Taxicab Driver Safety

(City Council on June 7, 8 and 9, 2000, amended this Clause by adding to Recommendation No. (9) of the Planning and Transportation Committee, the words "and driver safety, and further, that the Commissioner of Urban Development Services be requested to submit a report thereon, to the Planning and Transportation Committee and Council, in one year's time", so that such recommendation shall now read as follows:

> *"(9) the Municipal Licensing and Standards Division support the work of the Sub-Committee, and continue to study the impact of various safety devices/procedures on ridership and driver safety, and further, that the Commissioner of Urban Development Services be requested to submit a report thereon, to the Planning and Transportation Committee and Council, in one year's time;".)*

The Planning and Transportation Committee recommends that the following recommendations of the Licensing Sub-Committee, as outlined in the transmittal letter (April 25, 2000) from the City Clerk, be adopted:

(1) by December 1, 2000, all taxis in the City have emergency lights as described in the report (March 13, 2000) from the Commissioner of Urban Development Services, and one of the following:

(i) a taxicab security camera to meet specifications approved by the Municipal Licensing and Standards Division of the Urban Development Services; or

(ii) an automatic vehicle location/global positioning system (AVL/GPS) to meet specifications approved by the Municipal Licensing and Standards Division;

(2) an approved shield safety device remain as a complementary, voluntary safety device;

(3) by July 1, 2000 and working with the taxi industry, the Municipal Licensing and Standards Division develop technical specifications for each of the safety devices cited in (1)(i) and (ii) above. The specifications shall, at a minimum, ensure the following:

(a) no one product or supplier shall gain a monopoly, and technical standards shall be set to allow reasonable product choice;

(b) camera photographic records are strictly controlled and are only accessible to the police or other appropriate officials. Any violation of those controls will result in an immediate licence revocation hearing at the Toronto Licensing Tribunal;

(c) AVL/GPS systems are appropriately monitored;

(4) all costs for safety devices be borne by the person to whom the plate is registered;

(5) as an immediate step, the Municipal Licensing and Standards Division arrange a meeting as soon as possible between the taxi industry and the Toronto Police Service to examine ways to improve police response to emergency situations, and to ensure that drivers understand the appropriate use of 911;

(6) working with the industry, the Municipal Licensing and Standards Division continue to study new designs of safety devices;

(7) working with the industry, the Municipal Licensing and Standards Division explore new technologies, expected to be common by 2001, that will allow 911 dispatchers to determine the location of any cellular telephone emergency calls or signal from ordinary cell phones. When that technology is available, the City explore mandating the use of cellular emergency signalling devices to 911;

(8) with respect to improved focus on driver safety, a permanent sub-committee of the Taxi Advisory Committee (TAC) be formed immediately after elections for the TAC. The Driver Safety Sub-Committee should have the following mandate:

- **review police data and victimization studies on driver safety**
- **examine new technologies and procedures;**
- **examine and encourage the development of a purpose-built taxi vehicle;**
- **conduct ongoing liaison with the police;**
- **provide advice on driver education; and**
- **make semi-annual recommendations for procedural or technological improvements to the TAC and Licensing Sub-Committee;**

(9) the Municipal Licensing and Standards Division support the work of the Sub-Committee, and continue to study the impact of various safety devices/procedures on ridership;

(10) with respect to education, the new Driver Refresher Training course mandated by Council in 1998 have a major component dealing with driver safety, and integrate the driver safety unit of the Ambassador Training Program;

(11) the Municipal Licensing and Standards Division include safety information in future issues of *Fare Exchange* and in mailings to drivers;

(12) the Municipal Licensing and Standards Division, in conjunction with the private sector and other partners, continue to provide periodic safety information in Taxi Industry Publications;

(13) the Municipal Licensing and Standards Division, in conjunction with private sector and other partners, take steps to educate the public about taxi emergency lights and the appropriate response;

(14) taxi brokerage firms be required to file a Safety Plan with the Commissioner of Urban Development Services to deal with driver emergencies; and

(15) an Expression of Interest be developed in respect of a taxicab security camera and in respect of an automatic vehicle location/global positioning system (AVL/GPS).

The Planning and Transportation Committee submits the following transmittal letter (April 25, 2000) from the City Clerk, Licensing Sub-Committee:

Recommendations:

The Licensing Sub-Committee recommends that:

(1) the report (March 13, 2000) from the Commissioner of Urban Development Services be adopted subject to the following amendments, and the recommendations be re-numbered accordingly:

(a) Recommendation (1) be amended by deleting section (i) which reads: "A shield of a type approved by Municipal Licensing and Standards (MLS), or";

(b) Recommendations (1)(ii) and (iii) be amended by deleting the words in each recommendation "of a type approved by MLS" and substituting them with the words "to meet specifications approved by the Municipal Licensing and Standards Division of the Urban Development Services";

(c) Recommendation (3) be amended by deleting the words "be borne by the taxicab owner" and substituting them with the words "be borne by the person to whom the plate is registered.";

(d) Recommendation (5) be amended by deleting the words "MLS study new designs of partial shields now being tested in Calgary and elsewhere" and substituting them with the words "MLS continue to study new designs of safety devices";

(e) Recommendation (8) be amended by deleting the words "and conduct studies" and substituting them with the words "continue to study";

(2) an approved shield safety device remain as a complementary, voluntary safety device;

(3) taxi brokerage firms be required to file a Safety Plan with the Commissioner of Urban Development Services to deal with driver emergencies; and

(4) an Expression of Interest be developed in respect of a taxicab security camera and in respect of an automatic vehicle location/global positioning system (AVL/GPS).

The Sub-Committee also requested the Commissioner of Urban Development Services to continue monitoring the Global Positioning System (GPS) safety device with the intention of formulating recommendations thereon in the future.

