

MMARAS

Metro Manila Accident Reporting and Analysis System

Traffic Accident Report
January to December 2009

Produced by the Road Safety Unit (RSU),
Traffic Operations Center (TOC)
Metropolitan Manila Development Authority (MMDA)

Introduction

The Metro Manila Accident Reporting and Analysis System (MMARAS) is operated by the Road Safety Unit (RSU) of the MMDA-Traffic Operations Center (TOC), with the cooperation and assistance of the Traffic Enforcement Group under National Capital Regional Police Office (TEG-NCRPO) Philippine National Police (PNP).

The objective is to compile and maintain an ongoing database of 'Fatal' and 'Non Fatal' including the 'Damage to Property' road accidents, which can indicate areas where safety improvements need to be made. The system will also allow the impact of improvement measures to be monitored.

This report is intended to be a quarterly analysis of 'Fatal', "Non Fatal" and 'Damage to Property' road accidents that have been recorded by the PNP Traffic Accident Investigators for the year 2009. The information is presented in graphical and tabular form, which provides a readily identifiable pattern of accident locations and causation patterns. Annual comparisons of traffic accident statistics are also included in this report.

The Road Safety Unit currently has 9 data researchers who gather traffic accident data from different traffic offices and stations of the Traffic Enforcement Group (TEG-NCRPO) within Metro Manila. Previously, only those incidences involving Fatal and Non Fatal are gathered and encoded at the MMARAS database. But for the year 2005 up to present, we included the Damage to Property incidence so that we can see the significance and the real picture of what really is happening in our roads and also it gives us additional information in analyzing the causes of accident.

Although influx of traffic accident data increases tremendously, the Road Safety Unit managed to store this damage to property incidences to our MMARAS database and now included in the analysis for the formulation of remedial measures that would be introduced on the identified black spots.

The assistance and cooperation of the traffic investigators will be necessary to maintain an accurate record of the facts surrounding every traffic accident within Metro Manila, since a truly significant picture will only develop over time. The work of the Road Safety Unit will be crucial in providing an appropriate directional thrust in the fight to make the roads of Metro Manila a safer place for everyone.

The Metropolitan Road Safety Unit can be contacted for further information or assistance on Tel: 882-4151-57 loc. 297.

Compilation of January to December Reports for the Year 2009

Data Sources

Two data sources are available to the RSU:

- Individual report forms for each accident, gathered by Data Researchers Group of the RSU from different stations and Districts Offices of the Traffic Enforcement Group; and
- Clippings of road traffic accident from different newspapers and tabloids that is available at the office of the Public Affairs Service (PAS) of the MMDA.

We cut-off clippings of road traffic accident from different newspapers and tabloids for compilation of the same and reference for under reported incidences. However, only the first are entered into MMARAS, and only these provide the basis for the statistics presented in this report.

Overall Statistics

Table 1. Shows the number of road accident reports gathered and compiled from January to December 2009, classified by month.

Month	Fatal	Non Fatal Injury	Damage	Grand Total
January	22	1155	4222	5,399
February	23	911	3452	4,386
March	26	1003	3683	4,712
April	17	764	3662	4,443
May	20	879	4578	5,477
June	18	910	4647	5,575
July	30	1023	5232	6,285
August	25	1088	5216	6,329
September	9	826	4719	5,554
October	22	1028	4987	6,037
November	15	1060	4769	5,844
December	39	947	3720	4,706
Grand Total	266	11,594	52,887	64,747

Note:

The month of December is not yet completed as this report has been made.

Table 2. Shows the number of persons killed and injured in road accident for the months of January to December 2009.

	Central	Eastern	Northern	Southern	Western	Total Persons
Fatal	112	39	38	66	29	284
Non Fatal	4465	2587	2892	3370	831	14,145
Total	4,577	2,626	2,930	3,436	860	14,429

Note that a 'fatal' accident involves at least one person killed, while a 'non-fatal' accident at least one person injured but no fatalities.

