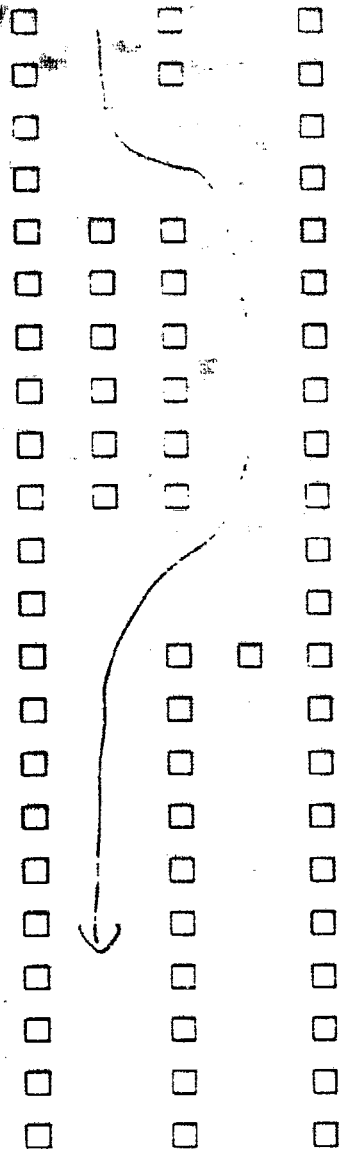
Test LG 32-8-30

Speed 35

File number CVD 91

Number of cones hit 0

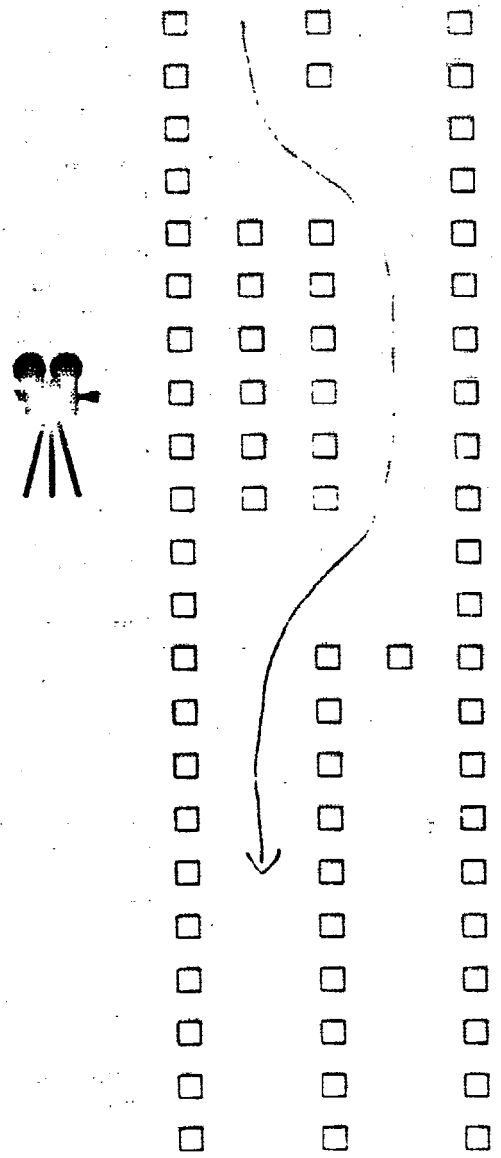


Test 36 30-50-30

Speed 40

