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0 - SCOPE

The following regulations shall apply to all tractive units used on international services.

1 - GENERAL CHARACTERISTICS

Warning devices on tractive units employed on international services must comply with the following regulations :

1.1 - Tonalities

The devices must be able to produce two different sounds in succession when activated by the driver, without any specific cadence being required (1).

1.2 - Operation

The warning devices must be operated by a manual control or a pedal.

1.3 - Energy supply

In principle, warning devices must be compressed-air operated using the pressure available on the tractive unit, i.e. of 5 to 10 bars. The technical specifications given below have been drawn up on this basis, although an alternative supply may be used, provided that the acoustic characteristics laid down are observed.

(1) A Railway may, however, stipulate a particular cadence, or even the use of one of the two tonalities only, over its own lines.

2 - ACOUSTIC CHARACTERISTICS

Warning devices must comply with the following technical specifications :

2.1 - Test Conditions

Acoustic tests must be conducted in open country with a wind speed of less than 3 m/second.

The compressed air supply must be set at 7 bars; the reference temperature shall be 20° C.

2.2 - Sound intensity

The level of acoustic pressure compared with a reference level of 2×10^{-5} N/m² and measured at 5 m along the centre-line of the warning device in accordance with the above-mentioned conditions, must be between 120 and 125 dB (A) (1).

2.3 - Frequency of sounds produced

The frequency of the low sound shall be 370 ± 15 c/s and that of the high sound 660 ± 15 c/s, with both sounds corresponding approximately to the notes F sharp of the 3rd octave and E of the 4th octave of the equally-tempered scale.

2.4 - Quality of sounds produced

The quality of the sounds produced must be as rich as possible in high-frequency harmonies.

(1) In the event of variation of the supply pressure between 9 and 5 bars, the level of acoustic pressure must not vary by more than 8 dB (A) as a result.

APPLICATION

As from 1 July 1980.

All Railways in the Union.

RECORD REFERENCES

Headings under which the question has been dealt with :

- Characteristics of audible signals used by tractive stock on international services.

(4th - 5th - 7th Committees : Stuttgart, May 1960; Paris, May 1961).

- Amendment to Leaflet 644 «Warning devices used on tractive units employed on international services».

(7th Committee M.P. : Leipzig, May 1965).

- Revision of Leaflet 644.

(Working Party 5/B for Diesel Traction, Paris, January 1978).

- Question 5/B/FIC - Approval of the new version of Leaflet 644.

(Traction and Rolling Stock Committees, Paris, June 1979).

- Examination of comments on draft Leaflet 644.

(Working Party for Diesel Traction, Paris, January 1980).