CU 6

also PIB 6

SPEED CAMERAS

STANDARD FOR CERTIFICATION OF APPROVED VEHICLE SURVEILLANCE EQUIPMENT (AUTOPATROL SP-200)

1 st January 2003

These standards relate to the provision of certificates of accuracy for the AutoPatrol SP-200 speed camera, which has been approved by the Minister of Police by notice in the Gazette as Approved Vehicle Surveillance Equipment. Such certificates are issued pursuant to the statutory authority of the Land Transport Act 1998, section 146.

Certificates of accuracy are provided for by that statute for one simple reason. That is; to allow evidence to be adduced as to testing and accuracy of a speed measuring device without the necessity for a person appearing as a witness in any proceedings. The person making the certificate must have been duly authorised and ideally would be the same person who carried out the testing. The statute provides that "the certificate shall be admissible as evidence that the equipment referred to has been tested and is accurate." The absence of a certificate issued under this statutory authority does not however jeopardise a prosecution, so long as the witness (es) are available to give evidence that the testing was indeed carried out, and that the device was found accurate.

The certificate provisions are to rely upon the statutory certificate provisions of the Land Transport Act 1998 These standards provide a platform for the process and describe the necessary tests and standards of accuracy set after consultation with the Measurement Standards Laboratory of NZ).

If any unit does not meet any of the following standards, the unit is to be taken out of service and forwarded to the agents for repair and re-calibration.

4.1 Approved Vehicle surveillance equipment shall be calibrated every 12 months.

Commentary: There is a 12 month limit for a certificate issued under section 146(4) Land Transport Act 1998, this standard places a requirement for certification annually. Any unit requiring repairs involving change or repair of internal circuit boards or components must be re-calibrated within the 12 month prior before being returned to service.

4.2 A certificate of accuracy shall be issued only by a sworn or non-sworn member of Police authorised by the Commissioner of Police.

Commentary: Section 146 permits that only a sworn or non-sworn member of the Police may be authorised by the Commissioner to certify as to the testing and accuracy of a speed-measuring device. It follows that the person making out such a certificate will be the same person who conducted the tests.

4.3 Each device shall have affixed a label indicating the next due date for calibration.

Commentary: Approved vehicle surveillance equipment shall be used for enforcement purposes only during the period that the certificate of accuracy remains current.

4.4 Following the completion of the testing outlined in this standard a Certificate of Accuracy may be issued.

Commentary: Copies of the certificate of accuracy shall be held as follows:

One in the District to which the device has been assigned.
The original shall be held by Police Calibration Services, along with the source documents from which the certificate was made.

4.5 **The test equipment used in this calibration process shall have previously been calibrated by the Measurement Standards Laboratory of NZ, and re-calibrated every 12 months.**

Commentary: Test equipment includes any frequency counter and any external speedometer and display used in the calibration process.

4.6 **Calibration of the approved vehicle surveillance equipment shall consist of a laboratory bench test and a road test as further outlined in these standards.**

Commentary: The following standards set out the actual tests and accuracy requirements for the Approved Vehicle Surveillance Equipment - AutoPatrol SP-200.

4.6.1 Laboratory Test

4.6.1.1 Simulated speeds at 50.9,100.9,150.9 and 200.9 km/h shall be introduced to the SP-200. Accuracy must be found to be within the allowable tolerance of plus 1 km/h and no less than 2 km/h over the range of speeds tested.

Commentary: A minimum of 20 speeds will be counted at each of the speeds specified above in any direction

4.6.1.2 A test of Channels A, B, C and D (lanes to which the sensors supply pulses as well as detector loops channels1, 2,3, and 4 will be tested to ensure each channel is functioning correctly and that sensitivity levels are normal.

Commentary: The SP-200 has 4 channels to discriminate between lane directions of travel. Each channel may be tested separately. All channels must operate in a similar manner.

4.6.1.3 Carry out interference testing for effects of external radio frequency energy and noise, within the spectrum 25 MHz to 900 MHz by transmitting those frequencies within 2 metres of the unit being calibrated and also its connecting cables. No external RF source so introduced shall result in a speed-reading, any alteration of a speed-reading or otherwise cause a photograph to be taken by the unit being calibrated.

Commentary: Static cameras operate on time over distance measurement and an internal computer within the SP-200 unit calculates the times. It must therefore be impervious to the effects of normal RF sources that may be commonly found in a normal operating environment. If the introduction of RF energy or noise results in no speeds being displayed from the unit being calibrated, this is normal and acceptable.

4.6.1.4 Stability testing under extremes of power supply voltage shall be conducted. The acceptable operating range is 210 to 255 volts AC.

Commentary: The SP-200 is designed to operate properly at supply voltages varying between 210 to 240 volts AC. Speeds recorded must be unaffected by such variations.

4.6.1.5 Results of an internal calibration (self test) carried out prior to deployment will be recorded.

Commentary: The self-test is a routine procedure carried out by the SP-200 during the start-up of a deployment. Any fault found during the start-up procedure test will result in the unit failing to operate.

4.6.2 Road test to ensure the device functions correctly.

4.6.2.1 Set up a normal deployment.

Commentary: Using a calibration site code as the site reference and the following format for Film number: "TESTxx" (where xx is the number of the timer unit) to identify the SP-200 unit being calibrated, photographs will be taken during this deployment which show both the speed measured by the SP-200 unit being calibrated and also the speed on a calibration vehicle with an external speedometer display.

4.6.2.2 Photograph one or more vehicle passes at speeds of 50 Km/h and 100 Km/h in each lane using a vehicle fitted with a certified externally mounted speedometer.

Commentary: The speed displayed by the calibration vehicles externally mounted speedometer will be captured in the photograph as the vehicle passes and is measured by the device being calibrated. This photograph will provide clear evidence of the correlation of speed values within the acceptable level of +/- 2 Km/h.

4.7 The results of all calibration tests shall be recorded on the SP200 calibration worksheet with all other results obtained.

Commentary: Police Calibration Services will file the calibration testing work sheets and resulting photographs for reference, along with the certificate of accuracy that is produced from those tests.