

# Welfare of Animals During Transport

**Council Regulation (EC) No 1/2005 on the protection of animals during transport and related operations and  
The Welfare of Animals (Transport) (England) Order 2006**

Guidance on the requirements of a satellite navigation (tracking) system for long journeys



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## Introduction

1. Council Regulation (EC) No 1/2005 on the protection of animals during transport and related operations ('the Regulation') requires that any road vehicle undertaking long journeys (normally in excess of eight hours, but see paragraph 3 below) transporting cattle, sheep, pigs, goats or unregistered<sup>1</sup> domestic equidae must be equipped with a satellite 'navigation' system (Article 6(9) and Annex I Chapter VI, 4.1).

2. There can be some confusion in the use of terminology which is compounded by the terminology used in the Regulation. A satellite *navigation* system, commonly used to plan routes, is not the same as a satellite *tracking* system which is the subject of this guidance and which is the system required by the EU legislation. The satellite tracking system is not required to be able to plan routes. Any reference to satellite tracking systems throughout the text of this document should be taken to mean the same as satellite navigation system as described in the Regulation. A copy of the Regulation can be seen here: <http://faolex.fao.org/docs/pdf/eur69655.pdf>

3. As permitted by Article 18(4) of the Regulation, a derogation has been applied in the UK from this requirement as specified in Part 3, paragraph 19 of The Welfare of Animals (Transport) (England) Order 2006 ('WATEO 2006'). Under the derogation, road vehicles used for journeys solely within the UK where the journey does not exceed 12 hours in order to reach the place of final destination are not required to be fitted with a satellite tracking system. Vehicles used for export journeys in excess of eight hours or domestic journeys in excess of 12 hours must have this equipment fitted.

## Current legal requirements

4. To meet with the Regulation's current requirements, the system must be able to *record and provide* the information which is required in the journey log (Annex II, section 4 of the Regulation), and in addition, the status of the tailgate or other loading flaps (open or closed). The system must also be capable of allowing interrogation of this information at any time during a journey by an enforcement officer.

5. The system is intended to be used by enforcement officers as a tool for assessing compliance with the requirements of the Regulation, particularly to check the details as set out in the journey log. But such systems can be enhanced to provide on-board monitoring of temperature, ventilation and humidity which can lead to higher welfare standards. They can also be used as a road management tool to ensure that the transporter is driven in a responsible way, which can also help raise welfare in transport standards. Although the current legislation provides for only the bare minimum of functionality of any satellite tracking system, the EU Commission is

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<sup>1</sup> Registered domestic Equidae are those registered for the purposes of EU zootechnics legislation (Directives 90/426/EEC and 90/427/EEC). Proof of registration must be carried during a journey. Further information on this can be found in section 2 of our main guidance document on the Regulation: <http://www.defra.gov.uk/foodfarm/farmanimal/welfare/transport/euguidance/guidance.htm>

committed to reviewing the requirements for satellite tracking systems and will include a report on them as part of their recently published road map for welfare in transport which is due to be published in the autumn of 2011. This may, subsequently, lead to changes in the legislation governing satellite tracking systems used in the transport of animals over long journeys. A 2006 European Commission technical specification for a tracking system is shown at Annex I. More information on the work of the EU Joint Research Centre to develop satellite tracking systems can be seen at: <http://awt.jrc.it/>

6. In the interim, you are required to install satellite tracking systems which fulfill the current requirements of the legislation and we advise transporters to ensure that the system has the flexibility to be enhanced, should the EU Commission implement new technical requirements in due course.

7. As the Regulation stands (see Section 4.1 of Chapter VI to Annex I) it simply states that the satellite tracking system should allow for the recording and provision of information equivalent to that in the journey log (Section 4 of Annex II). This means that whatever system is installed must comprise at least two separate components:

- **an onboard unit (OBU)** that collects and records the required data automatically; and,
- **a positioning system** that can deduce its own location by use of satellite signals, together with a time stamp.

