
PASSENGER TRANSPORT (TAXI-CAB SERVICES) REGULATION 1995

Order Pursuant to Clause 7B (5)

Security Camera Systems for Taxis

THIS specification establishes the minimum requirements for a security camera system to be fitted in a taxi for the purpose of recording images of persons in or about a taxi.

1. The system shall have a minimum of two cameras, one providing a view of the taxi driver and passengers the inside the vehicle ("internal camera"), and one providing a view of any person standing at the driver's door / window ("external camera").
2. The system shall be powered whenever the vehicle is being hired or available for hire, whether occupied by a passenger or not.
3. The internal camera shall be readily visible to passengers in the vehicle as a deterrent. The external camera may be concealed or otherwise not be identifiable to passengers. Both cameras shall be mounted in such a manner so as to readily prevent mis-alignment of the field of view, except in the case of a vehicle accident or other severe impact.
4. The installation of the camera system shall not affect the compliance of the taxi with all relevant requirements of the Road Transport (Vehicle Registration) Regulation 1998 and the Australian Design Rules.
5. The internal camera housing(s) shall not have any sharp edges and shall be positioned such that passengers or drivers of any height cannot come into contact with the housings during normal operations.
6. The cameras and all system components shall be installed in a manner which does not interfere with the driver's vision or view of mirrors or otherwise normal operation of the vehicle.
7. The system shall not interfere with any other systems on board the taxi, and shall itself not be affected by any sources of interference likely to be encountered in the taxi.
8. The driver shall have a visual indicator showing when the system is operational and when there is a malfunction, which should not be readily identifiable as part of the camera system by any passengers. This indicator shall incorporate the following minimum features:
 - Normal display state – Green image capture LED not illuminated
 - Valid image capture – Green LED flash (not less than 250ms)
 - Memory full (post alarm) – Oscillating Red / Green LED flashes (not less than 250ms) until memory reset
 - System fault – Oscillating Red LED flashing until fault cleared
9. Where a system is fitted with an indicator to show that it is on, this indicator shall be separate to those described in requirement 8, and/or of a different colour to avoid any possible confusion on the part of drivers using the system.
10. The system shall be designed and installed such that the system may be easily tested by an authorised officer of the Department of Transport to ensure that all features are operating and that images are being recorded as prescribed.
11. All system components shall be resistant to vandalism and/or degradation of the recorded image by intentional or accidental damage to the recording unit.
12. The system shall provide reliable and full functionality in all operational and environmental conditions encountered in the normal operation of taxis.
13. All system components shall be easily interchangeable in the event of failure or damage.
14. The system shall be capable of recording a minimum of 300 images during normal operation, i.e. without activation of an alarm condition.
15. As a minimum requirement, a number of images from both cameras shall be stored when the taxi starts and ends a journey, and images from the internal camera shall be stored during a journey.
16. A minimum of five images shall be taken at one second intervals from each camera when a door, including the driver's door, is opened or closed.
17. A minimum of three images shall be taken at one second intervals from each camera when the brake pedal is depressed. To conserve memory, multiple activations of the brake pedal within a thirty (30) second period may be treated as a single activation. Alternatively, where system memory allocation may cause this function to impinge on the availability of images recorded from other triggers, a minimum of five (5) images shall be taken from each camera at one (1) second intervals when the taxi meter is activated or stopped, and from the internal camera at a rate of not less than one (1) image every thirty (30) seconds during the first ten (10) minutes of the journey.

18. The system shall be interfaced to the driver's duress alarm such that images are recorded by the system if the driver activates the alarm. Upon activation of the alarm, the images from the most recent trip are to be retained in such a manner as to prevent overwriting of those images by any manual or automatic triggers which may follow the activation of the security device. The balance of memory is to be filled with images at a rate of not less than one (1) image per second from each camera, or where the total memory of the system exceeds the minimum requirement of three hundred (300) images, a minimum of two hundred and fifty (250) images shall be recorded in the prescribed manner following activation of the security device.
19. It shall be possible to change timing and parameters without changing components.
20. The driver shall be able to initiate the recording of images separate to the automatic triggers and activation of the security device. The system shall incorporate a feature which allows the images manually captured to be stored separately or otherwise be recoverable without having to activate the security device.
21. All occupants of the vehicle are to be clearly seen in the captured images taken from the internal camera.
22. The resolution and clarity of the recorded image from the internal camera shall be maintained under a range of lighting conditions from darkness (no light in the visible spectrum) through to bright sunlight.
23. The camera lenses shall have an auto iris or electronic iris facility such that image clarity is not adversely affected by light fluctuations.
24. The system shall have battery backup separate from the vehicle battery or use other memory technology which ensures full image retention for a minimum of seven days after the normal power source is removed.
25. Images from the recorder shall be capable of being recovered following submersion in water to a depth of six metres.
26. The recorder shall be constructed and/or installed in such a manner so that following a vehicle fire, all stored images shall be readily recoverable.
27. The recorder shall be impact resistant, sufficient to withstand a typical car accident.
28. All stored images shall be secured in a way to prevent unauthorised access.
29. It shall be possible to determine if the image has been manipulated in any way. This may be done by using signature encryption.
30. Image storage media shall only be able to be removed from the taxi by authorised persons, however, such authorised removal and exchange shall be easily facilitated by the system.
31. Images recovered from the system shall be able to be printed on a standard laser printer using proprietary software, and copies of images shall be able to be saved or exported in industry standard formats.
32. There shall be no requirement to change storage medium during a taxi-cab hiring.
33. All recorded images shall be time, date and taxi specific, with details shown on the image and/or encrypted within the image file. It shall be possible to determine from a recorded image file the time and date at which the image was taken and the registration number of the taxi in which it was taken.
34. The recording system shall be configured such that the recording medium will automatically commence rerecording once the medium has reached its recording capacity. The oldest images shall be overwritten first.
35. The camera shall use an image sensor with a minimum resolution of 330 TVL (H).
36. The resolution of the recorded images in playback shall be at least equivalent to 240 TVL (H).
37. The camera lenses shall be capable of maintaining images in focus at any distance from the lens between 500 mm and 10 m.
38. The system shall be fully operational with an input voltage of between 10 and 15 volts DC, and be protected against reverse voltage, short circuits and high voltage transients likely to be encountered in the vehicle's electrical system.
39. The operation of the system shall not be adversely affected by lower voltages likely to be encountered when the engine of the vehicle is started.
40. The system should be capable of transmitting images when the security device is activated to a remote network base where the taxi network has the capacity to receive the images.
41. In areas where taxis are fitted with Vehicle Tracking Devices, the camera system shall record the vehicle's latitude and longitude information onto the recorded image. This information may be obtained from the vehicle's Vehicle Tracking Device or other device fitted as part of the camera system.
42. The system shall be supported by a twenty-four hour download facility to recover images from taxis fitted with an approved camera system. This support shall also include a mobile facility with the ability to respond to serious incidents where police require the recovery of images from a taxi with an approved camera system.

Signed on 4 Jul 2001.

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