



BY-LAW NO. 270 - 2005

**A BY-LAW RESPECTING
SPEED DETECTION DEVICES
(AI-013)**

1. PREAMBLE

- 1.1 WHEREAS subsection 31(1) of the *Police Services Act* provides that a Board is responsible for the provision of police services and for law enforcement and crime prevention in the municipality and shall:
- b. generally determine after consultation with the Chief of Police, objectives and priorities with respect to the police service in the municipality;
 - c. establish priorities for the effective management of the police service; and
 - e. direct the Chief of Police and monitor his or her performance;
- 1.2 AND whereas subsection 31(6) of the *Police Services Act* provides that the Board may, by by-law, make rules for the effective management of the police service;
- 1.3 AND whereas the Ministry of Community Safety and Correctional Services Policing Standards requires a police services board to have a policy with respect to speed detection devices for the purposes of workplace safety under the *Police Services Act*;
- 1.4 AND whereas the *Occupational Health and Safety Act*, R.S.O. 1990, c.0.1, as amended, sets out the responsibilities of employers, supervisors and workers for workplace safety, the Board prescribes the Chief of Police shall establish procedures and processes with respect to speed detection devices;
- 1.5 AND whereas Part AI-013 of the Policing Standards Manual (2000), a copy of which is attached hereto as Appendix A, contains guidelines directing the Board, the Chief and members relative to speed detection devices.

NOW THEREFORE THE REGIONAL MUNICIPALITY OF NIAGARA POLICE SERVICES BOARD ENACTS AS FOLLOWS:

2 DEFINITIONS

- 2.1 "Act" means *Police Services Act*, R.S.O. 1990, c.P.15, as amended;
- 2.2 "Board" means the Regional Municipality of Niagara Police Services Board;
- 2.3 "Chief" means the Chief of the Niagara Regional Police Service;
- 2.4 "Member" means a member of the Niagara Regional Police Service;
- 2.5 "Ministry" means the Ministry of Community Safety and Correctional Services;
- 2.6 "Service" means the Niagara Regional Police Service.

3 BOARD POLICY

- 3.1 The Board recognizes that issues relating to the function of speed detection devices are an important component of the provision of police services and it is therefore the policy of this Board that speed detection devices be governed and used only in accordance with the procedure set out by the Chief of Police as directed in this By-law.

4 DIRECTION TO THE CHIEF

4.1 PROCEDURES

- 4.1.1 The Chief shall develop and maintain written procedures that govern the use and function of speed detection devices that are in accordance with Appendix A.

4.2 MEMBERSHIP AND TRAINING

- 4.2.1 The Chief shall ensure that the procedures developed and maintained in section 4.1 ensure that Members receive the appropriate training in relation to speed detection devices.
- 4.2.2 The Chief shall ensure that Members who operate speed detection devices have the requisite knowledge, skills and abilities and receive training on an ongoing basis.
- 4.2.3 The Chief shall establish a skills development and learning plan that is consistent with Appendix A for Members performing this function.

4.3 **EQUIPMENT**

4.3.1 The Chief shall ensure that appropriate equipment, in accordance with the Ministry's performance standard for speed detection devices, is used and available to Members who provide the service of traffic radar.

4.3.2 The procedures established above shall be in accordance with Appendix A.

5 REPORT TO THE BOARD

5.1 The Chief shall make a written report to the Board on or before August 30th of each year with respect to speed detection devices. The report shall include:

- a. a summary of the procedures as required by this By-law;
- b. the status of Service compliance with the said procedures; and
- c. a summary of the training given to Members with respect to speed detection devices and confirmation that Members have been trained in accordance with section 4.2.

