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Concept

FOT safety supervision during the operational phase

(Monitoring)

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Reference/file no.: 210.1/2013-02-18/203

Table of contents

1	Purpose of this document	4
2	FOT remit as supervisory authority	4
2.1	FOT authority	4
2.2	Legal basis of safety supervision	4
2.3	Control cycle for safety supervision	5
2.3.1	Safety-relevant provisions: Normative phase	5
2.3.2	Authorisations and approvals: Preventive phase	6
2.3.3	Monitoring: Operational phase	6
2.4	FOT principles in safety supervision	6
2.5	Roles	7
2.5.1	Separation of roles between companies/FOT in the operational phase	7
2.5.2	Role of the FOT in the event of accidents	7
2.6	Organisation	8
2.6.1	Safety supervision in the FOT	8
2.6.2	Safety supervision	9
2.6.2.1	Process sections.....	9
2.6.2.2	Technical sections.....	9
2.6.2.3	Safety risk management.....	9
2.6.2.4	Risk-oriented inspections: basic principles	9
2.6.2.5	Supervision of cableways: Accreditation	9
3	Safety supervision during the operational phase	10
3.1	Delimitation	10
3.2	Planning	10
3.3	Implementation	10
3.3.1	Instruments	10
3.3.2	Working basis	11
3.3.3	Process	11
3.3.4	Results	12
3.3.4.1	Assessments.....	12
3.3.4.2	Communication on-site.....	12
3.3.4.3	Supervision report.....	12
3.3.4.4	Suggestions for improvement.....	12
3.3.4.5	Requirements.....	12
3.3.4.6	Appeals	13
3.3.4.7	Criminal law aspects	13
3.3.4.8	Occupational health and safety	13
3.4	Follow-up	13
3.4.1	Monitoring of requirements (follow-Up)	13
3.4.2	Findings from the supervision	13
3.4.3	Information to the Director	14

Reference/file no.: 210.1/2013-02-18/203

1 Purpose of this document

This document describes how the Federal Office of Transport (FOT), an office of the Federal Department of the Environment, Transport, Energy and Communications (DETEC), acts as safety supervisory authority in the operational phase for companies subject to federal supervision.¹

This document is intended for interested parties among the public, in the private sector, and staff members of public transport companies and government agencies. It is intended to provide a quick overview of FOT safety supervision during the operational phase.

The information in Chapter 2 refers to all phases of safety supervision. Chapter 3 is devoted to the special features of safety supervision in the operational phase.

2 FOT remit as supervisory authority

2.1 FOT authority

In its capacity as supervisory authority for safety, the FOT has authority over federally licensed railway companies (Art. 10 RailA²), cableway companies (Art. 22 CabA³), bus and trolley bus companies (Art. 7 TrG⁴) and inland navigation companies (Art. 1 und 8 INA⁵).

The FOT is also the supervisory authority for other railway companies such as those with valid Swiss safety certification (Art. 10 RailA).

In 2010, the FOT became the supervisory authority for operators of railway sidings (Art. 17 AnGG⁶).

For navigation along the Rhine River, the FOT acts as a supervisory authority only for matters pertaining to legislation (See **Fehler! Verweisquelle konnte nicht gefunden werden.**).

2.2 Legal basis of safety supervision

The main legal bases for this task are to be found in the following legislation:

Railways:

- Railways Act (RailA; SR 742,101)
- COTIF⁷, with Protocols and Appendices
- Railway Sidings Act (AnGG)

Waterways:

- Inland Navigation Act (INA)

Cableways:

- Cableways Act (CabA)

Trolley buses:

- Trolley Bus Act (TrG)

¹ Supervision of conformity of products that may pose a risk to safety: see market supervision concept

² Federal Act of 20 December 1957 on Railways (RailA; SR 742.101)

³ Federal Act of 23 June 2006 on Cableways for Passenger Transport (CabA; SR 743.01)

⁴ Federal Act of 29 March 1950 on Trolley Bus Companies (TrG, SR 744.21)