8. The OBU must be capable of collecting and recording the following information:

- geographical positioning of the vehicle, departure and arrival times, together with a record of any stops and their duration.
- opening and closing of entry points for loading and unloading of animals;
- name and authorisation number of the transporter; and,
- the number of animals that have been injured or died during and after the journey and the reasons for their injury/death.

9. Additionally, the following information in line with that required by the TRACES<sup>2</sup> system, which can either be generated manually or automatically, may be recorded, although there is currently no legal obligation to do so<sup>3</sup>:

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<sup>2</sup> The Trade Control and Expert System (TRACES) is a web-based system run by the European Commission. It aims to make the paperwork for trading in animals and animal products easier by generating the necessary documents and sending copies to the appropriate authorities inland and abroad. The system allows traders to obtain export health certificates and movement notifications of their dispatches. It helps the authorities to meet health regulations and traders' needs.

<sup>3</sup> The EU may in future require the recording and provision of data equivalent to that entered on the TRACES system.

- the category of animals loaded, at least in compliance with the categories defined in the Regulation;
- the number of animals loaded.

10. Enforcement officers will use data recorded on the OBU to verify compliance of individual journeys with the paper journey log. Enforcement action may be taken where there are obvious discrepancies between the two records. Officers can request data during a journey, for example at a roadside check. Failure to provide such data, or to have installed on the vehicle a functioning satellite tracking system that meets the requirements of the Regulation could also result in enforcement action being taken.

## **What might be required of the navigation system in the future?**

11. The European Commission has given a clear indication that additional functionality will be required from the navigation system in the foreseeable future. As an indication of what the Commission might propose, the following is an extract from their most recent draft proposals to amend Regulation 1/2005:

*“The on-board unit through its navigation system and other on-board applications will automatically register the journey followed by the vehicle and will transmit data as referred to in paragraph 1 and 2 in real time to TRACES. Specification of the functionality and system requirements of the on-board unit and of its intrinsic navigation, collection, processing and transmission components as well as the operational requirements for its field utilisation – including aspects such as size of data, data transmission rate, data security considerations – will be adopted subsequently...”*

12. For reference, paragraphs 1 and 2 (as referred to in the text above) are shown here:

*“1. The organiser shall:*

*(a) ensure that the following information has been submitted to TRACES, within at least two working days before departure:*

*Name, address, telephone number and email address of the organiser;*

*Unique number(s) of the transporter’s authorisation(s);*

*Unique number of the certificate of approval of means of transport;*

*Names, address telephone number and email address of the contact person responsible for the entire journey;*

*Total expected duration of the journey in hours and days;*

*Veterinary certificate(s) number(s) (when necessary);*

*Place and country of departure and of destination;*

*Date and time of departure;*

*Expected date and time of arrival and place of destination;*

*Species and number of animals in the consignment;*

*Estimated total weight of the consignment;*

*Total space provided for the consignment (m<sup>2</sup>);*

*Date, time and location of the places where animals are to be rested or transferred, including exit points;*

*(b) comply with any instruction given by the competent authority pursuant to Article 14(1)(a);*

*(c) ensure that the planning of the journey is approved by the competent authority;*

*(d) ensure that the number of the journey log provided by the competent authority accompanies the animals during the journey until the place of destination or, in the case of export to a third country, at least until the exit point.*

*2. During the journey, the transporter shall ensure that the following events and information are recorded in the on-board unit, including a navigation system or other on-board applications:*

*Date and time of the loading of the first animal of the consignment at the place of departure;*

*Date and time of the unloading of the last animal of the consignment at the place of destination;*

*Species and number of animals in the consignment;*

*Species and number of animals injured and dead during the journey;*

*Date and time of coupling and decoupling of the trailer;*

*Estimated total weight of the consignment at the place of departure or at the place of any loading of the consignment;*

*Date, time and location of the places of rest or transfer.”*

13. There are some legal questions which remain unanswered as to whether the use of TRACES as a compliance checking tool as envisaged by the Commission for satellite tracking purposes is in line with data protection legislation and whether there is the necessary legal base in Community legislation for its use in this way.

