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Federal Department of the
Environment, Transport, Energy and Communications DETEC

Federal Office of Transport FOT

Directive

Authorisation of historical railway vehicles

1 September 2010

Vehicles for service on

- Standard-gauge lines
- Metre-gauge lines
- Special-gauge lines
- Rack railway lines
- Tram lines

File reference: 522/2011-06-15/356

Contents

1. Competence of the FOT

Based on Art. 18w of the Railways Act (RailA[1]) and Art. 8 of the Ordinance on the Construction and Operation of the Railways (RailO[2]), the Federal Office of Transport (FOT) is responsible for issuing operating licences for vehicles. This competence also covers historical vehicles.

2. Purpose of the Directive

This Directive specifies the requirements for the licensing of historical vehicles. It is based on the principles that journeys with historical vehicles should be carried out safely, and that the tests required for licensing take place according to uniform and non-discriminatory criteria.

This Directive is intended to put the applicable laws, ordinances and executive regulations into concrete terms.

This Directive is not ranked equally with a law or an ordinance, but is more binding than a recommendation. Deviations are permissible, as long as it can be shown that the objective of safe operation, pursued by law, ordinance and Directive, can be ensured by the alternative means.

3. Definition of the term “historical vehicles”

The FOT understands the term “historical vehicles” to cover older rolling stock that is primarily used to keep old technologies operational for the general public. The term “historical vehicles” covers rolling stock that has largely been withdrawn from regular service. These may be original or modified vehicles, which typically entered into service 30 years or more ago.

Vehicles that are currently complete or have been constructed according to old plans (= replicas) are classed by the FOT as new vehicles.

[1] RailA; SR 742.101
[2] RailO; SR 742.141.1

4. Applicable regulations

For the deployment of historical vehicles in Switzerland, the principal rules that apply are the Railways Ordinance (RailO) and the Ordinance of 5 December 1994 on the Electrical Installations of the Railways (EIRO[3]). For their operation, the Rail Service Regulations (RSR[4]) apply.

Old construction principles and designs do not usually completely satisfy current regulations on vehicle construction. The objective should be that the operator is able to define the deployment and operation of historical vehicles in such a way that, taking into account old technical designs, safe operation can nevertheless be ensured.

In individual cases, the FOT may approve of deviations[5] from the applicable regulations, if the applicant can prove that the same degree of safety is ensured, or that no unacceptable risk arises, and all proportionate measures have been taken to minimise risk.

The statutory regulations can be obtained electronically from the websites “Classified Compilation of Federal Legislation” and “FOT Regulations”.

5. Operating licence

5.1 Principles

For service in Switzerland, historical vehicles require a valid operating licence[6] from the FOT. The operating licence is required for transfers (whether active or towed) and for passenger travel (for both paying and non-paying passengers).

Vehicles that came into service before 01.01.1999 in Switzerland are considered to be approved[7].

The FOT supervises the construction, operation and maintenance of vehicles, using spot checks[8]. If necessary it may require a particular condition to be restored.

[3] EIRO; SR 734.42
[4] R 300.1 - .15 RSR
[5] Art. 5 para. 2 RailO
[6] Art. 8 RailO
[7] Art. 83 para. 4 RailO
[8] Art. 9 RailO

Operating licences issued relate to a particular vehicle and remain valid even if the vehicle changes owner. When an operator acquires a vehicle, he or she can take over the operating licence from the previous owner. On acquiring a vehicle, a new owner may contact the FOT and request a copy of the existing operating licence.

If an operator acquires a historical vehicle that is approved and in full operation, and if he or she intends to deploy it in the same way as before without further technical conversion, he or she may apply to the FOT for an operating licence for his/her company, referring to the existing licence. The owner must prove that the vehicle is in good working condition.

Existing vehicles (vehicles with an existing operating licence) must be adapted to current regulations if required to do so for reasons of safety[9]. The railway undertaking is responsible for the safe operation of the vehicles deployed.

The testing procedure for obtaining an operating licence for a historical vehicle corresponds essentially to the process applied to new vehicles. The applicant – for example, the railway undertaking – must draw up the complete safety certificate and submit it to the FOT.

In individual cases, the FOT may approve of deviations from the applicable regulations, if the same degree of safety is ensured, or no unacceptable risk arises, and all proportionate measures have been taken to minimise risk[10]. It may also be taken into consideration that historical vehicles have only a low mileage and are no longer deployed regularly.

As part of the approval tests, the FOT will decide whether to perform a technical and operational safety assessment of the vehicle.

The FOT normally issues an unlimited operating licence for vehicles; in special cases it may impose a time limit.

The FOT sets down categories of line in the operating licence, and may impose particular limits or reserve particular conditions.