Table 3. In terms of the number of accidents involved, by accident severity, this translates to:

	Central	Eastern	Northern	Southern	Western	Total
Fatal	110	36	37	56	27	266
Non Fatal	3677	2163	2311	2818	625	11,594
DTP	17057	10142	4752	17418	3518	52,887
Total	20,844	12,341	7,100	20,292	4,170	64,747

DTP – Damage to property

Table 4. Below indicates the distribution of accidents by cities and municipalities in Metro Manila from January – December 2009.

City	Fatal	Non Fatal Injury	Damage	Grand Total
Caloocan	18	979	2397	3,394
Las Piñas	13	543	2277	2,833
Makati	9	600	5930	6,539
Malabon	2	229	494	725
Mandaluyong	3	317	2556	2,876
Manila	27	625	3518	4,170
Marikina	23	1160	2109	3,292
Muntinlupa	2	324	1042	1,368
Navotas		156	567	723
Parañaque	11	447	3369	3,827
Pasay	15	396	2768	3,179
Pasig	8	423	3911	4,342
Pateros	1	23	86	110
Quezon	110	3677	17057	20,844
San Juan	2	263	1566	1,831
Taguig	5	485	1946	2,436
Valenzuela	17	947	1294	2,258
Grand Total	266	11,594	52,887	64,747

On the table no. 4, the municipality of Pateros has the lowest number of incidences for the year 2009 from January to December, followed by Navotas. We can now consider these LGU's to be the safest in Metro Manila in terms of road traffic accident is concerned, since they have lesser recorded fatal and non-fatal incidences in the MMARAS database up to this date. This may be attributed to the following:

- Small land area within NCR
- No major arterial road compared to other cities
- Not considered as a Central Business Districts (CBD's)
- Minimal road accidents, and/or
- Manageable traffic direction and control

On the other hand, the City of Quezon dominates all the cities and municipalities of Metro Manila in terms of fatal road traffic accident followed by City of Manila. This is because of the following several factors:

- Both are Central Business Districts (CBD's) with high social and economic activity.
- Quezon City has the biggest land area (166.2 sq. km.) among the cities in Metro Manila.
- It is noted that 5 on the 7 major thoroughfares such as EDSA, Commonwealth Ave., Quezon Ave., Roxas Blvd. and Radial Road 10 are located within these cities.

However, problems on road traffic accident in the entire Metropolitan Manila would be given preference by this agency in providing remedial measures on the "blackspots" or accident-prone areas. On this process, traffic accident might be reducing in the future.

Known deficiencies

The concept of collecting traffic accident data was revised by tasking the personnel of the Metropolitan Road Safety Unit - Data Researchers Group to gather and copy all those traffic accidents happened in Metro Manila through the available records of every traffic stations instead of letting the Traffic Accident Investigator make their own traffic accident report and be submitted in this office. This new concept increases the statistics of collected road traffic accident data, especially for the year 2005, 2006, 2007, 2008 and now 2009.

Given the complex mechanism for collecting and gathering of road accident data in Metro Manila, and the relatively large number of Traffic Accident Investigators involved, it is inevitable that there will be some data that is missed from the database and these are those under reported incidences. At the present time, however, there is no firm evidence that large numbers of accidents are being omitted because copied data are based from the records on the log book of every traffic stations where traffic accidents (major or minor) have been logged.

Data Analysis

Types of person involved

The following tables give a breakdown of the number of persons involved in road accidents during the past year, categorized by:

- Drivers : person driving a mechanically propelled vehicle or riding a Pedal cycle
- Passengers : anyone carried-in or on a mechanically propelled vehicle
- Pedestrians : anyone traveling on foot.

