A Road Map for Police Motorcycle Training

A Study of Needs, Training, and Collisions Involving Police Motorcycle Officers of the Austin Police Department, 1990-1999.

Earl Bolls
Senior Police Officer
Austin Police Department
Austin, Texas
United States

ABSTRACT

Police work for the Police Motorcycle Officer is one of the most demanding jobs as both a Police Officer and Motorcycle Rider. While we would like to think that officers are adequately prepared for both jobs, we must concede that the kind of training and preparation needed for the Police Motorcycle Officer must be extensive. Just what does it take to become a Police Motorcycle Officer and what does it take to stay one? What kind of environment does the Officer have to provide for? What kind of training is most effective in preparing an Officer for this kind of hazardous duty?

This brief will look at some of these questions.

The needs of an officer will be addressed based on the types of elements that they are exposed to. It will look at the active and passive hostile environment. The variety and criticality of hazards, real and anticipated, will be identified.

The brief will focus on a study of Police Motorcycle collisions involving officers of the Austin, Texas Police Department over a ten-year period, 1990 – 1999. The study will look for causative factors and the trends that can be established from this research.

At the same time, the way Motorcycle Officers were trained has changed in that decade. Factors such as turnovers in Training Staff and the adaptation of new motorcycle types has given the Department a new way that it looks at Police Motorcycle training. The type and focus of that training will be described and analyzed. What was stressed and why? Just how much time was spent in training? How closely did that training fit the needs of the Officer and the Department?

Having looked at the needs, the training and the collision rates among Officers, the brief will attempt to correlate the collision trends with the types of training. In an effort to better manage risk, we will evaluate the effectiveness of individual types of training and the overall picture of training within the Motorcycle Section of the Austin Police Department.

Dedication

This study is dedicated to William Stuart, James Cummings, Walter Tucker, Lee Smith, and all officers for whom both police work and motorcycles are a way of life.

1.0 Introduction

1.1 Introduction

This study will consist of six major sections with the first introducing the study. We will look at why it was done, whom it covered, where it took place, and when it happened.

The second section will identify concerns of the Police Motorcycle Officers. These often rise above those of the normal street rider. Motorcycling can be a demanding sport under optimum conditions, but presents a certain inherent risk to even the best of us. But when you combine the needs of the modern law enforcement officer into this environment, it raises the odds against us considerably.

Third will be an actual analysis of the collisions themselves. We will examine the 83 police motorcycle collisions that occurred in Austin, Texas during the last decade of this century. It will provide an overview of where we have been and what we have subjected ourselves to. From this analysis will come trends as to why the collisions occurred and the who, what, when, and where to avoid like the plague.

The forth section will take a look at the history of Police Motorcycle training at the Austin Police Department. We will see who taught what and why.

Fifth, we will compare the collision trends with training trends to find correlation between the two. Courses offered and their effect on officer performance will be measured.

Sixth and lastly recommendations will be made about what can be done to further reduce the occurrence of these collisions. Some conclusions are not surprising, while others will be quite unexpected. National studies will support some of the conclusions arrived at though the analysis. The study shows that there is a need for training based on the requirements of the local basis.

1.2 Objectives

As a long time police officer, an even longer motorcyclist, and an established motorcycle safety instructor, I have been foolish enough to just listen to what has been preached about collision statistics involving motorcycles. I have seen the gore in print, video, and first hand. I have had my share of falls and injuries. In fact my police motorcycles are all named after the first spill I take on them. Luckily some have gone unnamed for some time, but eventually they all get a name tagged on them. It has been said that there are two types of motorcycle riders, those that have been down, and those that will go down. Falling down, they say, is just a matter of time. I can only agree that the longer you ride and the more miles you have under your seat, the greater the probabilities are that you

will eventually “get off”. However, I must say that it is also a huge matter of how you approach your riding. I have found that in my line of work, as in most of life, the top three factors to unscathed are … “attitude, attitude, attitude”.

I have always wanted to know why my fellow officers where having wrecks. We have drawn many conclusions about it around the courthouse and the coffee cup. But never has anyone actually taken the time to find out why they were happening and what we could do about it. I have looked at the collision reports and tried to assume many things. I wanted it out on paper where we could all see it, and I wanted it to have meaning and make a difference. With that in mind I drew definite objectives for my research.

The objectives of this study are as follows:

1. Identify major areas of concern for the modern police motorcycle officer.
2. Identify the major trends of police motorcycle collisions.
3. Identify causative factors for both police and civilians in police motorcycle collisions.
4. Compare these factors to previously known factors in motorcycle collisions.
5. Evaluate the effectiveness of current training for police motorcycle officers.
6. Suggest a path for the direction of future police motorcycle training.

1.3 Study Area

The City of Austin has grown over the years from the small city serving as the capitol of Texas, to a major high tech center of the world. By population it has grown from 465,622 people in 1990 to 643,988 in 2000. That marks in increase of almost 28% in ten years. Conservative estimates project that by 2010 the population will grow by at least another 20% to just over 800,000 people. In 1990 Austin was, comprised by race, 61.7% White, 23.0% Hispanic, 11.9% Black, and 3.4% “Other”. Ten years later, April 1, 2000, we are 54.5% White, 28.3% Hispanic, 11.5% Black, and 5.6% “Other”.

By land Austin has amassed a large jurisdiction. In 1990 the City covered 225.4 square miles and has grown to 263.8 square miles. With its Extra Territorial Jurisdictions (ETJ), Austin now spans 365.7 square miles. That is an increase of 14.5% and 38.5% with the ETJ.

Housing trends in Austin are moving from sprawling suburbia to multi-residential areas especially in the downtown and surrounding urban areas. Traffic demands have long ago outpaced the roadway system in the Austin area. Roadway construction is everywhere and becoming a common way of life in traffic. There are more vehicles and, due to construction, a declining number of usable traffic lanes. While more roadways are being added and are being improved, it cannot

keep up with the current demand. The quality of the roadway surface only deteriorates at an alarming rate with its overuse.

Austin has two major highways running north and south (Interstate 35 and Loop 1, Mopac). The city is essentially divided in half by Interstate 35. Interstate 35 is under major construction north of downtown where it intersects US Highway 290 and south of downtown where it intersects US Highway 71. Two major thoroughfares run west from Interstate 35 to Loop 1 and beyond. They are US Highway 71, under construction at Interstate 35, and US Highway 183, under construction at its north end approximately five miles south of the north city limits. US Highway 290 runs east from Interstate 35 and is a controlled access highway until it reaches the eastern city limits.

1.4 The Study Group

The study group is the Motorcycle Police Officers of the Austin Police Department, Austin, Texas. Austin has long used motorcycles for police work in the city. Currently the City has just over 1000 officers in its ranks. Motorcycles are documented for us as far back as the early thirties. Austin has a good record in the area of officer safety that is reinforced through training and application.

Since 1869 Austin has put over 5000 officers on the street to protect its citizenry. Of those officers, only sixteen have been killed in the line of duty. Four, 25%, were killed in motorcycle collisions. They are:

Officer William Murray Stuart, 29, killed October 16, 1933;
Officer James R. Cummings, 31, killed December 3, 1933;
Officer Walter Lee Tucker, 26, killed October 14, 1948; and
Officer Lee Craig Smith, 28, killed December 15, 1979.

The City of Austin has been divided into six sectors for patrol purposes. Those areas are referred to as:

North West (NW),	North East (NE),
Central West (CW),	Central East (CE),
South West (SW), and	South East (SE).

In 1998 the Austin Police Department decentralized. Each sector is now an Area Command headed by a single Commander. These Commanders report to an Assistant Chief of Police who in turn is responsible to the Chief of Police. Commanders are give free reign over how to utilize their resources for their particular part of town and its policing challenges.

The Motorcycle Section itself has grown over the years even during the study period. In 1990 there were 34 Motorcycle Officers (30 officers, 3 sergeants, and 1 lieutenant). Officers were divided among three shifts with each shift having 10 officers and a sergeant. The single lieutenant supervised the entire Motorcycle Section. Two of the shifts each sent two officers to NW, NE, CE, SW, and SE

sectors while a single shift covered CW, the downtown area. It was believed then that the major traffic problems were in the downtown area and in fairness the shifts rotated through the downtown duty. In 1992 a fourth shift of officers were added bringing the total to 45 Motorcycle Officers. Two officers from each shift were then assigned to each sector. The downtown rotation was dissolved, and instead officers took turns working in Central East, where there was thought to be little traffic problems. With decentralization, the number of Motorcycles has grown to 51 (44 officers, 6 sergeants, and 1 lieutenant). They are currently dispersed as follows:

NW	- 9 officers	- 1 sergeant	
NE	– 6 officers	- 1 sergeant	
CW	– 8 officers	- 1 sergeant	- 1 lieutenant
CE	– 6 officers	- 1 sergeant	
SW	– 6 officers	- 1 sergeant	
SE	– 9 officers	- 1 sergeant	

The fleet of the Motorcycle Section has fluctuated from the Kawasaki KZ1000P to the Harley-Davidson FXRP, back to the Kawasaki, and now to the Harley-Davidson Road King and the FLHTPI. The transition appears as follow:

1990	34 Motorcycles	24 KZ1000s	10 FXRPs	
1991	34 Motorcycles	19 KZ1000s	15 FXRPs	
1992	45 Motorcycles	9 KZ1000s	36 FXRPs	
1993	45 Motorcycles	9 KZ1000s	36 FXRPs	
1994	45 Motorcycles	9 KZ1000s	36 FXRPs	
1995	45 Motorcycles	20 KZ1000s	25 FXRPs	
1996	45 Motorcycles	35 KZ1000s	10 FXRPs	
1997	45 Motorcycles	35 KZ1000s	10 FXRPs	
1998	50 Motorcycles	36 KZ1000s	14 Road Kings	
1999	51 Motorcycles	18 KZ1000s	14 Road Kings	19 FLHTPIs.

Annually the Motorcycle Section logs over 560,000 miles on the department motorcycles. The greatest number of miles is logged in Autumn (156,258) and Spring (136,442). Winter (127,433) and Summer (117,867) are the least ridden seasons. The most mileage occurs in September (63,116), May (57,336), and March (52,409) respectively.

Motorcycle Police Officers are primarily assigned to traffic duties. With the decentralization of the department, Motorcycle Officers are taking more non-priority calls and backups. This call load increase for Motorcycles is relieving line (car) officers' responsibilities and is more in line with the decentralization plan for officers to work more closely together. But line officers still have little time to spend in traffic enforcement and traffic direction, so it still ultimately falls back on the Motor Officer.

Motorcycles have always rotated through weekends, but predominantly work weekdays, especially Monday through Thursday. Each officer works four 10-hour

shifts (days) each week. Work hours are between 0600 hours (6:00 a.m.) and 1700 hours (5:00 p.m.) daily. Evening and Night shifts are seen as too hazardous to the riding environment and agreed on by the commands as to be avoided except under special assignment. Special assignments also covers VIP escorts, athletic runs, and parades.

1.5 The Data Base

The study covers some 83 collisions that occurred during the period 1990 though 1999. Data was gathered though the use of Collision Report Forms, ST-3 and PD-0039, diagrams of the collision scene, memoranda from the officers involved, investigator's notes, and interviews with the officers and investigators. This information was tabulated and a database was established using Microsoft Access 97. Some data manipulation was done in Microsoft Excel 97. Some of the programmed information was:

Offense Number
Location
Time and Date
Civilian Vehicle (Vehicle age, Color, Make, Model, Point of Contact)
Driver (Sex, Race, Age, City of Residence, Occupation, Injuries)
Police Motorcycle (Age, Make, Model, Damage, Point of Contact)
Police Officer (Sex, Race, Age, Injuries, Training)
Roadway Conditions (Light, Weather, Surface, Traffic Control)
Charges Filed (Hazardous, Non-Hazardous, Unit at Fault)
Causative Factors for Civilians (Operator Condition, Vehicle Movement)
Causative Factors for Police (Roadway, Operator Condition, Vehicle Movement)

Due to the time lapse from some of the earlier collisions, certain officers were no available for interview. Also there was some recollection that was inconsistent with the reported data. This was mainly in the area of causative factors. This is attributed to problems in uniform reporting using the ST3 and PD-0039 forms. However, since these were the authoritative reports, they had to be given greater weight in their testimony.

Another note is the human factor in these reports. Police officers seldom look to point the finger at another officer (Sad but true). Therefore the report often puts the officer, even when at fault, in a slightly better view in the report. Great care was taken to minimize this character flaw, but will be seen as an under reporting of causative factors on the part of the officers involved. Be that as it may, some results are indisputable whether or not the officers were found to be negligent.

2.0 Concerns

It was identified early on that there were three main areas of concern for the modern police motorcycle officer. These were the Environmental Concerns, Equipment Concerns, and the Training Concerns

2.1 Environmental Concerns

2.1.1 The Traffic Environment

The traffic environment is the area of most concern to the motorcycle officer and often the area of least attention. Officers are frequently sent out to work traffic with little more preparation than the skills and knowledge they were given in the academy. The gun and badge may be a deterrent and do well against the violent criminal, but do little to protect the officer against the motor vehicle on the roadway.

The high-speed highways of today have seen an increase in the maximum speed limits from 55 to 70 miles per hour in Texas. Increased speeds require greater distances for reaction. They present an even greater threat to the officer enforcing those limits. Not only is he subjected to the vehicles travelling at the greater speed around him, he is operating under higher sustained speeds in his pursuits. Chasing a violator on a highway often means higher speeds sustained over greater distances. His motorcycle must be able to handle these higher speeds and increased demand on precise handling.

The low speed environments of the surface streets in Austin present their own brand of danger. Heavy congestion and deteriorating roadway surfaces present problems with seeing and being seen as well as motorcycle handling. Enforcement and pursuit of violators is taking the officer into and through heavy traffic. An officer must often weave in and out of traffic to catch a violator. This increased exposure, even at lower speeds, presents a continued threat to the motorcycle officer.

2.1.2 Hostile Environment

The workplace in the police world requires the policeman in each of us to keep in mind certain conditions. Television has well pointed out that we live in a potentially violent world. Shootings and assaults are not uncommon to police officers, even when they are the victims of this violence.

The use of a motorcycle instead of a patrol car has certain limitations for the police officer dealing with the violent criminal element. First of all, that element is always present. You have to think like a cop all the time, and not just like a motorcyclist. While traffic may kill you, so can the criminals you were warned about in the academy. Just because traffic enforcement is a motorcycle police

officers forte, it does not preclude him from his requirement to maintain a vigilant watch against violence.

In a hostile action, a motorcycle officers gloves, helmet, and boots may actually hinder his ability to move in a manner to protect himself from the perpetrator. A motorcycle does not provide the same cover or concealment that the patrol car does. And while a bullet resistant vest will protect against some types of weapons, it increases the officers likelihood of heat related illnesses. An officer in operation of a motorcycle is less able to defend himself against attack because both his hand and feet are used in operation of the motorcycle. The motorcycle cannot be used as effectively as the car as a weapon against attack or defense against another motor vehicle.

2.1.3 Thermal Environment

Exposure to the thermal elements is an increased problem that the motorcycle officer must deal with. Simply put, it's hot when it's hot, and it's cold when it's cold. If you are outside, you must learn to adapt to what the weather throws at you.

In the cold environment an officer runs the risk of hypothermia and overexposure. Loss of dexterity, numbness to the digits and extremities, and apathy are all symptoms of hypothermia. Even if an officer is not hypothermic, the digital dexterity loss in the cold, or simply from the heavy winter gloves, can interfere with control operation and increase risk of collision involvement. In Texas the weather can vary as much as 50 degrees in a day. It might be chilly at 0600 hours when you go to work and 90 degrees on the way home. A leather jacket in the morning will be too heavy by lunch and unbearable by 1400 hours.

Texas heat is another matter altogether. In the summer of 2000 we had over 40 days of 100 plus degree days. The mercury topped out at 114 in late August. This type of exposure requires not only acclimation, but also a strategy for its survival. Dressing for the weather, increased liquid consumption, and decreased heat exposure are required. But when you are assigned a call in that weather, decreased exposure may not be possible. Strategies for relief need to be considered and considered early.

2.1.4 Wet Environment

Riding in Texas also means riding in the rain. Rain can crop up late in the afternoon, or last a week at a time. Sudden showers can soak a roadway and rapidly developing thunderstorms can lay down a blinding rain. On the other hand rain may only last a few minutes and only lightly coat the roadway.

Rain and fog produce several contributing factors. The most obvious is the decreased coefficient of friction or traction on the roadway. There is also decreased conspicuity of the officer and a decline in his ability to see clearly, visual acuity.

Wet weather reduces an officer's ability to do paperwork, like issue citations and perform collision reporting.

2.1.5 Lighting Environment

The last environmental concern is the case for changing lighting conditions. In the winter it will be dark at 0600 hours during rush hour. And in the evenings it is dark again. Dawn and dusk are also periods of decreased visual acuity due to the lower light levels entering the pupil. For an officer trying to adequately protect his eyes from wind and the elements, this will mean several different colors of eye protection. And, those colors will need to be changed accordingly.

Decreased lighting at night makes identification of road hazards and conditions near impossible. It requires decreases in speed that may not be compatible with effective traffic enforcement and riding at higher speeds.

2.2 Equipment Concerns

2.2.1 Conspicuity

One of the greatest factors that the police motorcycle officer must weigh, is his own conspicuity. There is a great debate over the issue of "being seen" (for safety) vs. "not being seen" (for tactical purposes). Again we must strike the compromise between the police officer and the motorcyclist in each of us. If we opt for decreased conspicuity, we must compensate it with an increase in skill and attitude.

2.2.2 Lighting

Lighting on the police motorcycle can be very limiting. At night, a motorcycle's headlight is barely adequate for normal street riding. The more tasking environment of the officer requires better lighting than is currently offered. The use of emergency lighting to illuminate in the appropriate directions can be difficult. Illumination to the front and rear is the minimum lighting requirement for an emergency vehicle when stationary. But, while moving, the side needs to project a light bright enough to be seen as the motorcycle approaches and moves into an unlit or congested intersection. Side lighting aids motorists in detection of the moving police motorcycle. These lights can be taxing on the current designs of the police motorcycle. The one bright note here, is the new BMW R1100RTP, with its dual battery system. One battery runs the lights, and the other is strictly for motorcycle operation. This ensures the officer will always have battery power to start the motorcycle. Austin does not have any of these motorcycles.

2.2.3 Communications

Radio equipment must allow clear communication at all time. Microphones need to be of the noise-canceling variety in order to reduce background and wind

interference during transmission while riding. In addition, the use of headsets and boom mikes, or bone transducers, with Push-to-Talk switches is almost mandatory. Officers must be free to use both hands while riding, and not have to remove a hand from the bars to use the conventional hand mike.

2.2.4 Personal Safety Equipment

Weather in Texas provides most of the conflict with standardization of personal safety equipment. An officer may need to have both a full coverage and a short coverage helmet. The full coverage helmet would work well in cooler weather, but the short helmet, or an adaptable full coverage helmet is preferable in the warmer weather. The same goes for gloves. Several weights will be necessary for the varying thermal exposures an officer will be subjected to in a single day. I have gone through as many as three weights of gloves on a long day in autumn. As mentioned earlier, bullet resistant vests may provide protection in the hostile environment and even layering in cooler weather, but may be unsuitable in hot weather.

2.3 Training and Education Concerns

2.3.1 Criticality

Training is critical. It was proven in this study that most officers will have their first collision within the first year of coming to motorcycles. In the past, officers were even placed into motorcycle duties before basic training could be afforded. Prior to 1982 there was no training at all for motorcycle officers. Training should also be repeated in order to keep the officer fresh in his abilities and to introduce him to new information and techniques.

2.3.2 Standardization of Training

There seems to be little standardization of training in the field of police motorcycles. Of what there is, it seems that the greatest stress is placed on the physical skills involved and too little on the mental processes or strategies. It seems that basic training focuses on low speed tight turning cone patterns and precise wheel placement. While this is indeed critical, there is a real need to get the student to see the bigger picture of where he is. The Motorcycle Safety Foundation stresses the mental aspects of motorcycling, but an officer needs to add the precise wheel placement at lower speeds and the acclimation to the high-speed environment. This training is possible and a greater need exists for the sharing of information by instructors.

3.0 Police Motorcycle Collisions 1990 - 1999

3.1 How the Data Was Analyzed

The data was laid out in an orderly fashion based on the lay out of the reporting forms. It looked at date, time, location, roadway conditions, vehicles, drivers, motorcycles, officers, charges, and causative factors. Each of these major areas was broken down and analyzed. Then the analysis was displayed on a year to year basis. There is one very large exception. Training for the Austin Police Motorcycles was fairly standard with no “Recertification” training offered prior to 1996. For this reason the years 1990–1995 were grouped together as a standard or base for measurement. What changes occurred in this base time will be discussed later in this report. However, this time period will usually be referred to as if it were a single reporting year.

3.1.1 Dates and Times

Dates will be referred to in the standard measurement of Month, Day, and Year (the format *mm/dd/yy*). Specific years, months, days of the month, and days of the week will be clearly referred to as individual measures and fields.

Elapsed time (time since a particular event) will be expressed in years and days. It will appear as a fraction with three decimal places (the format *y.ddd*) In these expressions you will note that the last three digits will never exceed 365 as that would represent more than a year’s worth of days and should reflect the next higher year before the decimal point.

Daily time will appear as a reference to the 24-hour clock.

Seasons represent the type of weather found at a particular time of year in Texas. December through February are traditionally the coldest months and were classified as Winter. June through August is the hottest and deemed appropriately Summer. Mild weather conditions are seen in both spring, March through May, and Autumn, September through November.

3.1.2 Units and Percentages

Most items will be presented by the number of times that the item occurs and then followed by its percentage. The percentage represents the number of times the item appears divided by the number of total items in a give time period or sampling.

Example:

June *(5)* – 22%

June is the most common found or listed item *(5)* is the number of times it appears in the sampling, and 22% is the percentage of the total sampling.

Where there are different numbers of sampling in any given year, the percentage is the most accurate measure for comparison purposes.

3.1.3 Points of Contact

Vehicle Points of Contact are of particular importance. Though the actual damage may be far spread, where the vehicles first contact each other, the roadway, or a fixed object tells more about pre-collision placement of the vehicles themselves.

The areas that represent the Point of Contact coincide with the standardized reporting codes for the State Collisions forms, ST3 and PD-0039. Each Point of Contact can be seen as one twelfth of a circle, or the hours on a clock face. 12 would be the front of the vehicle, 3 the right side, 6 the back, and 9 the left side. A clearer illustration of the exact positions is as follows:

12 – Front

11 – Left Front 1 – Right Front

10 – Left Front Quarter 2 – Right Front Quarter

9 – Left Distributed 3 – Right Distributed

8 – Left Back Quarter 4 – Right Back Quarter

7 – Left Back 5 – Right Back

6 – Back

When dividing the points into left or right, those that fell either directly in front or in back were not considered. Likewise in determining front and back, those that fell directly right or left were considered neither front nor back.

3.1.4 Damage

Damage to the vehicles was rated as Minimal, Moderate, or Extensive. The investigating officer considered Minimal damage under $500. Moderate damage was total area damage that exceeds the $500 limit but was not in excess of $1500. Extensive damage was estimated in excess of $1500.

3.1.5 Injuries

Injuries were classified as None, Minor, Intermediate, and Serious. Minor injuries were typified by complaint of pain. Intermediate injuries had non-incapacitating injuries. Serious injuries had incapacitating wounds.

3.2 The Data

3.2.1 Collisions by Year

This data can best be listed in a simple table and referred to later. It is fairly straightforward and shows the year, the number and type of collisions.