In so doing, the Sub-Committee recommended to the Planning and Transportation Committee that:

(1) by December 1, 2000, all taxis in the city have emergency lights as described in the report (March 13, 2000) from the Commissioner of Urban Development Services, and one of the following:

(i) a taxicab security camera to meet specifications approved by the Municipal Licensing and Standards Division of the Urban Development Services; or

(ii) an automatic vehicle location/global positioning system (AVL/GPS) to meet specifications approved by the Municipal Licensing and Standards Division;

(2) an approved shield safety device remain as a complementary, voluntary safety device;

(3) by July 1, 2000 and working with the taxi industry, the Municipal Licensing and Standards Division develop technical specifications for each of the safety devices cited in (1)(i) and (ii) above. The specifications shall, at a minimum, ensure the following:

(a) no one product or supplier shall gain a monopoly, and technical standards shall be set to allow reasonable product choice;

(b) camera photographic records are strictly controlled and are only accessible to the police or other appropriate officials. Any violation of those controls will result in an immediate license revocation hearing at the Toronto Licensing Tribunal;

(c) AVL/GPS systems are appropriately monitored;

(4) all costs for safety devices be borne by the person to whom the plate is registered;

(5) as an immediate step, the Municipal Licensing and Standards Division arrange a meeting as soon as possible between the taxi industry and the Toronto Police Service to examine ways to improve police response to emergency situations, and to ensure that drivers understand the appropriate use of 911;

(6) working with the industry, the Municipal Licensing and Standards Division continue to study new designs of safety devices;

(7) working with the industry, the Municipal Licensing and Standards Division explore new technologies, expected to be common by 2001, that will allow 911 dispatchers to determine the location of any cellular telephone emergency calls or signal from ordinary cell phones. When that technology is available, the City explore mandating the use of cellular emergency signalling devices to 911;

(8) with respect to improved focus on driver safety, a permanent sub-committee of the Taxi Advisory Committee (TAC) be formed immediately after elections for the TAC. The Driver Safety Sub-Committee should have the following mandate:

- review police data and victimization studies on driver safety;
- examine new technologies and procedures;
- examine and encourage the development of a purpose-built taxi vehicle;
- conduct ongoing liaison with the police;
- provide advice on driver education; and
- make semi-annual recommendations for procedural or technological improvements to the TAC and Licensing Sub-Committee;

(9) the Municipal Licensing and Standards Division support the work of the Sub-Committee, and continue to study the impact of various safety devices/procedures on ridership;

(10) with respect to education, the new Driver Refresher Training course mandated by Council in 1998 have a major component dealing with driver safety, and integrate the driver safety unit of the Ambassador Training Program;

(11) the Municipal Licensing and Standards Division include safety information in future issues of *Fare Exchange* and in mailings to drivers;

(12) the Municipal Licensing and Standards Division, in conjunction with private sector and other partners, continue to provide periodic safety information in Taxi Industry Publications;

(13) the Municipal Licensing and Standards Division, in conjunction with private sector and other partners, take steps to educate the public about taxi emergency lights and the appropriate response;

(14) taxi brokerage firms be required to file a Safety Plan with the Commissioner of Urban Development Services to deal with driver emergencies; and

(15) an Expression of Interest be developed in respect of a taxicab security camera and in respect of an automatic vehicle location/global positioning system (AVL/GPS).

The Sub-Committee also received a presentation on taxicab driver safety by the Executive Director, Municipal Licensing and Standards Division.

Background:

At its meeting on April 17, 2000, the Licensing Sub-Committee considered the following reports/communications:

- (March 13, 2000) from the Commissioner, Urban Development Services, reporting, as requested by the Licensing Sub-Committee at its meeting on January 24, 2000, on:

  (i) the possibility of a mandatory Global Positioning System (GPS) for taxis, and to meet with ambulance officials to determine the feasibility of using the system already in place for the Toronto ambulance system;

  (ii) the merits and costs related to GPS, lights, shields, strong boxes, cameras and to explore safety devices used by other jurisdictions;

  (iii) other GPS systems available, the cost of these systems, and the protocols necessary to make the GPS system workable as a safety measure;

  (iv) the possible use of a switch to open radio frequency;

  (v) the means by which safety devices will be paid for;

  (vi) a Bill of Rights for drivers; and

  (vii) the results of the City's survey of the taxi industry on taxi safety devices,

  and recommending that:

  (1) With respect to safety devices, by December 1, 2000, all taxis in the city have the following:

  Emergency lights as described in this report, and one of the following:

  (i) a shield of a type approved by Municipal Licensing and Standards (MLS), or

  (ii) a taxicab security camera of a type approved by MLS, or

  (iii) an automatic vehicle location/global positioning system (AVL/GPS) of a type approved by MLS;

  (2) working with the taxi industry, by July 1, 2000, MLS develop technical specifications for each of the above. The specifications shall, at a minimum, ensure the following:

  (a) no one product or supplier shall gain a monopoly, and technical standards shall be set to allow reasonable product choice;

(b) shields shall not restrict heating or cooling, pose a safety risk to the passenger, or reduce legroom below current standards;

(c) camera photographic records are strictly controlled and are only accessible to the police or other appropriate officials. Any violation of those controls will result in an immediate license revocation hearing at the Toronto Licensing Tribunal;

(d) AVL/GPS systems are appropriately monitored;

(3) all costs for safety devices be borne by the taxicab owner;

(4) as an immediate step, MLS arrange a meeting as soon as possible between the taxi industry and the Toronto Police Service to examine ways to improve police response to emergency situations, and to ensure that drivers understand the appropriate use of 911;

(5) working with the industry, MLS study new designs of partial shields now being tested in Calgary and elsewhere;

(6) working with the industry, MLS explore new technologies, expected to be common by 2001, that will allow 911 dispatchers to determine the location of any cellular telephone emergency calls or signal (from ordinary cell phones). When that technology is available, the city explore mandating the use of cellular emergency signalling devices to 911;

(7) with respect to improved focus on driver safety, a permanent sub-committee of the Taxi Advisory Committee (TAC) be formed immediately after elections for the TAC. The Driver Safety Sub-Committee should have the following mandate:

- review police data and victimization studies on driver safety;
- examine new technologies and procedures;
- examine and encourage the development of a purpose-built taxi vehicle;
- conduct ongoing liaison with the police;
- provide advice on driver education;
- make semi-annual recommendations for procedural or technological improvements to the TAC and Licensing Sub-Committee:

(8) MLS support the work of the Sub-Committee, and conduct studies on the impact of various safety devices/procedures on ridership;

(9) with respect to education, the new Driver Refresher Training Course mandated by Council in 1998 have a major component dealing with driver safety, and integrate the driver safety unit of the Ambassador Training Program;

(10) MLS include safety information in future issues of *Fare Exchange* and in mailings to drivers;

(11) MLS, in conjunction with private sector and other partners, continue to provide periodic safety information in Taxi Industry Publications; and

(12) MLS, in conjunction with private sector and other partners, take steps to educate the public about taxi emergency lights and the appropriate response.