⁵ Federal Act of 3 October 1975 on Inland Navigation (INA; SR 747.201)

⁶ Federal Act of 5 October 1990 on Railway Sidings (AnGG; SR 742.141.5)

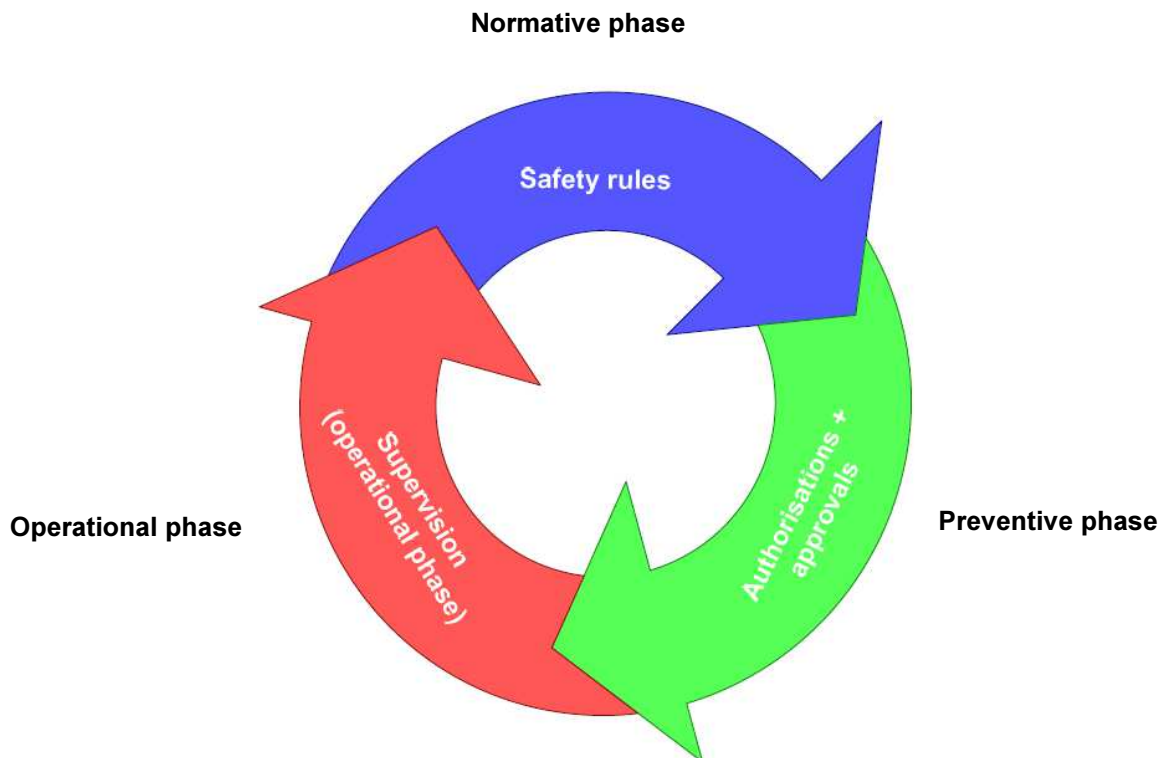
⁷ Convention of 9 May 1980 concerning International Carriage by Rail (COTIF, with Protocols and Appendices; SR 0.742.403.1)

Reference/file no.: 210.1/2013-02-18/203

General:

- Passenger Transport Act (PTA⁸)
- Working Hours Act (WHA⁹)
- Goods Carriage Act (GCarA¹⁰)
- Environmental Protection Act (EPA¹¹)
- Electricity Act (ElecA¹²)

2.3 Control cycle for safety supervision



This control cycle shows the interaction of the tasks of the FOT as safety supervisory authority and as regulator. These tasks can be divided into three phases:

2.3.1 Safety-relevant provisions: Normative phase

In its function as regulator, the FOT is responsible for the establishment and advancement of safety-relevant provisions. If it has the authority to do so, the FOT issues its own safety-relevant provisions (e.g. IP-RailO). Where the FOT does not itself issue safety-relevant provisions (e.g. in the form of laws), it elaborates the corresponding principles and drafts to be submitted to the Department, the Federal Council or Parliament. The various sectors involved are included in the elaboration process. In addition, the FOT plays an active role in the further development of international rules and regulations.

