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## Economic Commission for Europe

### Inland Transport Committee

#### Working Party on the Transport of Perishable Foodstuffs

##### Sixty-ninth session

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Item 5 (a) of the provisional agenda

**Proposals of amendments to ATP: Pending proposals**

### **ATP renewal tests at six and nine years for dependent equipment the refrigeration unit of which is powered by the engine of the vehicle**

**Transmitted by the Government of France**

*Note by the secretariat*

France has transmitted a revised version of ECE/TRANS/WP.11/2011/16/Rev.1, considered at the sixty-eighth session. Changes are underlined or struck out.

#### **Context**

1. The Agreement on the International Carriage of Perishable Foodstuffs and on the Special Equipment to be Used for such Carriage (ATP), signed in 1970, originally included a test for the renewal of certificates at six years.

2. ~~While~~ The tests were ~~are~~ clearly set out for refrigerator equipment from the beginning. The tests for mechanically refrigerated equipment were based on limited requirements ~~the requirements for mechanically refrigerated equipment are very limited~~. ~~The efficiency test must be conducted at an outside temperature of more than 15°C.~~

3. In 1995, ATP was amended to clarify these tests. An upper limit of six hours for cool-down to the class temperature was added. In 2008, the Working Party on the Transport of Perishable Foodstuffs (WP.11) voted in favour of a new agreement for cool-down tests with a view to the renewal of ATP certificates of independent mechanically refrigerated equipment. The shortcoming was thus partially rectified for independent mono-temperature equipment.

4. However, the method is inadequate for dependent and multi-temperature equipment. ATP remains very vague about the test for the renewal of dependent equipment.
5. France submitted an informal proposal on this matter in 2007, followed by a first formal proposal in 2008. The present proposal is to integrate that procedure into ATP.
6. Taking account of the suggestions made by, successively, Spain in respect of the time periods, the Netherlands on external temperatures and transitional provisions, and Germany on units driven by the vehicle engine, the proposal was amended in 2009, 2010, 2011 and 2012. In the last two votes, only one objection was received to the proposal. The arguments for the objection by the Netherlands were incorporated. Germany did not communicate the reasons for its objection in 2012, while it had voted in favour in 2011.
7. France thus once again submits this proposal, which concerns only equipment of which the refrigeration unit is powered by the engine of the vehicle.
4. Following an informal communication in 2008, the Government of France proposed a draft amendment in 2009 and again in 2010. The draft itself was amended in 2010 following comments from the members of WP.11, and again in 2011 in response to the opinion of the Sub Commission D2 on Refrigerated Transport (CERTÉ) from the International Institute of Refrigeration (IIR) testing centres.

### **Proposal Current situation**

8. For many years, the renewal of ATP certificates in France was based on a theoretical calculation of the ageing of the unit. This method is no longer valid given the changes in the foam.
9. The competent authority in France, in cooperation with Transfrigoroute France and Cemafrroid, the official ATP testing station, worked on new protocols for the more than 10,000 tests conducted each year, of which 5,000 concern dependent equipment. The objective was to develop a robust, simple and cost-effective test.



Equipment being tested for efficiency in a test centre



Verification of equipment by experts

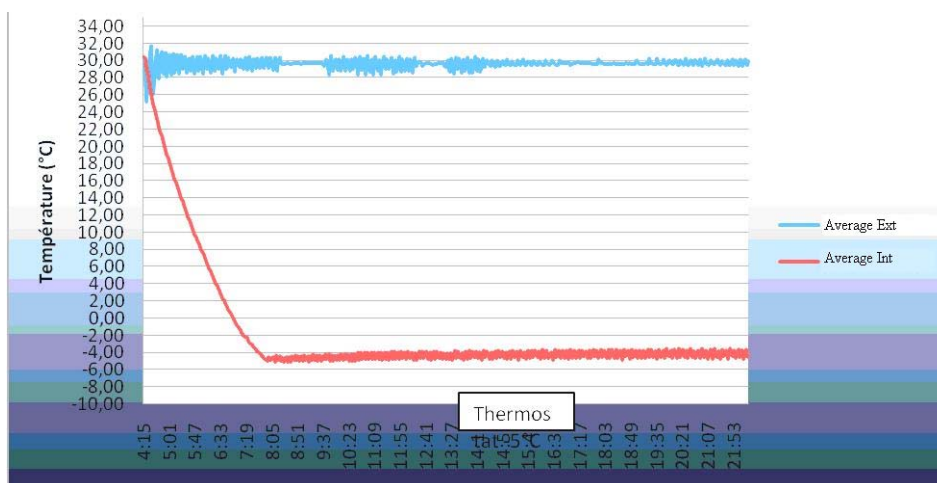
### Constraints for dependent equipment the refrigeration unit of which is powered by the engine of the vehicle