- communication (February 7, 2000) from Gerald H. Manley forwarding a submission regarding safety devices;

- communication (March 24, 2000) from Ian Allaby requesting that the Sub-Committee either:

  (a) request MLS to provide a comprehensive report canvassing items that might form the subject matter for a Drivers Bill of Rights and proposing a timetable for industry consultation; or

  (b) request the new Taxicab Advisory Committee to take up this question and to make recommendations after appropriate consultation;

- communication (undated) from Jim Bell, President, Toronto Taxicab Alliance, forwarding the views of the Toronto Taxicab Alliance as they relate to taxi driver safety;

- communication (undated) from Eric Gareau, Hegyi Geo Technologies International Inc. (HGI), in conjunction with Mobilcom, forwarding a submission respecting the GeoTrak+ communications system;

- communication (April 17, 2000) from Gerald H. Manley forwarding a submission respecting safety initiatives;

- communication (undated) from Ted Elliott forwarding a submission, titled "A Different Slant on Cab Driver Safety".

The following persons addressed the Sub-Committee:

- Gerald H. Manley, Taxi Owner
- P.C. Ed Heinrichs, Toronto Police
- Eric Gareau, Geo Technologies International Inc., in conjunction with Mobilcom
- Jim Bell, on behalf of the Toronto Taxicab Alliance
- Edward Elliott
- Lloyd Pollock, Celebrity Taxi
- Steve Holmes, Verifeye
- Gene MacDonald, Cab Connection
- Wilma Walsh, Ambassador Taxi Association
- Khadija (Kathy) Sunderji
- Ian Allaby
- Nabil Charbel, Staff Representative, Local 1688, Retail Wholesale Canada CAW Division

- Eugene Meikle, President, Toronto Taxi Drivers' Association
- Frank Carnevale, City Hall Group Inc.

(Report dated March 13, 2000, from the
Commissioner, Urban Development Services,
titled "Taxicab Driver Safety")

Purpose:

The purpose of this report, as requested by the Licensing Sub-Committee at its meeting on January 24, 2000, is to report on:

(i) the possibility of a mandatory Global Positioning System (GPS) for taxis, and to meet with ambulance officials to determine the feasibility of using the system already in place for the Toronto ambulance system;

(ii) the merits and costs related to GPS, lights, shields, strong boxes, cameras and to explore safety devices used by other jurisdictions;

(iii) other GPS systems available, the cost of these systems, and the protocols necessary to make the GPS system workable as a safety measure;

(iv) the possible use of a switch to open radio frequency;

(v) the means by which safety devices will be paid for;

(vi) a Bill of Rights for drivers; and

(vii) the results of the City's survey of the taxi industry on taxi safety devices.

Financial Implications and Impact Statement:

There will be some new costs to the City associated by these recommendations in fiscal year 2000; however, they can be addressed within the current budget request.

Any increases for future years shall be reflected during the appropriate budget processes.

Recommendations:

It is recommended that:

(1) with respect to safety devices, by December 1, 2000, all taxis in the city have the following:

Emergency lights as described in this report; and one of the following:

(i) a shield of a type approved by Municipal Licensing and Standards (MLS), or

(ii) a taxicab security camera of a type approved by MLS, or

(iii) an automatic vehicle location/global positioning system (AVL/GPS) of a type approved by MLS;

(2) working with the taxi industry, by July 1, 2000, MLS develop technical specifications for each of the above. The specifications shall, at a minimum, ensure the following:

- no one product or supplier shall gain a monopoly, and technical standards shall be set to allow reasonable product choice;

- shields shall not restrict heating or cooling, pose a safety risk to the passenger, or reduce legroom below current standards;

- camera photographic records are strictly controlled and are only accessible to the police or other appropriate officials. Any violation of those controls will result in an immediate license revocation hearing at the Toronto Licensing Tribunal; and

- AVL/GPS systems are appropriately monitored;

(3) all costs for safety devices be borne by the taxicab owner;

(4) as an immediate step, MLS arrange a meeting as soon as possible between the taxi industry and the Toronto Police Service to examine ways to improve police response to emergency situations, and to ensure that drivers understand the appropriate use of 911;

(5) working with the industry, MLS study new designs of partial shields now being tested in Calgary and elsewhere;

(6) working with the industry, MLS explore new technologies, expected to be common by 2001, that will allow 911 dispatchers to determine the location of any cellular telephone emergency calls or signal (from ordinary cell phones). When that technology is available, the city explore mandating the use of cellular emergency signalling devices to 911

(7) with respect to improved focus on driver safety, a permanent sub-committee of the Taxi Advisory Committee (TAC) be formed immediately after elections for the TAC. The Driver Safety sub-committee should have the following mandate:

- review police data and victimization studies on driver safety;
- examine new technologies and procedures;
- examine and encourage the development of a purpose-built taxi vehicle;
- conduct ongoing liaison with the police;

- provide advice on driver education;
- make semi-annual recommendations for procedural or technological improvements to the TAC and Licensing Sub-Committee;

(8) MLS support the work of the sub-committee, and conduct studies on the impact of various safety devices/procedures on ridership;

(9) with respect to education, the new Driver Refresher Training course mandated by Council in 1998 have a major component dealing with driver safety, and integrate the driver safety unit of the Ambassador Training Program;

(10) MLS include safety information in future issues of *Fare Exchange* and in mailings to drivers;

(11) MLS, in conjunction with private sector and other partners, continue to provide periodic safety information in Taxi Industry Publications; and

(12) MLS, in conjunction with private sector and other partners, take steps to educate the public about taxi emergency lights and the appropriate response.