Year	Total Collisions	Single Vehicle	Multiple Vehicle
1990	6	---	6
1991	4	1	3
1992	5	---	5
1993	9	3	6
1994	8	1	7
1995	7	1	6
1996	8	1	7
1997	14	4	10
1998	11	5	6
1999	11	2	9

3.2.2 Collisions by Date & Time

Seasons. In the base years the Spring and Summer seasons saw the most collision activity. The further the study progressed, the fewer collisions occurred in spring. Summer steadily dropped in collision rates over ’96 and ’97, but then steadily increased until it produced 50% of all collisions. Winter began an increase in representation in ’97 and has continued to be a major collision season through the remainder of the study. In ’99 it shared second place with Autumn at 18% of the reported collisions.

Months. Statistics by month tell a slightly different story. The high producers were usually the milder months until 1997. In ’97 and ’98 the colder months, December and February were high producers. In ’99 the hot months, July and August were the major months for collisions.

Day. On a study wide basis, the first days of the month involved the most collisions. When a further analysis was done, it was found that the first 15 days of the month yielded 50 – 82% of all the collisions.

Weekday. Wednesday is the fatal day here. Overall 24% of all collisions occurred on Wednesday and 22% occurred on Monday. Saturday and Sunday were consistently under represented, but I contribute that to the fact that motorcycle officers rarely work on those days.

Time. The hour in which a collision occurred varied from what the base had set. According to the '90-'95 statistics, lunch hour, the thirty minutes before noon accompanied with 1230 – 1330 hours yielded 28% of the collisions. But as the years progressed, morning rush hour showed unusual activity. In '97 and '98 0630 – 0730 yielded 36–55% of all collisions. In '99 it was 0850 – 0950 that showed 36% of the total collisions for that year.

3.2.3 Collisions by Type

Single Vehicle. The Single Vehicle Collision (SVC) represents a lone officer either falling down, or striking a fixed object. Yearly SVCs represent 13–45% of all collisions. They steadily increased from 1990 (0%) to 1998 (45%). In 1999 they dropped dramatically to just 18%.

Multiple Vehicle. Multiple Vehicle Collisions (MVC) have always represented the greatest risk to a motorcycle police officer. Yearly, these comprise 55–88% of all the studied collisions. The most common was a single police motorcycle and a single civilian motor vehicle. There were incidents of a single motorcycle and multiple cars (2%), a single car and multiple motorcycles (1%), and even a police motorcycle and another police motorcycle (5%). Riding side by side it was bound to happen, and it did 4 times in 10 years.

3.2.4 Collisions by Location

Area Commands. There was only one clear trend when Area Commands were compared. South West was consistently the lowest involved area 0 – 13%. This may have more to do with the particular make up or changing make up of officers on the different shifts and Area Commands. Risk acceptance levels vary from officer to officer. This constant change in the "mix" may be the hardest of elements to pin down and explain. A note here, when decentralization did occur in '98, the officers that were from different shifts but working South West did combine in a single shift to remain working South West and was the only shift to do so.

Location Types. This refers to Intersection, Mid Block, or Private Property. As it seems, the usual conclusion about where most motorcycle collisions occur *(car turning left in front of a motorcycle at an intersection)* is not true here. Only 13–21% of all collisions occurred at an intersection. Instead 73–88% occurred in Mid Block. Private Property had 5–9% of the collisions.

Speed Limits. The clear trend here was the higher the speed limit, the lower the collision rate. Roadways with speed limits under 40 mph had 65% of the collisions overall. On the average speed limits of 40 – 50 and over 50 mph were equally divided, but when compared year for year, the lower limit usually produced more collisions.

3.2.5 Collisions by Vehicle

Vehicle Age. The range in ages was 0 *(less than a year old)* to 20 years old. Vehicles 0-1 (11%) and 3-4 (13%) years old were highly represented in the study. The average age was 6.090.

Color. Year after year, and in the total averages, the predominant color of the vehicles was white (25%), followed by blue (15%) and maroon (11%).

Make. Overall Chevrolet and Ford were tied and the most represented at 18% each. Honda and Toyota also tied at 10% each. In the year by year analysis, the American manufactured vehicles always placed in the top percentile usually followed by an import.

Model. In the overall analysis the 4-door car was the most represented (38%) and the 2-door followed (23%). Comparing the years, the 2-door and 4-door models exchanged first and second place until ’98 and ’99. Here the Pickup Truck was the most involved (33–40%) followed by the Van (22-40%).

Point of Contact. The most common place for a civilian vehicle to be struck was in the rear (11–33%, 15% overall) or the left back quarter (6–40%, 11% overall). By area, the back half is more common (48%) than the front half (30%) and the left half slightly more common (36%) than the right half (34%).

3.2.6 Collisions by Driver

Sex. Males (67%) were represented in the study over females (33%). By year the males ranged from 50–100% in involvement.

Race. Overall racial involvement seemed to keep pace with Austin’s demographics, Whites (57%), Hispanics (25%) and Blacks (16%).

Age. The range of ages was 19–93 years old. The average age was 34.138. But the real picture is that drivers 17–30 years old represented 55% of the drivers involved. A breakdown by drivers age shows 17–20 (16%), 21–25 (23%), and 26–30 (16%) involvement.

Occupation. White-Collar (25%) and Blue-Collar (23%) workers lead in representation, while students follow (16%). Austin is home to the University of Texas and four other colleges and universities.

Residence. 92% of drivers live in the Austin or Metropolitan area and are licensed in the state of Texas (95%). No drivers lived out of state and only 5% were licensed out of state.

Owners. Most vehicles were driven by their owners (72%) while 18% were driving vehicle not owned by them. Also 85% of the drivers were insured for the vehicle they were driving.

Injuries. 92% of the drivers reported no injures while the other 8% reported only minor injuries.

3.2.7 Collisions by Police Motorcycle

Age of Unit. Age ranged from 0 – 7 years with the average unit involved being 2.260 years old. Units 2-3 years old (21%) and 3-4 years old (22%) were most commonly represented.

Make & Model. This was the hardest category to pin down, and the most controversial. Everyone seems to want to know which motorcycle is the safest. The bottom line is that the motorcycle most represented on the street at that time was the motorcycle most involved. By the numbers, the1992 Harley-Davidson FXRP (33%) and the 1995 Kawasaki KZ1000P (24%) were most involved. They were also the greatest numbers of motorcycles purchased in any one year (21 FXRPs in 1992 and 20 KZs in 1995).

On Emergency. Of the 83 units involved in collisions 1990-99, 61% were operating as an emergency vehicle.

Damage. Overall damage has remained minimal (55%). But over years ’98 and ’99 the damage has begun to decrease in the Moderate category and increase in the Extensive category. Moderate has gone from 47% in ’97 to 27% in ’99. Extensive has gone from 7% in ’97 to 27% in ’99.

Point of Contact. Most police motorcycles make contact with the front of the motorcycle (27%) or are struck in the right side (30%). By halves, the front is represented in 47% of the incidents while the back was struck in only 6%. This is consistent with several national collision studies. However when it comes to right and left side, the study differed dramatically from the national standard. Normally we would expect that the front and left would be over represented, but here we see the right (46%) over the left (14%).

3.2.8 Collisions by Police Officers

Sex. The males were over represented here (98%). But there were only two women on Motors during this study period. There have only been those two women on Motors in the Section’s history.

Race. Race was seen as a non-issue here. The Section demographics were consistent with the racial representation in the data.

Age. The age range was 25 – 48 years old. The average age was 36.147. Officers 31–35 (32%) and 36–40 (32%) were over represented. This age group represents the majority of police officers in the department riding motorcycles.

Injuries. Most collisions resulted in Minor to Intermediate injuries (28 and 37%) respectively. 46% of the officers were transported from the scene by ambulance.

Training. Overall 92% of the officers received training prior to their first collision on a police motorcycle. The average time from Basic training was 3.177. 38% of the officers had received Recertification Training prior to their collisions. When we analyze these statistics by year, we see that the interval between Recertification and Collision is rising from .034 in 1996, the first year Recertification was offered, to .187 in '99. Yearly analysis shows a real fluctuation in the times between Basic and collision, with the range well on either side of the average. There were 39 officers who had their first collision during this study. 62% of these officers had less that a year between Basic Training and their first collision. 23% had less that two years and 11% had less than three years from Basic Training to their first collision. Overall 47% of the collisions were first time collisions for the officers. But by years, this ranged from 67% in '90, and dropped to 50% by '94 and then increased to 72 and 75% in '95 and '96. These rates have dropped to 36% for both '98 and '99.

3.2.9 Collisions by Roadway Conditions

This area remained fairly consistent throughout the study it need only be summarized here.

Lighting. 77% daylight, 4% dawn, 4% dark – lighted

Weather. 94% Clear / Cloudy, 4% Rain, 2% Fog

Surface Type. 98% Asphalt

Surface Condition. 87% Dry, 12% Wet

Other Factors. Aged Roadway – 6%, Oil on Road – 8%, Debris on Road - 1%

Traffic Control. Static controls – 52%, Dynamic controls – 46%

3.2.10 Collisions by Charges Filed

Drivers. 43% of the civilian drivers involved in police motorcycle collisions received citations.

Hazardous Citations. The major citation was for some form of left turn violation (26%). Other turns and non-turn violations were equal in issuance (15%). Alcohol was a factor and the driver charged with Driving while Intoxicated in a single incident (3%). The trend here was that turn violations increased from '96 (20%), to '97 (40%), to '98 (66%), but then declined in '99 (17%).

Non-Hazardous Citations. The majority of non-hazardous citations were for driver's license (24%) or insurance (18%) violations

Unit at Fault. Here again we really differ from the national averages and studies. The police officer was found to be at fault in 55% of the collisions. Citizens were found at fault in only 45% of the incidents. Yearly officers were at fault 75% in '96, 50% in '97, 82% in '98, and 55% in '99.

3.2.11 Collisions by Causative Factors for Civilian Drivers

Roadway Condition. The roadway was determined to be a factor in only 2% of the collisions.

Vehicle Operator Condition. Driver condition contributed 23%. The major factor here was Driver inattention (17%).

Vehicle Movement. Vehicle movement was contributable in 75% of the cases. The two major factors were Fail to Yield Right of Way Turning Left (12%) and Fail to Yield Right of Way Private Drive (12%). The major problem here was that some investigators held that a left turn into a private drive had the same result as failing to yield exiting a private drive. Others thought that the left turn into the private drive should have been marked as a Fail to Yield Turning Left. Unsafe Start (7%) and Unsafe Backing (8%) were the next highest producers. Yearly we see that the trend is for more collisions involving inline movements (start & stop) is about equal to the collisions involving turning movements. The most common error in judgement was Fail to Yield Right of Way to Emergency Vehicle. This was most likely a result of all the collisions that occurred while the officers were operating as an emergency vehicle (lights and siren on) and the high number of police at fault collisions.

3.2.12 Collisions by Causative Factors for Police Officers

Roadway Conditions. Roadway Conditions contributed more than operator conditions here. Oil on the roadway was the major factor for 6% of the collisions. Debris, wetness, and design of the roadway were each cited in 3% of the collisions.

Vehicle Operator Condition. This was cited the least of all (2%) with inattention and impaired visibility the causative factors listed.

Vehicle Movement. Speed was the key factor for the police officers in 50% of the collisions. Speed was broken down into Following too Closely (19%), Fail to Control Speed (16%), and Over Braking (10%). All turning movements combined only comprised 18% of the listed factors for police officers. In the judgment category, Faulty Evasive Action had a strong showing at 9%.

4.0 Training

4.1 History

In 1982 Officer Robert Buck was appointed as the training officer for the Motorcycle Section. Buck had an Instructor certification from the Motorcycle Safety Foundation (MSF). He spent time with the instructional staff of the Dallas Police Department and put together a 20-hour course of instruction to familiarize officers with the police motorcycle. Officer Earl Bolls who had been an MSF instructor since 1977 assisted him. Together they taught the Basic Course for Police Motorcycle Officers. Officers assigned to Motorcycles were to complete the Basic Course within a year of their assignment. In the mean time they were still issued a motorcycle and expected to perform full duty as a Motor Officer.

In 1996 Officer Buck was promoted to Detective. Officer Bolls was asked to design a course for both the new officers and the officers currently assigned to motors. Numerous agencies were contacted about training, including Dallas PD, Houston PD, San Antonio PD, Ft. Worth PD, Harris County Sheriffs Office, Los Angeles PD, and the California Highway Patrol. Civilian teaching entities were also consulted, including the Motorcycle Safety Foundation, the Texas Department of Public Safety Motorcycle Bureau, the California Superbike School, the National Rifle Association, and H&K Firearms.

The Basic Police Motorcycle Course was designed along the guidelines of the MSF Experienced Riders Course (ERC). It utilized the videos and teaching techniques fundamental to MSF instruction. It went beyond the ERC and taught techniques of low speed precision riding and high-speed performance riding. A segment on defensive tactics utilizing the motorcycle as cover was also added.

The concept of “controlled aggression” was introduced. Controlled aggression is where an officer has to ride at the upper most limits of his capabilities and then slow to a controllable pace and attitude. This would simulate the officer having to suddenly pursue a vehicle, make the stop, and then approach the violator with a controlled professional response.

The design of the Basic Police Motorcycle Course was to raise the officer from a level of basic street rider to the level of a basic motorcycle police officer. The course was limited to 40 hours. Officers were required to pass the ERC evaluation before being allowed to enter the Basic Police Motorcycle Course.

Recertification Courses were designed to be 10 hours long. This would allow an Instructor to present four or five courses in a week and cover all the officers assigned to motors. It would keep the classes smaller and in more manageable groups while minimizing the number of officers off patrol on any one day.

In 1996 Officer Bolls put on the two Recertification Courses and two Basic Police Motorcycle Courses. He realized that the task was overwhelming for one person

and enlisted the aid of Officer Gary Zumwalt. Later Officer Dave Erskine was brought on board the training staff as a range aid.

In 1997 Officers Bolls and Zumwalt attended the Police Motorcycle Instructor School taught by Northwestern University. The department was getting ready to transition from the Kawasaki to the Harley-Davidson Road King. After riding these motorcycles in the Instructor School, Bolls and Zumwalt decided to refocus the Recertification Course to better demonstrate the handling difference between the Kawasakis and the Harley-Davidsons. In 1998 and 1999 the departmental training was directed toward the Northwestern style of training utilizing cone patterns requiring precise wheel placement. The emphasis was removed from higher speed and performance riding.

In 1999 Officer Zumwalt was promoted to Detective. Officer Bolls established a curriculum for Police Motorcycle Instructors and taught 5 new instructors. The department now had a full instructional staff with each Area Command having it's own instructor. At the decision of the instructional staff it was decided to abandon the emphasis on the Northwestern University method of training for the previous performance oriented style of instruction.

A list of departmental basic training is offered in the comparison section (5.0) of this report.

4.2 Course Analysis

4.2.1 Recertification – April 1996

This course focused on high-speed work and high performance braking. It also went back to the basic of eye placement. Classroom was utilized to teach the fundamentals followed by on-track sessions to put the information into use. Exercises in this course included the first half of the ERC range exercises.

This was a base line for the Instructor to evaluate the officers, begin the process of modifying old habits that were causing the officers problems and instill new behaviors in a coaching atmosphere.

4.2.2 Recertification – November 1996

This course finished up the work begun in the April course. It focused on new traffic strategies and the last of the ERC range exercises. Once the ERC was completed the officer had a new set of guidelines with which he could begin to build better skills for higher speed turning and braking.

Officers were introduced to the concept of "split attention". That is keeping your mind focused on your riding and path of travel while your motorcycle is slightly out of control. It raises the threshold of officer awareness and risk acceptance while reducing the risk of officers panicking in threatening situations.

4.2.3 Recertification – Spring 1997

By request, the focus of this training was brought on riding in tandem with another officer. Half the day was spent in recapitulating the basics for performance riding. The last half of the day was spent in “two-up” riding.

A simulated escort was also run. The Section was doing little to cross train officers to work with anyone other than their own shift in running escorts. It was found that escort procedures needed to be standardized. It was decided that a training and procedure manual should be prepared and distributed to the officers in the next Recertification Course.

4.2.4 Recertification – January 1998

This was the first Recertification Course following the Northwestern University Motorcycle Instructor Training. The subject matter focused on the need for transition to the Harley-Davidson Road King. Tight, low-speed cone patterns were established and the difficulty level was relaxed to allow officers to get used to the new methods. Some higher speed braking was introduced for transitional purposes. This training was not popular with the officers.

The newly established Escort Procedures were introduced and practiced on a simulated Presidential Escort.

4.2.5 Recertification – November 1998

The focus continued on tight cone patterns and the difficulty level was increased, but still not to the standard set by Northwestern University. High speed braking was continued and swerving was added to the curriculum. There was also the addition of a simulated pursuit exercise to combine the new skills.

Classroom work consisted of a review of the previous years collisions in order to increase officer awareness of current traffic / collision problems.

4.2.6 Recertification – July 1999

Officers were reintroduced to the concept of “split attention”. The new Road King riders were given the opportunity to get a little out of control with the new machines and realize that they had more control of the heavier motorcycle than most thought they had. An emphasis was now put on braking and swerving.

4.2.7 Recertification – November 1999

This marked the return to street style riding and the emphasis on motorcycle police work in the real world. Cones were replaced with realistic barriers and simulated traffic situations. All dimensions were set to standard lane widths. Officers were expected to set their own limitations and ride within them just as if on the street.

5.0 Comparison of Training to Collision Statistics

5.1 Basic Training and Collision Rates

It can be readily seen by the statistics that when a large class of new riders hits the streets, collision rates are apt to increase by about 45% in the next year. Similar trends seem to hold with the introduction of Recertification Training. This seems to give credence to the theory that when introduced to a new skill the rider will take time to master the skill before increasing his risk acceptance level. Once the risk acceptance level is raised, the probability and the actuality of him being involved in a collision increases as well. In police motorcycle situations it seems to be within the first year for the average rider. This trend for first time involved riders appears consistent throughout the study.

Year	Number of Collisions	SVCs	MVCs	Basic Taught	Total Students
1990	6	-----	6	2	7
1991	4	1	3	-----	-----
1992	5	-----	5	2	12
1993	9	3	6	1	4
1994	8	1	7	1	5
1995	7	1	6	1	7
1996	8	1	7	2	10
1997	14	4	10	1	4
1998	11	5	6	1	5
1999	11	2	9	3	19

Note the increase in collision rates (arrow) the year after a large class (circled)

Year	Number of Collisions	Number of 1st Time Collisions	Officers 0-1 Years After Basic	Officers 1-2 Years After Basic	Officers 2-3 Years After Basic
1990	6	4	1	3	-----
1991	4	1	1	-----	-----
1992	5	3	3	-----	-----
1993	9	2	-----	2	-----
1994	8	4	2	-----	2
1995	7	5	2	2	1
1996	8	6	5	1	-----
1997	14	3	1	1	1
1998	11	4	4	-----	-----
1999	11	2	2	2	-----

5.2 Training and Multiple Collisions

We find that lessons are not always learned in the class or the collision. Officers seem determined to continue to push the envelope to the brink of destruction. As a matter of fact, 43% of the collisions were the officer's first since training. But, we find that only 28 officers appear only once in the study representing 32.5% of the collisions while 23 officers appear a total of 58 times in the study involving them in 67.5% of the collisions. It would seem that approximately half of the officers continue to push their limits beyond their boundaries until either a new limit is found or is exceeded.

Total Involvements	Total Officers Involved	Officers Involved Only Once	Number of Single Involvements	Officers Involved More than Once	Number of Multiple Involvements
86	51	*(28)* - 55%	*(28)* - 32.5%	*(23)* - 45%	(58) - 67.5%

6.0 Recommendations

6.1 Training

The only clear conclusion that can be drawn from looking at training is that it is essential to prepare the officer for his new style of duty. No matter what you teach or how you teach it, any preparation is better than none at all. Seemingly, even with training, the results are the same. We can only hope that the training reduces the potential for involvement, injury, or damage in a collision. Usually within a year or two the officer will be involved in a collision. We only see that when you train and put a large group of officers on the streets in a year, that your collision rates will go up the following 12–18 months.

6.2 Awareness of Key Trends

Officers should make themselves aware of the trends in the danger areas. Knowing when and where collisions are most likely to occur is good information but do not provide certainties that they will not occur elsewhere. A collision is apt to strike an officer any time or place, no matter what he is riding.

6.3 Familiarity

Officers should become aware of their Command Areas. It was displayed by the South West Area Command where, during decentralization, the officers familiar with the area remained in the area instead of transferring to a new area of town. The officers' knowledge of the road and traffic conditions for their area has made a huge difference in their collision rate.

6.4 Controlled Aggression

While “controlled aggression” will continue to be taught, there should be a greater emphasis on the “controlled” portion of the equation. Officers remain in a high percentage of “at fault” collisions due to their aggressive riding style. This is further supported by the number of collisions that occur while the officer is operating as an emergency vehicle.

6.5 Vehicle Control

The large percentage of causative factors for police that list a derivative of speed (Fail to Control Speed, Following too Closely, and Over Braking) indicate a greater need for officers to exhibit greater vehicle control during all phases of motorcycle operation. Riding within well established limits under all conditions would go far to reduce these types of collisions.

6.6 Conspicuity

The greatest percentages of contact areas remain to the front followed by an almost even split directly into the left and right sides. This indicates clearly that the colliding vehicles were well within the officer’s field of view. Developing strategies to see and be seen, as suggested by both Hurt and MSF, can greatly improve the ability of the officer to reduce the risk of these collisions occurring.

6.7 Environment

The biggest surprise comes in the form of environment. It was identified much earlier that the riding environment, hot and cold, had a big effect on the motorcycle operator. The largest numbers of collisions seem to come in the months and seasons when officers put the least number of miles on the motorcycles (Winter, Summer). The added effects of heat related illnesses and hypothermia, or the added weight of cold weather gear may well inhibit the officers’ ability to operate the motorcycle effectively. Strategies, such as reduced exposure and increase relief during extended exposure to this environment may make a great deal of difference in these collisions.

7.0 Conclusion

In the analysis we can see that there are no panaceas for the problems of traffic. Nor are there any quick cures for the police motorcycle officer in traffic. This study has accomplished the objectives set out in the introduction.

This report has established the concerns for the modern motorcycle police officer. The risks of the traffic environment can only be lessened by adaptation of the proper attitudes toward the traffic around him. The effects of weather, especially the heat and cold, must be dealt with through greater protection and reduced exposure. Officers must continually train for work in the hostile criminal environment and cannot forget that he is still a police officer first. Officers must continue to try to better equip themselves with the latest technology that allows them to spend less effort on their physical tasks and greater attention to the mental strategies of riding.

The study has provided an in depth look at many factors involved in the police motorcycle collision. Some have had direct bearing and are manageable, while others can be just as dangerous, but are completely out of our control.

We have seen that the officer is more in control of his destiny than he would like to think. In fact he is in such control, that to gain better control would reduce his collision involvement by half.

Training has proved to be a key element in officer awareness. Alertness to conditions that are constantly changing minute by minute, and year by year. Only by expanding the knowledge and experience base of the officer, can he increase his limits of operation and reduce the risks of involvement in a bad situation.

The factors that affect police motorcycle officers are not those commonly encountered by the general motorcycling public. The needs and applications of the police motorcycle are different, and the resulting involvement has shown much different trends than expected.

There may be no real roadmap for the future. But one thing is clear. It all comes down to those three top factors … attitude, attitude, attitude. An officer in control, even when riding aggressively, who has the proper mind set can not only come out a survivor, but can triumph as a winner.

Appendix A

The Comparisons

A Road Map for Police Motorcycle Training

A Study of Needs, Training, and Collisions Involving Police Motorcycle Officers of the Austin Police Department, 1990-1999.