⁸ SR 745.1

⁹ SR 822.21

¹⁰ SR 742.41

¹¹ SR 814.01

¹² SR 734.0

Reference/file no.: 210.1/2013-02-18/203

2.3.2 Authorisations and approvals: Preventive phase

In its capacity as supervisory authority, the FOT is responsible for decisions relevant to safety in connection with plan approvals, operational permits, exceptional permits, safety certificates, safety approvals, approvals, implementation of environmental regulations as well as recognition and/or approval of specific categories of personnel. In this phase, the practical application of the principles elaborated during the normative phase is assessed. Conditions should also be applied to ensure compliance with legal provisions.

2.3.3 Monitoring: Operational phase

It is incumbent on the supervisory authority to monitor companies during the operational phase. It assesses whether the public transport companies are fulfilling their responsibility to ensure safe operation. In doing so, the supervisory authority bases itself, among other things, on the legislation listed in 2.2.

2.4 FOT principles in safety supervision

In its 2009 Safety Concept, the FOT describes how it exercises its role as safety supervisory authority. Also included in the report are the eight safety principles listed below.

¹ *The Federal Office of Transport (FOT) is the Swiss supervisory authority for the safety of railways, trams, cableways, boats, buses and trolley buses. Human safety and the protection of the environment are our central concern.*

² *We are committed to maintaining safety in public transport at least at current levels, and on a par with that of leading countries.*

³ *We ensure that all those involved in the delivery of transport services fulfil their responsibilities with regard to safety.*

⁴ *We ensure that all those involved in the delivery of transport services fulfil their responsibilities with regard to safety.*

⁵ *When considering applications for authorisations and during monitoring in the operational phase, we assess and address known risks.*

⁶ *Public transport operations are associated with risk. We accept residual risks only when, to the best of our knowledge, it is within tolerable bounds and cannot be eliminated with reasonable means. Where there are conflicting objectives, such as between safety and budgetary considerations, higher priority is accorded to safety.*

⁷ *We create general conditions that enable safety measures to be taken as effectively and efficiently as possible.*

⁸ *Communicating risks is a key component in risk management.*

The complete FOT Safety Concept can be found at:

www.bav.admin.ch

→ Topics → Safety → Safety concept

Reference/file no.: 210.1/2013-02-18/203

2.5 Roles

2.5.1 Separation of roles between companies/FOT in the operational phase

From the legal basis referred to in chapter 2.2, it follows that responsibility for safe operation lies with the public transport companies. These must adopt all measures necessary to be able to guarantee safety in their area of responsibility. Among other things, this includes organising themselves accordingly, knowing their installations and processes, training their staff and, if necessary, seeking outside specialist expertise (technical expert). The companies are also responsible for the quality of services provided externally.

It is the duty of the FOT to conduct random risk-oriented testing in order to gauge whether the public transport companies are exercising their responsibilities in full.

Due to this separation of roles, the FOT is not able to act as a technical expert on behalf of, or in place of the public transport companies: it would simply not be possible for the FOT, in its capacity as a supervisory authority, to evaluate its own safety-relevant work, carried out in the role of a technical expert.

It also follows from this separation of roles that random risk-oriented testing by the FOT in no way substitutes the management, supervision and monitoring activities that the company is required to carry out under its own responsibility.

Risk-related approach means a selective inspection of safety-relevant aspects. The aspects selected for inspection are determined by awareness of specific risks (see 3.2).

In its risk assessment, the FOT therefore systematically analyses various information, and, on that basis, determines the areas in which there is urgent need for action. The FOT's technical specialists are involved in this assessment. Action may be required in all three phases of the Safety Supervision Control Cycle.