Background:

At the January 24, 2000 meeting of the Licensing Sub-Committee of the Planning and Transportation Committee, taxi safety issues were addressed. The Acting Commissioner of Urban Development Services was directed to report back on the merits and costs related to Global Positioning Systems (GPS), emergency lights, taxicab shields, strongboxes and cameras, the time frame for implementation and to explore these safety devices as used by other jurisdictions.

Comments

Global Positioning System (GPS)

Overview of AVL/GPS

Description/Component Parts

The AVL/GPS system allows users to map, plot, track, locate, navigate and communicate information. It has been used in many industries world-wide for a number of years. For example, AVL/GPS technology has been used in the areas of survey and mapping, transportation, agriculture, aviation, recreational boating and fishing, retailers and by the military. It is relatively new technology for use in the taxicab industry.

AVL consists of 3 inter-related components:

(a) GPS receiver
(b) communications device
(c) central computer
(a) GPS Receiver

A GPS receiver is a device capable of receiving signals from navigation satellites passing overhead. The receiver performs mathematical calculations based on information from a minimum of three satellites and determines vehicle location in terms of latitude and longitude. Vehicle location is accurate to approximately 100 square metres, unless Differential GPS (DGPS) is used. DGPS corrects for errors in distance and determines vehicle location accurately within a couple of metres.

(b) Communications Device

A wireless communications device (e.g. cellular phone, dispatch radio or designated transmitter) is used to transmit vehicle location to a computer at a central location.

(c) Central Computer at Dispatch

The central computer plots the vehicle location information from the GPS on a map and tracks and interprets vehicle location on an ongoing basis, 24 hours a day. The central computer requires specialized hardware and software products. It must be powerful and sophisticated enough to interpret navigation signals and process incoming vehicle location from several hundred taxicabs with GPS receivers with no delay in time. The system also requires a backup system to protect against system failures.

Uses of AVL/GPS

AVL/GPS can function either as a vehicle dispatch/monitoring system and/or a safety alarm system. Both functions are applicable to taxicabs. Each function has its own merits.

AVL/GPS as a Dispatch System

Knowing the precise location of all vehicles lends itself to more efficient fleet management, improved customer service and faster customer response times. The system can automatically track the location and status of an entire fleet and use map data to identify the closest vehicle to a specified address. AVL/GPS also has the capability to store vehicle travel patterns over time, log hours of use and monitor vehicle idling time.

AVL/GPS as a Safety Alarm System

AVL/GPS can function exclusively as an alarm system, although staff was unable to locate any dispatchers using AVL/GPS as a safety system exclusively.

When AVL/GPS is used as an alarm system, it does not require constant monitoring of all fleet vehicles on an ongoing basis, 24 hours a day. It is only activated when a potentially dangerous situation arises. In these situations, a panic button would activate the AVL/GPS to start the sequence of events. This can take anywhere from 5 to 30 seconds and therefore results in a longer reaction time for help to arrive.

Accuracy and Reliability Issues

AVL/GPS has proven to be an excellent dispatch and asset management system for the taxi industry in a number of U.S., European and Canadian cities. Benefits include improved fleet efficiency, faster customer response times and ability to locate vehicles quickly and accurately.

Before mandating AVL/GPS several issues need to be addressed.

(a) Implementation/Technical Issues

Exact satellite position readings are not 100 percent accurate. Accuracy is dependent upon type of GPS receiver. For example, the Toronto Ambulance GPS is accurate to 100 square metres, unless DGPS is used to increase accuracy.

A GPS receiver may sometimes be blocked by buildings or overhead bridges and, therefore, may be unable to obtain the necessary information to determine vehicle location in the downtown core. Temperature changes and/or weather conditions may also affect reliability of GPS receivers.

(b) Driver/Safety Issues

Although AVL/GPS is a reliable technology it is still dependent upon the driver's ability to activate the panic button in a potentially dangerous situation. Furthermore, satellite signals may be blocked or disarmed by assailants.

False alarms are part and parcel of any AVL/GPS system and, as such, put an added demand on system monitoring. If mandated, staffing and monitoring needs must be addressed.

(c) Costs/Options

Pre-packaged AVL/GPS are available. Attachment 'A' contains a list of companies who manufacture and supply AVL/GPS to the taxi industry.

The cost of purchasing an AVL/GPS for 3,500 taxicabs is estimated between $3.5 - $4.0 million. This cost does not include customizing the pre-packaged system to interface with existing vehicle equipment. Off-the-shelf GPS location equipment utilizing a standard cellular phone costs approximately $1,500.00 with a $20.00 a month monitoring fee.

If AVL/GPS is mandated, either as a vehicle locating system and/or as a safety alarm system, the same investment is required; although staff was unable to locate any dispatcher who was using AVL/GPS technology exclusively as a safety option.

One-time costs include the purchase of hardware and software, customization and installation of equipment. Lifespan of equipment is approximately 10 to 15 years.

Ongoing costs would include:

- staffing and training of personnel to monitor equipment and response to emergency alarms, cost of inspection, maintenance and testing of devices; and
- software costs.

Ongoing costs are substantial. One manufacturer estimated on-going monthly costs to be between $4,000 and $6,000 per dispatch service.

(d) Alarm Monitoring Companies

Staff has contacted a number of Toronto area companies specializing in home/business alarm monitoring systems to determine their interest in monitoring GPS for the taxi industry. Overall, the response rate from the companies contacted was favourable.