Earl Bolls
Senior Police Officer
Austin Police Department
Austin, Texas
United States

Date & Time Trends *(Date and Time of Police Motorcycle Collisions)*

{ Most Commonly Found Item (*# of involvements / year*) - % Involved / year }

	1990-95		1996		1997		1998		1999	
Season										
Winter	*(8)*	- 21%	----	- ------	*(7)*	- 50%	*(4)*	- 36%	*(2)*	- 18%
Spring	*(12)*	- 31%	*(3)*	- 38%	*(2)*	- 14%	*(1)*	- 9%	*(1)*	- 9%
Summer	*(12)*	- 31%	*(2)*	- 25%	*(2)*	- 14%	*(3)*	- 27%	*(6)*	- 55%
Autumn	*(7)*	- 18%	*(3)*	- 38%	*(3)*	- 21%	*(3)*	- 27%	*(2)*	- 18%
Month										
First	**Jun.**	*(6)* - 15%	**May**	*(2)* - 25%	**Dec.**	*(4)* - 29%	**Dec.**	*(3)* - 27%	**Jul.**	*(3)* - 27%
Second	**Mar.**	*(5)* - 13%	**Nov.**	*(2)* - 25%	**Feb.**	*(3)* - 21%	**Jun.**	*(2)* - 18%	**Aug.**	*(2)* - 18%
Third	**Apr.**	*(4)* - 10%	**---------**	---- - ------	**Nov.**	*(2)* - 14%	**Oct.**	*(2)* - 18%	**---------**	---- - ------
Day										
First	**13th**	*(3)* - 8%	**15th**	*(3)* - 38%	**3rd**	(2) - 14%	**4th**	(2) - 18%	**7th**	(2) - 18%
Second	**26th**	*(3)* - 8%	**25th**	*(2)* - 25%	**15th**	(2) - 14%	**1st**	(2) - 18%	**12th**	(2) - 18%
1^{st} - 15^{th}		*(20)* - 51%		*(4)* - 50%		(9) - 64%		(9) - 82%		(8) - 73%
16^{th} - 31^{st}		*(19)* - 49%		*(4)* - 50%		(5) - 36%		(2) - 18%		(3) - 27%
Weekday										
First	**Wed.**	*(12)* - 31%	**Wed.**	*(2)* - 25%	**Mon.**	*(5)* - 36%	**Mon.**	*(4)* - 36%	**Wed.**	*(3)* - 27%
Second	**Fri.**	*(9)* - 23%	**---------**	---- - ------	**Thur.**	*(4)* - 29%	**Wed.**	*(2)* - 18%	**Mon.**	*(2)* - 18%
Time										
First	**07**	*(7)* - 18%	**16**	*(3)* 38%	**07**	*(4)* - 29%	**06**	*(4)* - 36%	**08**	*(2)* - 18%
Second	**15**	*(7)* - 18%	**08**	*(2)* - 25%	**06**	*(3)* - 21%	**09**	*(3)* - 27%	**09**	*(2)* - 18%
AM		*(18)* - 46%		*(4)* 50%		*(10)* - 71%		*(9)* - 82%		*(8)* - 73%
PM		*(21)* - 54%		*(4)* - 50%		*(4)* - 29%		*(2)* - 18%		*(3)* - 27%
Notes on Time										
	1125-1157	*(3)* - 8%	**1632-1643**	*(3)* - 38%	**0630-0735**	*(5)* - 36%	**0625-0737**	*(6)* - 55%	**0852-0956**	*(4)* - 36%
	1225-1328	*(8)* - 21%								
	"Lunch"	*(11)* - 28%								

Location Trends

(Locations of Occurrence in Police Motorcycle Collisions)

{ Most Commonly Found Item (*# of involvements / year*) - % Involved / year }

	1990-95	1996	1997	1998	1999
Collision Types					
Single Vehicle	*(6)* - 15%	*(1)* - 13%	*(4)* - 29%	*(5)* - 45%	*(2)* - 18%
Multi Vehicle	*(33)* - 85%	*(7)* - 88%	*(10)* - 71%	*(6)* - 55%	*(9)* - 82%
Veh vs. PD	*(30)* - 77%	*(5)* - 63%	*(9)* - 64%	*(5)* - 45%	*(9)* - 82%
MultiVeh vs. PD	*(2)* - 5%	---- - ------	---- - ------	---- - ------	---- - ------
Veh vs. MultiPD	---- - ------	*(1)* - 13%	---- - ------	---- - ------	---- - ------
PD vs. PD	*(1)* - 3%	*(1)* - 13%	*(1)* - 7%	*(1)* - 9%	---- - ------
Area Commands					
North West	*(6)* - 15%	---- - ------	*(5)* - 36%	---- - ------	*(2)* 18%
North East	*(1)* - 3%	*(1)* - 13%	*(2)* - 14%	*(4)* - 36%	*(1)* 9%
Central West	*(19)* - 49%	*(2)* - 25%	*(2)* - 14%	---- - ------	*(5)* 45%
Central East	*(2)* - 5%	*(3)* - 38%	*(2)* - 14%	*(4)* - 36%	*(2)* 18%
South West	*(7)* - 18%	*(1)* - 13%	*(1)* - 7%	---- - ------	---- - ------
South East	*(4)* - 10%	*(1)* - 13%	*(2)* - 14%	*(3)* - 27%	*(1)* 9%
North	*(7)* - 18%	*(1)* - 13%	*(7)* - 50%	*(4)* - 36%	*(3)* 27%
Central	*(21)* - 54%	*(5)* - 63%	*(4)* - 29%	*(4)* - 36%	*(7)* 64%
South	*(11)* - 28%	*(2)* - 25%	*(3)* - 21%	*(3)* - 27%	*(1)* 9%
East	*(7)* - 18%	*(5)* - 63%	*(6)* - 43%	*(11)* - 100%	*(4)* 36%
West	*(32)* - 82%	*(3)* - 38%	*(8)* - 57%	---- - ------	*(7)* 64%
Location Type					
Intersection	*(8)* - 21%	*(1)* - 13%	(2) - 14%	*(2)* - 18%	*(2)* - 18%
Mid Block	*(29)* - 74%	*(7)* - 88%	(11) - 79%	*(8)* - 73%	*(9)* - 82%
Private Property	*(2)* - 5%	---- - ------	(1) - 7%	*(1)* - 9%	---- - ------
Posted Speed Limits *(mph)*					
Under 40	*(26)* - 67%	*(3)* - 38%	*(7)* - 50%	*(6)* - 55%	*(8)* - 73%
40 - 50	*(5)* - 13%	*(3)* - 38%	*(1)* - 7%	*(3)* - 27%	*(2)* - 18%
Over 50	*(6)* - 15%	*(2)* - 25%	*(6)* - 43%	*(2)* - 18%	*(1)* - 9%
Roadway Under Construction					
Yes	---- - ------	*(1)* - 13%	---- - ------	---- - ------	---- - ------
No	*(39)* - 100%	*(7)* - 88%	*(14)* - 100%	*(11)* - 100%	*(11)* - 100%

Road Condition Trends *(Roadway Conditions Involved in Police Motorcycle Collisions)*

{ Most Commonly Found Item (*# of involvements / year*) - % Involved / year }

	1990-95	1996	1997	1998	1999
Total Incidents	39	8	14	11	11
Light Conditions					
Daylight	*(37)* - 95%	*(8)* - 100%	*(12)* - 86%	*(8)* - 73%	*(10)* - 91%
Dawn	*(1)* - 3%	---- - ------	---- - ------	*(2)* - 18%	---- - ------
Dark - not lighted	*(1)* - 3%	---- - ------	---- - ------	---- - ------	---- - ------
Dark - lighted	---- - ------	---- - ------	*(2)* - 14%	*(1)* - 9%	*(1)* - 9%
Weather Conditions					
Clear / Cloudy	*(37)* - 95%	*(8)* - 100%	*(12)* - 86%	*(10)* - 91%	*(11)* - 100%
Raining	*(2)* - 5%	---- - ------	*(1)* - 7%	---- - ------	---- - ------
Fog	---- - ------	---- - ------	*(1)* - 7%	*(1)* - 9%	---- - ------
Surface Type					
Asphalt	*(38)* - 97%	*(8)* - 100%	*(14)* - 100%	*(10)* - 91%	*(11)* - 100%
Concrete	*(1)* - 3%	---- - ------	---- - ------	*(1)* - 9%	---- - ------
Surface Condition					
Dry	*(35)* - 90%	*(8)* - 100%	*(12)* - 86%	*(8)* - 73%	*(9)* - 82%
Wet	*(4)* - 10%	---- - ------	*(2)* - 14%	*(3)* - 27%	*(1)* - 9%
Other Surface Factors					
Aged	*(3)* - 8%	*(1)* - 13%	*(1)* - 7%	---- - ------	---- - ------
Oil	*(2)* - 5%	*(2)* - 25%	---- - ------	*(1)* - 9%	*(2)* - 18%
Debris	---- - ------	---- - ------	*(1)* - 7%	---- - ------	---- - ------
Traffic Control					
Marked Lanes	*(10)* - 26%	*(1)* - 13%	*(2)* - 14%	---- - ------	*(1)* - 9%
Center Strip/Divider	*(6)* - 15%	*(3)* - 38%	*(4)* - 29%	*(4)* - 36%	*(3)* - 27%
Stop & Go Signal	*(5)* - 13%	*(1)* - 13%	*(3)* - 21%	---- - ------	*(3)* - 27%
Stop Sign	---- - ------	---- - ------	*(1)* - 7%	*(2)* - 18%	---- - ------
Yield Sign	---- - ------	---- - ------	*(1)* - 7%	*(1)* - 9%	---- - ------
Warning Sign	*(1)* - 3%	---- - ------	---- - ------	---- - ------	---- - ------
Turning Marks	---- - ------	*(1)* - 13%	---- - ------	---- - ------	---- - ------
None/Inoperative	*(17)* - 44%	*(2)* - 25%	*(3)* - 21%	*(3)* - 27%	*(4)* - 36%

Charges Filed Trends

(Criminal Charges Filed in Police Motorcycle Collisions)

{ Most Commonly Found Item (*# of involvements / year*) - % Involved / year }

	1990-95	1996	1997	1998	1999
Total Incidents	39	8	14	11	11
Total Civilian Drivers	32	6	9	5	9
Drivers Charged	***(drivers charged / total drivers)***				
	(12) - 38%	*(3)* - 50%	*(4)* - 44%	*(2)* - 40%	*(5)* - 56%
Total Charges Filed	16	5	5	3	6
Hazardous Charges Filed					
Left Turns	*(7)* - 44%	---- - ------	---- - ------	*(1)* - 33%	*(1)* - 17%
Other Turns	*(1)* - 6%	*(1)* - 20%	*(2)* - 40%	*(1)* - 33%	---- - ------
Non-Turn	*(2)* - 13%	*(1)* - 20%	---- - ------	---- - ------	*(2)* - 33%
DWI	*(1)* - 6%	---- - ------	---- - ------	---- - ------	---- - ------
Non-Hazardous Charges Filed					
Drivers License	*(3)* - 19%	*(2)* - 40%	*(2)* - 40%	---- - ------	*(1)* - 17%
Insurance	*(2)* - 13%	*(1)* - 20%	*(1)* - 20%	---- - ------	*(2)* - 33%
Equipment	---- - ------	---- - ------	---- - ------	*(1)* - 33%	---- - ------
Unit at Fault					
Police	*(18)* - 46%	*(6)* - 75%	*(7)* - 50%	*(9)* - 82%	*(6)* - 55%
Civilian	*(21)* - 54%	*(2)* - 25%	*(7)* - 50%	*(2)* - 18%	*(5)* - 45%

Vehicle Trends *(Civilian Vehicles Involved in Police Motorcycle Collisions)*

{ Most Commonly Found Item (*# of involvements / year*) - % Involved / year }

	1990-95	1996	1997	1998	1999
Units Involved	32	6	9	5	9
Age					
Age Range	0 - 17	0 - 20	0 - 12	0 - 11	1 - 14
Average Age	6.262	4.243	4.284	7.000	6.284
Color					
First	**White** *(5)* - 22%	**Green** *(2)* - 33%	**White** *(2)* - 22%	**White** *(3)* - 60%	**White** *(2)* - 22%
Second	**Maroon** *(7)* - 22%		**Green** *(2)* - 22%		**Blue** *(2)* - 22%
Make					
First	**Chev** *(7)* - 22%	**Ford** *(2)* - 33%	**Ford** *(3)* - 33%	**Dodge** *(2)* - 40%	**Ford** *(3)* - 33%
Second	**Olds** *(5)* - 16%		**Honda** *(3)* - 33%		**Toyota** *(2)* - 22%
Model					
First	**4 Door** *(14)* - 44%	**4 Door** *(4)* - 67%	**2 Door** *(4)* - 44%	**Pickup** *(2)* - 40%	**Pickup** *(3)* - 33%
Second	**2 Door** *(7)* - 22%	**2 Door** *(2)* - 33%	**4 Door** *(3)* - 33%	**Van** *(2)* - 40%	**Van** *(2)* - 22%
Point of Contact					
Front	*(3)* - 9%	----- -----	*(1)* - 11%	----- -----	----- -----
LF	*(1)* - 3%	*(1)* - 17%	*(1)* - 11%	----- -----	----- -----
LFQ	*(1)* - 3%	----- -----	*(1)* - 11%	*(1)* - 20%	----- -----
LD	*(1)* - 3%	----- -----	*(1)* - 11%	*(1)* - 20%	*(1)* - 11%
LBQ	*(2)* - 6%	----- -----	*(1)* - 11%	*(2)* - 40%	*(2)* - 22%
LB	*(3)* - 9%	----- -----	*(1)* - 11%	*(1)* - 20%	----- -----
BACK	*(5)* - 16%	*(2)* - 33%	*(1)* - 11%	----- -----	*(1)* - 11%
RB	*(2)* - 6%	----- -----	*(1)* - 11%	----- -----	*(2)* - 22%
RBQ	*(3)* - 9%	----- -----	----- -----	----- -----	----- -----
RD	*(3)* - 9%	*(1)* - 3%	----- -----	----- -----	*(1)* - 11%
RFQ	*(2)* - 6%	----- -----	*(1)* - 11%	----- -----	*(2)* - 22%
RF	*(3)* - 9%	----- -----	----- -----	----- -----	----- -----
Non-Contact	*(3)* - 9%	*(2)* - 33%	----- -----	----- -----	----- -----

Driver Trends *(Civilian Drivers Involved in Police Motorcycle Collisions)*

{ Most Commonly Found Item (*# of involvements / year*) - % Involved / year }

	1990-95	1996	1997	1998	1999
Drivers Involved	32	6	9	5	9
Sex					
Male	*(21)* - 66%	*(3)* - 50%	*(5)* - 56%	*(5)* - 100%	*(7)* - 78%
Female	*(11)* - 34%	*(3)* - 50%	*(4)* - 44%	---- - ------	*(2)* - 22%
Race					
White	*(19)* - 59%	*(3)* - 50%	*(5)* - 56%	*(2)* - 40%	*(6)* - 67%
Hispanic	*(8)* - 25%	*(1)* - 17%	*(1)* - 11%	*(1)* - 20%	*(3)* - 33%
Black	*(4)* - 13%	*(2)* - 33%	*(2)* - 22%	*(2)* - 40%	---- - ------
Age					
Age Range	17 - 93	23 - 84	17 - 51	24 - 50	20 - 47
Average Age	31.251	52.000	30.284	36.146	32.041
City of Residence					
Austin	*(30)* - 94%	*(3)* - 50%	*(7)* - 78%	*(3)* - 60%	*(8)* - 89%
Metro Area	*(2)* - 6%	*(1)* - 17%	*(2)* - 22%	*(2)* - 40%	*(1)* - 11%
Out of City	---- - ------	*(2)* - 0.33	---- - ------	---- - ------	---- - ------
Insured					
Yes	*(27)* - 84%	*(5)* 83%	*(8)* - 89%	*(5)* - 100%	*(7)* - 78%
No	*(5)* - 16%	*(1)* - 17%	*(1)* - 11%	---- - ------	*(2)* - 22%
Injuries					
None	*(30)* - 94%	*(6)* 100%	*(8)* - 89%	*(4)* - 80%	*(8)* - 89%
Minor	*(2)* - 6%	---- - ------	*(1)* - 11%	*(1)* - 20%	*(1)* - 11%
Occupation					
White Collar	*(7)* - 22%	*(1)* - 17%	*(2)* - 22%	*(2)* - 40%	*(3)* - 33%
Blue Collar	*(8)* - 25%	---- - ------	*(4)* - 44%	*(1)* - 20%	*(1)* - 11%
Student	*(7)* - 22%	---- - ------	*(1)* - 11%	---- - ------	*(2)* - 22%
Retired / Housewife	*(2)* - 6%	*(2)* - 33%	*(1)* - 11%	---- - ------	---- - ------
Medical	*(2)* - 6%	*(1)* - 17%	*(1)* - 11%	---- - ------	---- - ------
Police / Military	*(1)* - 3%	*(1)* - 17%	---- - ------	---- - ------	*(2)* - 22%
Unemployed	---- - ------	---- - ------	---- - ------	---- - ------	---- - ------

Police Motorcycle Trends

(Police Motorcycles Involved in Police Motorcycle Collisions)

{ Most Commonly Found Item (*# of involvements / year*) - % Involved / year }

	1990-95	1996	1997	1998	1999
Units Involved	39	10	15	12	11
Age					
Age Range	0 - 6	0 - 6	2 - 5	2 - 7	0 - 7
Average Age	2.225	2.146	2.122	3.183	2.299
Make & Model					
Kawasaki					
1985	*(2)* - 5%	---- - ------	---- - ------	---- - ------	---- - ------
1987	*(4)* - 10%	---- - ------	---- - ------	---- - ------	---- - ------
1989	*(9)* - 23%	---- - ------	---- - ------	---- - ------	---- - ------
1995	*(1)* - 3%	*(3)* - 30%	*(8)* - 53%	*(5)* - 42%	*(3)* - 27%
1996	---- - ------	*(2)* - 20%	*(4)* - 27%	*(4)* - 33%	*(3)* - 27%
Harley-Davidson - FXRP					
1990	*(5)* - 13%	---- - ------	---- - ------	---- - ------	---- - ------
1991	*(2)* - 5%	*(1)* - 10%	---- - ------	*(1)* - 8%	---- - ------
1992	*(17)* - 44%	*(4)* - 40%	*(3)* - 20%	*(2)* - 17%	*(1)* - 9%
Harley-Davidson - Road King					
1998	---- - ------	---- - ------	---- - ------	---- - ------	*(3)* - 27%
Harley-Davidson - FLHTPI					
1999	---- - ------	---- - ------	---- - ------	---- - ------	*(1)* - 9%
On Emergency					
Yes	*(20)* - 51%	*(7)* - 70%	*(10)* - 67%	*(8)* - 67%	*(9)* - 82%
No	*(19)* - 49%	*(3)* - 30%	*(5)* - 33%	*(4)* - 33%	*(2)* - 18%
Damage					
Minimal	*(22)* - 56%	*(7)* - 70%	*(7)* - 47%	*(8)* - 67%	*(5)* - 45%
Moderate	*(16)* - 41%	*(3)* - 30%	*(7)* - 47%	*(2)* - 17%	*(3)* - 27%
Extensive	*(1)* - 3%	---- - ------	*(1)* - 7%	*(2)* - 17%	*(3)* - 27%
Point of Contact					
Front	*(11)* - 28%	---- - ------	*(4)* - 27%	*(2)* - 17%	*(3)* - 27%
LF	*(2)* - 5%	*(2)* - 20%	- 0%	---- - ------	---- - ------
LFQ	*(1)* - 3%	---- - ------	*(1)* - 7%	*(1)* - 8%	*(1)* - 9%
LD	*(8)* - 21%	*(1)* - 10%	*(3)* - 20%	---- - ------	*(3)* - 27%
LBQ	*(1)* - 3%	---- - ------	---- - ------	---- - ------	---- - ------
LB	---- - ------	---- - ------	*(1)* - 7%	---- - ------	---- - ------
BACK	*(2)* - 5%	---- - ------	---- - ------	---- - ------	---- - ------
RB	---- - ------	---- - ------	*(1)* - 7%	---- - ------	---- - ------
RBQ	---- - ------	---- - ------	---- - ------	---- - ------	---- - ------
RD	*(10)* - 26%	*(4)* - 40%	*(4)* - 27%	*(6)* - 50%	*(2)* - 18%
RFQ	*(1)* - 3%	---- - ------	---- - ------	*(2)* - 17%	---- - ------
RF	*(2)* - 5%	*(1)* - 10%	*(1)* - 7%	*(1)* - 8%	*(2)* - 18%
Left	*(12)* - 31%	*(3)* - 30%	*(5)* - 33%	*(1)* - 8%	*(4)* - 36%
Right	*(13)* - 33%	*(5)* - 50%	*(6)* - 40%	*(9)* - 75%	*(4)* - 36%
Front	*(17)* - 44%	*(5)* - 50%	*(6)* - 40%	*(6)* - 50%	*(6)* - 55%
Back	*(3)* - 8%	---- - ------	*(2)* - 13%	---- - ------	---- - ------

Officer Trends *(Police Officers Involved in Police Motorcycle Collisions)*

{ Most Commonly Found Item (*# of involvements / year*) - % Involved / year }

	1990-95	1996	1997	1998	1999
Officers Involved	39	8	14	11	15
Sex					
Male	*(37)* - 95%	*(8)* - 100%	*(14)* - 100%	*(11)* - 100%	*(15)* - 100%
Female	*(2)* - 5%	---- - ------	---- - ------	---- - ------	---- - ------
Race					
White	*(32)* - 82%	*(7)* - 88%	*(11)* - 79%	*(6)* - 55%	*(13)* - 87%
Hispanic	*(7)* - 18%	*(1)* - 13%	*(2)* - 14%	*(1)* - 9%	*(1)* - 7%
Black	---- - ------	---- - ------	*(1)* - 7%	*(4)* - 36%	*(1)* - 7%
Age					
Age Range	28 - 47	28 - 47	33 - 43	33 - 40	25 - 48
Average Age	36.226	35.137	38.104	36.000	35.256
Injuries					
None	*(10)* - 26%	*(1)* - 13%	*(3)* - 21%	*(3)* - 27%	*(4)* - 27%
Minor	*(10)* - 26%	*(4)* - 50%	*(2)* - 14%	*(4)* - 36%	*(4)* - 27%
Intermediate	*(13)* - 33%	*(3)* - 38%	*(7)* - 50%	*(3)* - 27%	*(6)* - 40%
Serious	*(5)* - 13%	---- - ------	*(2)* - 14%	*(1)* - 9%	*(1)* - 7%
Transported by Ambulance					
Yes	*(20)* - 51%	*(3)* - 38%	*(6)* - 43%	*(4)* - 36%	*(7)* - 47%
No	*(19)* - 49%	*(5)* - 63%	*(8)* - 57%	*(7)* - 64%	*(8)* - 53%
Training *(prior to collision)*					
Basic					
Yes	*(33)* - 85%	*(8)* - 100%	*(14)* 100%	*(10)* 91%	*(15)* - 100%
No	*(6)* - 15%	- 0%	---- - ------	*(1)* 9%	---- - ------
Recertification	---- - ------				
Yes	*( )* - 0%	*(4)* - 50%	*(12)* 86%	*(8)* 73%	*(14)* - 93%
No	*(39)* - 100%	*(4)* - 50%	*(2)* 14%	*(3)* 27%	*(1)* - 7%
(average time since …)					
Basic	2.035	2.193	4.321	2.088	5.247
Recertification	------	.034	.175	.138	.187

Factor (Civilian) Trends *(Causative Factors for Civilians in Police Motorcycle Collisions)*