The random approach means that the supervisory authority does not check all documents and processes in detail. Consequently, the authority does not carry out comprehensive inspections of files or data, but instead assesses selected elements within selected risk-related aspects. The only legally-stipulated exceptions to this approach relate to environmental protection and safety approvals.

2.5.2 Role of the FOT in the event of accidents

Managing an incident and resuming operations fall within the direct responsibility of the company. The company does not require an authorisation or approval from the FOT to resume operations.

It is the duty of the FOT to assess the situation in light of past incidents of a similar nature involving other transport companies. On this basis, a decision is then made on whether urgent measures need to be taken.

If modifications are made by the company to its installations or operating regulations following an accident, the FOT is then the authority responsible for approving such changes where necessary.

The task of investigating the accident falls to DETEC's independent Rail/Navigation Division (SAIB-RN). This body carries out its activities in accordance with the Accident Investigation Ordinance¹³. The SAIB-RN sends a report of its findings to the FOT and to those involved. If this report includes recommendations, then these should be addressed to the FOT. The recommendations are then included in the risk assessment described in Chapter 2.5.1. The FOT may possibly need to take action on these. This need for action may affect the entire control cycle for safety supervision (see 2.3).

The FOT informs the SAIB-RN of the measures taken or justifies its decision not to take measures. In addition, the FOT tests out whether the recommendations could also be relevant to other companies.

¹³ Ordinance of 28 June 2000 on the Reporting and Investigation of Accidents and Serious Incidents in Public Transport (Accident Investigation Ordinance, AcclO, SR 742.161)

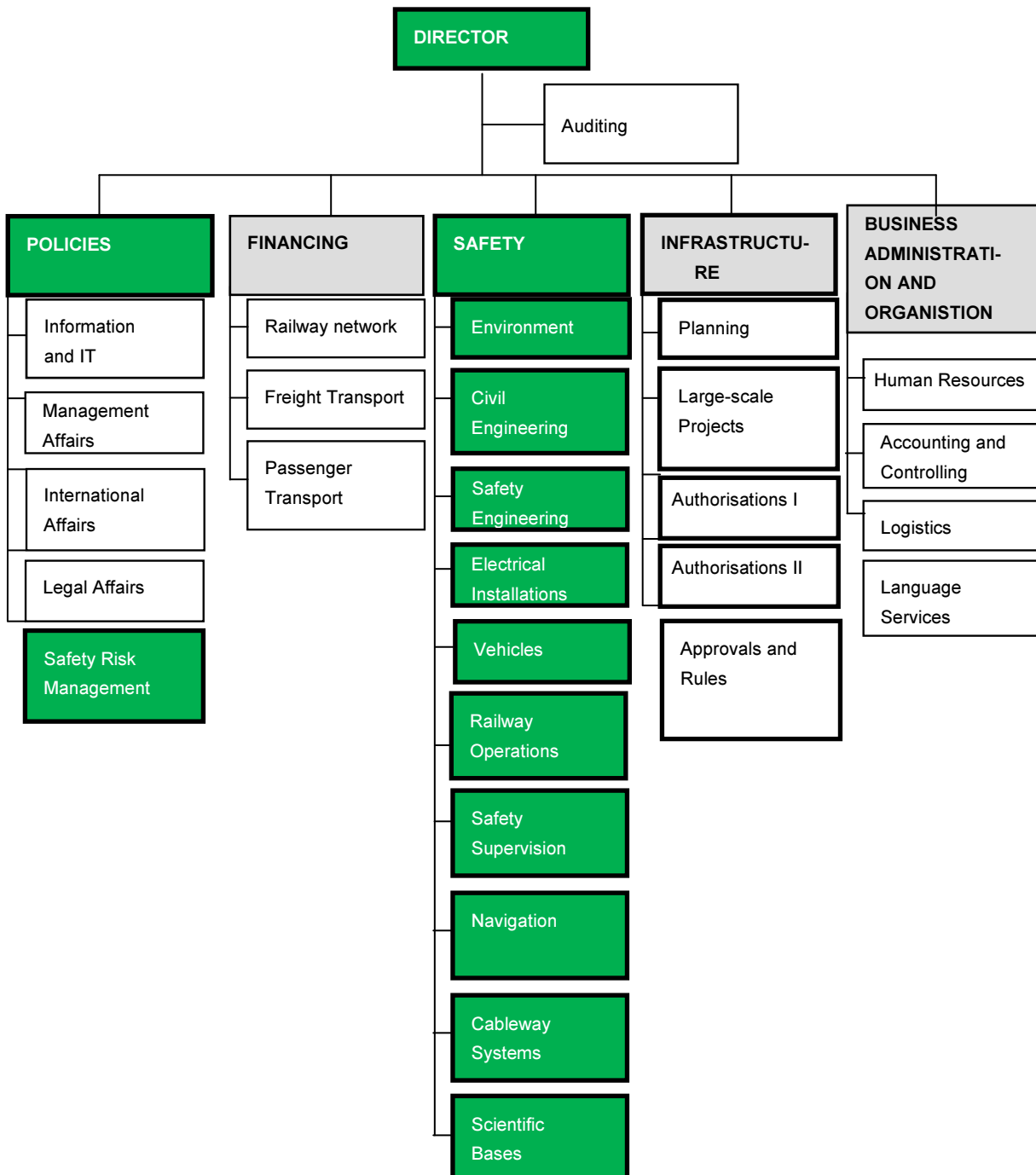
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The FOT does not play a direct role in any of the following situations: 1. management of the incident, 2. in the analysis of the course of the accident taking place directly after it, 3. in the resumption of operations of an installation/a vehicle.

