tunnels in operation, the committee drew up a forward inspection timetable and informed the owners and prefects concerned accordingly.
Two months prior to examination	The CESTR appoints an internal reporter (or two co-reporters if required) and informs the owner and the prefect.
In the two months preceding examination	The owner submits the safety documentation to the prefect for referral to the CESTR. The prefect communicates to the committee any observations he may wish to make. The committee's secretarial office and each reporter appointed by the committee also receive a copy.  The CESTR secretarial office sends the prefect (with a copy to the owner) an invitation to attend the committee meeting in which the dossier is to be examined  The reporter or co-reporters contact(s) the owner, examine(s) the safety documentation and organise(s) a meeting on site with the different persons concerned, including the emergency services: police, fire brigade).
Day dossier examined	The safety documentation is usually examined in Nanterre (La Défense, Tour Pascal B). The agenda is as follows: 1 – <b>The meeting is addressed:</b> - by the owner, accompanied if he wishes by the project manager and the authors of the comparative risk analyses and the specific hazard investigation; 2 – by the expert; 3 – by the persons appointed by the prefect (prefect himself, staff manager, the DDE (Direction Départementale de l'Équipement / departmental engineering services), police, fire brigade. 4 – by the reporters. 5 – Questions and answers. 6 – Intra-committee discussion and formulation of an opinion (in the absence of the persons mentioned in 1, 2 and 3 above; this may mean that some CESTR members are excluded from the discussion). 7 – Presentation to those present of the essential points of the opinion formulated by the committee.
In the days following examination	Final version of the committee's opinion produced and sent to the prefect (with a copy to the owner).  The committee may if necessary request an additional examination.

## 6 INDEX OF ACRONYMS AND PARTICULAR TERMS

Acronym/Term	Reference Para
<b>Comparative Risk Analysis</b>	3.3.
Circular 2000-63	Interministerial Circular 2000-63 of 25 August 2000 concerning the safety of tunnels in the national road network, official publication of the ministry of transport and housing, special edition 2000-6 of September 2000
	Foreword and 3.1
Circular 2000-82	Interministerial Circular 2000-82 of 30 November 2000 concerning the regulations governing the use by vehicles carrying dangerous goods of tunnels in the national road network, official publication of the ministry of transport and housing No. 23 of 25 December 2000
	Foreword and 3.3
CESTR	Comité d'Évaluation de la Sécurité des Tunnels Routiers / <b>Road tunnel safety assessment committee</b>
	3.4 and 5
CETU	Centre d'Etudes des Tunnels / <b>Tunnel Study Centre</b>
	Operating Instructions
	3.1
	Existing condition and reference condition (technical and organisational)
	3.5 and 4.3
	<b>Specific Hazard Investigation</b>
	3.3
	Annual Safety Exercise
	3.2
	Expert (called in by the owner)
	3.4
IT	Instruction Technique / <b>technical instruction</b> (appended to Circular 2000-63 of 25 August 2000)
	3.1
ITSOA	Instruction Technique pour la Surveillance et l'Entretien des Ouvrages d'Art / <b>technical instruction of 19 October 1979 for the surveillance and maintenance of civil engineering works</b>
	3.1
Law of 3 January 2002	Law 2002-3 of 3 January 2002 governing the safety of infrastructures and transport systems, technical enquiries into occurrences at sea, land or air transport accidents or incidents and the underground storage of natural gas, hydrocarbons and chemicals, Journal Officiel No. 3 of 4 January 2002
	Foreword
	<b>Owner</b>
	4.3
	<b>Emergency Response Plan</b>
	3.1
	Expert's Report (see Expert)
	Owner's Report
	3.4
	Traffic Rules
	3.1
	Feedback
	3.2
	<b>Safety Management System</b>
	3
	<b>Dangerous goods transport</b>
	3.3

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