6 IMPLEMENTATION

6.1 This By-law shall come into force upon the date of its passage.

6.2 The Chief shall implement this By-law, where applicable, through general order.

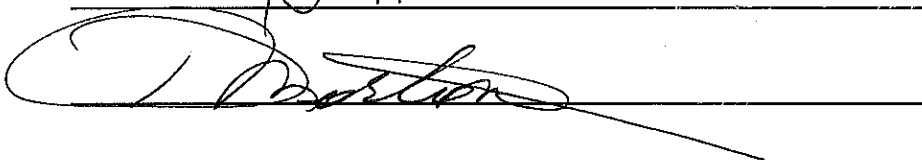
ENACTED AND PASSED this ^{27TH} day of *January*, 2005.

THE REGIONAL MUNICIPALITY OF NIAGARA POLICE SERVICES BOARD

Chairperson



Executive Director



Legislative/Regulatory Requirements

The *Occupational Health and Safety Act (OHSA)*, sets out the responsibilities of employers, supervisors and workers for workplace safety.

The Ontario Ministry of Labour's Health and Safety Guidelines "*Radiofrequency and Microwave Radiation in the Workplace*" set out Occupational Exposure Limits, which are enforced in Ontario workplaces by the Ministry of Labour under the general duty clause section 25(2)(h) of the *OHSA*. Occupational Exposure Limits are based on Health Canada's *Limits of Human Exposure to Radiofrequency Electromagnetic Fields in the Frequency Range from 3kHz to 300GHz, Safety Code 6*.

The current *Model Minimum Performance Specifications for Police Traffic Radar Devices DOT HS 808-069* publication of the National Highway Traffic Safety Administration (NHTSA), adopted by the International Association of Chiefs of Police (IACP), is recognized as the performance standard for speed detection radar devices.

In addition, the current *Model Minimum Performance Specifications for Lidar Speed Measurement Devices- DOT HS 809 239* publication of the National Highway Traffic Safety Administration (NHTSA), adopted by the International Association of Chiefs of Police (IACP), is recognized as the performance standard for speed detection laser devices.

Sample Board Policy

Board Policy # _____

It is the policy of the _____ Police Services Board with respect to speed detection devices that:

1. The Chief of Police will:
 - a) ensure the provision of speed detection devices that:
 - i) comply with the current *Model Minimum Performance Specifications for Police Traffic Radar Devices DOT HS 808-069* and/or the current *Model Minimum Performance Specifications for Lidar Speed Measurement Devices DOT HS 809 239* (recommend phased in through new expenditures by January 1st 2005);
 - ii) do not exceed $5\text{mW}/\text{cm}^2$ for the emission safety limits in compliance with Appendix 1 on Occupational Exposure Limits established by Health Canada's *Safety Code 6* and adopted by Ontario Ministry of Labour's Health and Safety Guideline "*Radiofrequency and Microwave Radiation in the Workplace*";
 - iii) are tested for accuracy on set-up; and

- iv) are tested and certified initially by the manufacturer's requirements in accordance with NHTSA standards and tested and certified following any repair/maintenance with information on tested emission levels and maintenance recorded;
- b) ensure that each member uses, maintains and cares for the speed detection devices provided to them in accordance with the standards established by the Minister;
- c) ensure that police officers do not:
 - i) use speed detection devices unless the member has successfully completed the required training course(s) delivered by a qualified instructor;
 - ii) have speed detection devices transmitting when not in use; and
 - iii) direct the speed detection devices towards any part of the body, specifically the head and groin areas;
- d) ensure that, at least every twenty four months, every member who may be required to use speed detection devices receives a refresher training course by a qualified instructor that reviews the topics covered in the initial training course, including updates on changes in case law, new technological developments and/or operating procedures; and
- e) ensure that police officers receive information regarding the *Model Minimum Performance Specifications for Police Traffic Radar Devices DOT HS 808-069*, *Model Minimum Performance Specifications for Lidar Speed Measurement Devices DOT HS 809 239*, Health Canada's *Safety Code 6* and the *OHSA* including the Ontario Ministry of Labour's Health and Safety Guideline "*Radiofrequency and Microwave Radiation in the Workplace*".

