BC Taxi Soft Meter Rule

November 16, 2016

Purposes

1. Enable taxi licensees to use newer "taxi soft meters" to calculate taxi fares in BC.
2. Require that taxi licensees use taxi soft meter models that have been demonstrated to be as accurate and reliable as traditional taxi meters.
3. Integrate accessibility functions into taxi soft meters.

Legislation

Under section 23(2)(a) of the *Passenger Transportation Act*, a Passenger Transportation Licence must expressly authorize the use of a meter in a motor vehicle.

Section 28(2)(a) states:

> If the Board approves in whole or in part, an application forwarded to it under section 26(1), the board may establish the terms and conditions that are to apply to the licence if issued.
>
> ….
>
> (ii) terms and conditions respecting equipment that must be installed or carried on or in motor vehicles operated under the authority of any licence issued in response to the application, and the inspection, testing, adjustments, display and use of that equipment…

Definitions

A "**taximeter**" calculates taxi fares based on distance rates or time rates, or both.

A "**taxi soft meter**" is:

a) any device used as a taximeter that calculates distance travelled on the basis of GPS technology, or
b) any smartphone or tablet with a touchscreen (or a similar mobile device such as an android or apple product) that is loaded with application software to be used as a taximeter.

Applicability

This rule applies to licensed taxi operators in British Columbia that have:

a) express authorization stating that vehicles may or must "be equipped with a meter that calculates fares on a time and distance basis," and
b) Board-approved meter rates.

Rule

1. **Basic Requirements** A licensee may only use taxi soft meters to calculate taxi fares when the licensee meets all of the following requirements.

   The licensee:

   a) has signed and provided, for each taxi soft meter model it uses, a Taxi Soft Meter Declaration of Compliance (Appendix E) to the Passenger Transportation Board ("Board") that it will comply with requirements in this rule, as amended from time to time;

   b) only uses taxi soft meter models (including any software updates or hardware modifications) that meets the performance requirements set out in Appendix A ("System Performance & Tolerances").

   c) only installs and operates taxi soft meters that:

      i. are programmed with current Board-approved taxi rates;

      ii. have hardware and software provisions that protect the rates from unauthorized changes as required in Appendix B ("System Security");

      iii. are:

         - affixed to the vehicle interior to the right of the driver, and
         - physically secured in the vehicle by hardware;

      iv. provide passengers with a printed or electronic receipt at the end of every trip which contains information as required in Appendix C ("Receipt"); and

      v. within 6 months of the date that the Declaration of Compliance (Appendix E) is signed, have a working fare announcer that meets the requirements set out in Appendix D ("Fare Announcer").

2. **Responsibility for Costs** Licensees are responsible for all costs associated with taxi soft meters including their evaluation, inspection, installation, use, maintenance, and removal.
3. **Appendices** Requirements set out in Appendices A through E form an integral part of this rule.
4. **Compliance** Failure to comply with this rule may result in enforcement and compliance actions by the Registrar of Passenger Transportation, or fitness reviews by the Passenger Transportation Board.

Review

The Board will review this policy in December 2017, or earlier if circumstances warrant.

Dates

Date of Rule: November 16, 2016

Effective Date: November 16, 2016

Appendix A: System Performance & Tolerances

Standards & Tolerances

In Canada, taximeters are exempt from approval and testing requirements that are set out in the federal *Weights & Measures Act*. Thus, Measurement Canada does not approve or test taximeters. In the United States, a number of state and federal agencies are involved in the determination and coordination of national standards for taximeters. *The table below provides links to agencies and standards of relevance to this rule.*

At the time of this rule, United States agencies that set "weights and measures" standards for taximeters have yet to establish a national standard in the US for "GPS meters" and other types of taxi soft meters. Future standards and allowable tolerances are expected to be substantially the same as those that now apply to 'mechanical' taximeter technologies. However, adaptations to some test methodologies and types of standards are needed to address differences in the ways that newer technologies calculate distances and taxi fares. This rule combines existing systems performance and tolerance "requirements" for taximeters with test procedures and criteria relevant to taxi soft meter technologies.

Institution	Reference Documents
National Conference on Weights and Measures (NCWM) • National Type Evaluation Program (NTEP)	NTEP-Authorized Evaluation Labs Taximeters with an NTEP Certificate of Conformance
National Institute of Standards and Technology (NIST)	Handbook 44 | Section 5.54 "Taximeters"

Requirements

1. The licensee may only use taxi soft meter models that:
    a) calculate flag rates, distance rates and time rates at distinct periods of time without overlap.
    b) have been evaluated and shown to meet the standards and perform within tolerances set out in section 5.54 of the NIST Handbook 44 (2017 edition or newer), including the following:

i. Section 5.54 (1.3) "Visibility of Indications"

ii. Section 5.54 (N.1) "Distance Test" (i.e. by multiple road tests of approximately 5 kilometres each)

iii. Section 5.54 (N.2) "Time Test"

iv. Section 5.54 (N.3) "Interference Test"

v. Section 5.54 (T) "Tolerances"

2. If a taxi soft meter uses GPS technology to calculate distances and distance rates, the road tests and routes used to evaluate the meter's performance must show that it can operate within NIST Handbook 44 tolerances despite the following technical challenges:

    a) Canyon effect (e.g. by routes on urban streets with tall buildings 20 stories high on both sides for 3 or more blocks)

    b) GPS Signal Loss (e.g. by routes with a tunnel at least 500 metres in length)

    c) Variable driving conditions (e.g. by routes that include 90° turns, gradual curves, and changes in elevation of 100 metres or more).

