

Guidelines for the Resolution of Complaints Related to Railway Noise and Vibration

Under the *Canada Transportation Act*

Consultation Guide

1. INTRODUCTION

This Guide describes the consultation the Canadian Transportation Agency (the Agency) is conducting with regard to guidelines for railway noise and vibration under the *Canada Transportation Act* (the CTA). The Guide provides background information and raises issues for discussion. It also indicates the timeframes for the consultation, how to submit comments, and the next steps.

On June 22, 2007, Parliament enacted amendments to the CTA which now authorizes the Agency, a quasi-judicial administrative tribunal of the federal government, to resolve complaints related to noise and vibration related to the construction or operation of railways under its jurisdiction.

The CTA requires the Agency to issue and publish guidelines with respect to the elements it will use to determine whether a railway company is in compliance with the CTA and the collaborative resolution of noise and vibration complaints related to the construction or operation of railways. The CTA further requires the Agency to consult with interested parties before issuing these guidelines and it has prepared draft guidelines that are now available for comment. The draft guidelines can be accessed at: www.cta-otc.gc.ca. Alternatively, a copy may be obtained from the Agency by calling: 1-888-222-2592.

2. SCOPE OF THE CONSULTATION

Parliament determined, as is now reflected in section 95.1 of the CTA, that a railway company shall cause only such noise and vibration as is reasonable, taking into account its statutory obligations regarding the level of service it must provide to its customers, its operational requirements, and the area where the construction or operation is taking place.

As well, Parliament gave the Agency the authority to order a railway company to undertake any changes in its construction or operation that the Agency considers reasonable to ensure compliance with section 95.1 of the CTA. Parliament also specified that the Agency must first be satisfied that the collaborative measures set out in the published guidelines have been exhausted before it conducts any investigation or hearing into a railway noise or vibration complaint.

As the legislative provisions have now been set out by Parliament, they are not within the scope of the present consultation. The Agency therefore seeks the views of interested parties on the draft guidelines with respect to:

- the elements or factors the Agency will consider in determining whether a railway company is complying with the provisions of section 95.1 of the CTA, and

- the collaborative process for the resolution of noise and vibration complaints related to the construction or operation of railways.

Other specific issues for discussion in the draft guidelines are presented later in this document.

3. BACKGROUND

Under the former *Railway Act*, the Agency's predecessors investigated complaints related to railway noise. Once the *Canada Transportation Act* came into force in 1996, the Agency addressed noise complaints under section 95 of the CTA. However, in December 2000, the Federal Court of Appeal determined that the Agency had no jurisdiction under section 95 of the CTA to rule on complaints related to noise, vibration or fumes emanating from the operations of a federally-regulated railway company. As such, it was deemed that no specific provisions in the CTA or in any other legislation existed which set out how the Agency or any other government organization was to regulate issues concerning railway operations other than those pertaining to rail service and safety.

From that time until June 2007, while Agency staff mediated numerous noise and vibration disputes between railway companies and communities when both parties agreed to mediation, the Agency could not rule on such issues and order railway companies to make changes to their railway construction and operations.

As Canadian cities expanded over the last few decades, residential developments have often been built closer to existing railway facilities. Potential noise from railway operations has not always been taken into account through environmental assessment processes for land-use planning and the approval of new residential developments. As a result, some residential areas have been built within the "noise shadow" of railway lines and yards.

At the same time, railway activities have intensified as the demand for rail transportation has increased. In many railway yards, operations now take place 24 hours a day, seven days a week.

These two phenomena have brought about an increase in railway noise complaints.

3.1 Railway noise

Physically, there is no distinction between sound and noise. Sound is a sensory perception and the complex pattern of sound is labelled noise, music, speech, etc. Noise can be defined as unwanted sound because of its adverse effects on well-being. (World Health Organization, *Guidelines for Community Noise*, 1999)

Sound can be classified as steady state (sound that is relatively constant, such as an idling locomotive), intermittent (occurring from time to time, such as the passage of a train), or impulse (very short, sharp sound, such as the coupling of rail cars within railway yards). For a given sound level, steady or intermittent sound is more tolerable; impulse sound, on the other hand, can be startling and very annoying.