{ Most Commonly Found Item (*# of involvements / year*) - % Involved / year }

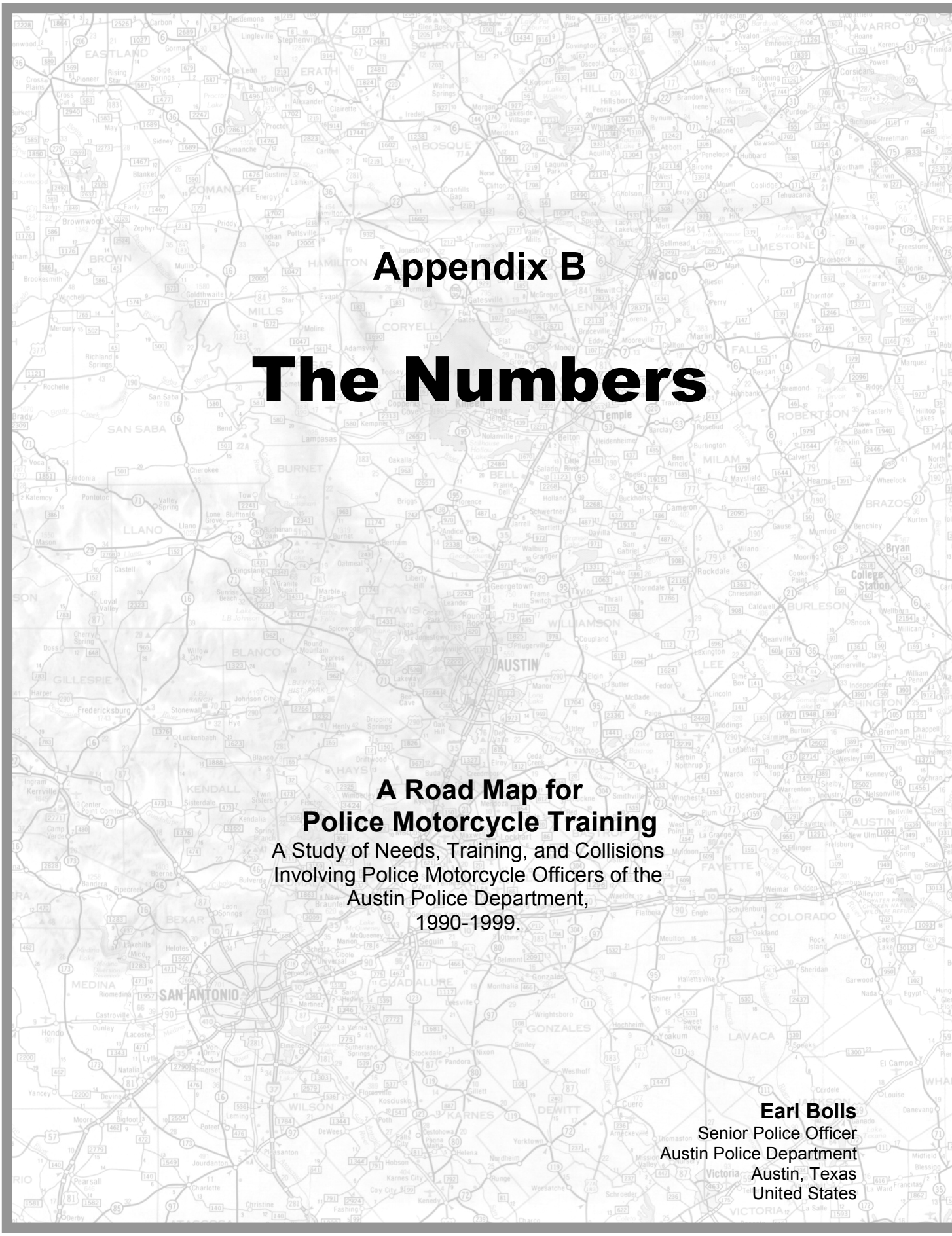
	1990-95	1996	1997	1998	1999
Total Listed Factors	31	6	8	5	10
Roadway	---- - ------	---- - ------	---- - ------	***(1)*** **- 20%**	---- - ------
Design of Roadway	---- - ------	---- - ------	---- - ------	*(1)* - 20%	---- - ------
Operator Condition	***(8)*** **- 26%**	***(1)*** **- 17%**	---- - ------	***(1)*** **- 20%**	***(4)*** **- 40%**
Inattention	*(6)* - 19%	*(1)* - 17%	---- - ------	---- - ------	*(3)* - 30%
Impaired Visibility	---- - ------	---- - ------	---- - ------	*(1)* - 20%	---- - ------
Distraction in Veh.	---- - ------	---- - ------	---- - ------	---- - ------	*(1)* - 10%
No Glasses	*(1)* - 3%	---- - ------	---- - ------	---- - ------	---- - ------
Alcohol	*(1)* - 3%	---- - ------	---- - ------	---- - ------	---- - ------
Vehicle Movement	***(23)*** **- 74%**	***(5)*** - 83%	***(8)*** **- 100%**	***(3)*** **- 60%**	***(6)*** **- 60%**
Start & Stop	***(5)*** **- 16%**	---- - ------	***(3)*** **- 38%**	***(1)*** **- 20%**	***(3)*** **- 30%**
Unsafe Backing	*(3)* - 10%	---- - ------	*(1)* - 13%	---- - ------	*(1)* - 10%
Unsafe Start	*(1)* - 3%	---- - ------	---- - ------	*(1)* - 20%	*(2)* - 20%
Unsafe Stop	*(1)* - 3%	---- - ------	*(1)* - 13%	---- - ------	---- - ------
FTYROW Stop Sign	---- - ------	---- - ------	*(1)* - 13%	---- - ------	---- - ------
Turning	***(13)*** **- 42%**	***(2)*** **- 33%**	***(3)*** **- 38%**	***(2)*** **- 40%**	***(3)*** **- 30%**
FTYROW Left Turn	*(6)* - 19%	---- - ------	---- - ------	---- - ------	*(1)* - 10%
Unsafe Turn Left	---- - ------	---- - ------	---- - ------	---- - ------	*(2)* - 20%
Unsafe Turn Right	---- - ------	---- - ------	*(1)* - 13%	---- - ------	---- - ------
Turned Unsafe	*(2)* - 6%	---- - ------	*(1)* - 13%	---- - ------	---- - ------
FTYROW Private Drive	*(2)* - 6%	*(2)* - 33%	*(1)* - 13%	*(2)* - 40%	---- - ------
Fail to Signal Intent	*(2)* - 6%	---- - ------	---- - ------	---- - ------	---- - ------
Wrong Way	*(1)* - 3%	---- - ------	---- - ------	---- - ------	---- - ------
Speed	***(1)*** **- 3%**	***(2)*** **- 33%**	---- - ------	---- - ------	---- - ------
Unsafe *(Over Limit)*	---- - ------	*(1)* - 17%	---- - ------	---- - ------	---- - ------
Fail to Control	---- - ------	*(1)* - 17%	---- - ------	---- - ------	---- - ------
Following too Closely	*(1)* - 3%	---- - ------	---- - ------	---- - ------	---- - ------
Judgement	***(4)*** **- 13%**	***(1)*** **- 17%**	***(2)*** **- 25%**	---- - ------	---- - ------
Faulty Evasive Action	*(1)* - 3%	---- - ------	*(1)* - 13%	---- - ------	---- - ------
FTYROW-Emergency Veh.	*(3)* - 10%	*(1)* - 17%	*(1)* - 13%	---- - ------	---- - ------

Factor (Police) Trends

(Causative Factors for Police in Police Motorcycle Collisions)

{ Most Commonly Found Item (*# of involvements / year*) - % Involved / year }

	1990-95	1996	1997	1998	1999
Total Listed Factors	28	7	9	12	12
Roadway	***(2)* - 7%**	***(1)* - 14%**	***(2)* - 22%**	***(3)* - 25%**	***(4)* - 33%**
Oily	*(1)* - 4%	*(1)* - 14%	---- - ------	*(1)* - 8%	*(1)* - 8%
Wet	*(1)* - 4%	---- - ------	---- - ------	*(1)* - 8%	---- - ------
Debris	---- - ------	---- - ------	*(2)* - 22%	---- - ------	---- - ------
Slippery	---- - ------	---- - ------	---- - ------	---- - ------	*(1)* - 8%
Lighting	---- - ------	---- - ------	---- - ------	---- - ------	*(1)* - 8%
Design of Roadway	---- - ------	---- - ------	---- - ------	*(1)* - 8%	*(1)* - 8%
Operator Condition	---- - ------	---- - ------	***(1)* - 11%**	---- - ------	***(1)* - 8%**
Inattention	---- - ------	---- - ------	---- - ------	---- - ------	*(1)* - 8%
Impaired Visibility	---- - ------	---- - ------	*(1)* - 11%	---- - ------	---- - ------
Vehicle Movement	***(26)* - 93%**	***(6)* - 86%**	***(6)* - 67%**	***(9)* - 75%**	***(7)* - 58%**
Turning	***(7)* - 25%**	***(1)* - 14%**	***(2)* - 22%**	---- - ------	***(2)* - 17%**
FTYROW Left Turn	*(1)* - 4%	---- - ------	---- - ------	---- - ------	---- - ------
Unsafe Passing Left	*(2)* - 7%	---- - ------	---- - ------	---- - ------	*(1)* - 8%
Unsafe Turn Left	*(1)* - 4%	---- - ------	*(1)* - 11%	---- - ------	---- - ------
Unsafe Turn Right	---- - ------	---- - ------	*(1)* - 11%	---- - ------	---- - ------
Turned Unsafe	*(2)* - 7%	*(1)* - 14%	---- - ------	---- - ------	*(1)* - 8%
FTYROW Private Drive	*(1)* - 4%	---- - ------	---- - ------	---- - ------	---- - ------
Speed	***(16)* - 57%**	***(3)* - 43%**	***(3)* - 33%**	***(8)* - 67%**	***(4)* - 33%**
Unsafe *(Under Limit)*	*(1)* - 4%	---- - ------	*(1)* - 11%	---- - ------	---- - ------
Fail to Control	*(3)* - 11%	---- - ------	*(1)* - 11%	*(5)* - 42%	*(2)* - 17%
Following too Closely	*(7)* - 25%	*(2)* - 29%	*(1)* - 11%	*(2)* - 17%	*(1)* - 8%
Over Acceleration	*(1)* - 4%	---- - ------	---- - ------	---- - ------	---- - ------
Over Braking	*(4)* - 14%	*(1)* - 14%	---- - ------	*(1)* - 8%	*(1)* - 8%
Judgement	***(3)* - 11%**	***(2)* - 29%**	***(1)* - 11%**	***(1)* - 8%**	***(1)* - 8%**
Faulty Evasive Action	*(3)* - 11%	---- - ------	*(1)* - 11%	*(1)* - 8%	*(1)* - 8%
Disregard Stop&Go Signal	---- - ------	*(1)* - 14%	---- - ------	---- - ------	---- - ------
FTYROW-Emergency Veh.	---- - ------	*(1)* - 14%	---- - ------	---- - ------	---- - ------



Appendix B

The Numbers

A Road Map for Police Motorcycle Training

A Study of Needs, Training, and Collisions Involving Police Motorcycle Officers of the Austin Police Department, 1990-1999.

Earl Bolls
Senior Police Officer
Austin Police Department
Austin, Texas
United States

Dates & Times 1990-99

(Date & Times of Occurrence in Police Motorcycle Collisions)

Total Occurrences - 83

Season

			Winter	(21)	25%	**Spring**	(19)	28%
			Summer	*(25)*	30%	**Autumn**	*(18)*	- 27%

Month

January	*(5)*	- 6%	**February**	*(6)*	- 7%	**March**	*(7)*	- 9%
April	*(6)*	7%	**May**	*(6)*	- 7%	**June**	*(10)*	- 12%
July	*(9)*	11%	**August**	*(6)*	7%	**September**	*(6)*	7%
October	*(5)*	- 6%	**November**	*(7)*	- 9%	**December**	*(10)*	12%

Day

1st	*(6)*	- 7%	**2nd**	*(1)*	- 1%	**3rd**	*(5)*	- 6%
4th	*(3)*	- 4%	**5th**	*(4)*	- 5%	**6th**	*(2)*	- 2%
7th	*(2)*	- 2%	**8th**	*(1)*	- 1%	**9th**	*(2)*	- 2%
10th	*(2)*	- 2%	**11th**	*(2)*	- 2%	**12th**	(5)	- 6%
13th	*(5)*	- 6%	**14th**	*(2)*	- 2%	**15th**	*(7)*	- 8%
16th	*(2)*	- 2%	**17th**	*(3)*	- 4%	**18th**	*(3)*	- 4%
19th	*(3)*	- 4%	**20th**	*(2)*	- 2%	**21st**	*(3)*	- 4%
22nd	*(1)*	- 1%	**23rd**	*(2)*	- 2%	**24th**	(1)	- 1%
25th	*(2)*	- 2%	**26th**	*(3)*	- 4%	**27th**	*(2)*	- 2%
28th	*(3)*	- 4%	**29th**	*(2)*	- 2%	**30th**	*()*	- 0%
31st	*(1)*	- 1%						
			1st - 15th	*(50)*	- 60%	**16th - 31st**	*(33)*	- 40%

Weekday

Monday	*(18)*	- 22%	**Tuesday**	*(11)*	- 13%	**Wednesday**	*(20)*	- 24%
Thursday	*(6)*	- 7%	**Friday**	*(12)*	- 14%	**Saturday**	*(4)*	- 5%
Sunday	*(6)*	- 7%						

Time *(by hours)*

06	*(8)*	- 10%	**07**	*(15)*	- 18%	**08**	*(7)*	- 8%
09	*(6)*	- 7%	**10**	*(6)*	- 7%	**11**	*(3)*	- 4%
12	*(7)*	- 8%	**13**	*(7)*	- 8%	**14**	*(5)*	- 6%
15	*(9)*	- 11%	**16**	*(5)*	- 6%	**17**	*(1)*	- 1%
			AM	*(49)*	- 59%	**PM**	*(34)*	- 41%
			Top of Hour	*(40)*	- 48%	**Bottom of Hour**	*(43)*	- 52%
			First Half	*(37)*	- 45%	**Last Half**	*(46)*	- 55%
Noted Time Segments			**0625 - 0755**	*(22)*	- 27%	**0640 - 0740**	*(18)*	- 22%
			1225 - 1328	*(13)*	- 16%	**1529 - 1643**	*(12)*	- 14%

Dates & Times 1990-95

(Date & Times of Occurrence in Police Motorcycle Collisions)

Total Occurrences - 39

Season

			Winter	(8)	- 21%	**Spring**	(12)	- 31%
			Summer	*(12)*	- 31%	**Autumn**	*(7)*	- 18%

Month

January	*(3)*	- 8%	**February**	*(3)*	- 8%	**March**	*(5)*	- 13%
April	*(4)*	- 10%	**May**	*(3)*	- 8%	**June**	*(6)*	- 15%
July	*(4)*	- 10%	**August**	*(2)*	- 5%	**September**	*(4)*	- 10%
October	*(2)*	- 5%	**November**	*(1)*	- 3%	**December**	*(2)*	- 5%

Day

1st	*(2)*	- 5%		-----	- -----	**3rd**	*(1)*	- 3%
4th	*(1)*	- 3%	**5th**	*(2)*	- 5%	**6th**	*(2)*	- 5%
7th	-----	- -----	**8th**	-----	- -----	**9th**	*(1)*	- 3%
10th	*(1)*	- 3%	**11th**	*(1)*	- 3%	**12th**	(2)	- 5%
13th	*(3)*	- 8%	**14th**	*(2)*	- 5%	**15th**	*(2)*	- 5%
16th	*(1)*	- 3%	**17th**	*(2)*	- 5%	**18th**	-----	- -----
19th	*(2)*	- 5%	**20th**	*(1)*	- 3%	**21st**	*(1)*	- 3%
22nd	*(1)*	- 3%	**23rd**	*(1)*	- 3%	**24th**	(1)	- 3%
25th	-----	- -----	**26th**	*(3)*	- 8%	**27th**	*(2)*	- 5%
28th	*(2)*	- 5%	**29th**	*(1)*	- 3%	**30th**	-----	- -----
31st	*(1)*	- 3%						
			1st - 15th	*(20)*	- 51%	**16th - 31st**	*(19)*	- 49%

Weekday

Monday	*(6)*	- 15%	**Tuesday**	*(5)*	- 13%	**Wednesday**	*(12)*	- 31%
Thursday	*(3)*	- 8%	**Friday**	*(9)*	- 23%	**Saturday**	*(2)*	- 5%
Sunday	*(2)*	- 5%						

Time *(by hours)*

06	-----	- -----	**07**	*(7)*	- 18%	**08**	*(2)*	- 5%
09	-----	- -----	**10**	*(3)*	- 8%	**11**	*(3)*	- 8%
12	*(4)*	- 10%	**13**	*(4)*	- 10%	**14**	*(3)*	- 8%
15	*(7)*	- 18%	**16**	*(2)*	- 5%	**17**	*(1)*	- 3%
			AM	*(18)*	- 46%	**PM**	*(21)*	- 54%
Noted Time Segments			**1225 - 1328**	*(8)*	- 21%	**1125 - 1157**	*(3)*	- 8%
			"Lunch Hour"	*(11)*	- 28%			

Dates & Times 1996

(Date & Times of Occurrence in Police Motorcycle Collisions)

Total Occurrences - 8

Season

				Winter	----- - -----	**Spring**	(3) -	37%
				Summer	*(2)* - 26%	**Autumn**	*(3)* -	37%

Month

January	----- - -----			**February**	----- - -----	**March**	----- - -----	
April	*(1)* -	13%		**May**	*(2)* -	25%	**June**	*(1)* - 13%
July	*(1)* -	13%		**August**	----- - -----		**September**	*(1)* - 13%
October	----- - -----			**November**	*(2)* -	25%	**December**	----- - -----

Day

1st	----- - -----			**2nd**	*(1)* -	13%	**3rd**	----- - -----
4th	----- - -----			**5th**	*(1)* -	13%	**6th**	----- - -----
7th	----- - -----			**8th**	----- - -----		**9th**	----- - -----
10th	----- - -----			**11th**	----- - -----		**12th**	----- - -----
13th	----- - -----			**14th**	----- - -----		**15th**	*(3)* - 38%
16th	----- - -----			**17th**	----- - -----		**18th**	*(1)* - 13%
19th	----- - -----			**20th**	----- - -----		**21st**	----- - -----
22nd	----- - -----			**23rd**	*(1)* -	13%	**24th**	----- - -----
25th	*(2)* -	25%		**26th**	----- - -----		**27th**	----- - -----
28th	----- - -----			**29th**	----- - -----		**30th**	----- - -----
31st	----- - -----							
				1st - 15th	*(4)* -	50%	**16th - 31st**	*(4)* - 50%

Weekday

Monday	*(1)* -	13%		**Tuesday**	*(1)* -	13%	**Wednesday**	*(2)* - 25%
Thursday	*(1)* -	13%		**Friday**	*(1)* -	13%	**Saturday**	*(1)* - 13%
Sunday	*(1)* -	13%						

Time *(by hours)*

06	*(1)* -	13%		**07**	*(1)* -	13%	**08**	*(2)* - 25%
09	----- - -----			**10**	----- - -----		**11**	----- - -----
12	*(1)* -	13%		**13**	----- - -----		**14**	----- - -----
15	----- - -----			**16**	*(3)* -	38%	**17**	*(1)* - 13%
				AM	*(4)* -	50%	**PM**	*(4)* - 50%
Noted Time Segments				**1632 - 1643**	*(3)* -	38%		

Dates & Times 1997

(Date & Times of Occurrence in Police Motorcycle Collisions)

Total Occurrences - 14

Season

			Winter	*(7)*	- 51%	**Spring**	(2)	- 14%
			Summer	*(2)*	- 14%	**Autumn**	*(3)*	- 21%

Month

January	-----	-----	**February**	*(3)*	- 21%	**March**	-----	-----
April	*(1)*	- 7%	**May**	*(1)*	- 7%	**June**	-----	-----
July	*(1)*	- 7%	**August**	*(1)*	- 7%	**September**	*(1)*	- 7%
October	*(1)*	- 7%	**November**	*(2)*	- 14%	**December**	*(3)*	- 21%

Day

1st	*(1)*	- 7%	**2nd**	-----	-----	**3rd**	*(2)*	- 14%
4th	-----	-----	**5th**	-----	-----	**6th**	-----	-----
7th	-----	-----	**8th**	*(1)*	- 7%	**9th**	-----	-----
10th	*(1)*	- 7%	**11th**	*(1)*	- 7%	**12th**	-----	-----
13th	*(1)*	- 7%	**14th**	-----	-----	**15th**	*(2)*	- 14%
16th	-----	-----	**17th**	*(1)*	- 7%	**18th**	*(1)*	- 7%
19th	*(1)*	- 7%	**20th**	-----	-----	**21st**	*(1)*	- 7%
22nd	-----	-----	**23rd**	-----	-----	**24th**	-----	-----
25th	-----	-----	**26th**	-----	-----	**27th**	-----	-----
28th	*(1)*	- 7%	**29th**	-----	-----	**30th**	-----	-----
31st	-----	-----						
			1st - 15th	*(9)*	- 64%	**16th - 31st**	*(5)*	- 36%

Weekday

Monday	*(5)*	- 36%	**Tuesday**	*(1)*	- 7%	**Wednesday**	*(1)*	- 7%
Thursday	*(4)*	- 29%	**Friday**	*(2)*	- 14%	**Saturday**	-----	-----
Sunday	*(1)*	- 7%						

Time *(by hours)*

06	*(3)*	- 21%	**07**	*(4)*	- 29%	**08**	*(1)*	- 7%
09	*(1)*	- 7%	**10**	*(1)*	- 7%	**11**	-----	-----
12	*(1)*	- 7%	**13**	*(1)*	- 7%	**14**	*(1)*	- 7%
15	*(1)*	- 7%	**16**	-----	-----	**17**	-----	-----
			AM	*(10)*	- 71%	**PM**	*(4)*	- 29%
Noted Time Segments			**0630 - 0735**	*(5)*	- 36%			

Dates & Times 1998

(Date & Times of Occurrence in Police Motorcycle Collisions)

Total Occurrences - 11

Season

			Winter	*(7)*	- 64%	**Spring**	(2)	- 18%
			Summer	*(2)*	- 18%	**Autumn**	*(3)*	- 27%

Month

January	*(1)*	- 9%	**February**	-----	- -----	**March**	*(1)*	- 9%
April	-----	- -----	**May**	-----	- -----	**June**	*(6)*	- 55%
July	-----	- -----	**August**	*(1)*	- 9%	**September**	-----	- -----
October	*(2)*	- 14%	**November**	*(1)*	- 9%	**December**	*(3)*	- 27%

Day

1st	*(2)*	- 14%	**2nd**	*(1)*	- 9%	**3rd**	*(1)*	- 9%
4th	*(2)*	- -----	**5th**	*(1)*	- 9%	**6th**	-----	- -----
7th	-----	- -----	**8th**	-----	- -----	**9th**	*(1)*	- 9%
10th	-----	- -----	**11th**	-----	- -----	**12th**	*(1)*	- 9%
13th	-----	- -----	**14th**	-----	- -----	**15th**	-----	- -----
16th	-----	- -----	**17th**	-----	- -----	**18th**	-----	- -----
19th	-----	- -----	**20th**	-----	- -----	**21st**	*(1)*	- 9%
22nd	-----	- -----	**23rd**	-----	- -----	**24th**	-----	- -----
25th	-----	- -----	**26th**	-----	- -----	**27th**	-----	- -----
28th	-----	- -----	**29th**	*(1)*	- 9%	**30th**	-----	- -----
31st	-----	- -----						
			1st - 15th	*(9)*	- 82%	**16th - 31st**	*(2)*	- 18%