MLS staff met with the General Manager of Ambulance Services to discuss the feasibility of the City's taxicab industry using the GPS already in place at Toronto Ambulance. It was determined that although the possibility exists from a technical standpoint, it would require a great deal of capital outlay on the part of the industry to get on-line. Maintenance costs would also be substantial after the initial outlay. Each individual taxi would have to be equipped with a GPS (satellite) receiver and antenna, a radio to transmit the location information to the control centre, and a control switch in the vehicle which would trigger the radio to send the signal. An appropriate software enhancement would be required at the monitoring end to enable communication with the system. Another problem associated with applying taxis to the present system is that the ambulances are based at a particular location and are tracked by the system relative to this base position. Taxis are not based at a fixed location and do not necessarily visit particular locations on any regular basis.

Summary:

Analysis has shown that AVL/GPS can be a highly effective tool for the industry to increase productivity and to boost driver safety. As identified in this report, there is a range of options to consider. Implementing a AVL/GPS system involves changing the way the industry performs its day-to-day business. Drivers must be willing to be monitored 24 hours a day and have calls dispatched from a computer. Unlike other safety options such as cameras or shields, AVL/GPS involves a process. It can provide consistency throughout the industry in terms of dispatching and monitoring vehicles and should be considered a viable option for the industry.

Attachment 'A'

List of AVL/GPS Manufacturers

(1) Digital Dispatch Systems Inc.
11920 Forge Place
Richmond, B.C. V7A 4V9

(2) Gemini Positioning Systems Ltd.
100, 6130 3rd Street S.E.
Calgary, Alberta, CANADA
T2H 1K4

(3) Global Dispatch Technologies Inc.
1726 25th Avenue N.E.
Calgary, Alberta, Canada
T2E 7K1

(4) Hegyi GeoTechnologies International Inc.
707-170 Laurier Ave. W.
Ottawa, Ontario, CANADA
K1P 5V5

(5) Magellan Corporation/ Ashtech Precision Products
960 Overland Court
San Dimas, CA 91773

(6) Raywood Communications
1270 Ferntree Gully Road
Scoresby, Vic, 3179, Australia

(7) Trimble Navigation
645 North Mary Avenue
Sunnyvale, CA 94086

Emergency Lights

Description of Emergency Lights

Taxicab emergency lights are produced in a number of styles, such as a system which when activated causes the roof light of the taxicab to flash. Another system incorporates two lights, one behind the front grill and one at the rear of the taxicab which when activated flash intermittently at the front and rear of the vehicle. Four suppliers of taxicab emergency lights were identified, three in Canada and one in the United States (Attachment B).

Installation

Taxicab emergency light installation varies depending on the manufacturers' product. Taxicab emergency lights are either independently installed on the vehicle or are incorporated as a function of the existing roof sign attached to the vehicle. A switch, readily available to the driver of the taxicab, activates the system. It was found that most taxicab equipment suppliers identified in the City of Toronto were able to readily provide the taxicab industry with the electronic equipment necessary to install an emergency light system.

Cost

The taxicab emergency lights available through the identified suppliers, range in price from $15.00 to $50.00. These prices do not include installation costs, which are approximately $25.00. Insurance costs are not affected by the installation of a taxicab emergency light system.

How Taxicab Emergency Lights are Used

The driver in an emergency situation can activate taxicab emergency lights installed on the vehicle or as a function of the existing roof sign by engaging a switch. Upon activation the emergency lights or roof sign flash indicating that the taxicab is in distress. This activation should attract the attention of police or other taxicabs to the particular taxicab driver's predicament and will alert others to assist.

Evaluation of Taxicab Emergency Lights

Taxicab emergency lights are a reactive safety measure. Thefts and attacks are indicated by the activation of the emergency lights by the taxicab driver. The driver, if operating in a populated area, upon activating the emergency lights could attract the attention of police, other taxi drivers or the public to his situation. This would require public knowledge of the operation of this emergency device.

Staff investigated how taxicab emergency lights were used in taxis in Toronto and in other jurisdictions to evaluate their effectiveness. The use of taxicab emergency lights in the City of Toronto was not found to be a widespread practice. No taxicab regulators were found to have mandated any type of emergency lighting system in their jurisdictions. Also, no jurisdictions were currently studying taxicab emergency lights as a safety measure for possible implementation.

Staff were unable to identify the number of taxicabs in Toronto equipped with emergency lights. It was found that taxicab emergency lights were the third choice of the taxicab industry stakeholders responding to the taxicab industry survey conducted by the Municipal Licensing and Standards Division, Taxi Industry Unit.

Implementation

By-law

The current by-law allows owners and drivers to install taxicab emergency lights. If Council wishes to mandate taxicab emergency lights, a by-law amendment would be required. Given that there are local suppliers in Toronto, the industry would require a lead-time of approximately one month to install the emergency lights.

It is recommended that if taxicab emergency lights were to be mandated a by-law amendment would require the following:

(1) taxicab emergency lights be of a design approved by the Municipal Licensing and Standards Division; and

(2) be subject to inspection.

In addition to amending the by-law, staff in conjunction with the taxicab industry would need to conduct a communication campaign to educate the public on the meaning of flashing emergency lights used as a safety device on a taxicab.

Summary:

Based on our investigation, there seems to be some support for mandating taxicab emergency lights. If Council decides to mandate the use of emergency lights, approximately one month is needed for the industry to complete this task. Furthermore, the Licensing By-law would require an amendment and a communications strategy, as described above, would need to be developed.