Police Service Guidelines

Traffic Radar

1. Every Chief of Police should ensure that the traffic radar provided for use has the following:
 - a) operating frequencies that conform to the standards established by the Minister:
 - i) X-BAND RADAR = 10.525 GHz (10,525,000,000 Hz);
 - ii) K-BAND RADAR = 24.150 GHz (24,150,000,000 Hz); and
 - iii) Ka-BAND RADAR = 33.400 GHz through to 36.000 GHz (33,400,000,000 Hz-36,000,000,000); and
 - b) emission safety limits not exceeding $5\text{mW}/\text{cm}^2$ in compliance with **Appendix 1** on Occupational Exposure Limits established by Health Canada's *Safety Code 6* and adopted by Ontario Ministry of Labour's Health and Safety Guideline "*Radiofrequency and Microwave Radiation in the Workplace*".
2. Every Chief of Police should ensure that:
 - a) the traffic radar is tested for accuracy at the time of set-up and in accordance with the operator's manual;
 - b) the traffic radar is tested for emission certification by the manufacturer in accordance with the *Model Minimum Performance Specifications for Police Traffic Radar Devices DOT HS 808-069* publication of the National Highway Traffic Safety Administration (NHTSA) with certification provided on delivery of any new unit;



- c) the results of the radar test for (power density) emission safety limits does not exceed 5 mW/cm² in compliance with Health Canada's *Safety Code 6* on all individual units; and
- d) the traffic radar is tested for accuracy and emission levels and certified following any repair/maintenance.

**Hand Held
Radar Units**

3. Every Chief of Police should ensure that all hand held radar units:
 - a) consists of one or more components that have the capabilities of a radar device as defined in the *Model Minimum Performance Specifications for Police Traffic Radar Devices DOT HS 808-069* publication of the National Highway Traffic Safety Administration (NHTSA); and
 - b) only transmit when the trigger is depressed.
4. Every police service's procedures on hand held radar units should ensure that members do not operate traffic radar units unless:
 - a) trained in the proper operating procedures for any radar unit that they will be using;
 - b) familiar with the radar unit and the set-up procedures in accordance with the operator's manual;
 - c) the radar unit in use has been certified for accuracy and emission levels initially by the manufacturer, at the time of purchase, in accordance with NHTSA standards and tested and certified following any repair/maintenance;
 - d) the accuracy testing requirements are carried out in accordance with the operator's manual and in accordance with the *Model Minimum Performance Specifications for Police Traffic Radar Devices DOT HS 808-069* publication of the National Highway Traffic Safety Administration (NHTSA); and
 - e) the antenna is directed outside of the vehicle whenever it is in operation or being tested.
5. Every Chief of Police should ensure that every member who may be required to use hand held radar units is made aware of the safety considerations for the use of hand held radar units, including:
 - a) during operation, the radar unit is not to be directed towards any part of the body, and in particular, the head and the groin areas;
 - b) the radar unit is to be transmitting only during speed acquisition; and
 - c) when not in use, the radar unit should be securely positioned.

**Moving
Radar Units**

6. Every Chief of Police should ensure that all moving radar units:
 - a) consist of components that include the patrol and target speed displays; and
 - b) can be used in both the moving mode and the stationary mode of operation.
7. Every police service's procedures on moving radar units should ensure that police officers do not operate traffic radar unless:
 - a) trained in the proper operating procedures for any radar unit that they will be using;
 - b) familiar with the radar unit and the set-up procedures in accordance with the operator's manual;