Fatalities

District	Drivers Killed	Passengers Killed	Pedestrians Killed	Total Killed
Central	36	14	62	112
Eastern	23	7	9	39
Northern	14	5	19	38
Southern	25	8	33	66
Western	14	5	10	29
Total	112 (39.44%)	39 (13.73%)	133 (46.83%)	284 (100%)

Injuries

District	Drivers Injured	Passengers Injured	Pedestrians Injured	Total Injured
Central	1636	1461	1368	4,465
Eastern	1262	651	674	2,587
Northern	1071	718	1103	2,892
Southern	972	932	1466	3,370
Western	422	275	134	831
Total	5,363 (37.91%)	4,037 (28.54%)	4,745 (33.55%)	14,145 (100%)

A person involved in a road accident may indicate a driver, a passenger or a pedestrian. Of these types of persons involved, we have recorded 133 pedestrians (46.83%), 112 drivers (39.44%) and 39 passengers (13.73%) that have been killed in road accidents since January up to December 2009. Looking into persons injured, 5,363 (37.91%) are drivers, 4,037 (28.54%) passengers and 4,745 (33.55%) pedestrians. The relatively high proportion of driver's and pedestrians killed and injured is a cause for concern.

Breakdown by time of day

The following table represents the frequency of incidents by time of day. However, there were a number of accidents this year that did not have the time of the incident recorded. These involved nine (9) fatal, three hundred and twenty-four (324) non-fatal injury and nine hundred and twenty-three (923) damage to property accidents.

Time Hour	Fatal	Non Fatal Injury	Damage	Grand Total
0	14	236	726	976
1	15	344	1076	1435
2	21	302	890	1213
3	13	240	759	1012
4	11	288	1102	1401
5	11	339	1214	1564
6	15	417	1741	2173
7	8	621	2490	3119
8	12	596	2788	3396
9	8	561	3150	3719
10	5	588	3594	4187
11	11	615	3521	4147
12	16	574	2980	3570
13	9	451	2478	2938
14	9	507	3144	3660
15	7	564	3292	3863
16	10	531	2727	3268
17	8	581	2434	3023
18	4	480	2064	2548
19	11	507	2395	2913
20	5	541	2163	2709
21	12	519	2101	2632
22	8	464	1688	2160
23	14	404	1447	1865
No Time Indicated	9	324	923	1256
Total	266	11,594	52,887	64,747 (100%)
Day-time (6:00-18:00)	122 (00.19%)	7,086 (10.94%)	36,403 (56.22%)	43,611 (67.35%)
Night-time (18:00 – 6:00)	144 (00.23%)	4,508 (6.96%)	16,484 (25.46%)	21,136 (32.65%)

Overall, 21,136 or 32.65% of accidents occurred during the hours of darkness and without time indicated, while the 43,611 or 67.35% occurred during the daytime. But, it can be observed that most of the accidents occurred at daytime but Fatal accidents are considered high during night-time and wee hours in the morning. Drivers, Passengers and Pedestrians are advised to be cautious and attentive during these particular hours.

Breakdown of vehicle types involved in accidents

The classification of vehicle types within MMARAS is as follows:

- Cycle/Pedicab : human-powered vehicle
- Motorcycle : two-wheeled mechanically propelled Vehicle
- Motor Tricycle : three-wheeled passenger-carrying mechanically propelled vehicle
- Car : privately-owned mechanically propelled vehicle, which included all forms of 'Private use' small passenger-carrying vehicle.
- Jeepney/Taxi/Fx/Bus : mechanically-propelled vehicle which carries passengers on payment of a fee.
- Van : small vehicle for carrying goods
- Truck : large vehicle for carrying goods

The following table indicated the distribution of vehicles involved in accidents from Jan. to December 2009:

Vehicle Type	Fatal	% of Total	Non Fatal Injury	% of Total	Damage to Property	% of Total	Total No. of Vehicles
Cycle-Pedicab	15	4.05%	612	3.37%	453	0.44%	1,080
Motorcycle	109	29.46%	6677	36.78%	7542	7.28%	14,328
Motor Tricycle	9	2.43%	1113	6.13%	1894	1.83%	3,016
Car	80	21.62%	4543	25.02%	55040	53.11%	59,663
Jeepney	34	9.19%	1891	10.42%	8247	7.96%	10,172
Taxi / Fx	6	1.62%	875	4.82%	4735	4.57%	5,616
Bus	19	5.14%	471	2.59%	4987	4.81%	5,477
Van	32	8.65%	1032	5.69%	10971	10.59%	12,035
Truck	56	15.14%	640	3.53%	6753	6.52%	7,449
Train	-	-	-	-	5	0.01%	5
Kuliglig	-	-	2	0.01%	8	0.01%	10
Horse-drawn vehicle	-	-	1	0.01%	1	0.01%	2
Push Cart	-	-	2	0.01%	11	0.01%	13
Heavy Equipment	-	-	3	0.02%	1	0.01%	4
Unknown Vehicle	10	2.70%	290	1.60%	2988	2.88%	3,288
TOTAL	370	100%	18,152	100%	103,636	100%	122,158