Attachment "B"

Taxicab Emergency Lights Suppliers

(1) Custom Contracting
27 Bathurst Street
Toronto, On
Jay Scheetz Jr.
Phone: (416) 504-3055

(2) Manntel
2568 St. Clair Avenue West
Toronto, On
Beant Mann
Phone: (416) 766-6266

(3) Metro Shop Inc.
New York City, N. Y.
Amos Taman
Phone: (718) 786-8585

(4) Mobilcom
457 King Street East
Toronto, On
Eric Gareau
Phone: (416) 866-8787

Cameras

Description of Taxicab Cameras

The taxicab camera system includes a small camera unit that mounts above or beside the rear-view mirror. The controller/recorder unit can be mounted behind the dashboard, in the trunk or any number of other locations in the vehicle, to prevent tampering by a perpetrator. The camera's built-in infrared illuminator provides clear images of subjects even in total darkness. The controller may be programmed to acquire single or multiple pictures based on the operation of the taximeter, opening and closing of doors, or a manual "emergency button", which causes the camera to take a series of pictures. The controller/recorder electronically stores a number of pictures, complete with the individual picture's time, date and a vehicle identification code. In the event of a criminal incident, authorized personnel may download the stored pictures to a computer for viewing and archiving.

Two suppliers of taxicab cameras were identified: one in Canada and one in the United States (see Attachment "C"). Staff contacted these distributors regarding the availability and cost of the cameras.

Installation

Taxicab camera installation varies slightly depending on the manufacturer. The system includes a small camera unit that mounts above or beside the rear-view mirror, and a controller unit that mounts behind the dashboard, in the trunk, or elsewhere in the taxicab. Installation and transfer from vehicle to vehicle can be effected easily. The installation takes approximately one hour to complete and the manufacturers will provide training to the installers.

Cost

The taxicab cameras available through the identified suppliers are in the area of $900.00 to $1000.00. This price does not include installation costs. Installation costs are approximately $70.00 per unit. Price may be reduced through bulk orders and installation. The suppliers will arrange financing or leasing options upon request.

How Taxicab Cameras are Used

Taxicab cameras in the interior of cabs are designed to protect drivers by both deterring acts of violence and providing images of offenders. Passengers are made well aware that these devices are taking pictures of everyone in the vehicle. The cameras are highly visible to passengers. Large signs to inform passengers of the presence of the camera in the taxicab are recommended.

The camera is most effective as a deterrent. The camera is not designed to provide immediate assistance nor is it expected to record an actual crime. Rather, it improves apprehension after an event and can be used to identify offenders. How successful the device is in improving safety will depend, to some extent, on the resulting conviction rate for offenders whose images were recorded by the camera. In another jurisdiction: Australia, the images gathered by the camera have been used as evidence in court and used in successful prosecution.

Evaluation of Taxicab Cameras

Staff investigated how taxicab cameras were used in taxis in Toronto and in other jurisdictions to evaluate the effectiveness of taxicab cameras. Taxi regulators in a number of Australian cities have recently mandated cameras in taxicabs and New York City regulators are currently involved in a pilot project studying the mandating of taxicab cameras as a safety measure for possible implementation.

In Perth, Western Australia, taxicab cameras were mandated in December 1997, after an eighteen-month study. The cameras were not necessarily the most effective safety option available, but were supported for the speed of implementation and non-intrusiveness. Reliability in a vehicle installation was considered. It was found that the solid state technology of the camera is virtually maintenance free and can withstand vibration and jolts. Taxicab cameras are believed to have reduced attacks on taxicab drivers.

Staff identified approximately twenty taxicabs in Toronto equipped with a camera. The images from the cameras have been utilized to initiate court proceedings and have been used successfully in prosecutions for transportation fraud. It was found that taxicab cameras were the second choice of the taxicab industry stakeholders responding to the taxicab industry survey regarding taxicab driver safety, conducted by the Municipal Licensing and Standards Division, Taxi Industry Unit.

Implementation

By-law

The current by-law allows owners and drivers to install taxicab cameras. If Council wishes to mandate taxicab cameras, a by-law amendment would be required. Given that there is a local supplier and a camera is currently in use in Toronto, the industry would require a lead-time of approximately three months to install the cameras.

It is recommended that if taxicab cameras were to be mandated, a by-law amendment would require the following:

(1) taxicab cameras be of a design approved by the Municipal Licensing and Standards Division; and

(2) be subject to inspection.

If taxicab cameras are mandated, it will be necessary to review the cameras' operation with regards to the Municipal Freedom of Information and Protection of Privacy Act.

In addition to amending the by-law, taxicab driver training in the use of the cameras would be required and staff in conjunction with the industry would need to conduct a communication campaign to educate the public on cameras used as safety devices.

Summary:

Based on our investigation, there seems to be substantial support for mandating taxicab cameras. If Council decides to mandate the use of cameras, approximately three months is needed for the industry to complete this task. Furthermore, a Licensing By-law amendment would be required and a communications strategy, as described above, would need to be developed.

Attachment "C"

Taxicab Camera Suppliers

(1) Raywood Communications U.S.A.
510 Bering Street, Suite 300
Houston, Tx
Mark Ward
Phone: (713) 974-8880
Fax: (713) 974-8875

(2) VerifEye
245 Fairview Mall Drive, Suite 602
Toronto, On
Steven D. Holmes
Phone: (416) 773-0222
Fax: (416) 773-0555

Shields

Description of Safety Shield

Taxicab shields are produced in a number of styles, such as full shields extending from the roof to the floor of the vehicle or half shields extending from the roof to approximately halfway across the top of the front seat of the vehicle directly behind the driver. Shields can be configured a number of other ways which incorporate openings and coin slots. Some models can be easily removed and stored in the trunk depending on the owner or drivers' wishes. These shields are currently manufactured for a number of vehicle makes and models and can be customized to suit other purchasers' requirements or vehicles. Eight suppliers of taxicab shields were identified, seven in Canada and one in the United States (Attachment "D"). Staff contacted a number of these distributors regarding the availability and cost of the shields.

Installation

Taxicab shield installation varies depending on the manufacturer, the type of shield (half or full shield) and the vehicle in which it is to be installed. These installations may only require two holes to be drilled in the roof to install a half shield or in the case of a full shield the installation may require holes to be drilled in the floor and door posts of the vehicle. This may affect the vehicle's resale value if sold for use other than a taxi.

Cost

The taxicab shields available through the identified suppliers range in price from $130.00 for a half shield to $700.00 for a full shield. These prices do not include installation costs which range from $40.00 to $100.00, depending on the type of shield installed. Prices may be reduced through bulk orders. Some suppliers offer financing or leasing arrangements.