2.6 Organisation

2.6.1 Safety supervision in the FOT

In order to separate the role of safety supervision as far as possible from the remaining functions of the FOT, the authorisation processes are carried out in the Infrastructure Division and the financial processes in the Financing Division. The material technical safety assessments are conducted by the relevant safety authority (shown here in green). The units marked in bold frames constitute the safety supervisory authority of the FOT.



Reference/file no.: 210.1/2013-02-18/203

2.6.2 Safety supervision

2.6.2.1 Process sections

Safety supervision is managed by the **Navigation** (for federally-licensed passenger boat companies) and the **Safety Supervision** sections (all remaining transport operators under the FOT's responsibility)

These sections are responsible for the steering and conduct of supervision over the transport companies during the operational phase. They plan and organise audits, monitoring of operations and inspections in accordance with risk-related principles (see Chapter 3.3.1).

Trained and certified lead auditors work in these sections. Each of these auditors exercises various roles:

- As lead auditor, each is responsible for the organisation and the conduct of the supervisory duties allocated to him or her, and for reporting accordingly.
- As contact person for a number of companies, each maintains continuous, co-ordinated contact with the allocated companies. This ensures that the companies know whom they need to contact for questions on safety supervision. The contact persons in the Navigation Section participate in periodic risk-oriented inspections under Art. 50 of the DETEC Implementing Provisions relating to the Shipbuilding Ordinance (AB-SBV)¹⁴.
- As a specialist in a given field, each is responsible for a technical area of supervision. In this role, he or she works closely with the corresponding internal FOT technical specialists. This ensures the mutual furthering of technical and methodical expertise.

2.6.2.2 Technical sections

The technical sections are responsible for all technical phases of safety supervision. As such, they support the Safety Supervision and Navigation sections during monitoring in the operational phase when their expertise is required.

This support comprises the preparation of specific technical check lists and the technical assessment of data. In addition, the specialists of the technical sections are also deployed as technical auditors for supervision on site.

2.6.2.3 Safety risk management

In addition to its other duties, the Safety Risk Management (SRM) unit is responsible for the further development of safety policies, including the safety concept, (see Chapter 2.4) as one of the basis for safety supervision.