## **Best practice**

14. Transporters must install a system compliant with the current legislation but we strongly recommend you to adopt systems now that will have the flexibility to deliver additional functionality. Some possibilities of additional functionalities are described in annex to this document (Annex II). This is an illustrative list only and should not be regarded as definitive guidance on what might become legal requirements at EU level in the future.



## Annex I

SANCO/10140/2006 (POOL/D2/10140/10140-EN.doc)

### WORKING DOCUMENT

#### Equipment for navigation systems for livestock vehicles used for long distance transport

##### A. Introduction

Paragraph 4.1 of Chapter VI of Annex I to Regulation (EC) No 1/2005 <http://faolex.fao.org/docs/pdf/eur69655.pdf> provides that as from 1 January 2007 for means of transport by road for the first time in service and as from 1 January 2009 onwards for all means of transport they must be equipped with the appropriate navigation system allowing for recording and providing information equivalent to those mentioned in the journey log as referred to in Annex II, section 4 of the aforementioned Regulation, and also information concerning opening/ closing of the loading flap.

In order to ensure compatibility of satellite navigation systems used on cross border transports, legislation on the requirements for such systems at Community level is necessary. In establishing the requirements for satellite navigation systems, a balance should be kept between the various aspects to be taken into consideration, as regards animal welfare, economic and social implications. In order to avoid unfair competition the legislation should enable all competent manufacturers to develop suitable equipment.

Part B that follows presents the possible requirements for a navigation system referred to in Article 6(9) of Regulation (EC) No. 1/2005 to be adopted in a Commission Regulation after approval by the Standing Committee.

##### B. Draft requirements for a navigation system

###### 1. Navigation system

The navigation system shall consist of the following linked parts

- an **onboard unit** (OBU) which is able to collect, record and store automatically data referred to in 2.5 and 2.8 and if deemed necessary, from other additional sensors;
- a **positioning system** which is able to deduce its own location by satellite signals and provide precise timing;

- a **communication system** which enables automatically the transmission of data collected and recorded by the OBU from a vehicle to a remote device during a journey.

## 2. Onboard unit (OBU)

2.1 The OBU shall at least be able to work at a temperature range between -40°C and + 80°C. If installed outside the cabin, it shall be waterproof.

2.2 The OBU shall operate with open software.

2.3 In order to allow the connection of sensors and/or modules for the monitoring of the transportation conditions sufficient analogue and digital inputs as well as communication ports such as standard USB and CAN port shall be present.

2.4 The OBU shall allow thresholds (journey time, temperature inside the animal compartment(s)) to be defined and shall be able to generate warning signals in cases where the collected data indicates that defined thresholds are exceeded.

2.5 During the journey, the OBU shall collect, record and store two sets of data for each group of animals covered by one journey log in any circumstances, including disconnection from the electrical power supply of the vehicle.

The first set of data, in relation to the time during the journey expressed in Greenwich time, consist of:

- geographical positioning of the vehicle (collected, recorded and stored at least every five minutes);
- speed (Kilometres/hour) (collected, recorded and stored at least every five minutes);
- opening and closing of entry points to the animal compartment(s) usable for loading and unloading of animals (collected, recorded and stored at least when status changes);
- coupling and decoupling of the trailer (collected, recorded and stored at least when status changes);
- temperature inside the animal compartment(s) (collected, recorded and stored at least every five minutes);
- warning signals (collected, recorded and stored when reaching the defined thresholds for the parameters of 2.4).

The second set of data, to be entered into the system or generated automatically, consists of the following information

- distinguishing number of the journey log;
- the category of animals loaded, at least in compliance with the categories defined in the regulation (EC) No 1/2005;
- the number of animals loaded;

- (d) name and authorisation number of transporter;
- (e) place, date and time departure according to the regulation (EC) No 1/2005;
- (f) place, date and time of arrival according to the regulation (EC) No 1/2005;
- (g) the number of animals dead during and after the journey including their identification number, when applicable, and the reason of death.