Weekday

Monday	*(4)*	- 36%	**Tuesday**	*(2)*	- 18%	**Wednesday**	*(2)*	- 18%
Thursday	*(2)*	- 18%	**Friday**	-----	- -----	**Saturday**	-----	- -----
Sunday	*(1)*	- 9%						

Time *(by hours)*

06	*(4)*	- 36%	**07**	*(2)*	- 18%	**08**	-----	- -----
09	*(3)*	- 27%	**10**	-----	- -----	**11**	-----	- -----
12	-----	- -----	**13**	*(1)*	- 9%	**14**	-----	- -----
15	*(1)*	- 9%	**16**	-----	- -----	**17**	-----	- -----
			AM	*(9)*	- 82%	**PM**	*(2)*	- 18%
Noted Time Segments			**0625 - 0737**	*(6)*	- 55%			

Dates & Times 1999

(Date & Times of Occurrence in Police Motorcycle Collisions)

Total Occurrences - 11

Season

			Winter	*(2)*	- 18%	**Spring**	(1)	- 9%
			Summer	*(6)*	- 55%	**Autumn**	*(2)*	- 18%

Month

January	*(1)*	- 9%	**February**	-----	- -----	**March**	*(1)*	- 9%
April	-----	- -----	**May**	-----	- -----	**June**	*(1)*	- 9%
July	*(3)*	- 27%	**August**	*(2)*	- 18%	**September**	*(1)*	- 9%
October	-----	- -----	**November**	*(1)*	- 9%	**December**	*(1)*	- 9%

Day

1st	*(1)*	- 7%	**2nd**	*(1)*	- 9%	**3rd**	*(1)*	- 9%
4th	-----	- -----	**5th**	-----	- -----	**6th**	-----	- -----
7th	*(2)*	- 14%	**8th**	-----	- -----	**9th**	-----	- -----
10th	-----	- -----	**11th**	-----	- -----	**12th**	*(2)*	- 18%
13th	*(1)*	- 7%	**14th**	-----	- -----	**15th**	-----	- -----
16th	*(1)*	- 7%	**17th**	-----	- -----	**18th**	*(1)*	- 9%
19th	-----	- -----	**20th**	*(1)*	- 9%	**21st**	-----	- -----
22nd	-----	- -----	**23rd**	-----	- -----	**24th**	-----	- -----
25th	-----	- -----	**26th**	-----	- -----	**27th**	-----	- -----
28th	-----	- -----	**29th**	-----	- -----	**30th**	-----	- -----
31st	-----	- -----						
			1st - 15th	*(8)*	- 73%	**16th - 31st**	*(3)*	- 27%

Weekday

Monday	*(2)*	- 18%	**Tuesday**	*(2)*	- 18%	**Wednesday**	*(3)*	- 27%
Thursday	*(2)*	- 18%	**Friday**	-----	- -----	**Saturday**	*(1)*	- 9%
Sunday	*(1)*	- 9%						

Time *(by hours)*

06	-----	- -----	**07**	*(1)*	- 9%	**08**	*(2)*	- 18%
09	*(2)*	- 18%	**10**	*(2)*	- 18%	**11**	-----	- -----
12	*(1)*	- 9%	**13**	*(1)*	- 9%	**14**	*(1)*	- 9%
15	-----	- -----	**16**	-----	- -----	**17**	-----	- -----
			AM	*(8)*	- 73%	**PM**	*(3)*	- 27%
Noted Time Segments			**0852 - 0956**	*(4)*	- 36%			

Locations 1990-99

(Locations of Occurrence in Police Motorcycle Collisions)

Total Occurrences - 83

Collision Type

Single Vehicle	*(18)*	- 22%
Multi Vehicle	*(65)*	- 78%
Veh vs PD	*(58)*	- 70%
MultiVeh vs PD	*(2)*	- 2%
Veh vs MultiPD	*(1)*	- 1%
PD vs PD	*(4)*	- 5%

Area Commands

North West	*(13)*	- 16%	**Central West**	*(26)*	- 31%	**South West**	*(9)*	- 11%
North East	*(11)*	- 13%	**Central East**	*(14)*	- 17%	**South East**	*(10)*	- 12%
North	*(24)*	- 29%	**Central**	*(40)*	- 48%	**South**	*(19)*	- 23%
			East	*(35)*	- 42%	**West**	*(48)*	- 58%

Location Type

Intersection	*(15)*	- 18%	**Mid Block**	*(64)*	- 77%	**Private Property**	*(4)*	- 5%

Posted Speed Limits *(mph)*

Under 40	*(54)*	- 65%	**40 - 50**	*(14)*	- 17%	**Over 50**	*(15)*	- 18%

Roadway Under Construction

Yes	*(2)*	- 2%	**No**	*(81)*	- 98%

Locations 1990-95

(Locations of Occurrence in Police Motorcycle Collisions)

Total Occurrences - 39

Collision Type

Single Vehicle	*(6)*	- 15%
Multi Vehicle	*(33)*	- 85%
Veh vs PD	*(30)*	- 77%
MultiVeh vs PD	*(2)*	- 5%
Veh vs MultiPD	-----	- ------
PD vs PD	*(1)*	- 3%

Area Commands

North West	*(6)*	- 15%	**Central West**	*(19)*	- 49%	**South West**	*(7)*	- 18%
North East	*(1)*	- 3%	**Central East**	*(2)*	- 5%	**South East**	*(4)*	- 10%
North	*(7)*	- 18%	**Central**	*(21)*	- 54%	**South**	*(11)*	- 28%
			East	*(7)*	- 18%	**West**	*(32)*	- 82%

Location Type

Intersection	*(8)*	- 21%	**Mid Block**	*(29)*	- 74%	**Private Property**	*(2)*	- 5%

Posted Speed Limits *(mph)*

Under 40	*(28)*	- 72%	**40 - 50**	*(5)*	- 13%	**Over 50**	*(6)*	- 15%

Roadway Under Construction

0%

Yes	-----	- ------	**No**	*(39)*	- 100%

Locations 1996

(Locations of Occurrence in Police Motorcycle Collisions)

Total Occurrences - 8

Collision Type

Single Vehicle	*(1)*	13%
Multi Vehicle	*(7)*	88%
Veh vs PD	*(5)*	63%
MultiVeh vs PD	-----	------
Veh vs MultiPD	*(1)*	13%
PD vs PD	*(1)*	13%

Area Commands

North West	-----	------	**Central West**	*(2)*	25%	**South West**	*(1)*	13%
North East	*(1)*	13%	**Central East**	*(3)*	38%	**South East**	*(1)*	13%
North	*(1)*	13%	**Central**	*(5)*	63%	**South**	*(2)*	25%
			East	*(5)*	63%	**West**	*(3)*	38%

Location Type

Intersection	*(1)*	13%	**Mid Block**	*(7)*	88%	**Private Property**	-----	------

Posted Speed Limits *(mph)*

Under 40	*(3)*	38%	**40 - 50**	*(3)*	38%	**Over 50**	*(2)*	25%

Roadway Under Construction

Yes	*(1)*	13%	**No**	*(7)*	88%

Locations 1997

(Locations of Occurrence in Police Motorcycle Collisions)

Total Occurrences - 14

Collision Type

Single Vehicle	*(4)*	-	29%
Multi Vehicle	*(10)*	-	71%
Veh vs PD	*(9)*	-	64%
MultiVeh vs PD	-----	-	------
Veh vs MultiPD	-----	-	------
PD vs PD	*(1)*	-	7%

Area Commands

North West	*(5)*	- 36%	**Central West**	*(2)*	- 14%	**South West**	*(1)*	- 7%
North East	*(2)*	- 14%	**Central East**	*(2)*	- 14%	**South East**	*(2)*	- 14%
North	*(7)*	- 50%	**Central**	*(4)*	- 29%	**South**	*(3)*	- 21%
		0%	**East**	*(6)*	- 43%	**West**	*(8)*	- 57%

Location Type

Intersection	*(2)*	- 14%	**Mid Block**	*(11)*	- 79%	**Private Property**	*(1)*	- 7%

Posted Speed Limits *(mph)*

Under 40	*(7)*	- 50%	**40 - 50**	*(1)*	- 7%	**Over 50**	*(6)*	- 43%

Roadway Under Construction

			Yes	-----	- ------	**No**	*(14)*	- 100%

Locations 1998

(Locations of Occurrence in Police Motorcycle Collisions)

Total Occurrences - 11

Collision Type

Single Vehicle	*(5)*	-	45%
Multi Vehicle	*(6)*	-	55%
Veh vs PD	*(5)*	-	45%
MultiVeh vs PD	-----	-	------
Veh vs MultiPD	-----	-	------
PD vs PD	*(1)*	-	9%

Area Commands

North West	-----	- ------	**Central West**	-----	- ------	**South West**	-----	- ------
North East	*(4)*	- 36%	**Central East**	*(4)*	- 36%	**South East**	*(3)*	- 27%
North	*(4)*	- 36%	**Central**	*(4)*	- 36%	**South**	*(3)*	- 27%
			East	*(11)*	- 100%	**West**	-----	- ------

Location Type

Intersection	*(2)*	- 18%	**Mid Block**	*(8)*	- 73%	**Private Property**	*(1)*	- 9%

Posted Speed Limits *(mph)*

Under 40	*(6)*	- 55%	**40 - 50**	*(3)*	- 27%	**Over 50**	*(2)*	- 18%

Roadway Under Construction

			Yes	-----	- ------	**No**	*(11)*	- 100%

Locations 1999

(Locations of Occurrence in Police Motorcycle Collisions)

Total Occurrences - 11

Collision Type

Single Vehicle	*(2)*	- 18%
Multi Vehicle	*(9)*	- 82%
Veh vs PD	*(9)*	- 82%
MultiVeh vs PD	-----	- ------
Veh vs MultiPD	-----	- ------
PD vs PD	-----	- ------

Area Commands

North West	*(2)*	- 18%	**Central West**	*(5)*	- 45%	**South West**	-----	- ------
North East	*(1)*	- 9%	**Central East**	*(2)*	- 18%	**South East**	*(1)*	- 9%
North	*(3)*	- 27%	**Central**	*(7)*	- 64%	**South**	*(1)*	- 9%
			East	*(4)*	- 36%	**West**	*(7)*	- 64%

Location Type

Intersection	*(2)*	- 18%	**Mid Block**	*(9)*	- 82%	**Private Property**	-----	- ------

Posted Speed Limits *(mph)*

Under 40	*(8)*	- 73%	**40 - 50**	*(2)*	- 18%	**Over 50**	*(1)*	- 9%

Roadway Under Construction

Yes	-----	- ------	**No**	*(11)*	- 100%

Roadway Conditions 1990-99 *(Roadway Conditions in Police Motorcycle Collisions)*

Total Incidents Involved - 83

Item (# of Involvements) - % Involved

Light Conditions

Daylight	*(64)*	-	77%	**Dark - not lighted**	*(1)*	-	1%
Dawn	*(3)*		4%	**Dark - lighted**	*(3)*		4%

Weather Conditions

Raining	*(3)*	-	4%	**Clear / Cloudy**	*(78)*	-	94%
Fog	*(2)*	-	2%				

Surface Type

Concrete	*(2)*	-	2%	**Asphalt**	*(81)*	-	98%

Surface Condition

Wet	*(10)*	-	12%	**Dry**	*(72)*	-	87%

Other Surface Factors

Aged	*(5)*	-	6%	**Debris**	*(1)*	-	1%
Oil	*(7)*	-	8%				

Traffic Control

Marked Lanes	*(14)*	-	17%	**Center Stripe/Divider**	*(20)*	-	24%
Stop & Go Signal	*(12)*	-	14%	**Stop Sign**	*(3)*	-	4%
Warning Sign	*(1)*	-	1%	**Yield Sign**	*(2)*	-	2%
Turning Marks	*(1)*	-	1%	**None/Inoperative**	*(29)*	-	35%

Roadway Conditions 1990-95 *(Roadway Conditions in Police Motorcycle Collisions)*

Total Incidents Involved - 39

Item (# of Involvements) - % Involved

Light Conditions

Daylight	*(37)*	-	95%	**Dark - not lighted**	-----	-	------
Dawn	*(1)*		3%	**Dark - lighted**	*(1)*		3%

Weather Conditions

Raining	*(2)*	-	5%	**Clear / Cloudy**	*(37)*	-	95%
Fog	-----	-	------				

Surface Type

Concrete	*(1)*	-	3%	**Asphalt**	*(38)*	-	97%

Surface Condition

Wet	*(4)*	-	10%	**Dry**	*(35)*	-	90%

Other Surface Factors

Aged	*(3)*	-	8%	**Debris**	-----	-	------
Oil	*(2)*	-	5%				

Traffic Control

Marked Lanes	*(10)*	-	26%	**Center Stripe/Divider**	*(6)*	-	15%
Stop & Go Signal	*(5)*	-	13%	**Stop Sign**	-----	-	------
Warning Sign	*(1)*	-	3%	**Yield Sign**	-----	-	------
Turning Marks	-----	-	------	**None/Inoperative**	*(17)*	-	44%

Roadway Conditions 1996

(Roadway Conditions in Police Motorcycle Collisions)

Total Incidents Involved - 8

Item (# of Involvements) - % Involved

Light Conditions

Daylight	*(8)*	-	100%	**Dark - not lighted**	-----	-	------
Dawn	-----	-	------	**Dark - lighted**	-----	-	------

Weather Conditions

Raining	-----	-	------	**Clear / Cloudy**	*(8)*	-	100%
Fog	-----	-	------				

Surface Type

Concrete	-----	-	------	**Asphalt**	*(8)*	-	100%

Surface Condition

Wet	-----	-	------	**Dry**	*(8)*	-	100%

Other Surface Factors

Aged	*(1)*	-	13%	**Debris**	-----	-	------
Oil	*(2)*	-	25%				

Traffic Control

Marked Lanes	*(1)*	-	13%	**Center Stripe/Divider**	*(3)*	-	38%
Stop & Go Signal	*(1)*	-	13%	**Stop Sign**	-----	-	------
Warning Sign	-----	-	------	**Yield Sign**	-----	-	------
Turning Marks	*(1)*	-	13%	**None/Inoperative**	*(2)*	-	25%

Roadway Conditions 1997

(Roadway Conditions in Police Motorcycle Collisions)

Total Incidents Involved - 14

Item (# of Involvements) - % Involved

Light Conditions

Daylight	*(12)*	-	86%	**Dark - not lighted**	*(1)*	-	7%
Dawn	*(3)*	-	4%	**Dark - lighted**	*(3)*	-	21%

Weather Conditions

Raining	*(1)*	-	1%	**Clear / Cloudy**	*(12)*	-	86%
Fog	*(1)*	-	7%				

Surface Type

Concrete	-----	-	------	**Asphalt**	*(14)*	-	100%

Surface Condition

Wet	*(2)*	-	2%	**Dry**	*(12)*	-	86%

Other Surface Factors

Aged	*(1)*	-	1%	**Debris**	*(1)*	-	7%
Oil	-----	-	------				

Traffic Control

Marked Lanes	*(2)*	-	2%	**Center Stripe/Divider**	*(4)*	-	29%
Stop & Go Signal	*(3)*	-	4%	**Stop Sign**	*(1)*	-	7%
Warning Sign	-----	-	------	**Yield Sign**	*(1)*	-	7%
Turning Marks	-----	-	------	**None/Inoperative**	*(1)*	-	7%

Roadway Conditions 1998

(Roadway Conditions in Police Motorcycle Collisions)

Total Incidents Involved - 11

Item (# of Involvements) - % Involved

Light Conditions

Daylight	*(6)*	-	55%	**Dark - not lighted**	-----	-	------
Dawn	*(2)*		18%	**Dark - lighted**	*(1)*		9%

Weather Conditions

Raining	-----	-	------	**Clear / Cloudy**	*(10)*	-	91%
Fog	*(1)*	-	9%				

Surface Type

Concrete	*(1)*	-	9%	**Asphalt**	*(10)*	-	91%

Surface Condition

Wet	*(3)*	-	27%	**Dry**	*(8)*	-	73%

Other Surface Factors

Aged	-----	-	------	**Debris**	-----	-	------
Oil	*(1)*	-	9%				

Traffic Control

Marked Lanes	-----	-	------	**Center Stripe/Divider**	*(4)*	-	36%
Stop & Go Signal	-----	-	------	**Stop Sign**	*(2)*	-	18%
Warning Sign	-----	-	------	**Yield Sign**	*(1)*	-	9%
Turning Marks	-----	-	------	**None/Inoperative**	*(3)*	-	27%

Roadway Conditions 1999

(Roadway Conditions in Police Motorcycle Collisions)

Total Incidents Involved - 11

Item (# of Involvements) - % Involved

Light Conditions

Daylight	*(10)*	91%	**Dark - not lighted**	-----	------
Dawn	-----	------	**Dark - lighted**	*(1)*	9%

Weather Conditions

Raining	-----	------	**Clear / Cloudy**	*(11)*	100%
Fog	-----	------			

Surface Type

Concrete	-----	------	**Asphalt**	*(11)*	100%

Surface Condition

Wet	*(1)*	9%	**Dry**	*(9)*	82%

Other Surface Factors

Aged	-----	------	**Debris**	-----	------
Oil	*(2)*	18%			

Traffic Control

Marked Lanes	*(1)*	9%	**Center Stripe/Divider**	*(3)*	27%
Stop & Go Signal	*(3)*	27%	**Stop Sign**	-----	------
Warning Sign	-----	------	**Yield Sign**	-----	------
Turning Marks	-----	------	**None/Inoperative**	*(4)*	36%

Charges Filed 1990-99

(Criminal Charges Filed in Police Motorcycle Collisions)

Total Incidents Involved -61

Item (# of Involvements) - % Involved

Charges Filed

Persons Charged *(26)* - 43%

Total Charges Filed - 35

Hazardous Charges Filed

Left Turns *(9)* - 26%

Other Turns *(5)* - 15%

Non-Turns *(5)* - 15%

DWI *(1)* - 3%

Non Hazardous Charges Filed

Drivers License *(8)* - 24%

Insurance *(6)* - 18%

Equipment *(1)* - 3%

Unit at Fault

Police *(46)* - 55%

Civilian *(37)* - 45%

Charges Filed 1990-95

(Criminal Charges Filed in Police Motorcycle Collisions)

Total Incidents Involved - 32

Item (# of Involvements) - % Involved

Charges Filed

Persons Charged *(12)* - 38%

Total Charges Filed - 16

Hazardous Charges Filed

Left Turns *(7)* - 44%

Other Turns *(1)* - 6%

Non-Turns *(2)* - 13%

DWI *(1)* - 6%

Non Hazardous Charges Filed

Drivers License *(3)* - 19%

Insurance *(2)* - 13%

Equipment ----- - ------

Unit at Fault

Police *(18)* - 46%

Civilian *(21)* - 54%

Charges Filed 1996

(Criminal Charges Filed in Police Motorcycle Collisions)

Total Drivers Involved - 6

Item (# of Involvements) - % Involved

Charges Filed

Persons Charged *(3)* - 50%

Total Charges Filed - 5

Hazardous Charges Filed

Left Turns ----- - ------

Other Turns *(1)* - 20%

Non-Turns *(1)* - 20%

DWI ----- - ------

Non Hazardous Charges Filed

Drivers License *(2)* - 40%

Insurance *(1)* - 20%

Equipment ----- - ------

Unit at Fault

Police *(6)* - 75%

Civilian *(2)* - 25%

Charges Filed 1997

(Criminal Charges Filed in Police Motorcycle Collisions)

Total Drivers Involved - 9

Item (# of Involvements) - % Involved

Charges Filed

Persons Charged *(4)* - 44%

Total Charges Filed - 5

Hazardous Charges Filed

Left Turns ----- - ------

Other Turns *(2)* - 40%

Non-Turns ----- - ------

DWI ----- - ------

Non Hazardous Charges Filed

Drivers License *(2)* - 40%

Insurance *(1)* - 20%

Equipment ----- - ------

Unit at Fault

Police *(7)* - 50%

Civilian *(7)* - 50%

Charges Filed 1998

(Criminal Charges Filed in Police Motorcycle Collisions)

Total Drivers Involved - 5

Item (# of Involvements) - % Involved

Charges Filed

Persons Charged *(2)* - 40%

Total Charges Filed - 3

Hazardous Charges Filed

Left Turns *(1)* - 33%

Other Turns *(1)* - 33%

Non-Turns ----- - ------

DWI ----- - ------

Non Hazardous Charges Filed

Drivers License ----- - ------

Insurance ----- - ------

Equipment *(1)* - 33%

Unit at Fault

Police *(9)* - 82%

Civilian *(2)* - 18%

Charges Filed 1999

(Criminal Charges Filed in Police Motorcycle Collisions)

Total Drivers Involved - 9

Item (# of Involvements) - % Involved

Charges Filed

Persons Charged *(5)* - 56%

Total Charges Filed - 6

Hazardous Charges Filed

Left Turns *(1)* - 17%

Other Turns ----- - ------

Non-Turns *(2)* - 33%

DWI ----- - ------

Non Hazardous Charges Filed

Drivers License *(1)* - 17%

Insurance *(2)* - 33%

Equipment ----- - ------

Unit at Fault

Police *(6)* - 55%

Civilian *(5)* - 45%

Vehicles 1990-99 *(Civilian Vehicles Involved in Police Motorcycle Collisions)*

Total Vehicles Involved - 61

Age

Age Range: 0 - 20 years **Average Age:** 6.090

Age of Vehicle (# of Involvements) - % Involved

0-1	*(7)* - 11%	**1-2**	*(2)* - 3%	**2-3**	*(6)* - 10%
3-4	*(8)* - 13%	**4-5**	*(4)* - 7%	**5-6**	*(4)* - 7%
6-7	*(5)* - 8%	**7-8**	*(4)* - 7%	**8-9**	*(2)* - 3%
9-10	*(2)* - 3%	**10-11**	*(4)* - 7%	**11-12**	*(2)* - 3%
12-13	*(4)* - 7%	**13-14**	*(3)* - 5%	**14-15**	*(3)* - 5%

Color

White	*(15)* - 25%	**Blue**	*(9)* - 15%	**Maroon**	*(7)* - 11%
Red	*(5)* - 8%	**Green**	*(5)* - 8%	**Grey**	*(3)* - 5%
Black	*(3)* - 5%	**Silver**	*(2)* - 3%	**Yellow**	*(2)* - 3%

Make

Chev	*(11)* - 18%	**Ford**	*(11)* - 18%	**Honda**	*(6)* - 10%
Toyota	*(6)* - 10%	**Olds**	*(5)* - 8%	**Jeep**	*(4)* - 7%
Dodge	*(3)* - 5%	**GMC**	*(3)* - 5%	**Mazda**	*(3)* - 5%
Mercury	*(2)* - 3%	**Cadillac**	*(2)* - 3%		- 0%

Model

4 Door	*(23)* - 38%	**2 Door**	*(14)* - 23%	**Pickup**	*(10)* - 16%
SUV	*(6)* - 10%	**Van**	*(5)* - 8%	**Bus**	*(1)* - 2%

Registration

Texas	*(58)* - 95%	**California**	*(1)* - 2%	**Iowa**	*(1)* - 2%
Nebraska	*(1)* - 2%				

Damage

Minimal	*(46)* - 75%	**Moderate**	*(15)* - 25%		

Point of Contact *(by segments)*

		Front	*(4)* - 7%		
Left Front	*(3)* - 5%			**Right Front**	*(3)* - 5%
Left Front Quarter	*(3)* - 5%			**Right Front Quarter**	*(5)* - 8%
Left Distributed	*(4)* - 7%			**Right Distributed**	*(5)* - 8%
Left Back Quarter	*(7)* - 11%			**Right Back Quarter**	*(3)* - 5%
Left Back	*(5)* - 8%			**Right Back**	*(5)* - 8%
		Back	*(9)* - 15%		
Non-Contact	*(5)* - 8%				