File number CVD92

Number of cones hit 0 *



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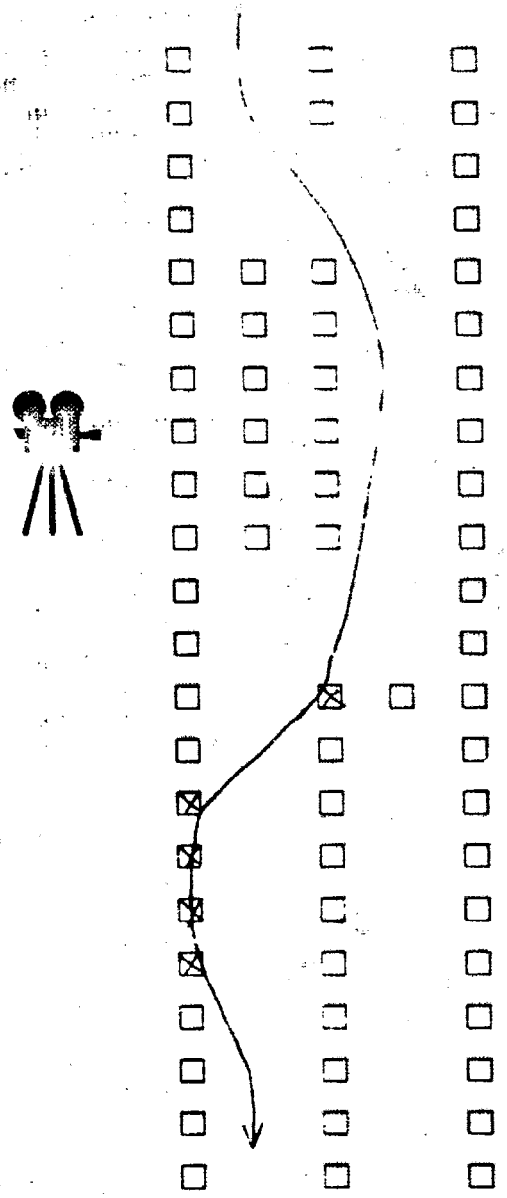
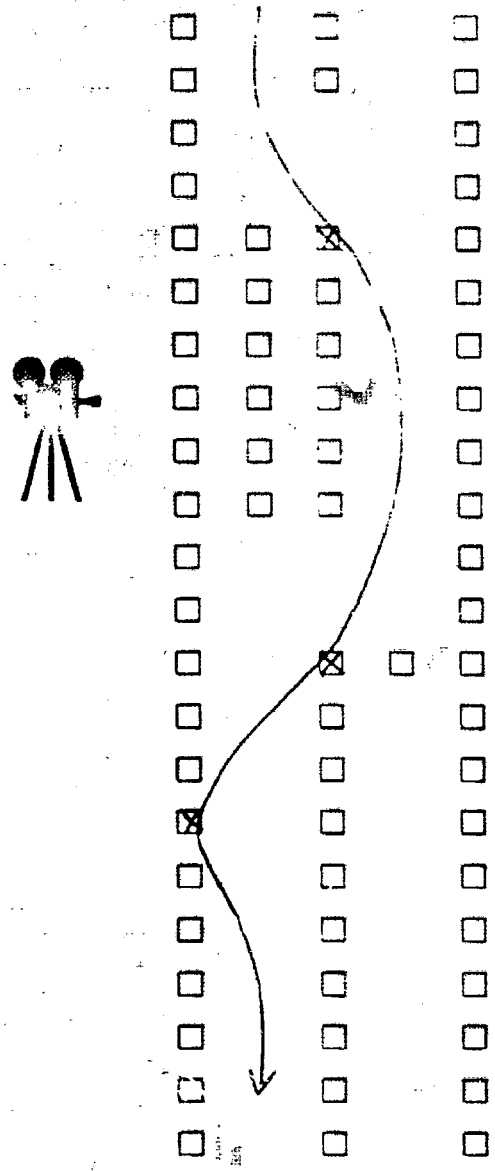