- c) the radar unit in use has been certified for accuracy and emission levels initially by the manufacturer, at the time of purchase, in accordance with NHTSA standards and tested for accuracy and emission levels and certified following any repair/maintenance;
 - d) the console is securely fastened so that the unit is not capable of movement;
 - e) the antenna of the radar unit is located as necessary to ensure adequate ground reflection;
 - f) the antenna is directed outside of the vehicle;
 - g) the testing requirements are carried out for accuracy at the time of set-up as part of the operating procedures; and
 - h) the testing for emission certification is carried out in accordance with the manufacturer's requirements and in accordance with the *Model Minimum Performance Specifications for Police Traffic Radar Devices DOT HS 808-069* publication of the National Highway Traffic Safety Administration (NHTSA).
8. Every Chief of Police should ensure that every member who may be required to use moving radar units is made aware of the safety considerations for the use of moving radar units, including:
- a) that moving radar units are not to be left in the transmitting mode when not in use to actively identify a speed;
 - b) that the antenna should be located more than 15 cm from the occupants of the vehicle;
 - c) the antenna must be located in a position so the police officer is not intercepting the transmitting beam; and
 - d) when the unit is being tested officers should ensure that the antenna is directed outside the vehicle.
9. Every Chief of Police should ensure that all laser units:
- a) are tested and certified by the manufacturer in accordance with the current *Model Minimum Performance Specifications for Lidar Speed Measurement Devices DOT HS 809 239* publication of the National Highway Traffic Safety Administration (NHTSA) with certification provided on delivery of any new unit; and
 - b) are tested for accuracy and emission levels and certified following any repair/maintenance.
10. Every police service's procedures on traffic laser units should ensure that police officers do not use traffic laser unless:
- a) trained in the proper operating procedures by a qualified instructor for any laser unit that they will be using;
 - b) familiar with the laser unit and the set-up procedures in accordance with the operator's manual; and
 - c) the laser unit in use has been tested for accuracy and emission levels and certified by the manufacturer, at the time of purchase, in accordance with NHTSA standards and tested for accuracy and emission levels and certified following any repair/maintenance.

Traffic
Laser

**Training
General**

11. Every Chief of Police should, in consultation with a qualified instructor, establish a skills development and learning plan that is current, accurate and sufficient for members performing this function.
12. Every Chief of Police should ensure that every police officer that uses speed detection devices has demonstrated the knowledge, skills and abilities required to perform the function safely and competently.

**Training for
Stationary
Radar Units**

13. Every Chief of Police should ensure that police officers do not:
 - a) use stationary traffic radar unless the member has successfully completed an initial training course by a qualified instructor on traffic radar, including:
 - i) theoretical training on the following topics:
 - Basic Theory of Radar;
 - Importance of Speed Management;
 - The Doppler Principle;
 - Cosine Angle Effect;
 - Sources of Interference;
 - Radar Detecting & Jamming Devices;
 - Officer Health and Safety;
 - Operational Procedures;
 - Equipment Maintenance;
 - Direction Sensing/"Fastest Target Feature";
 - Case Law; and
 - Testimony and Presenting Radar Evidence in Court;
 - ii) practical exercises under the supervision of a qualified instructor including:
 - Sources of Interference;
 - Speed Estimation;
 - Target Identification Exercises; and
 - Set-up and Test Procedures;
 - b) have radar units transmitting when not in use; and
 - c) direct the radar units towards any part of the body, specifically the head and groin areas.

**Training for
Moving
Radar Units
Opposite
Direction
Mode**

14. Every Chief of Police should ensure that police officers do not:
 - a) use moving traffic radar unless the member has successfully completed an initial training course by a qualified instructor on stationary radar; and
 - b) use moving traffic radar unless the member has successfully completed an initial training course on moving radar by a qualified instructor, including:
 - i) theoretical training on the following topics:
 - Operational Procedures for Moving Radar Units;
 - Moving Cosine Angle Effect; and
 - Limitations of Equipment; and



- ii) in-car training and practical exercises under the supervision of a qualified instructor, including:
 - Sources of Interference;
 - Speed Estimation;
 - Target Identification Exercises; and
 - Set-up and Test Procedures.

*Training for
Moving
Radar Units
Same
Direction
Mode*

15. Every Chief of Police should ensure that police officers do not:
- a) use moving traffic radar for same direction mode unless the member has successfully completed an initial training course on stationary radar by a qualified instructor and has successfully completed an initial training course on moving radar by a qualified instructor; and
 - b) has successfully completed a training course by a qualified instructor, including:
 - i) theoretical training on same direction mode theory; and
 - ii) in-car training and practical exercises under the supervision of a qualified instructor on same direction mode procedures and exercises.