(by halves)

Left	*(22)* - 36%	**Right**	*(21)* - 34%		
Front	*(18)* - 30%	**Back**	*(29)* - 48%		

Vehicles 1990-95 *(Civilian Vehicles Involved in Police Motorcycle Collisions)*

Total Vehicles Involved - 32

Age Range: 0 - 17 years **Average Age:** 6.262

Age of Vehicle (# of Involvements) - % Involved

Predominant Ages	**3-4**	*(1)*	-		**6-7**	*(5)*	-	16%

Color

Predominant Colors	**White**	*(7)*	-	22%	**Maroon**	*(7)*	-	22%

Make

Predominant Makes	**Chev**	*(7)*	-	22%	**Olds**	*(5)*	-	16%

Model

Predominant Models	**4 Door**	*(14)*	-	44%	**2 Door**	*(7)*	-	22%

Registration

Predominant Registrations	**Texas**	*(30)*	-	94%	**Others**	*(2)*	-	6%

Damage

	Minimal	*(25)*	-	78%	**Moderate**	*(7)*	-	22%

Point of Contact *(by segments)*

				Front	*(3)*	-	9%	
Left Front	*(1)*	-	3%					**Right Front** *(3)* - 9%
Left Front Quarter	*(1)*	-	3%					**Right Front Quarter** *(2)* - 6%
Left Distributed	*(1)*	-	3%					**Right Distributed** *(3)* - 9%
Left Back Quarter	*(2)*	-	6%					**Right Back Quarter** *(3)* - 9%
Left Back	*(3)*	-	9%					**Right Back** *(2)* - 6%
				Back	*(5)*	-	16%	
Non-Contact	*(3)*	-	9%					

(by halves)

Left	*(8)*	-	25%	Right	*(13)*	-	41%
Front	*(10)*	-	31%	Back	*(15)*	-	47%

Vehicles 1996 *(Civilian Vehicles Involved in Police Motorcycle Collisions)*

Total Vehicles Involved - 6

Age

Age Range: 0 - 20 years **Average Age:** 4.243

Age of Vehicle (# of Involvements) - % Involved

Predominant Ages	**0-1**	*(2)*	-	33%	**2-3**	*(2)*	-	33%

Color

Predominant Colors	**Green**	*(2)*	-	33%

Make

Predominant Makes	**Ford**	*(2)*	-	33%

Model

Predominant Models	**4 Door**	*(4)*	-	67%	**2 Door**	*(2)*	-	33%

Registration

Predominant Registrations	**Texas**	*(6)*	-	100%

Damage

	Minimal	*(5)*	-	83%	**Moderate**	*(1)*	-	17%

Point of Contact *(by segments)*

	Front	*(0)*	-	0%				
Left Front	*(1)*	-	17%		**Right Front**	*(0)*	-	0%
Left Front Quarter	*(0)*	-	0%		**Right Front Quarter**	*(0)*	-	0%
Left Distributed	*(0)*	-	0%		**Right Distributed**	*(1)*	-	17%
Left Back Quarter	*(0)*	-	0%		**Right Back Quarter**	*(0)*	-	0%
Left Back	*(0)*	-	0%		**Right Back**	*(0)*	-	0%
	Back	*(2)*	-	33%				
Non-Contact	*(2)*	-	33%					

(by halves)

Left	*(1)*	-	17%	Right	*(1)*	-	17%	
Front	*(1)*	-	17%	Back	*(2)*	-	33%	

Vehicles 1997 *(Civilian Vehicles Involved in Police Motorcycle Collisions)*

Total Vehicles Involved - 9

Age

Age Range: 0 - 12 years **Average Age:** 4.284

Age of Vehicle (# of Involvements) - % Involved

Predominant Ages	**0-1** *(2)* - 22%	**3-4** *(2)* - 22%

Color

Predominant Colors	**White** *(2)* - 22%	**Green** *(2)* - 22%

Make

Predominant Makes	**Ford** *(3)* - 33%	**Honda** *(3)* - 33%

Model

Predominant Models	**2 Door** *(4)* - 44%	**4 Door** *(3)* - 33%

Registration

Predominant Registrations	**Texas** *(9)* - 100%

Damage

	Minimal *(7)* - 78%	**Moderate** *(2)* - 22%

Point of Contact *(by segments)*

	Front *(1)* - 11%	
Left Front *(1)* - 11%		**Right Front** *(0)* - 0%
Left Front Quarter *(1)* - 11%		**Right Front Quarter** *(1)* - 11%
Left Distributed *(1)* - 11%		**Right Distributed** *(0)* - 0%
Left Back Quarter *(1)* - 11%		**Right Back Quarter** *(0)* - 0%
Left Back *(1)* - 11%		**Right Back** *(1)* - 11%
	Back *(1)* - 11%	
Non-Contact *(0)* - 0%		

(by halves)

Left *(5)* - 56%	Right *(2)* - 22%
Front *(4)* - 44%	Back *(4)* - 44%

Vehicles 1998 *(Civilian Vehicles Involved in Police Motorcycle Collisions)*

Total Vehicles Involved - 5

Age

Age Range: 0 - 11 years **Average Age:** 7.00

Age of Vehicle (# of Involvements) - % Involved

Predominant Ages **7-8** *(2)* - 40%

Color

Predominant Colors **White** *(3)* - 60%

Make

Predominant Makes **Dodge** *(2)* - 40%

Model

Predominant Models **Pickup** *(2)* - 40% **Van** *(2)* - 40%

Registration

Predominant Registrations **Texas** *(5)* - 100%

Damage

Minimal *(4)* - 80% **Moderate** *(1)* - 20%

Point of Contact *(by segments)*

					Front	*(0)*	-	0%			0%
Left Front	*(0)*	-	0%						**Right Front**	*(0)*	-	0%
Left Front Quarter	*(1)*	-	20%						**Right Front Quarter**	*(0)*	-	0%
Left Distributed	*(1)*	-	20%						**Right Distributed**	*(0)*	-	0%
Left Back Quarter	*(2)*	-	40%						**Right Back Quarter**	*(0)*	-	0%
Left Back	*(1)*	-	20%						**Right Back**	*(0)*	-	0%
					Back	*(0)*	-	0%				
Non-Contact	*(0)*	-	0%									

(by halves)

Left	*(5)*	-	100%	Right	*(0)*	-	0%
Front	*(1)*	-	20%	Back	*(3)*	-	60%

Vehicles 1999 *(Civilian Vehicles Involved in Police Motorcycle Collisions)*

Total Vehicles Involved - 9

Age

Age Range: 1 - 14 years **Average Age:** 6.284

Age of Vehicle (# of Involvements) - % Involved

Predominant Ages	**14-15**	*(2)* - 22%	

Color

Predominant Colors	**White**	*(2)* - 22%	**Blue** *(2)* - 22%

Make

Predominant Makes	**Ford**	*(3)* - 33%	**Toyota** *(2)* - 22%

Model

Predominant Models	**Pickup**	*(3)* - 33%	**Van** *(2)* - 22%

Registration

Predominant Registrations	**Texas**	*(9)* - 100%	**California** *(1)* - 11%

Damage

	Minimal	*(7)* - 78%	**Moderate** *(2)* - 22%

Point of Contact *(by segments)*

	Front	*(0)* - 0%	
Left Front *(0)* - 0%			**Right Front** *(0)* - 0%
Left Front Quarter *(0)* - 0%			**Right Front Quarter** *(2)* - 22%
Left Distributed *(1)* - 11%			**Right Distributed** *(1)* - 11%
Left Back Quarter *(2)* - 22%			**Right Back Quarter** *(0)* - 0%
Left Back *(0)* - 0%			**Right Back** *(2)* - 22%
	Back	*(1)* - 11%	
Non-Contact *(0)* - 0%			

(by halves)

Left *(3)* - 33%		Right *(5)* - 56%	
Front *(2)* - 22%		Back *(5)* - 56%	

Drivers 1990-99 *(Civilian Drivers Involved in Police Motorcycle Collisions)*

Total Drivers Involved - 61

Sex

Male *(41)* - 67% **Female** *(20)* - 33%

Race

White *(35)* - 57% **Hispanic** *(15)* - 25% **Black** *(10)* - 16%

Age

Age Range: 17 - 93 years **Average Age:** 34.138

Age of Driver (# of Involvements) - % Involved

15-20 *(10)* - 16%	**21-25** *(14)* - 23%	**26-30** *(10)* - 16%
31-35 *(3)* - 5%	**36-40** *(9)* - 15%	**41-45** *(4)* - 7%
46-50 *(4)* - 7%	**51-55** *(1)* - 2%	**56-60** *(3)* - 5%
70-79 *(1)* - 2%	**80-89** *(1)* - 2%	**90-99** *(1)* - 2%

Occupation

White Collar *(15)* - 25%	**Blue Collar** *(14)* - 23%
Student *(10)* - 16%	**Retired / Housewife** *(5)* - 8%
Medical *(4)* - 7%	**Police / Military** *(4)* - 7%
Unemployed *(1)* - 2%	

City of Residence

Austin *(51)* - 84%	**MetroArea** *(5)* - 8%
Out of City *(5)* - 8%	**Out of State** *(0)* - 0%

Licensing State

Texas *(58)* - 95% **Nebraska** *(1)* - 2% **Iowa** *(1)* - 2%

Driver Insured

Yes *(52)* - 85% **No** *(9)* - 15%

Driver was Owner of Vehicle

Yes *(44)* - 72% **No** *(17)* - 28%

Driver Injuries

None *(56)* - 92% **Minor** *(5)* - 8%

Drivers 1990-95 *(Civilian Drivers Involved in Police Motorcycle Collisions)*

Total Drivers Involved - 32

Sex

Male *(21)* - 66% **Female** *(11)* - 34%

Race

White *(19)* - 59% **Hispanic** *(8)* - 25% **Black** *(4)* - 13%

Age

Age Range: 17 - 93 years **Average Age:** 31.251

Age of Driver (# of Involvements) - % Involved

15-20 *(8)* - 25%	**21-25** *(6)* - 19%	**26-30** *(5)* - 16%
31-35 *(3)* - 9%	**36-40** *(5)* - 16%	**41-45** *(1)* - 3%
46-50 *(1)* - 3%	**56-60** *(2)* - 6%	**90-99** *(1)* - 3%

Occupation

White Collar *(7)* - 22%	**Blue Collar** *(8)* - 25%
Student *(7)* - 22%	**Retired / Housewife** *(2)* - 6%
Medical *(2)* - 6%	**Police / Military** *(1)* - 3%

City of Residence

Austin *(30)* - 94% **MetroArea** *(3)* - 9%

Licensing State

Texas *(32)* - 100%

Driver Insured

Yes *(27)* - 84% **No** *(5)* - 16%

Driver was Owner of Vehicle

Yes *(22)* - 69% **No** *(10)* - 31%

Driver Injuries

None *(30)* - 94% **Minor** *(2)* - 6%

Drivers 1996 *(Civilian Drivers Involved in Police Motorcycle Collisions)*

Total Drivers Involved - 6

Sex

Male *(3)* - 50% **Female** *(3)* - 50%

Race

White *(3)* - 50% **Hispanic** *(1)* - 17% **Black** *(2)* - 33%

Age

Age Range: 23 - 84 years **Average Age:** 52.000

Age of Driver (# of Involvements) - % Involved

21-25 *(1)* - 17% **26-30** *(1)* - 17% **41-45** *(1)* - 17%
56-60 *(1)* - 17% **70-79** *(1)* - 17% **80-89** *(1)* - 17%

Occupation

White Collar *(1)* - 17% **Blue Collar** *(0)* - 0%
Student *(0)* - 0% **Retired / Housewife** *(2)* - 33%
Medical *(1)* - 17% **Police / Military** *(1)* - 17%
Unemployed *(0)* - 0%

City of Residence

Austin *(3)* - 50% **MetroArea** *(1)* - 17%
Out of City *(2)* - 33% **Out of State** *(0)* - 0%

Licensing State

Texas *(6)* - 100%

Driver Insured 0%

Yes *(5)* - 83% **No** *(1)* - 17%

Driver was Owner of Vehicle

Yes *(4)* - 67% **No** *(2)* - 33%

Driver Injuries

None *(6)* - 100% **Minor** *(0)* - 0%

Drivers 1997

(Civilian Drivers Involved in Police Motorcycle Collisions)

Total Drivers Involved - 9

Sex

Male *(5)* - 56% **Female** *(4)* - 44%

Race

White *(5)* - 56% **Hispanic** *(1)* - 11% **Black** *(2)* - 22%

Age

Age Range: 17 - 51 years **Average Age:** 30.284

Age of Driver (# of Involvements) - % Involved

15-20 *(1)* - 11% **21-25** *(3)* - 33% **26-30** *(2)* - 22%
36-40 *(1)* - 11% **41-45** *(1)* - 11% **51-55** *(1)* - 11%

Occupation

White Collar *(2)* - 22% **Blue Collar** *(4)* - 44%
Student *(1)* - 11% **Retired / Housewife** *(1)* - 11%
Medical *(1)* - 11% **Police / Military** *(0)* - 0%
Unemployed *(0)* - 0%

City of Residence

Austin *(7)* - 78% **MetroArea** *(2)* - 22%

Licensing State

Texas *(9)* - 100%

Driver Insured

Yes *(8)* - 89% **No** *(1)* - 11%

Driver was Owner of Vehicle

Yes *(8)* - 89% **No** *(1)* - 11%

Driver Injuries

None *(8)* - 89% **Minor** *(1)* - 11%

Drivers 1998 *(Civilian Drivers Involved in Police Motorcycle Collisions)*

Total Drivers Involved - 5

Sex

Male *(5)* - 100% **Female** *(0)* - 0%

Race

White *(2)* - 40% **Hispanic** *(1)* - 20% **Black** *(2)* - 40%

Age

Age Range: 24 - 50 years **Average Age:** 36.146

Age of Driver (# of Involvements) - % Involved

21-25 *(1)* - 20% **26-30** *(1)* - 20% **36-40** *(1)* - 20%
41-45 *(1)* - 20% **46-50** *(1)* - 20%

Occupation

White Collar *(2)* - 40% **Blue Collar** *(1)* - 20%
Student *(0)* - 0% **Retired / Housewife** *(0)* - 0%
Medical *(0)* - 0% **Police / Military** *(0)* - 0%
Unemployed *(0)* - 0% 0%

City of Residence

Austin *(3)* - 60% **Out of City** *(2)* - 40%

Licensing State

Texas *(5)* - 100%

Driver Insured

Yes *(5)* - 100% **No** *(0)* - 0%

Driver was Owner of Vehicle

Yes *(3)* - 60% **No** *(2)* - 40%

Driver Injuries

None *(4)* - 80% **Minor** *(1)* - 20%

Drivers 1999

(Civilian Drivers Involved in Police Motorcycle Collisions)

Total Drivers Involved - 9

Sex

Male	*(7)*	-	78%	**Female**	*(2)*	-	22%	

Race

White	*(6)*	-	67%	**Hispanic**	*(3)*	-	33%	**Black**	*(0)*	-	0%

Age

Age Range: 20 - 47 years **Average Age:** 32.041

Age of Driver (# of Involvements) - % Involved

15-20	*(1)*	-	11%	**21-25**	*(3)*	-	33%	**26-30**	*(1)*	-	11%
36-40	*(2)*	-	22%	**46-50**	*(2)*	-	22%				

Occupation

White Collar	*(3)*	-	33%	**Blue Collar**	*(1)*	-	11%
Student	*(2)*	-	22%	**Retired / Housewife**	*(0)*	-	0%
Medical	*(0)*	-	0%	**Police / Military**	*(2)*	-	22%
Unemployed	*(0)*	-	0%				

City of Residence

Austin	*(8)*	-	89%	**MetroArea**	*(1)*	-	11%

Licensing State

Texas	*(9)*	-	100%

Driver Insured

Yes	*(7)*	-	78%	**No**	*(2)*	-	22%

Driver was Owner of Vehicle

Yes	*(7)*	-	78%	**No**	*(2)*	-	22%

Driver Injuries

None	*(8)*	-	89%	**Minor**	*(1)*	-	11%

Police Motorcycles 1990-99 (Police Motorcycles in Police Motorcycle Collisions)

Total Vehicles Involved - 83

Age

Age Range: 0 - 7 years **Average Age:** 2.260

Age of Vehicle (# of Involvements) - % Involved

Kawasaki - KZ1000P

0-1	*(3)*	4%	**1-2**	*(7)*	8%	**2-3**	*(14)*	17%
3-4	*(11)*	13%	**4-5**	*(4)*	5%	**5-6**	*(4)*	5%
6-7	*(2)*	2%						

Harley-Davidson - FXRP

0-1	*(4)*	5%	**1-2**	*(7)*	8%	**2-3**	*(4)*	5%
3-4	*(7)*	8%	**4-5**	*(6)*	7%	**5-6**	*(4)*	5%
6-7	*(2)*	2%	**7-8**	*(2)*	2%			

Harely-Davidson - Road King

			1-2	*(3)*	4%			

Harely-Davidson - FLHTPI

			0-1	*(1)*	1%			

Make & Model

Kawasaki - KZ1000P

1985	*(2)*	2%	**1987**	*(4)*	5%	**1989**	*(9)*	11%
1995	*(20)*	24%	**1996**	*(10)*	12%			

Harley-Davidson - FXRP

1990	*(5)*	6%	**1991**	*(4)*	5%	**1992**	*(27)*	33%

Harely-Davidson - Road King

			1998	*(3)*	4%			

Harely-Davidson - FLHTPI

			1999	*(1)*	1%			

On Emergency

			Yes	*(51)*	61%	**No**	*(32)*	39%

Damage

Minimal	*(46)*	55%	**Moderate**	*(31)*	37%	**Extensive**	*(6)*	7%

Point of Contact *(by segments)*

			Front	*(22)*	27%			
Left Front	*(3)*	4%				**Right Front**	*(8)*	10%
Left Front Quarter	*(3)*	4%				**Right Front Quarter**	*(3)*	4%
Left Distributed	*(4)*	5%				**Right Distributed**	*(25)*	30%
Left Back Quarter	*(1)*	1%				**Right Back Quarter**	-----	------
Left Back	*(1)*	1%				**Right Back**	*(2)*	2%
			Back	*(2)*	2%			

(by halves)

Left	*(12)*	14%	**Right**	*(38)*	46%			
Front	*(39)*	47%	**Back**	*(6)*	7%			

Police Motorcycles 1990-95

(Police Motorcycles in Police Motorcycle Collisions)

Total Vehicles Involved - 39

Age

Age Range: 0 - 6 years **Average Age:** 2.225

Age of Vehicle (# of Involvements) - % Involved

Kawasaki - KZ1000P

0-1	*(1)*	- 3%	**1-2**	*(1)*	- 3%	**2-3**	*(2)*	- 5%
3-4	*(3)*	- 8%	**4-5**	*(3)*	- 8%	**5-6**	*(4)*	- 10%
6-7	*(2)*	- 5%						

Harley-Davidson - FXRP

0-1	*(4)*	- 10%	**1-2**	*(7)*	- 18%	**2-3**	*(4)*	- 10%
3-4	*(7)*	- 18%	**4-5**	*(2)*	- 5%	**5-6**	-----	- ------
6-7	-----	- ------	**7-8**		- 0%			

Harely-Davidson - Road King

			1-2	-----	- ------			

Harely-Davidson - FLHTPI

			0-1	-----	- ------			

Make & Model

Kawasaki - KZ1000P

1985	*(2)*	- 5%	**1987**	*(4)*	- 10%	**1989**	*(9)*	- 23%
1995	*(1)*	- 3%	**1996**	-----	- ------			

Harley-Davidson - FXRP

1990	*(5)*	- 13%	**1991**	*(2)*	- 5%	**1992**	*(17)*	- 44%

Harely-Davidson - Road King

			1998	-----	- ------			

Harely-Davidson - FLHTPI

			1999	-----	- ------			

On Emergency

			Yes	*(20)*	- 51%	**No**	*(19)*	- 49%

Damage

Minimal	*(22)*	- 56%	**Moderate**	*(16)*	- 41%	**Extensive**	*(1)*	- 3%

Point of Contact *(by segments)*

			Front	*(11)*	- 28%			
Left Front	*(2)*	- 5%				**Right Front**	*(2)*	- 5%
Left Front Quarter	*(1)*	- 3%				**Right Front Quarter**	*(1)*	- 3%
Left Distributed	*(8)*	- 21%				**Right Distributed**	*(10)*	- 26%
Left Back Quarter	*(1)*	- 3%				**Right Back Quarter**	-----	- ------
Left Back	-----	- ------				**Right Back**	-----	- ------
			Back	*(2)*	- 5%			

(by halves)

Left	*(12)*	- 31%	**Right**	*(13)*	- 33%			
Front	*(17)*	- 44%	**Back**	*(3)*	- 8%			

Police Motorcycles 1996

(Police Motorcycles in Police Motorcycle Collisions)

Total Vehicles Involved -10

Age

Age Range: 0 - 6 years **Average Age:** 2.146

Age of Vehicle (# of Involvements) - % Involved

Kawasaki - KZ1000P

0-1	*(2)* - 20%	**1-2**	*(3)* - 30%	**2-3**	----- - ------
3-4	----- - ------	**4-5**	----- - ------	**5-6**	----- - ------
6-7	----- - ------				

Harley-Davidson - FXRP

0-1	----- - ------	**1-2**	----- - ------	**2-3**	----- - ------
3-4	----- - ------	**4-5**	*(4)* - 40%	**5-6**	*(1)* - 10%
6-7	----- - ------	**7-8**	----- - ------		

Harely-Davidson - Road King

		1-2	----- - ------		

Harely-Davidson - FLHTPI

		0-1	----- - ------		

Make & Model

Kawasaki - KZ1000P

1985	----- - ------	**1987**	----- - ------	**1989**	----- - ------
1995	*(3)* - 30%	**1996**	*(2)* - 20%		

Harley-Davidson - FXRP

1990	----- - ------	**1991**	*(1)* - 10%	**1992**	*(4)* - 40%

Harely-Davidson - Road King

		1998	----- - ------		

Harely-Davidson - FLHTPI

		1999	----- - ------		

On Emergency

		Yes	*(7)* - 70%	**No**	*(3)* - 30%

Damage

Minimal	*(7)* - 70%	**Moderate**	*(3)* - 30%	**Extensive**	----- - ------

Point of Contact *(by segments)*

		Front	*(2)* - 20%		
Left Front	*(2)* - 20%			**Right Front**	*(1)* - 10%
Left Front Quarter	----- - ------			**Right Front Quarter**	----- - ------
Left Distributed	*(1)* - 10%			**Right Distributed**	*(4)* - 40%
Left Back Quarter	----- - ------			**Right Back Quarter**	----- - ------
Left Back	----- - ------			**Right Back**	----- - ------
		Back	----- - ------		

(by halves)

Left	*(3)* - 30%	**Right**	*(5)* - 50%		
Front	*(5)* - 50%	**Back**	----- - ------		

Police Motorcycles 1997

(Police Motorcycles in Police Motorcycle Collisions)

Total Vehicles Involved - 15

Age

Age Range: 2 - 5 years **Average Age:** 2.122

Age of Vehicle (# of Involvements) - % Involved

Kawasaki - KZ1000P

0-1 ----- - ------	**1-2** *(4)* - 27%	**2-3** *(8)* - 53%
3-4 ----- - ------	**4-5** ----- - ------	**5-6** ----- - ------
6-7 ----- - ------		

Harley-Davidson - FXRP

0-1 ----- - ------	**1-2** ----- - ------	**2-3** ----- - ------
3-4 ----- - ------	**4-5** ----- - ------	**5-6** *(3)* - 20%
6-7 ----- - ------	**7-8** ----- - ------	