2.6 A non-removable memory in the OBU shall store all data collected during the journey at least for four weeks after completion of the journey.

2.7 The integrity of the data shall be assured (black box) and protected against any manipulation of its content.

2.8 The OBU has to be able to send and store a warning signal in the case of any type of attempt to be opened and/or manipulated (anti-tampering function).

2.9 The OBU has to be able to allow downloading the data referred to in 2.5 and 2.8 and to alert the driver of the vehicle when reaching the defined thresholds for the temperature in the compartment(s) where animals are located.

### **3. Positioning system**

3.1 The device which is used to locate the vehicle shall be based on Global Navigation Satellite Systems (GNSS).

3.2 The device shall be able to receive signals of 12 satellites simultaneously and to provide the most accurate position of the vehicle.

### **4. Communication system**

4.1 The communication system shall be based on General Packet Radio Service (GPRS) technology (minimum dual band class 8) to send data.

4.2 Open standard protocols shall be used for communication.

4.3 The communication protocol shall provide proof of origin and ensure confidentiality as well as integrity of the data transmitted.

4.4 For data interchange Extensible Markup Language (XML) shall be used.

4.5 The system shall allow the intervals of data transmission to be defined.

## Annex II

### Introduction

1. This technical annex gives indications of best practice for the fitting of satellite tracking systems to both current and likely future specifications. This is without prejudice to other legislative requirements in respect of animal health and welfare that may have an impact on how animals are transported and the equipment required to facilitate this e.g. sheep and goat electronic identification.

### Flexibility

2. As explained in the main body of this guidance, transporters should be aware that any satellite tracking system they fit now should be sufficiently flexible to meet likely future requirements coming from Brussels. The European Commission's most recent draft proposals to amend the Regulation indicated the likely extent of this additional functionality.

### Recording journey information

3. One of the two principal components of a compliant satellite tracking system is a communication system that enables transfer of data recorded by the On-Board Unit (OBU) at regular intervals to a base station located at the transporter's headquarters. The OBU must be capable of collecting and recording the following information:

- geographical positioning of the vehicle, departure and arrival times, together with a record of any stops and their duration.
- opening and closing of entry points for loading and unloading of animals;
- name and authorisation number of the transporter; and,
- the number of animals that have been injured or died during and after the journey and the reasons for their injury/death.

4. Additionally, the following information in line with that required by the TRACES<sup>4</sup> system, which can either be generated manually or automatically, may be recorded, although there is currently no legal obligation to do so:

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<sup>4</sup> The Trade Control and Expert System (TRACES) is a web-based system run by the European Commission. It aims to make the paperwork for trading in animals and animal products easier by generating the necessary documents and sending copies to the appropriate authorities inland and abroad. The system allows traders to obtain export health certificates and movement notifications of their dispatches. It helps the authorities to meet health regulations and traders' needs.

- the category of animals loaded, at least in compliance with the categories defined in the Regulation;
- the number of animals loaded.

5. The Commission has indicated that journey information may, in future, need to be transmissible in real time to the TRACES system.

- Date and time of the loading of the first animal of the consignment at the place of departure;
- Date and time of the unloading of the last animal of the consignment at the place of destination;
- Species and number of animals in the consignment;
- Species and number of animals injured and dead during the journey;
- Date and time of coupling and decoupling of the trailer;
- Estimated total weight of the consignment at the place of departure or at the place of any loading of the consignment;
- Date, time and location of the places of rest or transfer.

6. Journey information held at transporters' base stations should be made available to an enforcement official upon request. The Regulation does not specify how long such information should be stored, although it is recommended that information on each journey is kept for a minimum of three years (paper journey logs must be kept for this length of time).

