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DOCKET PLANNING DIVISION
NEW YORK STATE DEPARTMENT OF TRANSPORTATION

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TRANSPORTATION ANALYSIS REPORT

19

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TITLE: STREAMLINING THE COLLECTION AND PROCESSING OF TRAFFIC COUNT STATISTICS

ABSTRACT: Traffic volume counts provide basic information for transportation analysis and forecasting, as well as facility design, monitoring, and operation. The traditional methods of organizing a traffic count program have changed little since 1965. Basically, they include a system of continuous counter stations for developing seasonal adjustment factors, seasonal-control stations to aid in factor development as well as in determining the seasonal assignment of coverage count stations, and the coverage count stations themselves.

Such a program works well but is quite costly. Thus, the New York State Department of Transportation undertook to examine its program and procedures as well as look ahead at new technology in order to streamline the process and reduce costs. Seasonal adjustment factors for coverage counts were revised and the number of factor groups was reduced. The method of determining which sections should be counted was also revised and based upon changes in traffic volumes, and telemetry systems and methods of collecting additional traffic data (truck weight, vehicle classification) were examined. Implementation of these improvements yielded a 35% reduction in counting with little or no loss of information.

TRAVEL AND ENVIRONMENTAL STATISTICS
TRAVEL AND ENERGY FORECASTING

TRANSPORTATION SYSTEMS INVENTORIES
URBAN AREA TRAVEL ANALYSIS

New York State Department of Transportation
Planning Division State Campus

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typically be applied to raw counts. Although FHWA (1) provides standard formulas for the computation of such factors, NYSDOT has not, traditionally, undertaken such corrections unless the percent is "large" (e.g. above 20% multi-axle vehicles). However, recent concern for trucks as a factor in pavement deterioration and highway capacity have increased attention on this subject. Since multi-axle vehicle proportions tend to vary widely by location and facility type, and reflect local conditions such as truck terminal centers, considerable research is needed to establish the nature of such variations. NYSDOT is presently undertaking this work. In the interim, we continue to make adjustments when needed, but generally do not undertake adjustments for most counts.

Accuracy of Raw Counts

It is well known that various mechanical devices and manual counts will not always yield identical results. Differences in clock time, sensitivity of recording devices to vehicle pass-over, multi-axle vehicle proportions, and mechanical equipment failure or malfunction all combine to introduce error.

In August, 1981, a comparison of four separate counting methods (manual counting, portable road-tube counters, a fixed mechanical continuous counter using induction loops, and a telephone-based counter system using the same induction loops) was conducted at a single location for a 24-hour period (19). Without elaborating on some of the details of the experiment and recognizing that there are hazards associated with

generalizations based upon the observations and situations encountered at one station of such short duration, it nevertheless appears appropriate to suggest:

1. There is no such thing as an accurate traffic count. Clock error, machine error, percent trucks, and other factors are likely to cloud the reliability of any count.
2. Manual counts are likely to contain considerable errors, particularly if conducted by inexperienced or unsupervised personnel.
3. When counts are taken with a road-tube counter, they will overestimate traffic volume depending upon truck percentage. Such counts should be adjusted for the multi-axle truck percentage, and checked closely for clock accuracy.
4. Counts should be taken for at least 24 hours to minimize overall clock error. Even over longer count periods, (1 day to 3 weeks), counters are not likely to give similar results, but differences will be smaller.
5. Both the continuous counter and the telemetry system show very similar, but not exactly the same results.

This test also showed that portable road-tube counters are reasonably accurate and can be relied upon to accomplish most of the Department's traffic counting needs.

Hartgen and Lemmerman

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