Taxi Cab Testing

Effective Date: Jan 29, 2015

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NIST Handbook 44 Sec. 5.54 Taximeter Code

Background

"Taximeter" - A device that automatically calculates, at a predetermined rate or rates, and indicates the charge for hire of a vehicle.

Pretest Requirements

1. To be able to conduct distance tests on one or more taximeters a precisely measured road course must first be established.
2. Work with the Municipality Public Works Traffic Engineer to establish one or more “measured mile” courses in the Municipality.
3. Municipality Surveyors under the direction of the Traffic Engineer mark out on municipality curbs and gutters measured miles and fractional miles as requested by the inspector. They utilize laser transits to establish precise distances for the course, and are accurate within one inch per mile.

Procedure

This procedure will assist the inspector while performing accuracy testing of taximeter devices.

1. Arrive at the location and contact the on-site manager. Follow all rules set in place at the location regarding safety, accountability, etc.

2. Visually inspect to insure the taximeter has a primary indicating element, normally a series of digital indicators, and those indicators:
   A. Shall have digits that are fully legible.
   B. There shall be operational distance, fare, and time indicators.
   C. Each indicator shall be identified with legible descriptive terms

3. Check to see if a prior year approval seal is on the front of the device.

4. Conduct an inspection and test of each taximeter following the sections and steps from NIST Handbook 44 stated below.

5. U.R.3. STATEMENT OF RATES – The firm’s management must have posted in open view of the customer in each taxicab or shuttle the rate per mile that will be charged. If surcharges are levied separately for elapsed time and travel into different zones away from the firm’s base these also shall be provided.

6. U.R.1 INFLATION OF VEHICLE TIRES – Taximeters show and are calibrated to the rotation of a given vehicles tires and are read through a sensor attached to the driveshaft or transmission of the vehicle. It is critical that a vehicle's tire pressures are maintained at a constant level, and as calibrated. This tire pressure shall also be posted on the rate card attached to the vehicle's visor, and verified prior to a meter test. Conduct a "road test" of each taxicab or shuttle on the pre-established measured mile course:

7. Prepare a Taximeter Test Data Report Form which can be used for multiple vehicle tests.

8. Insure all indicators on the taximeter are returned to zero.

9. Have the vehicle driver activate the taximeter and proceed down the measure mile course at an average, legal, operating speed.

10. Note the changes in price indications and compare with flags/road markings on the measured mile course. Record any error in feet on the Taximeter Test Data Report Form. At the end of the course compare errors with Program with Correction Factor Tolerance Tables, or with Section T.1 NIST Handbook 44 Taximeter Code.

11. **If the meter is out of tolerance,** allow the licensed service technician to adjust the meter to correct errors found.

12. **Whether or not the taximeter has been adjusted**, have the vehicle driver position the vehicle to conduct a second test going the opposite direction on the measure mile course. Have the driver activate the taximeter and proceed down the measure mile course again at an average, legal, operating speed.

13. FOR THIS SECOND TEST, AGAIN note the changes in price indications and compare with flags/road markings on the measured mile course. Record any error in feet on the Taximeter Test Data Report Form. At the end of the course compare errors with Program with Correction Factor Tolerance Tables.

14. If the taximeter is performing within tolerance the mileage test is completed and the meter passes this portion of the test.

15. If the taximeter if not performing within tolerance on the mileage test or abnormal performance of the meter is noted the meter fails this portion of the test.

16. Then conduct a time test on the same taximeter using a Certified Stopwatch:
    A. Normally a two minute test is sufficient and you will be able to note the drops or changes in charges on the taximeter indicator as the meters clock advances.
    B. Compare the errors noted on the Taximeter with the Stopwatch. Using the NIST H-44 tolerance table note if the clock part of the meter is in tolerance. If not, run a second test. The meter fails if the clock does not perform within tolerance.

17. Waiting time:
    To compute the correct interval for the meter to drop use the following example:

    Divide the waiting time rate by the amount of the drop: $40.00 / .30 = 133.33333

Divide 3600 (60 minutes x 60 seconds) by 133.33333: 3600 / 133.33333 = 27 seconds

The meter should drop every 27 seconds. The tolerance limits are from 5% overregistation to 15% underregistration. Press the "hired" button (display says hired) and the stopwatch at the same time. Stop the stopwatch when the meter advances to $2.30 and reset it. Apply the tolerance limits; the first drop must be between 25.65 and 31.05 seconds. Start again at $2.60 and stop at $3.80 (four more drops). Apply the tolerance limits, the four drops must be between 1 minute 42.6 seconds and 2 minutes 4.2 seconds. Repeat this procedure for additional rates.

18. Complete a WinWam Device Inspection Report. Make copies of both the WinWam Device Report and the Taximeter Test Data Report Form. Have the firm's owner or manager sign the reports and provide a copy of each to them for their records

H-44 TOLERANCE

A. On Distance Tests Maintenance and Acceptance Tolerances shall be as follows:
   1. On Overregistration: 1% of the interval under test.
   2. On Underregistration: 4% of the interval under test.

B. On Time Tests Maintenance and Acceptance Tolerances shall be as follows:
   1. On Overregistration: 3 seconds per minute (5%)
   2. On Underregistration: 9 seconds per minute (15%) on the initial interval.

The tolerance table for 1/10 of a mile rate.

Money Drop	Distance (Miles)	Over Registration (Feet)	Drop (Feet)	Under Registration (Feet)
1	0.10	523	528	649
2	0.20	1045	1056	1198
3	0.30	1568	1584	1747
4	0.40	2091	2112	2296
5	0.50	2614	2640	2846
6	0.60	3136	3168	3395
7	0.70	3659	3696	3944
8	0.80	4182	4224	4493
9	0.90	4704	4752	5042
10	1.00	5227	5280	5591