10. Most dependent equipment is used for distribution. ~~The equipment runs a~~ A significant amount, often more than 70%, of the time that the equipment is running is while the vehicle engine is idling. It requires significant cool-down capacity, but also sufficient capacity to maintain the class temperature while the engine is idling.

### Proposed test protocol

11. With this in mind, the following checks are proposed:
- Cool-down capacity of the unit under electric power or powered by the vehicle engine;
  - Capacity to maintain the temperature below the class temperature for at least two hours for an outside temperature of +15° C and one hour for an outside temperature of +30° C, after stabilization, while the engine is idling with a tolerance of 100 revolutions per minute.

### Temperature change inside the container while a dependent unit is running – average external temperature of 30° C ± 0.5° C



Example of a cool-down test recording

## Impact of the test

### Technical impact of the test

12. These tests have been used in France since 2002. About 5,000 tests of pulley motor dependent equipment at six and nine years are conducted per year.

13. Of equipment that has not been properly serviced before testing, between 20 and 30% does not pass. With proper servicing, less than 3% of equipment fails. Equipment is now serviced before testing. The results clearly show the relevance of these tests if one compares vehicle performance before and after servicing. Servicing makes it possible to reduce the environmental impact of the equipment, as well as its energy consumption and CO<sub>2</sub> emissions.

14. Overall, the test protocol put in place in France in 2002 has greatly enhanced levels of performance and maintenance of the equipment. Equipment that cannot cool down to and maintain the temperature in class C may, if it passes the test for class A, be downgraded to this class.

### Economic impact of the procedure

15. Furthermore, there is a drop in fuel consumption and operating costs. The tests conducted show that equipment takes much longer to cool down before it is serviced than after. Both cool-down time and fuel consumption may double for poorly maintained equipment.

16. Given that in France the cost of the test is around 400 euros for a three-year renewal, introducing this procedure brings benefits in terms of energy savings and improved performance.

## Conclusion

17. On the basis of these findings, the proposed protocol seeks to harmonize ATP and establish a more equitable procedure. It concerns only equipment of which the refrigeration unit is powered by the engine of the vehicle.

18. To allow users to adapt, these provisions will apply only to equipment manufactured after these provisions take effect. Vehicles in service on this date may be tested under the protocol currently in force for as long as they remain in service.

## Proposed amendment

19. It is proposed that the text marked in bold below be added to the text of the ATP agreement:

“Annex 1, appendix 2

6. [...]

### **6.2 Mechanically refrigerated equipment**

#### **Independent equipment**

It shall be verified that, when the outside temperature [...]

[...] for a further period of not more than three years.

**Dependent equipment, the refrigeration unit of which is powered by the engine of the vehicle**

**It shall be verified that, when the outside temperature is not lower than 15° C, the inside temperature of the empty equipment can be maintained at the class temperature, after cool down and stabilization, when the engine is running at the idle speed set by the manufacturer (where applicable) with a tolerance of  $\pm 100$  revolutions per minute, for a minimum period of:**

- one hour if the outside temperature is higher than or equal to +30° C,**
- one hour and twenty minutes if the outside temperature is higher than or equal to +25° C,**
- one hour and forty minutes if the outside temperature is higher than or equal to +20° C**
- two hours if the outside temperature is higher than or equal to +15° C.**

**If the results are satisfactory, the equipment may be kept in service as mechanically refrigerated equipment in its initial class for a further period of not more than three years.**

**(ii) Transitional provisions applicable [...] this provision should apply to equipment constructed after the entry into force of this provision.”**

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