TRANSIT OCCURRENCE RATES

Developed for CalTIP and its Members

The following data was culled from the *Safety Management Information Statistics (SAMIS) 1999 Annual Report.* This report is a compilation and analysis of transit accident, casualty, and crime statistics reported under the Federal Transit Administration's (FTA's) National Transit Database Reporting System by FTA-funded transit systems in the United States during 1999.

A. Summary of 1999 Calculated Occurrence Rates

	Type of Transit System		
Type of Rate	**Medium Motor Bus (MMB)**	**Small Motor Bus (SMB)**	**Demand Response**
Incident	**16.55**	**13.61**	**9.45**
Collision	**7.33**	**6.99**	**5.12**
Fatality	**0.04**	**0.08**	**0.006**

B. Use of This Data

CalTIP members may use these benchmark rates as a comparison to their own occurrence rates. Nevertheless, when using these rates, it is important to recognize that there are variations in reporting systems, methods and definitions among transit agencies reporting to the SAMIS system, and that SAMIS does not include non-FTA funded transit systems.

It is also important to recognize that the optimum comparison is from within a transit system from year to year with analysis on whether the trend is positive or negative and why the difference.

C. Resource Information

1. The data was obtained from the following Internet web site:

   http://transit-safety.volpe.dot.gov/publications/Safety/SAMIS/SAMIS99

2. Transit occurrence rates were calculated from the individual data provided in the above-subject report using the following equation:

$$\text{Occurrence Rate} = \frac{\text{\# of Occurrences} \times 1{,}000{,}000 \text{ miles}}{\text{Total Miles Driven}}$$

3. "Occurrence" equals one of the following:

   a. Incidents
   b. Collisions
   c. Fatalities

4. Rates were calculated for three sizes/types of transit systems, those fleets that fit the kind of transit systems within CalTIP:

Size/Type of Fleet	Abbrev.	Definition
Medium Motor Bus/Fixed Route	MMB	Between 100 and 500 buses.
Small Motor Bus/Fixed Route	SMB	Fewer than 100 buses.
Demand Response	DR	Vehicles that are operated on roadways providing service on demand. Vehicles are normally dispatched, and used exclusively for this service.

5. Rates are based upon the above calculation (paragraph 2) and use the following miles driven:

MMB = 653,553,649 miles
SMB = 292,491,488 miles
DR = 166,904,703 miles

D. Occurrence Rate Calculations

a. Incident Rate

1) Definition of "Incident" Collisions, personal casualties, derailments/left roadway, fires, and property damage greater than $1,000 associated with transit agency revenue vehicles and all transit facilities.

2) Number of Incidents (MMB) 10,813
3) Number of Incidents (SMB) 3,982
4) Number of Incidents (DR) 1,577

5) MMB Incident Rate = $\frac{\text{10813 incidents X 1,000,000 miles}}{\text{653,553,649 total miles driven}}$

MMB Incident Rate = 16.55 incidents for every one million miles driven

6) SMB Incident Rate = $\frac{\text{3982 incidents X 1,000,000 miles}}{\text{292,491,488 total miles driven}}$

SMB Incident Rate = 13.61 incidents for every one million miles driven

7) DR Incident Rate = $\frac{\text{1577 incidents X 1,000,000 miles}}{\text{166,904,703 total miles driven}}$

DR Incident Rate = 9.45 incidents for every one million miles driven

b. Collision Rate

1) Definition of "Collision" With Vehicle: An accident in which a transit vehicle strikes or is struck by another vehicle. Reports are made if the accident results in death, injury, or property damage over $1,000.

With Object: An accident in which a transit vehicle strikes an obstacle other than a vehicle or person, e.g. building, utility pole. Reports are made if the accident results in a death, injury or property damage over $1,000.

With People: An accident in which a transit vehicle strikes a person. Except where specifically indicated, collisions with people do not include suicide attempts. Reports are made if the accident results in death, injury, or property damage over $1,000.

2) # of Collisions (MMB) = 4,791
3) # of Collisions (SMB) = 2,045
4) # of Collisions (DR) = 854

5) MMB Collision Rate = $\frac{\text{4791 collisions X 1,000,000}}{\text{653,553,649 total miles driven}}$

MMB Collision Rate = 7.33 collisions for every one million miles driven

6) SMB Collision Rate = $\frac{\text{2045 collisions X 1,000,000}}{\text{292,491,488 total miles driven}}$

SMB Collision Rate = 6.99 collisions for every one million miles driven

7) DR Collision Rate = $\frac{\text{854 collisions X 1,000,000}}{\text{166,904,703 total miles driven}}$

DR Collision Rate = 5.12 collisions for every million miles driven

c. Fatality Rate

1)	Definition of "Fatality"		A transit-caused death confirmed within 30 days of a transit accident.
2)	Number of Fatalities (MMB)		26
3)	Number of Fatalities (SMB)		24
4)	Number of Fatalities (DR)		1
5)	MMB Fatality Rate	=	26 fatalities X 1,000,000 / 653,553,649 total miles driven
	MMB Fatality Rate	=	0.04 fatalities for every one million miles driven
6)	SMB Fatality Rate	=	24 fatalities X 1,000,000 / 292,491,488 total miles driven
	SMB Fatality Rate	=	0.08 fatalities for every one million miles driven
7)	DR Fatality Rate	=	1 fatality X 1,000,000 / 166,904,703 total miles driven
	DR Fatality Rate	=	0.006 fatalities for every one million miles driven

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