Sound is measured on a logarithmic scale and is quoted in decibels (dB). Under well-defined conditions, a 10 dB change is perceived as either a doubling or halving in sound intensity (or loudness). An “A-weighted decibel” or dBA, which gives greater weight to the frequencies of sound to which the human ear is most sensitive, has been found to be useful in assessing the effects of noise on humans.

There is a considerable literature that documents the physiological and psychological effects of noise on humans. According to Health Canada, “The most common effect of community noise [of which railway noise is one type] is annoyance. (...) But noise may also affect your ability to have an ordinary conversation, enjoy some leisure activities, get a good night’s sleep, or do work that needs thought and concentration”. (It’s Your Health: COMMUNITY NOISE ANNOYANCE. September 2005)

Most railway noise issues brought to the attention of the Agency result from rail switching operations conducted at night.

3.2 Railway vibration

Vibration levels are often measured in decibels. The abbreviation “VdB” is used for vibration decibels to distinguish them from sound decibels (dBA). Unlike airborne noise, ground-borne vibrations are not a phenomenon to which many people are exposed every day.

High speed trains, trains with stiff primary suspensions, flat or worn wheels as well as the type and conditions of the rails and the rail support system are all factors that can generate ground-borne vibrations. Soil and subsurface conditions also strongly influence the level of vibration: stiff clay soils propagate vibrations more effectively. Shallow rock concentrates vibrations close to the surface and spreads them farther from the track. Vibrations are more perceptible inside buildings than outside. Generally, the more massive a building is, the lower the levels of vibration. (United States Federal Transit Administration, *Noise and Vibration Manual*)

Fewer issues concerning railway vibration have been brought to the attention of the Agency than those concerning noise.

3.3 Railway operations and railway companies’ obligations

Railways play a vital role in the Canadian economy. An effective and efficient transportation system is essential to the prosperity of a country as vast as Canada and rail transportation is a key component in this system.

Railway companies have statutory obligations to their customers. Section 113 of the CTA describes railway companies’ responsibilities to provide adequate and suitable service to their customers for, among other things, the loading, unloading, transportation and delivery of merchandise. Section 114 describes a railway company’s responsibilities regarding the transfer of merchandise from its railway to other railway, the return of rolling stock of other companies and the obligation, where a railway forms part of a continuous line with the railway of another company, to maintain the continuous line of transportation.

A railway company's operational requirements referred to in section 95.1 of the CTA include not only those operations and functions necessary to effectively run a railway in order to fulfill its obligations under sections 113 and 114 of the CTA, but also its statutory or legal obligations under other legislation such as the safety provisions of the *Railway Safety Act*.

4. CONSULTATION ISSUES

To facilitate the discussion, the Agency has developed a list of questions set out below for comment.

The Agency will review all comments and suggestions provided within the scope of the consultation as summarized above and within the scope of its powers as described in the CTA.

4.1 Setting guidelines for railway noise

The scientific literature indicates that an *immission* (measured at the point of reception) day-night sound level¹ of 55 dBA will result in a minimal effect on the public in urban and suburban areas. As noise increases from 55 to 65 dBA, the annoyance rises from slight to moderate.

In Canada, the United States, and in Europe, different authorities and governments have established standards or guidelines regarding acceptable noise levels within their respective jurisdictions. Some standards or guidelines address specific noise sources such as aircraft or railways while others pertain to all sources of noise within a municipality or a state/province. Maximum acceptable levels set in these different standards or guidelines range from 55 dBA to more than 70 dBA.

As an example, the United States Federal Inter-Agency Committee on Urban Noise has classified the effect of noise below 55 dBA as "minimal" and that between 55 dBA and 65 dBA as "moderate" and generally consider these levels as "acceptable" for land use planning. The United States Federal Aviation Administration has adopted 65 dBA as the point above which airport noise becomes "normally unacceptable".

The United States Environmental Protection Agency has established noise emission standards for moving rail cars and locomotives that have been adopted by the United States Federal Railroad Administration. These emission standards permit railway noise levels up to 93 dBA.

Many Canadian municipal governments have also adopted regulations regarding noise. Maximum acceptable levels vary considerably from one municipality to another. Some municipal governments set standards only for new developments while others also set standards for existing residential areas.