Harely-Davidson - Road King

1-2 ----- - ------

Harely-Davidson - FLHTPI

0-1 ----- - ------

Make & Model

Kawasaki - KZ1000P

1985 ----- - ------	**1987** ----- - ------	**1989** ----- - ------
1995 *(8)* - 53%	**1996** *(4)* - 27%	

Harley-Davidson - FXRP

1990 ----- - ------	**1991** ----- - ------	**1992** *(3)* - 20%

Harely-Davidson - Road King

1998 ----- - ------

Harely-Davidson - FLHTPI

1999 ----- - ------

On Emergency

Yes *(10)* - 67% **No** *(5)* - 33%

Damage

Minimal *(7)* - 47% **Moderate** *(7)* - 47% **Extensive** *(1)* - 7%

Point of Contact *(by segments)*

Front *(4)* - 27%

Left Front ----- - ------	**Right Front** *(1)* - 7%
Left Front Quarter *(1)* - 7%	**Right Front Quarter** ----- - ------
Left Distributed *(3)* - 20%	**Right Distributed** *(4)* - 27%
Left Back Quarter ----- - ------	**Right Back Quarter** ----- - ------
Left Back *(1)* - 7%	**Right Back** *(1)* - 7%

Back ----- - ------

(by halves)

Left *(5)* - 33%	**Right** *(6)* - 40%
Front *(6)* - 40%	**Back** *(2)* - 13%

Police Motorcycles 1998

(Police Motorcycles in Police Motorcycle Collisions)

Total Vehicles Involved - 12

Age

Age Range: 2 - 7 years **Average Age:** 3.183

Age of Vehicle (# of Involvements) - % Involved

Kawasaki - KZ1000P

0-1 ----- - ------	**1-2** ----- - ------	**2-3** *(4)* - 33%
3-4 *(5)* - 42%	**4-5** ----- - ------	**5-6** ----- - ------
6-7 ----- - ------		

Harley-Davidson - FXRP

0-1 ----- - ------	**1-2** ----- - ------	**2-3** ----- - ------
3-4 ----- - ------	**4-5** ----- - ------	**5-6** ----- - ------
6-7 *(2)* - 17%	**7-8** *(1)* - 8%	

Harely-Davidson - Road King

1-2 ----- - ------

Harely-Davidson - FLHTPI

0-1 ----- - ------

Make & Model

Kawasaki - KZ1000P

1985 ----- - ------	**1987** ----- - ------	**1989** ----- - ------
1995 *(5)* - 42%	**1996** *(4)* - 33%	

Harley-Davidson - FXRP

1990 ----- - ------	**1991** *(1)* - 8%	**1992** *(2)* - 17%

Harely-Davidson - Road King

1998 ----- - ------

Harely-Davidson - FLHTPI

1999 ----- - ------

On Emergency

Yes *(8)* - 67% **No** *(4)* - 33%

Damage

Minimal *(8)* - 67% **Moderate** *(2)* - 17% **Extensive** *(2)* - 17%

Point of Contact *(by segments)*

Front *(2)* - 17%

Left Front ----- - ------	**Right Front** *(1)* - 8%
Left Front Quarter *(1)* - 8%	**Right Front Quarter** *(2)* - 17%
Left Distributed ----- - ------	**Right Distributed** *(6)* - 50%
Left Back Quarter ----- - ------	**Right Back Quarter** ----- - ------
Left Back ----- - ------	**Right Back** ----- - ------

Back ----- - ------

(by halves)

Left *(1)* - 8%	**Right** *(9)* - 75%
Front *(6)* - 50%	**Back** ----- - ------

Police Motorcycles 1999

(Police Motorcycles in Police Motorcycle Collisions)

Total Vehicles Involved - 11

Age

Age Range: 0 - 7 years **Average Age:** 2.299

Age of Vehicle (# of Involvements) - % Involved

Kawasaki - KZ1000P

0-1 ----- - ------	**1-2** ----- - ------	**2-3** ----- - ------
3-4 *(3)* - 27%	**4-5** *(3)* - 27%	**5-6** ----- - ------
6-7 ----- - ------		

Harley-Davidson - FXRP

0-1 ----- - ------	**1-2** ----- - ------	**2-3** ----- - ------
3-4 ----- - ------	**4-5** ----- - ------	**5-6** ----- - ------
6-7 ----- - ------	**7-8** *(1)* - 9%	

Harely-Davidson - Road King

1-2 *(3)* - 27%

Harely-Davidson - FLHTPI

0-1 *(1)* - 9%

Make & Model

Kawasaki - KZ1000P

1985 ----- - ------	**1987** ----- - ------	**1989** ----- - ------
1995 *(3)* - 27%	**1996** *(3)* - 27%	

Harley-Davidson - FXRP 3%

1990 ----- - ------	**1991** ----- - ------	**1992** *(1)* - 9%

Harely-Davidson - Road King

1998 *(3)* - 27%

Harely-Davidson - FLHTPI

1999 *(1)* - 9%

On Emergency

Yes *(9)* - 82% **No** *(2)* - 18%

Damage

Minimal *(5)* - 45% **Moderate** *(3)* - 27% **Extensive** *(3)* - 27%

Point of Contact *(by segments)*

Front *(3)* - 27%

Left Front ----- - ------		**Right Front** *(2)* - 18%
Left Front Quarter *(1)* - 9%		**Right Front Quarter** ----- - ------
Left Distributed *(3)* - 27%		**Right Distributed** *(2)* - 18%
Left Back Quarter ----- - ------		**Right Back Quarter** ----- - ------
Left Back ----- - ------		**Right Back** ----- - ------

Back ----- - ------

(by halves)

Left *(4)* - 36%	**Right** *(4)* - 36%
Front *(6)* - 55%	**Back** ----- - ------

Officers 1990-99 *(Police Officers Involved in Police Motorcycle Collisions)*

Total Officers Involved - 87

Item (# of Involvements) - % Involved

Sex

Male *(85)* - 98% **Female** *(2)* - 2%

Race

White *(64)* - 74% **Hispanic** *(12)* - 14% **Black** *(6)* - 7%

Age (years)

Age Range: 25 - 48 **Average Age:** 36.147

21-25 *(1)* - 1% **26-30** *(10)* - 11% **31-35** *(28)* - 32%

36-40 *(28)* - 32% **41-45** *(15)* - 17% **46-50** *(5)* - 6%

Injuries

None *(21)* - 24% **Minor** *(24)* - 28%

Intermediate *(32)* - 37% **Serious** *(9)* - 10%

Transported by Ambulance

Yes *(40)* - 46% **No** *(47)* - 54%

Training

Prior to Collision

Basic

Yes *(80)* - 92% **No** *(7)* - 8%

Recertification

Yes *(38)* - 44% **No** *(49)* - 56%

Average time *(years)* since …

Basic 3.177 **Recertification** 0.134

Officers 1990-95 *(Police Officers Involved in Police Motorcycle Collisions)*

Total Officers Involved - 39

Item (# of Involvements) - % Involved

Sex

Male *(37)* - 95% **Female** *(2)* - 5%

Race

White *(32)* - 82% **Hispanic** *(7)* - 18% **Black** ----- - ------

Age (years)

Age Range: 28 - 48 **Average Age:** 36.226

21-25 ----- - ------ **26-30** *(6)* - 15% **31-35** *(12)* - 31%

36-40 *(9)* - 23% **41-45** *(9)* - 23% **46-50** *(3)* - 8%

Injuries

None *(10)* - 26% **Minor** *(10)* - 26%

Intermediate *(13)* - 33% **Serious** *(5)* - 13%

Transported by Ambulance

Yes *(20)* - 51% **No** *(19)* - 49%

Training

Prior to Collision

Basic

Yes *(33)* - 85% **No** *(6)* - 15%

Recertification

Yes ----- - ------ **No** *(39)* - 100%

Average time *(years)* since …

Basic 2.035 **Recertification** ------

Officers 1996 *(Police Officers Involved in Police Motorcycle Collisions)*

Total Officers Involved - 8

Item (# of Involvements) - % Involved

Sex

Male *(8)* - 100% **Female** ----- - ------

Race

White *(7)* - 88% **Hispanic** *(1)* - 13% **Black** ----- - ------

Age (years)

Age Range: 28 - 47 **Average Age:** 35.137

21-25 ----- - ------ **26-30** *(2)* - 25% **31-35** *(3)* - 38%

36-40 *(1)* - 13% **41-45** *(1)* - 13% **46-50** *(1)* - 13%

Injuries

None *(1)* - 13% **Minor** *(4)* - 50%

Intermediate *(3)* - 38% **Serious** ----- - ------

Transported by Ambulance

Yes *(3)* - 38% **No** *(5)* - 63%

Training

Prior to Collision

Basic

Yes *(8)* - 100% **No** ----- - ------

Recertification

Yes *(4)* - 50% **No** *(4)* - 50%

Average time *(years)* since …

Basic 2.193 **Recertification** .034

Officers 1997 *(Police Officers Involved in Police Motorcycle Collisions)*

Total Officers Involved - 14

Item (# of Involvements) - % Involved

Sex

Male *(14)* - 100% **Female** ----- - ------

Race

White *(11)* - 79% **Hispanic** *(2)* - 14% **Black** *(1)* - 7%

Age (years)

Age Range: 33 - 43 **Average Age:** 38.104

21-25 ----- - ------ **26-30** ----- - ------ **31-35** *(2)* - 14%

36-40 *(8)* - 57% **41-45** *(2)* - 14% **46-50** *(2)* - 14%

Injuries

None *(13)* - 93% **Minor** *(2)* - 14%

Intermediate *(7)* - 50% **Serious** *(2)* - 14%

Transported by Ambulance

Yes *(6)* - 43% **No** *(8)* - 57%

Training

Prior to Collision

Basic

Yes *(14)* - 100% **No** ----- - ------

Recertification

Yes *(12)* - 86% **No** *(2)* - 14%

Average time *(years)* since …

Basic 4.321 **Recertification** .175

Officers 1998

(Police Officers Involved in Police Motorcycle Collisions)

Total Officers Involved - 11

Item (# of Involvements) - % Involved

Sex

Male *(11)* - 100% **Female** ----- - ------

Race

White *(6)* - 55% **Hispanic** *(1)* - 9% **Black** *(4)* - 36%

Age (years)

Age Range: 33 - 40 **Average Age:** 36.000

21-25 ----- - ------ **26-30** ----- - ------ **31-35** *(4)* - 36%

36-40 *(7)* - 64% **41-45** ----- - ------ **46-50** ----- - ------

Injuries

None *(3)* - 27% **Minor** *(4)* - 36%

Intermediate *(3)* - 27% **Serious** *(1)* - 9%

Transported by Ambulance

Yes *(4)* - 36% **No** *(1)* - 9%

Training

Prior to Collision

Basic

Yes *(10)* - 91% **No** *(1)* - 9%

Recertification

Yes *(8)* - 73% **No** *(3)* - 27%

Average time *(years)* since …

Basic 2.088 **Recertification** .138

Officers 1999

(Police Officers Involved in Police Motorcycle Collisions)

Total Officers Involved - 15

Item (# of Involvements) - % Involved

Sex

Male *(15)* - 100% **Female** ----- - ------

Race

White *(13)* - 87% **Hispanic** *(1)* - 7% **Black** *(1)* - 7%

Age (years)

Age Range: 33 - 40 **Average Age:** 36.000

21-25 *(1)* - 7%	**26-30** *(2)* - 13%	**31-35** *(7)* - 47%
36-40 *(3)* - 20%	**41-45** *(1)* - 7%	**46-50** *(1)* - 7%

Injuries

None *(4)* - 27%	**Minor** *(4)* - 27%
Intermediate *(6)* - 40%	**Serious** *(1)* - 7%

Transported by Ambulance

Yes *(7)* - 47% **No** *(8)* - 53%

Training

Prior to Collision

Basic

Yes *(15)* - 100% **No** ----- - ------

Recertification

Yes *(14)* - 93% **No** *(1)* - 7%

Average time *(years)* since …

Basic 5.247 **Recertification** .187

Causative Factors (Civilian) 1990-99 *(Causative Factors in Police Motorcycle Collisions)*

Total Causative Factors Listed - 60

Roadway

				Design of Road	*(1)*	-	2%

Vehicle Operator Condition

Inattention	*(10)*	-	17%	**Impaired Visibility**	*(1)*	-	2%
No Glasses	*(1)*	-	2%	**Distraction in Veh.**	*(1)*	-	2%
Alcohol	*(1)*	-	2%				

Vehicle Movement

Start & Stop

Unsafe Backing	*(5)*	-	8%	**Unsafe Start**	*(4)*	-	7%
FTYROW Stop Sign	*(1)*	-	2%	**Unsafe Stop**	*(2)*	-	3%

Turning

Left

FTYROW Left Turn	*(7)*	-	12%	**Unsafe**	*(2)*	-	3%

Right

Unsafe	*(1)*	-	2%

Other

FTYROW Private Drive	*(7)*	-	12%	**Turned Unsafe**	*(3)*	-	5%
Fail to Signal Intent	*(2)*	-	3%	**Wrong Way**	*(1)*	-	2%

Speed

Following too Closely	*(1)*	-	2%	**Fail to Control**	*(1)*	-	2%
Unsafe *(Over Limit)*	*(1)*	-	2%				

Judgement

Faulty Evasive Action	*(2)*	-	3%
FTYROW to Emergency Vehicle	*(5)*	-	8%

Totals

Roadway	***(1)***	-	2%
Vehicle Operator Condition	***(14)***	-	23%
Vehicle Movement	***(45)***	-	75%
Start & Stop	*(12)*	-	20%
Turning	*(23)*	-	38%
Speed	*(3)*	-	5%
Judgment	*(7)*	-	12%

Causative Factors (Civilian) 1990-95 *(Causative Factors in Police Motorcycle Collisions)*

Total Causative Factors Listed - 31

Roadway

				Design of Road	-----	-	------

Vehicle Operator Condition

Inattention	*(6)*	-	19%	**Impaired Visibility**	-----	-	------
No Glasses	*(1)*	-	3%	**Distraction in Veh.**	-----	-	------
Alcohol	*(1)*	-	3%				

Vehicle Movement

Start & Stop

Unsafe Backing	*(3)*	-	10%	**Unsafe Start**	*(1)*	-	3%
FTYROW Stop Sign	-----	-	------	**Unsafe Stop**	*(1)*	-	3%

Turning

Left

FTYROW Left Turn	*(6)*	-	19%	**Unsafe**	-----	-	------

Right

Unsafe	-----	-	------				

Other

FTYROW Private Drive	*(2)*	-	6%	**Turned Unsafe**	*(2)*	-	6%
Fail to Signal Intent	*(2)*	-	6%	**Wrong Way**	*(1)*	-	3%

Speed

Following too Closely	*(1)*	-	3%	**Fail to Control**	-----	-	------
Unsafe *(Over Limit)*	-----	-	------				

Judgement

Faulty Evasive Action	*(1)*	-	3%
FTYROW to Emergency Vehicle	*(3)*	-	10%

Totals

Roadway	-----	-	------
Vehicle Operator Condition	***(8)***	-	**26%**
Vehicle Movement	***(23)***	-	**74%**
Start & Stop	*(5)*	-	16%
Turning	*(13)*	-	42%
Speed	*(1)*	-	3%
Judgment	*(4)*	-	13%

Causative Factors (Civilian) 1996

(Causative Factors in Police Motorcycle Collisions)

Total Causative Factors Listed - 6

Roadway

				Design of Road	-----	-	------

Vehicle Operator Condition

Inattention	*(1)*	-	17%	**Impaired Visibility**	-----	-	------
No Glasses	-----	-	------	**Distraction in Veh.**	-----	-	------
Alcohol	-----	-	------				

Vehicle Movement

Start & Stop

Unsafe Backing	-----	-	------	**Unsafe Start**	-----	-	------
FTYROW Stop Sign	-----	-	------	**Unsafe Stop**	-----	-	------

Turning

Left

FTYROW Left Turn	-----	-	------	**Unsafe**	-----	-	------

Right

Unsafe	-----	-	------				

Other

FTYROW Private Drive	*(2)*	-	33%	**Turned Unsafe**	-----	-	------
Fail to Signal Intent	-----	-	------	**Wrong Way**	-----	-	------

Speed

Following too Closely	-----	-	------	**Fail to Control**	*(1)*	-	17%
Unsafe *(Over Limit)*	*(1)*	-	17%				

Judgement

Faulty Evasive Action	-----	-	------				
FTYROW to Emergency Vehicle	*(1)*	-	17%				

Totals

Roadway	-----	-	------
Vehicle Operator Condition	***(1)***	-	**17%**
Vehicle Movement	***(5)***	-	**83%**
Start & Stop	-----	-	------
Turning	*(2)*	-	33%
Speed	*(2)*	-	33%
Judgment	*(1)*	-	17%

Causative Factors (Civilian) 1997

(Causative Factors in Police Motorcycle Collisions)

Total Causative Factors Listed - 8

Roadway

				Design of Road	-----	-	------

Vehicle Operator Condition

Inattention	-----	-	------	**Impaired Visibility**	-----	-	------
No Glasses	-----	-	------	**Distraction in Veh.**	-----	-	------
Alcohol	-----	-	------				

Vehicle Movement

Start & Stop

Unsafe Backing	*(1)*	-	13%	**Unsafe Start**	-----	-	------
FTYROW Stop Sign	*(1)*	-	13%	**Unsafe Stop**	*(1)*	-	13%

Turning

Left

FTYROW Left Turn	-----	-	------	**Unsafe**	-----	-	------

Right

Unsafe	*(1)*	-	13%				

Other

FTYROW Private Drive	*(1)*	-	13%	**Turned Unsafe**	*(1)*	-	13%
Fail to Signal Intent	-----	-	------	**Wrong Way**	-----	-	------

Speed

Following too Closely	-----	-	------	**Fail to Control**	-----	-	------
Unsafe *(Over Limit)*	-----	-	------				

Judgement

Faulty Evasive Action	*(1)*	-	13%				
FTYROW to Emergency Vehicle	*(1)*	-	13%				

Totals

Roadway	-----	-	------
Vehicle Operator Condition	-----	-	------
Vehicle Movement	***(8)***	-	100%
Start & Stop	*(3)*	-	38%
Turning	*(3)*	-	38%
Speed	-----	-	------
Judgment	*(2)*	-	25%

Causative Factors (Civilian) 1998 *(Causative Factors in Police Motorcycle Collisions)*

Total Causative Factors Listed - 5

Roadway

Design of Road *(1)* - 20%

Vehicle Operator Condition

Inattention ----- - ------
No Glasses ----- - ------
Alcohol ----- - ------
Impaired Visibility *(1)* - 2%
Distraction in Veh. ----- - ------

Vehicle Movement

Start & Stop

Unsafe Backing ----- - ------
FTYROW Stop Sign ----- - ------
Unsafe Start *(1)* - 2%
Unsafe Stop ----- - ------

Turning

Left

FTYROW Left Turn ----- - ------
Unsafe ----- - ------

Right

Unsafe ----- - ------

Other

FTYROW Private Drive *(2)* - 3%
Fail to Signal Intent ----- - ------
Turned Unsafe ----- - ------
Wrong Way ----- - ------

Speed

Following too Closely ----- - ------
Unsafe *(Over Limit)* ----- - ------
Fail to Control ----- - ------

Judgement

Faulty Evasive Action ----- - ------
FTYROW to Emergency Vehicle ----- - ------

Totals

Roadway	***(1)***	**2%**
Vehicle Operator Condition	***(1)***	**2%**
Vehicle Movement	***(3)***	**5%**
Start & Stop	*(1)*	2%
Turning	*(2)*	3%
Speed	-----	------
Judgment	-----	------

Causative Factors (Civilian) 1999

(Causative Factors in Police Motorcycle Collisions)

Total Causative Factors Listed - 10

Roadway

Design of Road ----- - ------

Vehicle Operator Condition

Inattention *(3)* - 30%
No Glasses ----- - ------
Alcohol ----- - ------
Impaired Visibility ----- - ------
Distraction in Veh. *(1)* - 10%

Vehicle Movement

Start & Stop

Unsafe Backing *(1)* - 10%
FTYROW Stop Sign ----- - ------
Unsafe Start *(2)* - 20%
Unsafe Stop ----- - ------

Turning

Left

FTYROW Left Turn *(1)* - 10%
Unsafe *(2)* - 20%

Right

Unsafe ----- - ------

Other

FTYROW Private Drive ----- - ------
Fail to Signal Intent ----- - ------
Turned Unsafe ----- - ------
Wrong Way ----- - ------

Speed

Following too Closely ----- - ------
Unsafe ***(Over Limit)*** ----- - ------
Fail to Control ----- - ------

Judgement

Faulty Evasive Action ----- - ------
FTYROW to Emergency Vehicle ----- - ------

Totals

Roadway ----- - ------
Vehicle Operator Condition ***(4)*** - **40%**
Vehicle Movement ***(6)*** - **60%**

Start & Stop *(3)* - 30%
Turning *(3)* - 30%
Speed ----- - ------
Judgment ----- - ------

Causative Factors (Police) 1990-99 *(Causative Factors in Police Motorcycle Collisions)*

Total Causative Factors Listed - 68

Roadway

Oily	*(4)*	-	6%	**Debris**	(2)	-	3%
Wet	*(2)*	-	3%	**Slippery**	*(1)*	-	1%
Design of Road	*(2)*	-	3%	**Lighting**	*(1)*	-	1%

Vehicle Operator Condition

Inattention	*(1)*	-	1%	**Impaired Visibility**	*(1)*	-	1%

Vehicle Movement

Turning

Left

FTYROW Left Turn	*(1)*	-	1%	**Passing**	*(3)*	-	4%
				Unsafe	*(2)*	-	3%

Right

Unsafe	*(1)*	-	1%				

Other

FTYROW Private Drive	*(1)*	-	1%	**Turned Unsafe**	*(4)*	-	6%

Speed

Unsafe *(Under Limit)*	*(2)*	-	3%	**Fail to Control**	*(11)*	-	16%
Over Acceleration	*(1)*	-	1%	**Over Braking**	*(7)*	-	10%
Following too Closely	*(13)*	-	19%				

Judgement

Faulty Evasive Action	*(6)*	-	9%
Disregard Stop&Go Signal	*(1)*	-	1%
FTYROW to Emergency Vehicle	*(1)*	-	1%

Totals

Roadway	***(12)***	-	**18%**
Vehicle Operator Condition	***(2)***	-	**3%**
Vehicle Movement	***(54)***	-	**79%**
Turning	*(12)*	-	18%
Speed	*(34)*	-	50%
Judgment	*(8)*	-	12%

Causative Factors (Police) 1990-95 *(Causative Factors in Police Motorcycle Collisions)*

Total Causative Factors Listed - 28

Roadway

Oily	*(1)*	-	4%	**Debris**	-----	-	------
Wet	*(1)*	-	4%	**Slippery**	-----	-	------
Design of Road	-----	-	------	**Lighting**	-----	-	------

Vehicle Operator Condition

Inattention	-----	-	------	**Impaired Visibility**	-----	-	------

Vehicle Movement

Turning

Left

FTYROW Left Turn	*(1)*	-	4%	**Passing**	*(2)*	-	7%
				Unsafe	*(1)*	-	4%

Right

Unsafe	-----	-	------				

Other

FTYROW Private Drive	*(1)*	-	4%	**Turned Unsafe**	*(2)*	-	7%

Speed

Unsafe *(Under Limit)*	*(1)*	-	4%	**Fail to Control**	*(3)*	-	11%
Over Acceleration	*(1)*	-	4%	**Over Braking**	*(4)*	-	14%
Following too Closely	*(7)*	-	25%				

