

MMARAS

Metro Manila Accident Recording and Analysis System

Traffic Accident Report
January to December 2015

Produced by the Road Safety Unit (RSU)
Traffic Discipline Office-Traffic Engineering Center (TDO-TEC)
Metropolitan Manila Development Authority (MMDA)

Introduction

The Metro Manila Accident Recording and Analysis System (MMARAS) is created and operated by the Road Safety Unit (RSU) of the MMDA-Traffic Discipline Office-Traffic Engineering Center (MMDA-TDO-TEC), with the cooperation and assistance of the Traffic Enforcement Unit (TEU) of the Philippine National Police (PNP).

The objective is to compile and maintain an on-going database of Fatal, Non Fatal Injury and Damage to Property road crashes, which can indicate areas where safety improvements are need to be made. The system will also allow the impact of improvement measures that needs to be monitored.

This report is intended to provide brief information on 'Fatal', 'Non Fatal Injury' and 'Damage to Property' road crashes that have been recorded by the MMDA-Road Safety Unit thru the Police Blotter of the PNP for the year 2015. The information is presented in tabular form, which provides a readily identifiable pattern of accident locations and causation patterns.

The Road Safety Unit currently has 8 data researchers who gather traffic accident data from different traffic offices and stations of the Traffic Enforcement Units (TEU) 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 trust 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 2015

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 Unit; and
- Recorded road crashes at MMDA's Metrobase thru radio calls, concerned citizen calls and captured by CCTV's.

We also get the recorded road crashes from the MMDA's Metrobase but only the first are entered into MMARAS Database, and only these provide the basis for the statistics presented in this report.

Overall Statistics

Table 1. Shows the number of road crash incidents/cases gathered and compiled from January to December 2015, classified by month.

| Month | Fatal | Non Fatal Injury | Damage to Property | Grand Total |
|-----------------------------------|---------------------|----------------------|-----------------------|------------------------------|
| January | 46 | 1,377 | 5,491 | 6,914 |
| February | 52 | 1,414 | 5,895 | 7,361 |
| March | 42 | 1,652 | 6,448 | 8,142 |
| April | 35 | 1,440 | 5,838 | 7,313 |
| May | 43 | 1,427 | 6,352 | 7,822 |
| June | 39 | 1,363 | 6,474 | 7,876 |
| July | 36 | 1,428 | 6,641 | 8,105 |
| August | 40 | 1,370 | 6,869 | 8,279 |
| September | 50 | 1,351 | 7,115 | 8,516 |
| October | 47 | 1,460 | 7,204 | 8,711 |
| November | 40 | 1,361 | 6,463 | 7,864 |
| December | 49 | 1,460 | 7,203 | 8,712 |
| Grand Total | 519 | 17,103 | 77,993 | 95,615 |
| Ave. Accident Rate Per Day | 1.42 per day | 46.86 per day | 213.68 per day | 261.96 or 262 per day |

Table 2. Shows the actual number of persons killed and injured in a road crash for the months of January to December 2015.

| | Central | Eastern | Northern | Southern | Western | Total Persons |
|--------------|--------------|--------------|--------------|--------------|--------------|---------------|
| Fatal | 151 | 62 | 92 | 145 | 86 | 536 |
| Non Fatal | 5,970 | 3,992 | 3,190 | 7,161 | 1,545 | 21,858 |
| Total | 6,121 | 4,054 | 3,282 | 7,306 | 1,631 | 22,394 |

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. Shows the number of road crash incidents/cases by Accident Severity and District, this translates to:

| | Central | Eastern | Northern | Southern | Western | Total |
|--------------|----------------|----------------|-----------------|-----------------|----------------|---------------|
| Fatal | 146 | 58 | 93 | 139 | 83 | 519 |
| Non Fatal | 4,466 | 3,126 | 2,481 | 5,692 | 1,338 | 17,103 |
| DTP | 22,917 | 13,846 | 5,169 | 26,381 | 9,680 | 77,993 |
| Total | 27,529 | 17,030 | 7,743 | 32,212 | 11,101 | 95,615 |

DTP – Damage To Property

Table 4. Below indicates the distribution of accidents by cities and municipalities in Metro Manila from January – December 2015.