Insurance costs are not affected by the installation of a taxicab shield in the vehicle at this time. An insurance company representative, Mr. Jack Adamson, advised that if shields were mandated, the insurance industry would examine claims over a two-year period to determine if further insurance costs should be levied due to any injuries caused by the installation of shields. This, however, is a normal function of risk management in the insurance industry.

How Taxicab Shields are Used

Taxicab shields are installed between the front and rear seats of the vehicle, physically separating the taxicab driver from the passengers seated in the rear of the vehicle. A half shield extends to approximately halfway across the top of the rear seat behind the driver, whereas the full shield extends to the bottom of the rear seat or the floor of the vehicle. Both shields will prevent taxicab drivers from being attacked from behind by a passenger.

Evaluation of Taxicab Shields

Taxicab shields are a preventative safety measure. Thefts and attacks are reduced by separating the taxicab driver from possible attackers in the rear seat. The driver's sense of security is enhanced and the shield may allow the driver more time to activate his two-way radio, cellular phone or any other safety device available to him.

Staff investigated how taxicab shields were used in taxis in Toronto and in other jurisdictions to evaluate the effectiveness of taxicab shields. Taxi regulators in New York City, N.Y. and Chicago, Ill., have mandated shields in taxicabs and a number of other jurisdictions are currently studying various taxicab safety measures for possible implementation.

In New York City, the taxicab shield regulation was uniformly enforced in the early 1990's; however, taxicabs which are exclusively owner-driven are exempt from requiring a shield, but then must be equipped with a cellular phone for emergency purposes. Taxicab shields are believed to reduce attacks on taxicab drivers but no statistics have been gathered by the regulators. Shields were found, in some cases, to interfere with passenger and driver's leg room. Issues have arisen regarding possible injuries to passengers as a result of the shields, though these injuries are greatly reduced by the passenger's use of the available seat belts. Shields were also found to interfere with air circulation within the taxicab. New York now requires new taxicabs to be equipped with an after-market blower for the passenger compartment which can be controlled by the passenger. There are no special provisions to accommodate persons with disabilities. The disabled community is served by paratransit permit contracts instituted by the city which created another class of taxicab licence.

Similar issues were identified in Chicago, and taxicab shields were mandated as in New York City. This occurred on January 1, 1998, with an exemption from the use of a shield for owner driven vehicles. Taxicab shields are believed to reduce attacks on taxicab drivers but no statistics have been gathered by the regulators. Issues have arisen regarding passenger and drivers' leg room in shield equipped taxicabs. No concerns have been raised with regard to possible injuries to passengers as a result of shields. Obstruction of air circulation by the installation of shields was addressed by the use of a tube vent for air transfer to the passenger compartment. Disability issues are dealt with by requiring the large brokerages to provide wheelchair accessible taxicabs, of which there are currently thirty.

Staff identified approximately fifty taxicabs in Toronto equipped with shields. It was generally found that taxicab shields were the first choice of the taxicab industry stakeholders responding to the taxicab industry survey conducted by the Municipal Licensing and Standards Division, Taxi Industry Unit.

Implementation

By-law

The current by-law allows owners and drivers to install taxicab shields. If Council wishes to mandate taxicab shields, a by-law amendment would be required. Given that there are local suppliers and shields currently in use in Toronto, the industry would require a lead time of approximately three months to install the shields.

It is recommended that if taxicab shields were to be mandated a by-law amendment would require the following:

(1) taxicab shields be of a design approved by MLS;
(2) taxicab shields must be configured to accommodate passengers with physical and/or sensory disabilities;
(3) a method for proper air circulation in the passenger compartment;
(4) regulations regarding passenger capacity of taxicabs equipped with shields; and
(5) Be subject to inspection.

In addition to amending the by-law, staff in conjunction with the industry would need to conduct a communication campaign to educate the public on shields used as safety devices.

Summary:

Based on our investigation, there seems to be substantial support for mandating taxicab shields. If Council decides to mandate the use of shields, approximately three months is needed for the industry to complete this task. Furthermore, the Licensing By-law would require an amendment and a communications strategy, as described above, would need to be developed.

Attachment “D”

Taxicab Shield Suppliers

(1) A. T. I. Canada
Udora, On
Bill MacKenzie
Phone: (705) 228-8104

(2) Chinook Plastics
Calgary, Al
Ian White
Phone: (403) 250-7484

(3) Clearview Partitions
Markham, On
Phone: (905) 477-4760

(4) C. R. Laurence Co. Inc.
65 Tigi Court
Jerry Czajko
Concord, On
Phone: (905) 303-7966
Fax: (905) 303-7965
E-mail: crlon@crluarence.com

(5) D & R Electronics Co. Ltd.
881 Edgely Boulevard
Concord, On
Michael Lucarelli
Phone: (905) 660-0620

(6) Lasco International Group
San Francisco, Cal
Phone: (415) 668-3770
Fax: (415) 771-2002
E-mail: www.lascointl.com

(7) Okan Industries
Brampton, On
Steve Okopny
Phone: (905) 799-9790

(8) Pather Plastics
370 Alden Road
Markham, On
Neville Pather
Phone: (905) 475-6549

Survey Results

In January, 2000, a survey on taxi safety devices was sent to approximately 12,000 licensed taxicab drivers, owners and brokerages in the City. The safety devices included surveillance cameras, flashing lights, global positioning systems, plastic shields and strongboxes. Licensees were also asked to rate cost-sharing options and whether the devices should be mandatory.