Judgement

Faulty Evasive Action	*(3)*	-	11%
Disregard Stop&Go Signal	-----	-	------
FTYROW to Emergency Vehicle	-----	-	------

Totals

Roadway	***(2)***	-	**7%**
VehicleOperator Condition	**-----**	-	**------**
Vehicle Movement	***(26)***	-	**93%**
Turning	*(7)*	-	25%
Speed	*(16)*	-	57%
Judgment	*(3)*	-	11%

Causative Factors (Police) 1996

(Causative Factors in Police Motorcycle Collisions)

Total Causative Factors Listed - 7

Roadway

Oily	*(1)*	- 14%	**Debris**	-----	- ------
Wet	-----	- ------	**Slippery**	-----	- ------
Design of Road	-----	- ------	**Lighting**	-----	- ------

Vehicle Operator Condition

Inattention	-----	- ------	**Impaired Visibility**	-----	- ------

Vehicle Movement

Turning

Left

FTYROW Left Turn	-----	- ------	**Passing**	-----	- ------
			Unsafe	-----	- ------

Right

Unsafe	-----	- ------

Other

FTYROW Private Drive	-----	- ------	**Turned Unsafe**	*(1)*	- 14%

Speed

Unsafe *(Under Limit)*	-----	- ------	**Fail to Control**	-----	- ------
Over Acceleration	-----	- ------	**Over Braking**	*(1)*	- 14%
Following too Closely	*(2)*	- 29%			

Judgement

Faulty Evasive Action	-----	- ------
Disregard Stop&Go Signal	*(1)*	- 14%
FTYROW to Emergency Vehicle	*(1)*	- 14%

Totals

Roadway	***(1)***	**- 14%**
VehicleOperator Condition	**-----**	**- ------**
Vehicle Movement	***(6)***	- **86%**
Turning	*(1)*	- 14%
Speed	*(3)*	- 43%
Judgment	*(2)*	- 29%

Causative Factors (Police) 1997

(Causative Factors in Police Motorcycle Collisions)

Total Causative Factors Listed - 9

Roadway

Oily	-----	- ------	**Debris**	*(2)*	- 22%
Wet	-----	- ------	**Slippery**	-----	- ------
Design of Road	-----	- ------	**Lighting**	-----	- ------

Vehicle Operator Condition

Inattention	-----	- ------	**Impaired Visibility**	*(1)*	- 11%

Vehicle Movement

Turning

Left

FTYROW Left Turn	-----	- ------	**Passing**	-----	- ------
			Unsafe	*(1)*	- 11%

Right

Unsafe	*(1)*	- 11%

Other

FTYROW Private Drive	-----	- ------	**Turned Unsafe**	-----	- ------

Speed

Unsafe *(Under Limit)*	*(1)*	- 11%	**Fail to Control**	*(1)*	- 11%
Over Acceleration	-----	- ------	**Over Braking**	-----	- ------
Following too Closely	*(1)*	- 11%			

Judgement

Faulty Evasive Action	*(1)*	- 11%
Disregard Stop&Go Signal	-----	- ------
FTYROW to Emergency Vehicle	-----	- ------

Totals

Roadway	***(2)***	**- 22%**
VehicleOperator Condition	***(1)***	**- 11%**
Vehicle Movement	***(6)***	**- 67%**
Turning	*(2)*	- 22%
Speed	*(3)*	- 33%
Judgment	*(1)*	- 11%

Causative Factors (Police) 1998

(Causative Factors in Police Motorcycle Collisions)

Total Causative Factors Listed - 12

Roadway

Oily	*(1)*	-	8%	**Debris**	-----	-	------
Wet	*(1)*	-	8%	**Slippery**	-----	-	------
Design of Road	*(1)*	-	8%	**Lighting**	-----	-	------

Vehicle Operator Condition

Inattention	-----	-	------	**Impaired Visibility**	-----	-	------

Vehicle Movement

Turning

Left

FTYROW Left Turn	-----	-	------	**Passing**	-----	-	------
				Unsafe	-----	-	------

Right

Unsafe	-----	-	------				

Other

FTYROW Private Drive	-----	-	------	**Turned Unsafe**	-----	-	------

Speed

Unsafe *(Under Limit)*	-----	-	------	**Fail to Control**	*(5)*	-	42%
Over Acceleration	-----	-	------	**Over Braking**	*(1)*	-	8%
Following too Closely	*(2)*	-	17%				

Judgement

Faulty Evasive Action	*(1)*	-	8%
Disregard Stop&Go Signal	-----	-	------
FTYROW to Emergency Vehicle	-----	-	------

Totals

Roadway	***(3)***	-	**25%**
VehicleOperator Condition	**-----**	-	**------**
Vehicle Movement	***(9)***	-	**75%**
Turning	-----	-	------
Speed	*(8)*	-	67%
Judgment	*(1)*	-	8%

Causative Factors (Police) 1999

(Causative Factors in Police Motorcycle Collisions)

Total Causative Factors Listed - 12

Roadway

Oily	*(1)*	-	8%	**Debris**	-----	-	------
Wet	-----	-	------	**Slippery**	*(1)*	-	8%
Design of Road	*(1)*	-	8%	**Lighting**	*(1)*	-	8%

Vehicle Operator Condition

Inattention	*(1)*	-	8%	**Impaired Visibility**	-----	-	------

Vehicle Movement

Turning

Left

FTYROW Left Turn	-----	-	------	**Passing**	*(1)*	-	8%
				Unsafe	-----	-	------

Right

Unsafe	-----	-	------				

Other

FTYROW Private Drive	-----	-	------	**Turned Unsafe**	*(1)*	-	8%

Speed

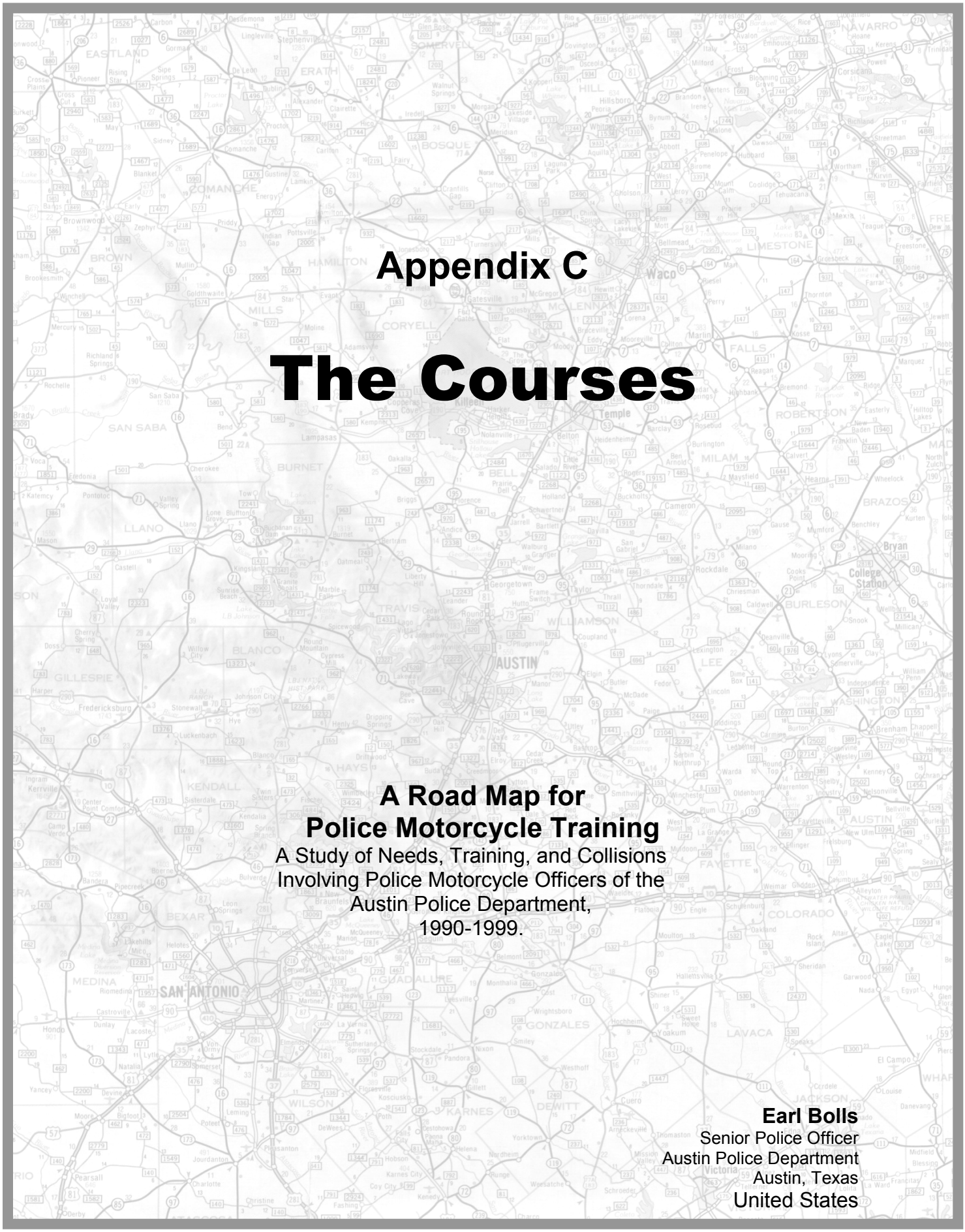
Unsafe *(Under Limit)*	-----	-	------	**Fail to Control**	*(2)*	-	17%
Over Acceleration	-----	-	------	**Over Braking**	*(1)*	-	8%
Following too Closely	*(1)*	-	8%				

Judgement

Faulty Evasive Action	*(1)*	-	8%
Disregard Stop&Go Signal	-----	-	------
FTYROW to Emergency Vehicle	-----	-	------

Totals

Roadway	***(4)***	-	**33%**
VehicleOperator Condition	***(1)***	-	**8%**
Vehicle Movement	***(7)***	-	**58%**
Turning	*(2)*	-	17%
Speed	*(4)*	-	33%
Judgment	*(1)*	-	8%



Appendix C

The Courses

A Road Map for Police Motorcycle Training

A Study of Needs, Training, and Collisions Involving Police Motorcycle Officers of the Austin Police Department, 1990-1999.

Earl Bolls
Senior Police Officer
Austin Police Department
Austin, Texas
United States

Basic Police Motorcycle

Instructional Plan

	Day 1	Day 2	Day 3	Day 4	Day 5
8:00 - 8:15	Show Up	Breeze Out	Street Strategies (Classroom)	Breeze Out	Escorts (Classroom)
8:15 - 8:30		Slow 'Race			
8:30 - 8:45	Introduction			Combination Braking	Partners (Classroom)
8:45 - 9:00		Switchback			
9:00 - 9:15	Riding with Control (Classroom)				Partners (Range)
9:15 - 9:30		Figure 8's		Brake & Escape	
9:30 - 9:45					
9:45 - 10:00		Cloverleaf			Broadslides
10:00 - 10:15	Motorcycle Inspection			180 Decel	
10:15 - 10:30					
10:30 - 10:45	Righting a Motorcycle	Slow&Offset Cones (Med.)			Monster Drill
10:45 - 11:00					
11:00 - Noon	LUNCH	LUNCH	LUNCH	LUNCH	LUNCH
Noon- 12:15	Cone Weaves	90 o Pullouts	Rear Wheel Skids	30 MPH Cone Weave	Riding Evaluation Practice
12:15 - 12:30					
12:30 - 12:45	Stopping Principles	Parking	Stopping in Short Distance		
12:45 - 1:00				Diminishing Clearance	
1:00 - 1:15	Stopping on a Curve	Balance stops .	Swerving		Riding Evaluation
1:15 - 1:30				Evasive Maneuver	
1:30 - 1:45	Board Drags	Bump & Go	Brake & Swerve		
1:45 - 2:00				Accel U-turns	
2:00 - 2:15	Introduction to Countersteer	Slow&Offset Cones (Lg.)	Stop Quickly on a Curve		
2:15 - 2:30					
2:30 - 2:45	Countersteer for Traction			Defensive Tactics (Classroom)	Road Ride & Shuttle
2:45 - 3:00		Mazes	Swerve & Brake		
3:00 - 3:15	Cornering Judgment				
3:15 - 3:30			Advanced Dirt Trailing and Broadslides (Dirt)	Defensive Tactics (Practical)	
3:30 - 3:45	Dirt Trailing and Rear Wheel Skids (Dirt)	Intersection			
3:45 - 4:00					
4:00 - 4:15					Written Test, Critique, & Wrap Up
4:15 - 4:30					
4:30 - 4:45	Wrap Up	Wrap Up	Wrap Up	Wrap Up	
4:45 - 5:00					

revised 3/99

Police Motorcycle Recertification School
Overview – April 1996

Classroom -		Eye Placement
Exercises -	**Warm Up -**	Figure 8's
		Cone Weaves (Slow & Offset)
		Clover Leaf
		Balance Stop
	Speed Work -	Excel U-turns
		30 mph Cone Weave
		Diminishing Clearance
	Braking -	Curved Stops (Normal & Quick)
		30 mph Straight-line Stops
		40 mph Decel Turn Through
		40 mph Decel Turn Through w/Stop
		40 mph Decel w/ Left & Right Turns
Defensive Tactics		
Classroom -		Motorcades & Escorts

Police Motorcycle Recertification School
Syllabus– April 1996

7:00 - 7:45am	**Classroom**	Eyeplacement
7:45 - 8:00am	**Break**	
8:00 - 8:20am	**Warm Up**	Cone Weave
8:20 - 8:35am		Figure 8's
8:35 - 8:55am		Clover Leaf & Balanced Stops
8:55 - 9:05am	**Break**	
9:05 - 9:30am		Clover Leaf & Balanced Stops
9:30 - 9:55am	**Speed Work**	Excel U-turns
9:55 - 10:05am	**Break**	
10:05 - 10:30am		30 mph Cone Weave
10:30 - 11:00am		Diminishing Clearance
11:00 - Noon	**Lunch**	
Noon - 12:30pm	**Braking**	Curved Stops
12:30 - 12:45pm		30 mph Straight-line Stops
12:45 - 12:55pm	**Break**	
12:55 - 1:25pm		40 mph Decel Turn Through
1:25 - 1:55pm		40 mph Decel Turn Through w/Stop
1:55 - 2:05pm	**Break**	
2:05 - 3:00pm		40 mph Decel with Left & Right Turns
3:00 - 3:10pm	**Break**	
3:10 - 4:00pm	**Defensive Tactics**	
4:00 - 5:00pm	**Motorcades & Escorts Procedures**	

Police Motorcycle Recertification School

Overview – November 1996

Classroom - Search, Predict, Act

Exercises -	**Warm Up -**	Figure 8's
		Clover Leaf
		Cornering Judgment
		Parking
	Speed Work -	30 mph Cone Weave
		30 mph Cone Weave w/ Straight Braking
		30 mph Cone Weave w/ Brake & Swerve
	Partners -	Figure 8
		Stop & Go
		Cone Weave
		Stopping on a Curve
		Brake & Escape
	Braking -	Broad Slides
		Monster Drill

Defensive Tactics

Classroom - Hypothermia

Police Motorcycle Recertification School

Syllabus– November 1996

7:00 - 8:00am	**Classroom**	Search, Predict, Act
8:00 - 8:15am	**Break**	
8:15 - 8:35am	**Warm Up**	Figure 8's
8:35 - 9:05am		Clover Leaf
9:05 - 9:15am	**Break**	
9:05 - 9:25am		Cornering Judgment
9:25 - 9:50am		Parking Drill
9:50 - 10:00am	**Break**	
10:00 - 10:20am	**Speed Work**	30 mph Cone Weave
10:20 - 10:40am		30 mph Cone Weave w/Straight Braking
10:40 - 11:00am		30 mph Cone Weave w/Brake & Swerve
11:00 - Noon	**Lunch**	
Noon - 12:30pm	**Partners**	Classroom
12:30 - 1:30pm		Riding Exercises
1:30 - 1:45pm	**Break**	
1:45 - 2:25pm	**Braking**	Broad Slides
2:25 - 3:00pm		Monster Drill
3:00 - 3:10pm	**Break**	
3:10 - 4:10pm	**Defensive Tactics**	
4:10 - 4:30pm	**Hypothermia**	
4:30 - 5:00pm	**Critique & Evaluation**	

Police Motorcycle Rectification School
Overview - ***Fall 1997***

Classroom - Traction utilization, Lazer Radar

Exercises -

Warm Up -
- Cornering Judgment
- Figure 8's
- Clover Leaf
- Parking

Speed Work -
- Straight Line Acceleration
- Acceleration in a Curve

Braking -
- Combination Braking
- Brake & Swerve
- 30 mph Cone Weave w/ Straight Braking
- 30 mph Cone Weave w/ Brake & Swerve

Partners - **Classroom**
- "Split!"
- Circuit Training
  - Figure 8, Obstacles, Quick Stop, "Split!", Cone Weave, Stopping on a Curve, Brake & Escape
- Road Ride, Lazer Radar

Escorts - **Classroom**
- Simulated Escort

Defensive Tactics

Classroom -
- Heat Related Illness

Police Motorcycle Rectification School

Syllabus - Spring 1997

7:00 - 7:50am	**Classroom**	Traction utilization, Lazer Radar
7:50 - 8:00am	**Break**	
8:00 - 8:20am	**Warm Up**	Cornering Speed Judgment
8:20 - 8:35am		Figure 8's
8:35 - 9:00am		Clover Leaf
9:00 - 9:05am	**Break**	
9:05 - 9:20am	**Speed Work**	Straight Line Acceleration
9:20 - 9:40am		Accelerating in a Curve
9:40 - 9:50am	**Break**	
9:50 - 10:05am	**Braking**	Combination Braking
10:05 - 10:20am		Brake & Swerve
10:20 - 10:40am		30 mph Cone Weave w/Straight Braking
10:40 - 11:00am		30 mph Cone Weave w/Brake & Swerve
11:00 - Noon	**Lunch**	
Noon - 12:20pm	**Partners**	Classroom
12:20 - 12:40pm		"Split!"
12:40 - 1:00pm		Circuit Training
1:00 - 1:15pm	**Break**	
1:15 - 2:00pm		Road Ride, Lazer Radar
2:00 - 2:25pm	**Escorts**	Classroom
2:25 - 2:50pm		Simulated Escort
2:50 - 3:00pm	**Break**	
3:00 - 4:10pm	**Defensive Tactics**	
4:10 - 4:30pm	**Heat Related Illness**	
4:30 - 5:00pm	**Critique & Evaluation**	

Police Motorcycle Rectification School
Overview - January 1998

Classroom -	**Introduction**	Collision Review & Limitations
Exercises -	**Warm Up**	Motorcycle Pick Up (New)
		Figure 8's
	Cone Work	Cone Weaves - Slow & Offset
		Intersection
	Braking	Braking Chute
		Brake & Escape
	Turning	The 360!
	Speed Work	180 Decel
	Escorts -	**Classroom**
	Escorts -	Simulated Escort
Defensive Tactics		Annual Firearms Qualification

Police Motorcycle Rectification School
Syllabus - January 1998

6:30 - 7:00am	**Classroom**	Collision Review & Limitations
7:00 - 7:15am	**Range**	Motorcycle Pick Up (New)
7:15 - 7:30am	**Warm Up**	Figure 8's
7:30 - 7:50am	**Cone Work**	Cone Weaves - Slow & Offset
7:50 - 8:20am		Intersection
8:20 - 8:30am	**Break**	
8:30 - 9:00am	**Braking**	Braking Chute
9:00 - 9:25am		Brake & Escape
9:25 - 9:35am	**Break**	
9:35 - 10:15am	**Turning**	The 360!
10:15 - 11:00am	**Speed Work**	180 Decel
11:00 - Noon	**Lunch**	
Noon - 1:00pm	**Pistol Range**	Annual Firearms Qualification
1:00 - 2:00pm	**Classroom**	Escorts
2:00 - 3:30pm	**Escort**	Simulated Presidential Escort
3:30 - 4:30pm	**Critique & Evaluation**	

Police Motorcycle Recertification School

Overview - ***November 1998***

Classroom -	**Introduction**	Collision Review
Exercises -	**Warm Up**	Parking Review
	Cone Work	Cone Weaves - Slow & Offset
	Turning	Cloverleaf
		Braking Chute
		The 360!
	Braking	Combination Braking
		Brake & Escape
	Speed Work	180 Decel
		Accel U-turns
	Escorts -	**Classroom**
	Escorts -	Simulated Escort
Defensive Tactics		Cover & Concealment

Police Motorcycle Recertification School

Syllabus - November 1998

7:00 - 7:30am	**Classroom**	Collision Review & Limitations
7:30 - 7:50am	**Range**	Parking Review
7:50 - 8:20am	**Cone Work**	Cone Weaves - Slow & Offset
8:20 - 9:00am	**Turning**	Cloverleaf
9:00 - 9:10am	**Break**	
9:10 - 9:50am		The 360!
9:50 - 10:10am	**Braking**	Combination Braking
10:10 - 10:20am	**Break**	
10:20 - 10:40am		Brake & Escape
10:40 - 11:10am	**Speed Work**	180 Decel
11:10 - 11:40am		Accel U-Turns
11:40 -	**Lunch**	
1:00 - 1:30pm	**Classroom**	Escorts
1:30 - 3:00pm	**Escort**	Simulated Escorts
3:00 - 4:30pm	**Defensive Tactics**	
4:30 - 5:00pm	**Critique & Evaluation**	

Police Motorcycle Rectification School

Overview - ***July 1999***

Exercises -	**Warm Up**	Figure 8's
	Braking	Broadslides
		Monster Drill
		Combination Braking
		Brake & Escape
	Speed Work	Accel U-turns
	Escorts -	**Classroom**
	Escorts -	Simulated Escort
Defensive Tactics		Exiting the Kill Zone

Police Motorcycle Rectification School

Syllabus - July 1999

7:00 - 7:30am	**Warm Up**	Figure 8's
7:30 - 8:00am	**Braking**	Broadslides
8:00 - 8:20am		Monster Drill
8:20 - 8:30am	**Break**	
8:30 - 9:15am	**Braking**	Braking Chute
9:15 - 9:45am		Brake & Escape
9:45 - 9:55am	**Break**	
9:55 -10:30am	**Speed Work**	Accel U-turns
10:30 - 1:30pm	**Classroom**	Escorts
	Escort	Simulated Presidential Escort
1:30 - 4:30pm	**Defensive Tactics**	Exit the Kill Zone
4:30 - 5:00pm	**Critique & Evaluation**	

Police Motorcycle Rectification School

Overview - *November 1999*

Classroom -	**Introduction**	Collision Review
Exercises -	**Warm Up**	Parking
	Cone Work	Cone Weaves - Slow & Offset
		Cloverleaf
	Braking	Combination Braking
		Brake & Escape
	Speed Work	180 Decel
		Accel U-Turns
	Escorts -	**Classroom**
	Escorts -	Simulated Escort

Defensive Tactics

Police Motorcycle Rectification School

Syllabus - November 1999

7:00 - 7:30am	**Classroom**	Introduction & Collision Review
7:30 - 7:50am	**Range**	Parking
7:50 - 8:20am		Cone Weaves - Slow & Offset
8:20 - 9:00am		Cloverleaf
9:00 - 9:10am	**Break**	
9:10 - 9:40am	**Braking**	Combination Braking
9:40 - 9:50am	**Break**	
9:50 - 10:10am	**Braking**	Brake & Escape
10:10 - 10:30am	**Speed Work**	180 Decel
10:30 - 11:00am		Accel U-Turns
11:00am	**Lunch**	
12:00 - 12:30pm	**Classroom**	Escorts
12:30 - 3:00pm	**Escorts**	Simulated Escort
3:00 - 4:30pm	**Defensive Tactics**	
4:30 - 5:00pm	**Critique & Evaluation**	