On the table shown before this page, motorcycles have the highest fatality accident rate with 109 involved or 29.46% of the total fatal accidents, then followed by cars with 80 total or 21.62% respectively. For non fatal incidents, Motorcycles still have the highest rate with 6,677 or 36.78% share and followed by cars with 4,543 or 25.02%.

According to the statistics released by the LTO, the distributions of registered vehicles in Metro Manila are:

Jan. to Oct. 2004

Motor cycle	Motor Tricycle	Car	Jeepney/ Taxi/FX	Bus	Truck/ Trailers	Total
284,176	Included at MC	989,281	101,577	13,573	70,145	1,458,752
19.5%		67.8%	7.0%	0.9%	4.8%	100%

Annual 2005

Motor cycle	Motor Tricycle	Car	Jeepney/ Taxi/FX	Bus	Truck/ Trailers	Total
366,394	Included at MC	569,915	558,639	10,404	75,501	1,580,853
23.18%		36.05%	35.34%	0.65%	4.78%	100%

Jan. to Aug. 2006

Motor cycle	Motor Tricycle	Car	Jeepney/ Taxi/FX	Bus	Truck/ Trailers	Total
293,113	Included at MC	430,042	409,066	6,087	60,552	1,198,860
24.45%		35.87%	34.12%	0.51%	5.05%	100%

Accident maps

Maps indicating the location of all accidents during this year are not available because our software (Mapinfo) is already obsolete and it is very difficult to plot the accidents due to un-updated street name and landmarks. The maps will be updated and reproduced once the new GIS software (ArcGIS) will be provided and distributed by the Office of the General Manager for Planning of the MMDA to this Unit.

Collision Type

Table 1. Shows the accident statistics by collision type.

Collision Type	Fatal	Non Fatal	Damage	Total
Angle Impact	-	97	1324	1,421
Head-On	-	17	44	61
<i>Hit and Run (regardless of what collision type)</i>	19	420	2498	2,937
<i>Hit Object (regardless of what object was being hit)</i>	9	98	749	856
Hit Parked Vehicle	-	12	589	601
Hit Pedestrian	110	4105	-	4,215
No Collision Stated (as based in the blotter book)	87	4814	39476	44,377
<i>Other</i>	10	142	161	313
Rear-end	1	99	1680	1,780
<i>Self-Accident</i>	23	315	510	848
Side Swipe	7	1475	5856	7,338
Grand Total	266	11,594	52,887	64,747

Table 2. Shows the breakdown of Hit and Run.

Collision Type	Fatal	Non Fatal	Damage	Total
Hit and Run (Angle Impact)	-	1	5	6
Hit and Run (Head-on)	-	-	1	1
Hit and Run (Hit parked vehicle)	-	-	132	132
Hit and Run (Hit Pedestrian)	11	182	-	193
Hit and Run (Hit Veh. + Hit Obj., Barrier-Steel)	-	-	1	1
Hit and Run (No Collision Stated)	7	228	2301	2536
Hit and Run (Other, Hit Veh. + Hit Ped.)	1	5	-	6
Hit and Run (Rear-end)	-	1	20	21
Hit and Run (Side Swipe)	-	3	38	41
Grand Total	19	420	2,498	2,937

Continuation of Collision Type

Table 3. Shows the breakdown of Hit object collisions.