3. Upon request, the licensee must provide documentation of the evaluation it undertook to ensure that the taxi soft meter model it selects meets the standards and performance requirements in this rule. Documentation may include one or more of the following:

    a) Product specifications and performance test documentation that had been provided by the maker of the taxi soft meter,

    b) A report by an independent engineer who reviewed the product, conducted road tests, and evaluated its level of conformance with requirements in this rule.

    c) A Certificate of Conformance issued by a laboratory that is authorized to conduct NTEP evaluations of taximeters.

4. Hardware changes or software upgrades must not affect the way rates are calculated; if the calculation of rates is affected, the licensee must evaluate the taxi soft meter in accordance with this rule.

Appendix B: System Security

Requirements

1. Rates programmed into the taxi soft meter may only be changed:
    a) by an authorized representative of the licensee who has central, password-protected access to program rates for all taxi soft meters in the fleet,
    b) after the Board has approved a rate change of the Registrar has ordered changes to meet compliance requirements.
2. Hardware and software provisions must be in place that prevent a vehicle operator from changing the rates or modifying how the soft meter works in a taxi, except in circumstances described in (1) above.
3. The licensee must have access to, and provide to the Board or Branch upon request, a changelog that provides a persistent audit trail of rates that are charged, historical rate changes that have been made and the person(s) who made them.

Appendix C: Receipt

Requirements

The taxi soft meter generates a receipt in print or electronic form at the end of every trip that includes the following details:

1. each charge or fee for the trip (including flag rate, total distance charges, total waiting time charges and other rates)
2. total amount paid
3. date, start time and end time of the trip
4. total time for which "time rates" were charged and total distance travelled for which "distance rates" were charged
5. initial pickup and final drop off locations
6. company name and taxi number
7. taxi company contact information (phone, URL, or email)

Appendix D: Fare Announcer ("Talking Meters")

Requirements

1. A taxi licensee may only use a taxi soft meter that is installed with a functioning fare announcer that:
    a) A driver can easily activate and silence at the request of a passenger
    b) Announces the following in English:
        i. *Upon meter activation*: The taxi company name, the unique taxi ID number for the vehicle, and the flag rate.
        ii. *During a trip*: The trip fare at regular intervals (e.g. every $1 or $2).
        iii. *When a trip concludes*: The total fare, the company name, and unique taxi ID for the vehicle.
        iv. *If turned off while a trip is in progress*: A verbal acknowledgement that the fare announcer has been turned off and that the meter is still running.
    c) Has been user tested by at least one person who is blind or partially sighted (as opposed to persons with vision loss corrected by prescription glasses).

2. Notwithstanding (1) above, a taxi licensee is temporarily exempt from fare announcer requirements in this rule if the maker of the taxi soft meter model supplies a commitment letter that it will, within 6 months, incorporate a fare announcer into that model. This temporary exemption is in effect until the earliest of these two dates:
        i. The date that falls 6 months after the Board receives a Declaration of Compliance (Appendix E) from the licensee, or
        ii. The date that fare announcers are installed and operational as part of the taxi soft meter system.

3. The taxi licensee must provide training to all drivers on when and how to use the fare announcer.

4. The taxi licensee must comply with fare announcer requirements unless otherwise approved by the Board.

Appendix E: Declaration of Compliance

Taxi Soft Meter Declaration of Compliance PT Board Form 20

About this Form:

- ✓ Taxi licensees: Submit this form to the Passenger Transportation Board before installing any new model of taxi soft meter in any vehicles.
- ✓ This form must be signed by the **individual** (sole proprietor), **all partners** in the partnership, the **president or sole director** of a corporation or a **senior manager** of a Society.
- ✓ The Passenger Transportation Board may publish some or all aspects of this form and may make it available to the Registrar of Passenger Transportation, other agencies or the general public.

1. Legal Name of Taxi Operator

Legal Name(s): _____

2. Contact Information

All Trade Names (i.e. doing business as): _____

Passenger Transportation Licence Number: _____

Mailing Address: _____

Postal Code: _____ Phone: _____

Cell: _____ Email: _____

3. Taxi Soft Meter

Taxi Meter **Make & Model**: _____

☐ This soft meter has a fare announcer, or

☐ A commitment letter is attached from the soft meter vendor to add a taxi fare announcer.

4. Declaration

I declare that:

1. I have read the Board's BC Taxi Soft Meter Rule.
2. The taxi operator named above will comply with requirements set out in the "BC Taxi Soft Meter Rule" as amended from time to time.
3. The taxi operator will install or add a fare announcer function to all taxi soft meters within 6 months of the date that this declaration form is signed.
4. I understand that failure to comply with requirements set out in the "BC Taxi Soft Meter Rule" as amended from time to time may result in compliance and enforcement initiatives by the Registrar, Passenger Transportation Branch, or fitness reviews by the Passenger Transportation Board.

! Please insert electronic signature or print, sign and scan

Name	Signature
Position or Title	Date