Different jurisdictions have not only adopted different standards or guidelines, they also use different measurement units and different measurement locations or distances from the receiver.

¹ A day-night sound level (L_{dn}) is a 24-hour average sound level adjusted by 10dB to take into account night-time sensitivity.

Setting a maximum acceptable level for railway noise could, in some instances, allow the continuation of situations that may be deemed unreasonable upon investigation and which could be mitigated. Alternatively, a maximum acceptable level may lead to proposed solutions that are technically and economically unfeasible.

The Agency therefore proposes not to adopt a maximum acceptable level but rather to determine what is reasonable based on the circumstances specific to a complaint.

4.2 Applicability of the guidelines and the provisions of the CTA regarding noise and vibration

Question: Does the section on the applicability of the guidelines provide sufficient information to determine what railway noise or vibration and which railway companies are subject to the CTA? If not, what other information would be relevant?

Is there other information concerning the noise and vibration provisions that would be relevant? If so, please specify.

4.3 The collaborative resolution of noise and vibration complaints

Question: Are the conditions and measures proposed in the draft guidelines sufficiently clear and explicit with respect to the responsibilities of all parties in resolving issues related to railway noise or vibration? If not, please explain.

Question: Are there other aspects that you propose be added concerning the collaborative resolution of noise and vibration complaints? If so, what are they and how might they be relevant in an Agency assessment of noise complaints?

4.4 Determining what is a reasonable level of railway noise or vibration

The Agency proposes to determine what is a reasonable level of noise or vibration on a case-by-case basis, evaluating each situation and railway noise or vibration issue on its own merits. The section *Elements to be Considered in Resolving Noise and Vibration Complaints* in the draft guideline document lists the elements the Agency proposes to consider in determining what is reasonable noise or vibration in each situation.

Question: Do the elements proposed to be considered in the resolution of noise and vibration complaints strike a balance between the needs of communities and those of the railway companies?

Question: Would you add or eliminate any elements? Please specify.

4.5 Procedures regarding complaints and Agency decisions

The Agency's procedures and timeframes summarized in the draft guidelines for filing and reviewing of a complaint as well as decisions and possible appeals are based on its General Rules and are set out in the CTA. The substance of such procedures is not within the scope of the consultation. However, any additional information or clarifications that would be useful concerning the processes are within the scope of the consultation.

The Agency also seeks your views on the information that should be provided to resolve a noise or vibration complaint. This information is listed in Appendix A of the draft guidelines.

A balance is needed between having "ideal" information to appreciate the nature and extent of the noise or vibration issue (which could require resources to which citizens may not normally have access) and having information that is insufficient to explore potential solutions.

Question: Is the information in the draft guidelines regarding complaints, decisions, and appeals clear and sufficient?

Question: Is the information requested to file a complaint adequate to focus the discussion and explore potential solutions?

Question: Can this information be gathered by citizens without calling upon the services of specialists or requiring an undue amount of time and effort?

Question : Is there other information that would be useful to guide discussions effectively? If so, please specify.

5. HOW CAN YOU PARTICIPATE IN THE CONSULTATION?

Written comments can be sent to the Agency via e-mail at:

rid.dif@cta-otc.gc.ca

Alternatively, comments may be sent by mail to the following address:

Secretary
Canadian Transportation Agency
Ottawa, Ontario K1A 0N9

In either case, please indicate clearly: **Consultation - Railway Noise and Vibration Guidelines.**

Comments should be clearly identified with your name and address and, when this is the case, the organization that you represent.

In addition, a telephone number, an e-mail address, or both, would be useful for Agency staff who may seek clarification or insight into the views and proposals you submit.

The consultation period will take place from October 29, 2007 to December 12, 2007.

6. NEXT STEPS

Following the consultation, Agency staff will review the comments received that are within the scope of the consultation and make the appropriate revisions to the draft guidelines. During this review and revision process, Agency staff may contact participants and seek additional information and insight these participants may have regarding the comments and proposals that they have submitted.

The Agency will work expeditiously to finalize and publish the guidelines.

7. FOR FURTHER INFORMATION

Telephone: 1-888-222-2592

E-mail: rid.dif@cta-otc.gc.ca

TTY: 1-800-669-5575

Facsimile: 1-819-997-6727