| City | Fatal | Non Fatal Injury | Damage | Grand Total |
|--------------------|--------------|-------------------------|---------------|--------------------|
| Caloocan | 43 | 1,130 | 2,933 | 4,106 |
| Las Piñas | 24 | 1,035 | 2,357 | 3,416 |
| Makati | 19 | 969 | 9,185 | 10,173 |
| Malabon | 5 | 418 | 672 | 1,095 |
| Mandaluyong | 7 | 500 | 3,715 | 4,222 |
| Manila | 83 | 1,338 | 9,680 | 11,101 |
| Marikina | 26 | 985 | 2,596 | 3,607 |
| Muntinlupa | 21 | 966 | 2,807 | 3,794 |
| Navotas | 12 | 211 | 507 | 730 |
| Parañaque | 26 | 1,183 | 3,730 | 4,939 |
| Pasay | 10 | 712 | 4,236 | 4,958 |
| Pasig | 23 | 1,375 | 6,199 | 7,597 |
| Pateros | - | 4 | 27 | 31 |
| Quezon | 146 | 4,466 | 22,917 | 27,529 |
| San Juan | 2 | 266 | 1,336 | 1,604 |
| Taguig | 39 | 823 | 4,039 | 4,901 |
| Valenzuela | 33 | 722 | 1,057 | 1,812 |
| Grand Total | 519 | 17,103 | 77,993 | 95,615 |

On the table no. 4, the municipality of Pateros has the lowest number of incidences for the year 2015 from January to December, followed by Navotas and Malabon. We can now consider these LGU's to be the safest in Metro Manila in terms of road crash incident is concerned, since they have lesser recorded fatal, non-fatal and damage to property incidences in the MMARAS database up to this date. This may be attributed to the following:

- Small land area within the 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 and then Makati. 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, so as with the City of Makati and 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 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, from year 2005-2014 and now 2015.

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 actual number of persons involved in a road crash, 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 | 67 | 23 | 61 | 151 |
| Eastern | 25 | 14 | 23 | 62 |
| Northern | 48 | 11 | 33 | 92 |
| Southern | 65 | 14 | 66 | 145 |
| Western | 27 | 7 | 52 | 86 |
| Total | 232 (43.28%) | 69 (12.87%) | 235 (43.84%) | 536 (100%) |

Injuries

| District | Drivers Injured | Passengers Injured | Pedestrians Injured | Total Injured |
|--------------|----------------------------|---------------------------|---------------------------|--------------------------|
| Central | 2756 | 1957 | 1257 | 5,970 |
| Eastern | 2024 | 1150 | 818 | 3,992 |
| Northern | 1382 | 827 | 981 | 3,190 |
| Southern | 3469 | 1739 | 1953 | 7,161 |
| Western | 710 | 339 | 496 | 1,545 |
| Total | 10,341 (47.31%) | 6,012 (27.50%) | 5,505 (25.19%) | 21,858 (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 235 pedestrians (43.84%), 232 drivers (43.28%) and 69 passengers (12.87%) that have been killed in road accidents since January up to December 2015. Looking into persons injured, 10,341 (47.31%) are drivers, 6,012 (27.50%) passengers and 5,505 (25.19%) pedestrians. The relatively high proportion of drivers 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 ten (10) fatal, two hundred and thirty-seven (237) non-fatal injury and eight hundred and eight (808) damage to property accidents.