Collision Type	Fatal	Non Fatal	Damage	Total
Hit object	4	45	320	369
Hit object (Barriers, e.g. concrete, plastic, steel)	1	9	102	112
Hit object (Billboards/Signboards/Signages)	1	1	11	13
Hit object (Cable Wires of PLDT, Meralco, etc.)	-	1	24	25
Hit object (Establishments, e.g. shops, stores, stalls, etc.)	-	1	6	7
Hit object (Fences/Walls, e.g. see-thru, concrete, etc.)	-	5	64	69
Hit object (Gates)	-	1	27	28
Hit object (House, Shanty, Barracks, and the like)	-	2	11	13
Hit object (Islands, e.g. center island, divider, pots and the like)	-	4	20	24
Hit object (Light/Lamp Posts and the like)	-	3	14	17
Hit object (Pavements, e.g. gutter, sidewalk, road)	1	3	10	14
Hit object (Plants/Trees and the like)	-	6	8	14
Hit object (Posts of PLDT, Meralco, MRT, e.g. concrete, steel, wood, other)	2	7	63	72
Hit object (Pumps, e.g. gas nozzle, fire hydrant, etc.)	-	-	9	9
Hit object (Railings, e.g. steel)	-	-	8	8
Hit object (Vertical Clearance)	-	-	8	8
Hit object (Waiting Shed)	-	-	4	4
Hit object (Two or More objects/structures being hit at a time, e.g. Cable Wire & Post, Barrier & Fence, etc.)	-	9	20	29
Hit object (Various Objects, e.g. Door, Glass Panel, Meterbase, Galvanized Iron, Pipe, Stair, Table, etc.)	-	1	20	21
Grand Total	9	98	749	856

Continuation of Collision Type

Table 4. Shows the breakdown of Other collision or combined collisions.

Collision Type	Fatal	Non Fatal	Damage	Total
Other		1	14	15
Other (Backing Collision)			27	27
Other (Caught in Flood)			18	18
Other (Chain/Multiple Collision)			4	4
Other (Fell on Open Manhole/Drainage/Excavation)			5	5
Other (Hit Animal Crossing)		3	2	5
Other (Hit by a Broken Glass)			1	1
Other (Hit by a Crashed Airplane)		1		1
Other (Hit by a Fallen Debris/Object)			8	8
Other (Hit by a Fallen Object + Hit Parked Vehicle)		1		1
Other (Hit by a Fallen Part of a Tree)			5	5
Other (Hit by a Piece of Wood)			2	2
Other (Hit Object + Hit Parked Vehicle)			4	4
Other (Hit Object + Hit Pedestrian)		7		7
Other (Hit Opened Door of Vehicle)			2	2
Other (Hit Vehicle + Hit Object)		5	8	13
Other (Hit Vehicle + Hit Pedestrian)	8	107		115
Other (Passenger Fell Down)	2	15		17
Other (Run Over an Excavation)			1	1
Other (Stoning or Any Object Throwing Incident)			47	47
Other (Two or More Collision at a Time)		2	13	15
Grand Total	10	142	161	313

Table 5. Shows the breakdown of Self-Accident.

Collision Type	Fatal	Non Fatal	Damage	Total
Self-Accident	22	307	506	835
Self-Accident (MC Fell to Pavement)	1	5	1	7
Self-Accident (Guttered)		3	1	4
Self-Accident (Overturned Vehicle)			2	2
Grand Total	23	315	510	848