Application can be made to the FOT for an operating licence for journeys in Switzerland covering historical vehicles of foreign origin that are licensed in a European country. Existing safety certificates for cross acceptance vehicle properties can also be used for approval in Switzerland.

[9] Art. 83 para. 1 RailO
[10] Art. 5 para. 2 RailO

5.2 Address

Applications for an operating licence should be submitted to this address:

Federal Office of Transport
Approvals and Rules Section
Postfach
CH-3003 Bern

Further information on questions of approval can be found on the FOT website:
www.admin.ch

5.3 Information required

The written application for an operating licence must be signed by a person authorised by the applicant, and must contain at least the following details:

1) Title: Application for an operating licence for a historical vehicle

2) Name and address of the applicant, giving details of a contact person

3) Address for invoices

4) Technical identification of the vehicle to be licensed, giving the vehicle number

5) Technical description with technical data

6) Drawing of the exterior, giving dimensions

7) Details of the technical condition of the vehicle

8) Details of the planned deployment of the vehicle

9) Required safety certificates

10) Possible plan of procedure, with dates for the main steps.

A single copy of the documents should be submitted to the FOT on paper. Smaller files may also be transmitted electronically.

For complex projects we recommend making telephone contact before submitting the application and the file, and if necessary a preliminary discussion to clarify the procedure.

Telephone number for information: +41 31 323 04 57

e-mail: zulassungen@bav.admin.ch (Keyword: operating licence historical vehicle)

5.4 Fees

The FOT charges a fee for the operating licence. Based on the FOT Fees Ordinance[11] the amount due is calculated according to the volume of work for FOT staff.

6. Construction principles

Historical vehicles have old construction characteristics, with corresponding properties. These usually do not satisfy all aspects of today's statutory requirements and the current state of the technology. There are usually no safety certificates corresponding to the most recent regulations either. Nevertheless, historical vehicles generally have extensive operational experience dating from earlier periods.

Before deploying historical vehicles, railway undertakings must consider carefully the age-related differences, and the interactions between vehicle and infrastructure. The positive operational experience of historical vehicles in previous use may be included in an assessment of adequate safety.

Railway undertakings that operate historical vehicles must take into consideration as appropriate the known deviations from the state of the technology, both for operation and for supervision and maintenance. One effective method for doing this is to draw up a risk analysis.

Pressurised components of vehicles' pneumatic, hydraulic and steam systems must be subjected to the prescribed pressure tests according to applicable regulations before bringing them into operation[12]. The railway undertaking must ensure that the prescribed tests are carried out and documented by the authorised bodies in a timely manner. Pressurised equipment must be monitored during operation for airtightness; the responsible railway undertakings should manage the necessary responsibilities. The technical care of pressurised systems on historical vehicles should pay particular attention to ageing, fatigue, corrosion and alternating stresses.

[11] FeeO-FOT; SR 742.102

[12] Ordinance on the use of pressure equipment of 15 June 2007

7. Interaction of infrastructure and vehicle

Historical vehicles must be compatible with the infrastructure on which they are to run. The applicant must prove this, with reference to the infrastructure operators involved. The infrastructure operator issues technical operating recommendations[13] for the use of its infrastructure. These should be used as the basis for the compatibility certificate.

The following points must be considered:

- Proof of disruption-free and interference-free operation
- Compatibility of vehicle and track class
- Compatibility of demarcation and clearance gauge
- Compatibility of wheel and rail profile
- Compatibility with track alignments (curves, superelevation, geometry of points)
- In some cases, compatibility of rack and pinion
- In some cases, compatibility of pantograph and overhead line
- Compatibility of safety systems, particularly vehicle - track vacancy detection systems
- Efficient operation
- Possibilities of communication
- In some cases, step positions for passengers
- In some cases, safety in tunnels
- Equipment and labelling.

8. Train control equipment

The train control equipment for train journeys should be aligned with the standard of equipment on the routes to be travelled, i.e. the vehicles must be equipped appropriately for the infrastructure on which they are to run.

8.1 Minimum equipment for historical vehicles

[13] Art. 12a RailO

For deployment on the Swiss normal-gauge network (except for ETCS Level 2 routes), historical vehicles must be equipped with at least SIGNUM + ETM-S in accordance with the FOT's decree[14] i.e. they must be able to respond to the signals "Halt" (stop) and "Warnung" (warning), from both the SIGNUM track magnets and the Eurobalises (EuroSIGNUM). For deployment on stretches of track that are equipped with ETCS Level 2, vehicles must be fitted with ETCS equipment in accordance with Specification SRS 2.3.0d or higher.

When engaged, the train control equipment must set off emergency braking by venting the main pipe, and interrupt traction. Switching off traction is not necessary for steam locomotives with a two-man crew. Staff should be informed appropriately of their additional monitoring duties.