2.6.2.4 Risk-oriented inspections: scientific bases

In addition to its other duties, the Scientific Bases Section is responsible for risk assessments mentioned in Chapter 2.5.1. It establishes important scientific bases for the FOT's risk-oriented monitoring activities. This helps to ensure that the FOT sets the right priorities when monitoring in the operational phase.

2.6.2.5 Supervision of cableways: Accreditation

With regard to cableways, the FOT pursues its supervisory activity as an inspection body in keeping with ISO/IEC 17020. The FOT is accredited as an inspection body, Type A (SIS 114) by the Swiss Accreditation Service (SAS). The organisational efficiency, the processes and procedures of supervision and the technical expertise of those involved are all confirmed by this accreditation.

¹⁴ SR 747.201.71

Reference/file no.: 210.1/2013-02-18/203

3 Safety supervision during the operational phase

3.1 Delimitation

Safety supervision is primarily concerned with operational and technical considerations relevant to safety. Aspects such as financial controlling are handled by other organisational units of the FOT.

Key financial figures may however be taken into consideration as a basis for preparing and carrying out safety supervision.

3.2 Planning

The supervision is planned and carried out with awareness of risks. The risks are analysed and assessed on the basis of various information. Important sources of information are not only the reports of incidents received by the FOT, but also information from company reports and safety reports submitted to the FOT on an annual basis. In addition, findings and data from approvals carried out during the preventative phase are also included in the risk assessment.

The Safety Supervision Section plans its supervision activities taking the overall picture into account. In so doing, it determines what companies, installations and technical areas should be monitored and which instruments are to be used. The planning is designed to ensure that all companies can be audited within a given period. The interval between audits depends on the size of the company and the type of transport concerned as well as the duration of validity of operational permits and safety approvals and certificates in the case of railway companies.

If necessary, the supervision activities fixed by this planning can be complemented with reactive supervision. These include audits, monitoring of operations, or inspections required in light of new information (e.g. incident reports or reports from third parties).

3.3 Implementation

3.3.1 Instruments

The FOT primarily uses two instruments as part of its safety supervision activities: audits and monitoring of operations. Inspections are also carried out in individual cases.

The aim of an **audit** is first and foremost to examine the organisation and processes of a company. However, the audit also assesses the management system and the interaction of the processes. The entire company, from management down to individual aspects of the operation or individual installations may be included when carrying out an audit.

Audits are carried out up to the level of operative management. Duties and processes of boards of directors do not form part of the safety supervision of the FOT.

As a rule, audits are announced in advance.

When **monitoring operations**, operative processes are examined during ongoing operations and checked for plausibility or assessed. The focus is on monitoring compliance with regulations and processes. A check is also made of whether the staff are sufficiently trained to carry out their duties, whether the necessary aids are available to them, whether the processes defined by the company are put into practice during operation and whether these processes are able to fulfil their objective in practice. The monitoring of operations is therefore not normally carried out with the involvement of managers, but rather with those responsible on site.

The monitoring of operations in the area of navigation mainly involves assessing the completeness and readiness of a ship's safety-relevant installations and equipment.

Reference/file no.: 210.1/2013-02-18/203

Instruments such as **audits and monitoring of operations are often implemented in combination**: Monitoring of operations is also carried out within the scope of an audit. The findings from monitoring of operations are a basis for the audit to identify processes with possible potential for improvement. With this procedure, it is possible to check within a company the entire functional chain, from the establishment of the processes at management level to implementation by the individual staff members, or even to check the effect that these processes have on the condition of installations.

Consequently, the management receive a neutral assessment of the processes and their impact within the company.

Inspections examine specific aspects, normally, the technical conditions of a part of an installation, of a vehicle or of a ship. Inspections generally take place outside regular operation.