| Time Hour | Fatal | Non Fatal Injury | Damage | Grand Total |
|---------------------------------|---------------------|-------------------------|------------------------|------------------------|
| 00:00-00:59 | 23 | 350 | 1000 | 1,373 |
| 01:00-01:59 | 35 | 424 | 1188 | 1,647 |
| 02:00-02:59 | 33 | 402 | 1100 | 1,535 |
| 03:00-03:59 | 32 | 402 | 985 | 1,419 |
| 04:00-04:59 | 31 | 453 | 1149 | 1,633 |
| 05:00-05:59 | 31 | 596 | 1477 | 2,104 |
| 06:00-06:59 | 21 | 776 | 2256 | 3,053 |
| 07:00-07:59 | 20 | 956 | 3363 | 4,339 |
| 08:00-08:59 | 19 | 920 | 3590 | 4,529 |
| 09:00-09:59 | 21 | 858 | 3851 | 4,730 |
| 10:00-10:59 | 16 | 801 | 4629 | 5,446 |
| 11:00-11:59 | 10 | 795 | 4793 | 5,598 |
| 12:00-12:59 | 18 | 780 | 4549 | 5,347 |
| 13:00-13:59 | 11 | 737 | 4208 | 4,956 |
| 14:00-14:59 | 24 | 728 | 4947 | 5,699 |
| 15:00-15:59 | 15 | 830 | 4958 | 5,803 |
| 16:00-16:59 | 21 | 921 | 4492 | 5,434 |
| 17:00-17:59 | 9 | 835 | 3826 | 4,670 |
| 18:00-18:59 | 18 | 758 | 3627 | 4,403 |
| 19:00-19:59 | 21 | 787 | 4589 | 5,397 |
| 20:00-20:59 | 10 | 719 | 3805 | 4,534 |
| 21:00-21:59 | 13 | 704 | 3157 | 3,874 |
| 22:00-22:59 | 28 | 668 | 2985 | 3,681 |
| 23:00-23:59 | 29 | 666 | 2661 | 3,356 |
| No Time Indicated | 10 | 237 | 808 | 1,055 |
| Grand Total | 519 | 17,103 | 77,993 | 95,615 |
| Day-time (06:00-17:55) | 205 (00.21%) | 9,937 (10.39%) | 49,462 (51.73%) | 59,604 (62.33%) |
| Night-time (18:00-05:55) | 314 (00.33%) | 7,166 (07.49%) | 28,531 (29.84%) | 36,011 (37.66%) |

Overall, 36,011 or 37.66% of accidents occurred during the hours of darkness and without time indicated, while the 59,604 or 62.33% occurred during daytime. But, it can be observed that eventhough most of the accidents occurred at daytime, 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 actual distribution of number of vehicles involved in a road crash from January to December 2015:

| Vehicle Type | Fatal | Non Fatal Injury | Damage to Property | Total No. of Vehicles |
|----------------------|------------|------------------|--------------------|-----------------------|
| Cycle-Pedicab | 26 | 940 | 374 | 1,340 |
| Motorcycle | 262 | 11,620 | 8,401 | 20,283 |
| Motor Tricycle | 29 | 1,524 | 2,113 | 3,666 |
| Car | 125 | 7,427 | 83,077 | 90,629 |
| Jeepney | 61 | 2,161 | 8,519 | 10,741 |
| Taxi / Fx | 16 | 1,335 | 8,301 | 9,652 |
| Bus | 32 | 704 | 6,635 | 7,371 |
| Van | 48 | 1,313 | 14,413 | 15,774 |
| Truck | 129 | 1,402 | 15,737 | 17,268 |
| Train | 17 | 10 | 3 | 30 |
| Kuliglig | - | 4 | 6 | 10 |
| Animal-drawn vehicle | - | - | 1 | 1 |
| Heavy Equipment | - | - | 3 | 3 |
| Unknown Vehicle | 34 | 714 | 6,808 | 7,556 |
| TOTAL | 779 | 29,154 | 154,391 | 184,324 |

On the table shown before this page, motorcycles have the highest fatality accident rate with 262 involved, then followed by trucks with 129 and cars with 125 total. For non fatal incidents, Motorcycles still have the highest rate with 11,620 shares and followed by cars with 7,427 and PUJ's with 2,161. While for damage to property cars have the highest rate with 83,077 and followed by trucks with 15,737 and vans with 14,413 total.