Accident Causations

Accident Factors	Fatal	Non Fatal	Damage	Grand Total
Human Error			2	2
Human Error (Passenger of Veh-1 Step on the Accelerator Hitting Veh-2 to Veh-5)			1	1
Human Error (Alcohol suspected)		5	4	9
Human Error (Alcohol suspected / Lost Control)		2		2
Human Error (Alleged Moving Backwards)		1	21	22
Human Error (Avoid Hitting Another Vehicle)		2	1	3
Human Error (Avoid Hitting Another Vehicle / Lost Control)			1	1
Human Error (Backing Inattentively)		1	11	12
Human Error (Bad overtaking)		21	751	772
Human Error (Bad turning)		2	151	153
Human Error (Disobey sign or traffic lights)		27	267	294
Human Error (Evaded Animal Crossing)	1	1		2
Human Error (Inattentive / Too fast)	9	17	43	69
Human Error (Inattentive)	32	2352	81	2,465
Human Error (Lost Control)		3	5	8
Human Error (Lost Control / Fell to Pavement)		1	1	2
Human Error (Moving Counterflow)		1	1	2
Human Error (Tired / Asleep)		1	8	9
Human Error (Too close)	1	249	500	750
Human Error (Too fast / Too close)		27	242	269
Human Error (Too fast)	21	1501	2702	4,224
Other			4	4
Other (Wet Road Surface)		1	3	4
Vehicle Defect		1	1	2
Vehicle Defect (Mechanical Trouble)			3	3
Vehicle Defect (Lost Brake)		1	2	3
No Stated Accident Factor at Blotter Book	202	7377	48081	55,660
Grand Total	266	11,594	52,887	64,747

Top Five (5) Accident Causations

- (1) Too Fast**
- (2) Inattentive**
- (3) Bad overtaking**
- (4) Too Close**
- (5) Disobey Sign or Traffic Lights**

MMDA has been coming up with solutions to solve the problem in Road Safety, almost all of the Authority's projects are geared towards Public Safety. Pedestrians facilities and signage's are designed to promote safety and convenience, Footbridges has been put up at major choke points where pedestrian volume is high, Sidewalk clearing operations intensified, geometric improvements at accident prone areas undertaken among others. Road Safety is a global concern, and the task to lessen the number of traffic accidents is a high objective but possible with the cooperation and support of the public.

Accident Prone Stretches

Based on the MMARAS database, by means of cross table querying, there are also numbers of accidents prone stretches in every district. And these stretches are:

District	Location
Northern	
Caloocan	Quirino Highway; Rizal Avenue Extension
Malabon	C-4 Road; Gov. Pascual Ave.; M. H. Del Pilar St.; McArthur Highway
Navotas	Honorio Lopez Blvd., Radial Road 10; Gov. Pascual Ave.; M. Naval St.
Valenzuela	Maysan Road; McArthur Highway
Southern	
Makati	EDSA; Pres. Sergio Osmeña Highway; Buendia Ave.
Las Piñas	Alabang-Zapote Road; Real St.; Marcos Alvarez Ave.
Muntinlupa	West Service Road; National Highway: Alabang-Zapote Road
Parañaque	West Service Road; Roxas Blvd.; Ninoy Aquino Ave.; Dr. A. Santos Ave.
Pasay	EDSA; Buendia Ext.; Roxas Blvd.
Taguig	Carlos P. Garcia Ave. (C-5); M. L. Quezon St.; East Service Road
Pateros	M. Almeda St.; P. Herrera St.
Eastern	
Marikina	Marcos Highway; Sumulong Highway
Mandaluyong	EDSA; Shaw Blvd.
Pasig	Ortigas Ave.; E. Rodriguez Jr. Ave.; Marcos Highway; Julia Vargas
San Juan	Ortigas Ave.; EDSA; Santolan Road; P. Guevarra St.; N. Domingo St.
Western	
Manila	Pres. Sergio Osmeña Highway; Radial Road 10; Roxas Blvd.
Central	
Quezon	Commonwealth Ave.; EDSA; Quirino Highway; Quezon Ave.; Katipunan Ave.

Note:

There are still other accident-prone stretches aside from the above stated stretches.

SAFETY MEASURES

1. Installation of “Pedestrian Footbridges” along Metro Manila’s major thoroughfares or major choke points wherein pedestrian volume is high.
2. Improvement of Sidewalks, to encourage pedestrian to pass thru.
3. Installation of various Traffic Facilities (gantry, signages, barriers, see-thru fence, etc.) to promote safety and convenience.
4. Application of “Lane Markings”, for both vehicles and pedestrians.
5. Installation of “Reflectorized Sash Stickers” on concrete barriers to be easily recognized by motorists especially during night time.
6. Installation of Steel Barriers along the sidewalks to separate vehicles from pedestrians.
7. Strict enforcement of road violations by the various Traffic Enforcement Units.