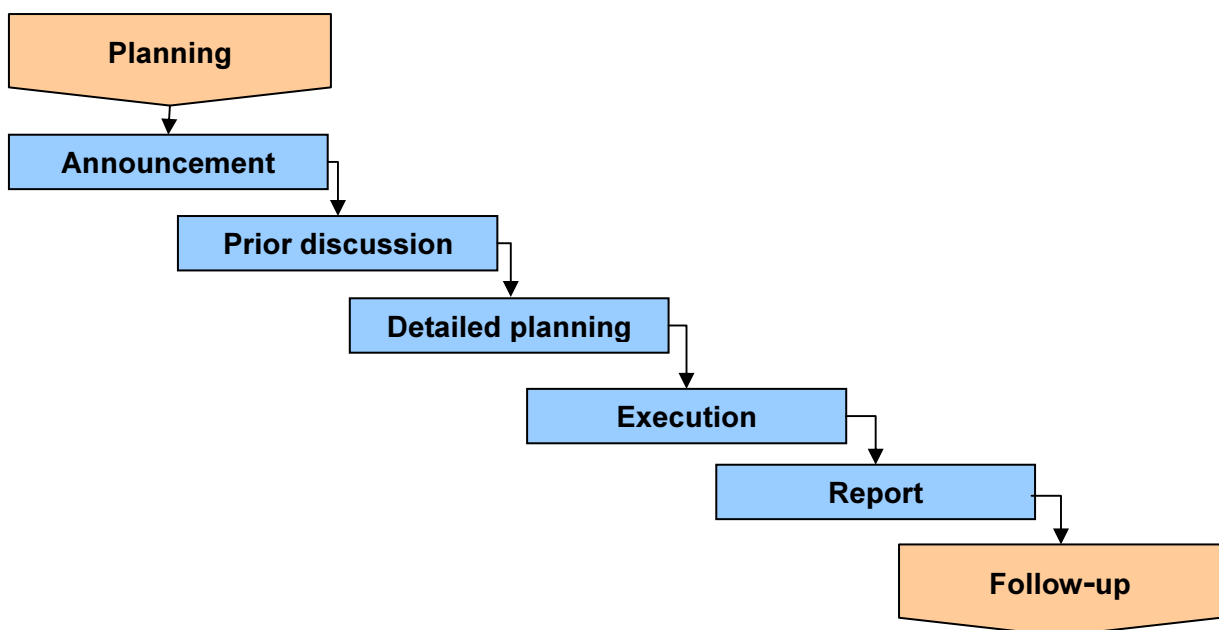
Monitoring of operations and inspections may be conducted with or without prior notice.

3.3.2 Working basis

The supervision work of the FOT is conducted on the basis of structured and standardised procedures. Questionnaires and check lists are used to ensure that audits and monitoring of operations are carried out uniformly and systematically. This ensures that each subject and each company is examined on the basis of the same guidelines.

3.3.3 Process

The typical process of a supervision activity described in the previous chapters is shown here taking an audit by way of example:



Reference/file no.: 210.1/2013-02-18/203

3.3.4 Results

3.3.4.1 Assessments

It is as important for both companies and auditors to note that the results of supervision activities always represent an assessment by the auditors of the FOT. Therefore, the results are an external opinion on risk-related, selected safety-relevant activities of the company, based on random probes.

3.3.4.2 Communication on-site

If possible, the results of a supervision activity are communicated orally to the company at the end of an audit or monitoring of operations.

These results comprise, on the one hand, the general impression of the auditors and, on the other hand, also their safety-related findings arising from their assessment as well as any suggestions for improvement and requirements. The results communicated on-site should represent the impressions and assessments of the auditors.

If it is not possible for the auditors to make a definitive assessment with regard to a specific aspect on-site, they communicate the findings they have. The auditors subsequently make the necessary clarifications and inform the company of the result.

3.3.4.3 Supervision report

A supervision report is generally produced for all supervision activities within a month, irrespective of whether safety-relevant findings were made or not. This report contains in writing the results that were communicated orally on-site and, where applicable, the results of subsequent clarification.

The report should represent the assessments and impressions of the auditors and not serve only as a written record of suggestions for improvement and requirements conveyed orally on-site. Therefore, the report should also explicitly contain the special positive findings.