The survey results are summarized in the following charts:

I am	A Driver	An Owner who drives	An Owner	A Broker	All Categories
Totals	607	138	305	13	1063

Choice	Camera	Flashing Lights	GPS	Shields	Strongbox
1	249	218	76	505	20
2	360	270	148	178	100
3	250	279	268	122	149
4	143	197	370	143	206
5	61	99	201	115	588
Totals	1063	1063	1063	1063	1063
Required by law	540	557	430	636	369
A matter of choice	524	507	633	426	693
Cost – Owner	604	618	545	613	579
Cost – Driver	104	113	95	100	121
Cost- Shared	352	330	417	347	362

Safety shields were the first or second choice of approximately 64 percent of all respondents, cameras were the first or second choice of approximately 57 percent of all respondents, and flashing lights were the first or second choice of approximately 45 percent of the respondents.

Approximately 60 percent of the respondents indicated shields should be mandatory; approximately 51 percent indicated cameras should be mandatory and 52 percent indicated flashing lights should be mandatory.

Within all categories, the majority of respondents indicated that the owner should bear the cost of any safety device. Approximately 1/3 of respondents indicated the costs should be shared between owner and driver.

At the industry workshop on February 15, 2000, the survey results were revealed to the industry members. The drivers' workgroup and the owners/brokers' workgroup both presented overviews of their discussions. The drivers, for the most part, supported shields and the owners/brokers leaned towards a more flexible use of the various safety devices.

The ensuing discussions at the workshop centered on the pros and cons of each device and how the industry as a whole would be impacted by the mandatory application of one or more of the safety devices. It should be noted that at this workshop, owners and brokerages representation outnumbered driver representation. The consensus which emerged at the end of the workshop was that cameras and safety shields were the only viable devices. The group felt that GPS was not cost-effective at this time and would be problematic to apply across the board in the industry.

Flashing lights and strongboxes were deemed not to provide effective safety measures on their own.

The group felt that more information was needed before a definitive preference could be established. Input from the riding public was deemed to be essential to the formation of a sound recommendation. A suggestion that public focus groups be established to solicit public input was well received.

The position of the cab driver's union was clearly stated – shields were the only acceptable safety device. The union representatives were not prepared to waver from this stated position.

Radio Frequency Switches

This would not require any new technology and can be used by any taxi that is radio dispatched. A floor switch could be activated in emergency situations which opens the microphone allowing the dispatcher to hear any conversation in the taxi. It does not allow for vehicle location and can be de-activated by simply turning the radio off.

Drivers' Bill of Rights

This issue needs further study and should be developed by the industry for presentation to the Sub-Committee in terms of a business-related initiative. It is not clear that the regulator can or should intervene in such issues.

Conclusion:

Various safety options for enhanced taxicab safety have been examined in this report. The recommendations presented to the sub-committee reflect the results of the examination into the various safety devices available on the market today. In addition, these recommendations support the various opinions communicated by the taxicab industry.

Contact:

Bruce Robertson
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Telephone: 392-3070; Fax: 392-3102
brobertscity.toronto.on.ca

The Planning and Transportation Committee reports, for the information of Council, also having had before it during consideration of this matter, the following communications/material appended to the report (April 25, 2000) from the City Clerk, Licensing Sub-Committee, which were forwarded to all Members of Council with the agenda of the Planning and Transportation Committee for its meeting of May 16, 2000, and copies thereof are on file in the office of the City Clerk:

- sketch from the Municipal Licensing and Standards Taxi Industry Unit showing a Tally of All Respondents, Figure 1 and First Choice Selection of All Respondent, Figure 1.01

- Survey 2000;

- communication (February 7, 2000) from Gerald H. Manley forwarding a submission regarding safety devices;

- communication (March 24, 2000) from Ian Allaby, requesting that the Sub-Committee either:

  (a) request MLS to provide a comprehensive report canvassing items that might form the subject matter for a Drivers Bill of Rights and proposing a timetable for industry consultation; or

  (b) request the new Taxicab Advisory Committee to take up this question and to make recommendations after appropriate consultation;

- communication (undated) from Jim Bell, President, Toronto Taxicab Alliance, forwarding the views of the Toronto Taxicab Alliance as they relate to taxi driver safety;

- communication (undated) from Eric Gareau, Hegy Geo Technologies International Inc. (HGI), in conjunction with Mobilcom, forwarding a submission respecting the GeoTrak+ communications system;

- communication (April 17, 2000) from Gerald H. Manley, forwarding a submission respecting safety initiatives;

- communication (undated) from Ted Elliott, forwarding a submission, titled “A Different Slant on Cab Driver Safety”;

The Planning and Transportation Committee reports, for the information of Council, also having had before it during consideration of this matter, the following communications/material:

- communication (May 11, 2000) from John McIntyre suggesting that any recommendation which does not allow drivers to choose shields as the front line of defence should be rejected;

- communication (May 16, 2000) from Steve Okopny, President, Okan Industries Ltd., forwarding comments respecting taxi shields and stating that these shields could be used as a form of advertising and source of revenue; and

- communication (undated) from Jim Bell, President, Toronto Taxicab Alliance, recommending that:

  (1) the implementation of an in-car camera or GPS/AVL system be delayed until the commencement of the second mechanical examination cycle, May 1, 2001;

  (2) a training video be produced to reflect the correct use of the mandated safety devices and teach drivers how to effectively act during a robbery and teach robbery preventive procedures; and

  (3) the Committee consider a subsidy to assist the industry in the capital cost outlay of a mandated safety device;

The following persons addressed the Committee with regard to this matter :

- Gerry Manley;
- Jim Bell, Toronto Taxicab Association;
- Eric Gareau, Hegyi Geo Tech. International Inc., in conjunction with Mobilcom;
- Steven Holmes, Verifeye;
- Gene MacDonald, Cab Connection; and
- Steve Okopny, Okan Industries Ltd.

(City Council on June 7, 8 and 9, 2000, had before it, during consideration of the foregoing Clause, a communication (May 28, 2000) from Mr. John McIntyre, requesting that Council adopt the recommendations contained in the report dated March 13, 2000, from the Commissioner of Urban Development Services, headed "Taxicab Driver Safety".)

(City Council also had before it, during consideration of the foregoing Clause, a communication (May 30, 2000) from Mr. Kevin Richardson, in opposition to the adoption of the recommendation requiring mandatory cameras in taxicabs.)