Collision Types

| Collision Type | Fatal | Non Fatal Injury | Damage to Property | Grand Total |
|--|------------|------------------|--------------------|---------------|
| Angle Impact | 11 | 983 | 3,699 | 4,693 |
| Head-on | 12 | 227 | 330 | 569 |
| Hit and Run | 32 | 798 | 4,400 | 5,230 |
| Hit Object | 18 | 220 | 1,939 | 2,177 |
| Hit Parked Vehicle | 1 | 52 | 2,184 | 2,237 |
| Hit Pedestrian | 194 | 4,536 | NA | 4,730 |
| Multiple Collision | 19 | 619 | 1,866 | 2,504 |
| No Collision Stated (based on Police Blotter Book) | 121 | 5,454 | 29,035 | 34,610 |
| Other | 27 | 341 | 118 | 486 |
| Rear-end | 28 | 1,488 | 14,730 | 16,246 |
| Self-Accident | 34 | 457 | 558 | 1,049 |
| Side Swipe | 22 | 1,928 | 19,134 | 21,084 |
| Grand Total | 519 | 17,103 | 77,993 | 95,615 |

| Breakdown of Hit and Run Collision Incidences | Fatal | Non Fatal Injury | Damage to Property | Grand Total |
|---|-----------|------------------|--------------------|--------------|
| Hit and Run (Angle Impact) | - | 32 | 362 | 394 |
| Hit and Run (Head-on) | - | 4 | 6 | 10 |
| Hit and Run (Hit Parked Vehicle) | - | 3 | 400 | 403 |
| Hit and Run (Hit Pedestrian) | 26 | 311 | - | 337 |
| Hit and Run (No Collision Stated) | 5 | 372 | 2771 | 3148 |
| Hit and Run (Rear-end) | 1 | 18 | 231 | 250 |
| Hit and Run (Side Swipe) | - | 58 | 630 | 688 |
| Grand Total | 32 | 798 | 4,400 | 5,230 |

Top Collision Types

1. Side Swipe Collisions
2. Rear-end Collisions
3. Hit Pedestrian
4. Hit and Runs
5. Angle Impact Collisions

Accident Causations

| Accident Factor | Fatal | Non Fatal Injury | Damage to Property | Grand Total |
|---|------------|------------------|--------------------|---------------|
| Human Error | 1 | 34 | 108 | 143 |
| Human Error (Alcohol suspected) | - | 17 | 10 | 27 |
| Human Error (Avoided Hitting Animal) | - | - | 1 | 1 |
| Human Error (Avoided Hitting Another Vehicle) | - | 5 | 1 | 6 |
| Human Error (Avoided Hitting Pedestrian) | - | 1 | 4 | 5 |
| Human Error (Driver Error) | 7 | 543 | 1569 | 2119 |
| Human Error (Garbage Collector Fell While Collecting Garbage) | - | 1 | - | 1 |
| Human Error (Lost Control) | 6 | 26 | 5 | 36 |
| Human Error (Moving Backwards/Backing Inattentively) | - | - | 1 | 1 |
| Human Error (Tired/Asleep) | - | 3 | 7 | 10 |
| Human Error (Too fast) | - | 1 | - | 1 |
| No Accident Factor (based on Police Blotter Book) | 503 | 16444 | 76273 | 93220 |
| Other | - | 1 | - | 1 |
| Other (Due to Humps) | - | 1 | - | 1 |
| Other (Due to Mentally ill Co-Passenger) | 1 | - | - | 1 |
| Other (Due to Oil Spill) | - | 3 | - | 3 |
| Other (Open Manhole / Pathhole) | - | - | 2 | 2 |
| Other (Passenger Jumped-Off) | - | 1 | - | 1 |
| Other (Road Condition) | - | 1 | 1 | 2 |
| Other (Runover a Scattered Sand) | - | 2 | - | 2 |
| Other (Slippery Road / Wet Road) | 1 | - | 1 | 2 |
| Vehicle Defect | - | 2 | 1 | 3 |
| Vehicle Defect (Detached Wheel) | - | - | 1 | 1 |
| Vehicle Defect (Electrical) | - | 1 | - | 1 |
| Vehicle Defect (Lost Brakes) | - | 2 | 2 | 4 |
| Vehicle Defect (Mechanical) | - | 10 | 8 | 18 |
| Vehicle Defect (Sudden Unintended Acceleration) | - | 1 | - | 1 |
| Vehicle Defect (Tire Broke) | - | 1 | - | 1 |
| Grand Total | 519 | 17,101 | 77,995 | 95,615 |

Three (3) Accident Causations

1. Human Error
2. Other
3. Vehicle Defect

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.

Updated (February 09, 2016)

**Source : Metro Manila Accident Recording and Analysis System (MMARAS) Database
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