*Training for
Traffic Laser*

16. Every Chief of Police should ensure that police officers do not:
- a) use traffic laser unless the member has successfully completed an initial training course on traffic laser by a qualified instructor, including:
 - i) theoretical training on:
 - Basics of Laser;
 - Importance of Speed Management;
 - Cosine Angle Effect;
 - Laser Detection and Jamming Devices;
 - Officer Health and Safety;
 - Operational Procedures;
 - Equipment Maintenance;
 - Case Law; and
 - Testimony and Presenting Laser Evidence in Court; and
 - ii) in-field training and practical exercises under the supervision of a qualified instructor including:
 - Speed Estimation;
 - Target Identification Exercises; and
 - Set-up and Test Procedures.

*Refresher
Training
on Speed
Detection
Devices*

17. Every Chief of Police should ensure that, at least every twenty four months, every member who may be required to use speed detection devices receives a refresher training course from two to four hours by a qualified instructor that reviews the topics covered in the initial training course, including updates on changes in case law, new technological developments and/or operating procedures.



Appendix A

Occupational exposure of the whole body to RF/MW fields, in any six-minute period, should not exceed the values in Table I.

Table I: RF/MW Occupational Exposure Limits

Frequency (MHz)	RMS Electric Field Strength (V/m)	RMS Magnetic Field Strength (A/m)	Power Density (mW/cm ²)
0.01 - 1	600	4.9	--
1 - 10	600/f	4.9/f	--
10 - 30	60	4.9/f	--
30 - 300	60	0.163	1
300 - 1 500	$3.46\sqrt{f}$	$0.0093\sqrt{f}$	f/300
1 500 - 300000	140	0.36	5

RMS = root mean square

f = frequency in MHz

A/m = amperes per metre

mW/cm² = milliwatts per square centimetre

V/m = volts per

metre

In addition, workers should not be subject to RF contact shocks or burns. This can be achieved by reducing stray fields and installing appropriate insulation and grounding, or by ensuring that the electric current flowing between a worker and an object energized by electromagnetic fields does not exceed the values in Table II.

Table II: Contact-Current Limits

Frequency (MHz)	RMS Current (mA) milliamperes, r 1/1000 Amperes)
0.01 - 0.1	400 f
0.1 - 30.0	40



The limits in Tables I and II are based on Health Canada "Safety Code 6", EHD-TR-160 (1991).

Table III shows which sources of RF/MW radiation may expose workers to levels in excess of Occupational Exposure Guidelines. Measurements of RF/MW levels should be carried out around sources with the potential to cause overexposure, in order to ensure compliance with the Occupational Exposure Limits.

Measurements are not necessary for sources which do not have the potential to produce exposures in excess of the Occupational Exposure Limits.

Table III: Sources of RF/MW Radiation

Source	Frequency (MHz)	Potential for Over-exposure?
Video Display Terminal (VDT)	0.015 - 0.3	No
Induction Heater	60 Hz - 0.5 MHz	Yes
Dielectric Heater	1 - 100 (typically 27.12)	Yes
Diathermy Applicator	13.56, 27.12, 915, 2450	Yes
Communications Transmitters		
AM Radio	0.535 - 1.605	Yes
FM Radio	88 - 108	Yes
VHF TV	54-72, 76-88, 174-216	Yes
UHF Radio	470 - 890	Yes
Dish Antenna	800 - 15,000	Yes
CB Radio	27.12	Yes
Cordless Telephone	46- 49	No
Cellular Telephone	824 - 850	No
Traffic Radar	10,500 and 24,000	No
Microwave Oven	915 and 2,450	No*

**Federal legislation requires that microwave ovens be constructed to meet stringent microwave leakage limits and to have safety interlocks. When these interlocks are defeated, for example, during repair work, there is a risk of overexposure to microwave radiation.*