7. Information from the OBU should be made available to enforcement officials during a journey. Preferable methods for the downloading of this information are via either a PDA type device or a laptop. A number of commercially available systems store journey information using the internet. However, for the purposes of enforcement, either of the aforementioned would be advantageous in terms of the real time access to data in contrast to any internet based system that might require a log-in by the enforcement official or any system that provides information via a hard copy printout (unless the printout can provide equivalent information to that facilitated by an electronic system); or any system, which would require information to be provided by a third party data management company, at a later date, upon request.

## Temperature monitoring and recording

8. Although it is a current requirement to monitor and record temperatures on board the vehicle, there is no requirement to record this data on the OBU. However, this may become a requirement in the future. Therefore, it may be advisable to adopt a system that records and stores to the OBU information on all temperature readings taken from inside the animal compartment at regular intervals (e.g. every five minutes) and that can also transmit this information to the base station.

9. It is a general requirement of the Regulation that the temperatures within the animal compartment of vehicles transporting domestic cattle, sheep, goats, pigs and domestic equidae on long journeys be maintained within the range 5°C to 30°C (with a +/- 5°C tolerance either side of this range). Vehicles undertaking export journeys of over eight hours and domestic journeys of over 12 hours must be fitted with mechanical ventilation systems that can effectively maintain temperatures within this range throughout the animal compartment(s), and that can operate independently from the vehicle engine for at least four hours.

10. Systems should incorporate a warning system that alerts the driver when the temperature in the animal compartment moves outside the Regulation's temperature envelope. This will enable the driver to take prompt preventive action to prevent animals from suffering either heat or cold stress. The system should be capable of alerting the driver when away from the vehicle. This could be achieved by means of a Short Message Service bulletin i.e. a 'text'.

### Temperature sensors

11. The Regulation states that temperature sensors should be located in those parts of the vehicle that are expected to experience the worst (or most extreme) environmental conditions. They must therefore be of a robust construction, capable of tolerating a harsh environment and produce readings that accurately reflect the true air temperature where they are located.

12. In most vehicles, the highest temperatures are likely to be experienced at the front of the animal compartment on the top tier; the lowest temperatures are likely to be encountered on the lowest tier at the rear. Thus a minimum of four temperature probes per deck is recommended. However, it may be advisable, for purposes of assessing animal welfare, to install more temperature sensors, especially where onboard temperatures are likely to be less predictable or more variable.

13. Systems should be capable of isolating a particular area of the vehicle to avoid the receipt of negative readings where a given area of the vehicle, or deck, is not being used. They should also be portable if fitted to a vehicle with adjustable decks. Separate sensors will also be required for any trailer.

There are systems available commercially which can provide up to 128 temperature sensors.

### **Opening and closing of the loading flaps (doors)**

14. The Regulation requires satellite tracking systems to include a facility for recording the opening and closing of the vehicle or trailer's loading flaps i.e. its doors.

15. Best practice would be for a minimum of four sensors per door to be fitted. There are systems on the market that can fit up to 16 sensors per door. As with temperature monitoring sensors, these should be of a robust construction, capable of tolerating a harsh environment.

### **Availability of satellite tracking equipment**

16. A number of manufacturers have advised us that they can produce satellite tracking systems (for both existing vehicles and new builds) that meet both the current legal requirements together with those we consider to be best practice and likely future requirements. Transporters may wish to purchase and fit such systems to their vehicles, or are at liberty to design and construct any system of their own that meets the requirements outlined in this guidance document.

17. A list of these manufacturers can be obtained from the industry bodies designated by the UK competent authorities to inspect and approve vehicles. A list of these bodies can be found on the vehicle approval pages of our website at:

<http://www.defra.gov.uk/foodfarm/farmanimal/welfare/transport/euguidance/approval.htm>

18. Please be advised that some manufacturers will only install systems in 'new build' vehicles and will not be prepared to augment or adapt existing equipment in older vehicles in order to make it compliant with the Regulation.