For existing vehicles that have already been approved for operation but do not yet have Swiss train control equipment, the FOT sets a transitional period for their upgrade until 31 July 2011.

For metre-gauge and narrow-gauge trains, mountain railways and trams, the railway undertaking must contact the relevant infrastructure operator to find out the minimum equipment required.

8.2 Journeys without train control equipment

Applicants who are applying to the FOT for a time-limited operating licence for single journeys without train control equipment must submit to the FOT, together with their application, a risk assessment that relates to the particular route and has been agreed with the infrastructure operator involved.

The risk assessment must answer at least the following questions:

- which stretches are to be travelled
- what realistic hazards are expected
- what are the possible causes leading to a hazard
- what risk this produces
- what measures can be used to compensate for the lack of train control equipment.

[14] FOT communication of 14 September 2007

9. Safety control system

Historical vehicles must be equipped with a safety control system[15] that can bring the train to a standstill on any stretch of track if the traction vehicle becomes unfit for service. The safety control system with driver vigilance device must monitor the readiness of driver to operate the locomotive at particular intervals of time or distance, through defined actions[16]. The system must be reset[17] through two operating actions.

Vehicles operated by a two-man crew for technical reasons do not require a safety control system; the crew should be informed and instructed appropriately in their additional monitoring duties.

10. External doors, step positions

Historical vehicles may be deployed for individual journeys, despite having open boarding platforms, unsupervised doors or step positions that are not adapted to the infrastructure, if the railway undertaking is able to ensure the safety of travellers through appropriate aids and supervisory measures, such as accompanying staff.

Unaccompanied trips are not permitted with these vehicles.

The tasks of the staff employed must be listed in the operating instructions for the historical vehicle.

11. Maintenance

Railway undertakings are responsible for the maintenance of historical vehicles they deploy[18]. They ensure that the necessary work is planned and carried out only under the supervision of qualified and experienced professionals[19].

For the planning of necessary maintenance work, the original documents and drawings of the historical vehicle should be included. For planning regular maintenance, ageing, stress, observations by the operating staff, and the general condition of safety-related components should all be taken into consideration. Intervals between inspections should be set according to these findings.

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[15] Art. 55 RailO
[16] AB-RailO on Art. 55 para. 1, AB55.1, page no. 1, point no. 2
[17] AB-RailO on Art. 55 para. 1, AB 55.1, page no. 2, point no. 3
[18] Art. 10 RailO
[19] Art. 2 para. 2 and 14 RailO

12. Railway operation

Historical vehicles must be used in a way that ensures safe operation.

The railway undertaking should consult the original operational regulations for the deployment of historical vehicles.

Railway undertakings should issue operating instructions that are tailored to the particular deployment, and submit these to the FOT[20]. Operational regulations that deviate from the Rail Service Regulations must be submitted to the FOT for approval at least three months before the planned operation[21]. The detailed procedure is in line with the FOT Regulations of 1 November 2000 on the Issue of Rail Service and Operational Regulations for Railways (RailRO[22]).

The operational regulations issued by the infrastructure operator are binding for the users of the network. They contain specific rules for the use of historical vehicles that relate to the stretches of track to be used.

The following points in particular must be taken into consideration:

- Train composition
- Speed and timetable
- Braking regulations
- Train staff
- Special requirements (e.g. fire risk of stream traction, or limitations on track use).

13. Rights and duties

13.1 Notification

The FOT must be informed immediately of any safety-related findings and/or incidents in connection with the approved operation of a historical vehicle.

[20] Art. 12 para. 1 RailO
[21] Art. 12 para. 5 RailO
[22] RailRO, SR 742.170

An up-to-date list of rolling stock should be submitted to the FOT annually, giving any changes and information on operation and maintenance.

13.2 Subsequent modifications

The operating licence for a historical vehicle refers to its technical condition at the point of submitting an application. If adaptations are made to safety-related functions or components of a historical vehicle, or if it is used later for a different or extended period of operation, this must be approved by the FOT before renewed operation. The operator must submit an application with the appropriate documentation.

The FOT will use the delta method to check the notified changes. Tests will focus on the area in which there have been changes.

13.3 Confidentiality

FOT staff are subject to professional and official secrecy under the Federal Personnel Act in relation to the information and documents contained in the applicant's operating licence procedure[23]. Documents and their contents will not be passed on by the FOT to any third parties without the agreement of the applicant.

14. Withdrawal of the operating licence

The FOT can withdraw an operating licence that it has issued if:

- it becomes clear that technical and operating safety is no longer guaranteed;
- the current conditions of use do not accord with the operating licence.

15. Entry into force

This Directive comes into force on 1 September 2010.

[23] LFP, SR 172.220.1

Bern, 17 August 2010

FEDERAL OFFICE OF TRANSPORT

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