The supervision report is sent to the operative management.

3.3.4.4 Suggestions for improvement

Suggestions for improvement are intended to draw attention to problem that are not safety-relevant or only indirectly so.

Companies are free to take measures in response to these suggestions for improvement and do not need to notify the FOT of any action taken in this regard.

3.3.4.5 Requirements

In the event of safety-relevant findings, the FOT formulates requirements for the removal of the causes of these findings.

As a rule, the requirements do not contain any solutions. These are to be drawn up and implemented by the company itself.

Requirements always have a deadline. It should always be clear on what legal basis they rely. What the FOT expects from a company must be seen from the requirement.

In each requirement, the FOT explains exactly what information is required, when and for what purpose (for information, for approval, etc.).

If requirements are expressed orally, both the formulation and the deadline for fulfilling the safety-relevant condition of the requirement must be appropriate. Proportionality should also be considered. In an extreme case, this may also imply that during direct and acute danger, the operation must be stopped and corresponding measures must be taken by the company.

Requirements of the FOT are applicable, starting from the time when they were communicated orally to the company and not only when the written supervision report has been received by the company.

Reference/file no.: 210.1/2013-02-18/203

3.3.4.6 Appeals

Should a company fail to agree with the requirements formulated in the supervision report, it may submit a complaint and corresponding request for a formal decision within 30 days. This complaints procedure is subject to a fee and may be appealed before the Federal Administrative Court.

3.3.4.7 Criminal law aspects

It is neither a role nor a duty of supervision, during the operational phase, to assess the criminal relevance of findings. In the event that findings are made that may be criminally relevant, these will be communicated to the company in the form of findings, and recorded in the supervision report. The internal units of the FOT responsible for criminal aspects will also be notified. These units will then clarify the criminal relevance, communicate with the company with reference to this and, if necessary, file a criminal complaint with the relevant authorities.

3.3.4.8 Occupational health and safety

The corresponding supervisory authority for occupational health and safety for public transport companies is not the FOT but rather SUVA. If the FOT observes any aspects relating to occupational health and safety during the course of its monitoring activities, it shall notify the company of its observations but will not issue any requirements. At the same time, the FOT shall inform SUVA of its observations. SUVA may then work with the company to decide what subsequent action should be taken to address the observed issues.

3.4 Follow-up

3.4.1 Monitoring of requirements (follow-Up)

Should the FOT express requirements orally or in a formal decision, the company shall be responsible for its implementation.

The FOT must monitor and enforce compliance and implementation of the requirements. As a general rule, the technical sections are consulted for safety-relevant assessments. If a company fails to implement a requirement, then the FOT may order the company to suspend operations and/or file a criminal complaint if necessary.

The contact person within the Safety Supervision Section is responsible for ensuring that requirements are implemented (follow-up) by the company in question. This contact person also ensures that the requirements are properly recorded and maintained internally, keeps track of company deadlines and handles company responses as well as correspondence with the company.

3.4.2 Findings from the supervision

In some cases, findings from the supervision may be important for other processes and tasks of the FOT. This applies, in particular, to the processes of the Scientific Bases Section, but also to the technical sections, or to other FOT sections leading processes (see also Safety Supervision Control Cycle, Chapter 2.3). Therefore, both the technical sections involved and the Scientific Bases Section receive copies of the supervision reports for their information. In addition, the Scientific Bases Section also receives structurally presented information from the supervision activities.

By working out the findings from the supervision, it is ensured that this information flows into the right processes and that both the issue of the risk assessments for the supervision and the safety technical and operational assessments may be developed at the FOT. This is particularly the case for renewal of operational permits for cableway installations and for issuance of safety certificates and/or approvals for railway operations.

Reference/file no.: 210.1/2013-02-18/203

3.4.3 Information to the Director

The Safety Supervision Section will inform the Director every six months about the state of safety supervision. This information will include data on supervision planning, statistics and findings from supervision activities carried out.