Test AG 30-80-30

speed 45

File number CVD 93

Number of cones hit 5



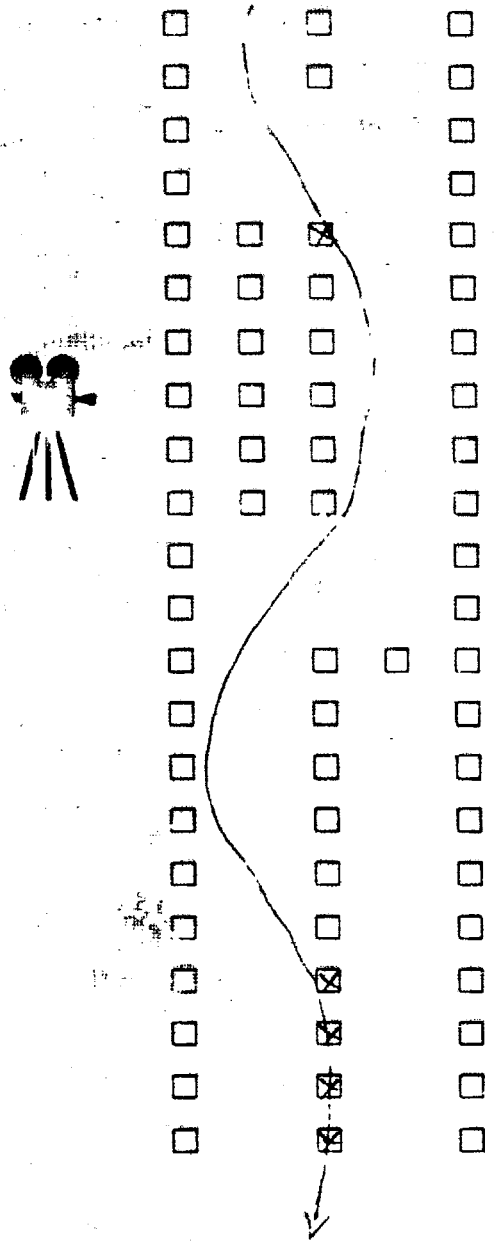
Test NG 30-D-30

Speed 50

File number CVD 94

Number of cones hit 3

JH 6549



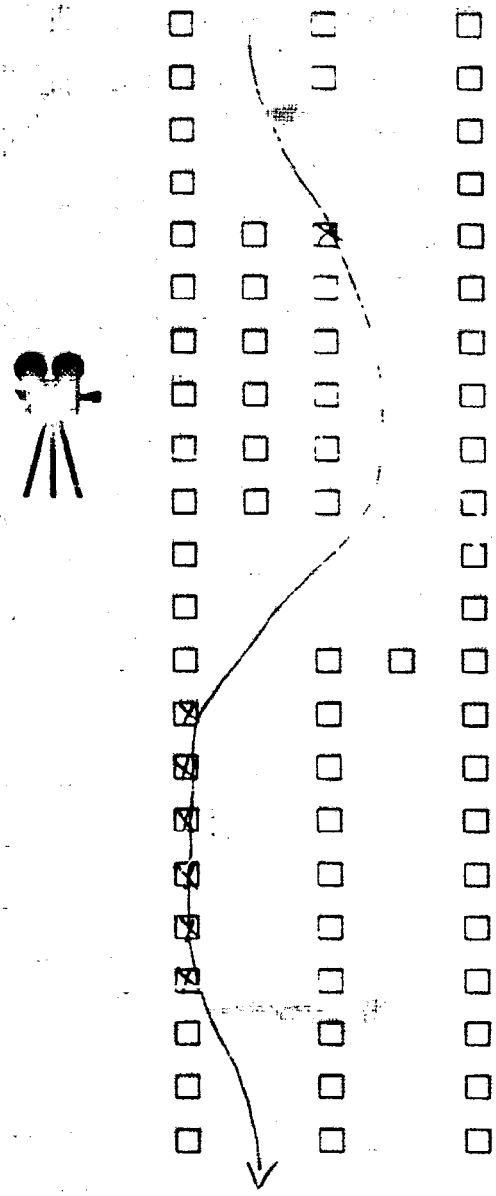
Test ASa 30-50-30

Speed 35

File number CVD95

Number of cones hit 5

JC C520



Test NG 30-B-30

Speed 35

File number CVD 96

Number of cones hit 7 *

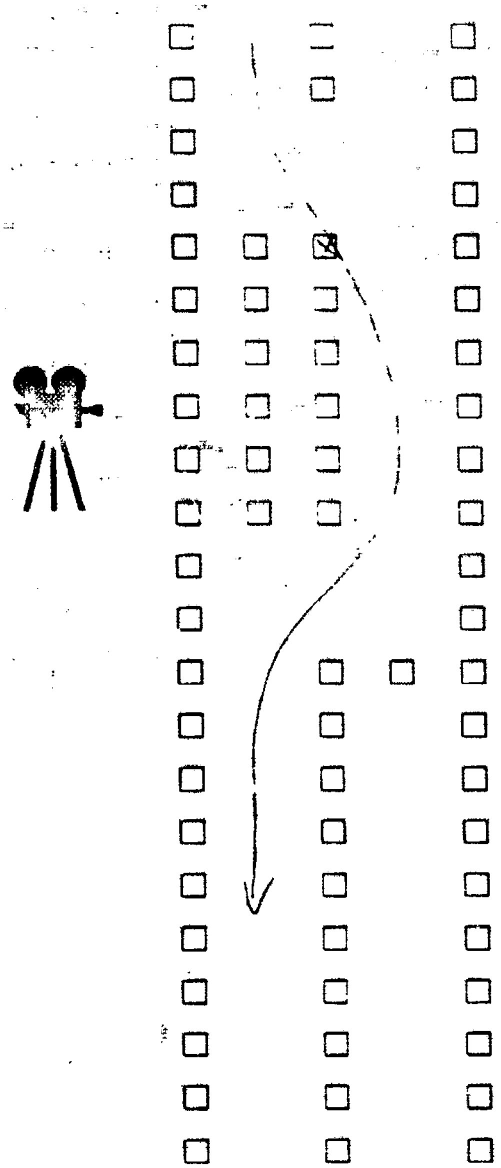
30 C.521

Test 26 30-20-30

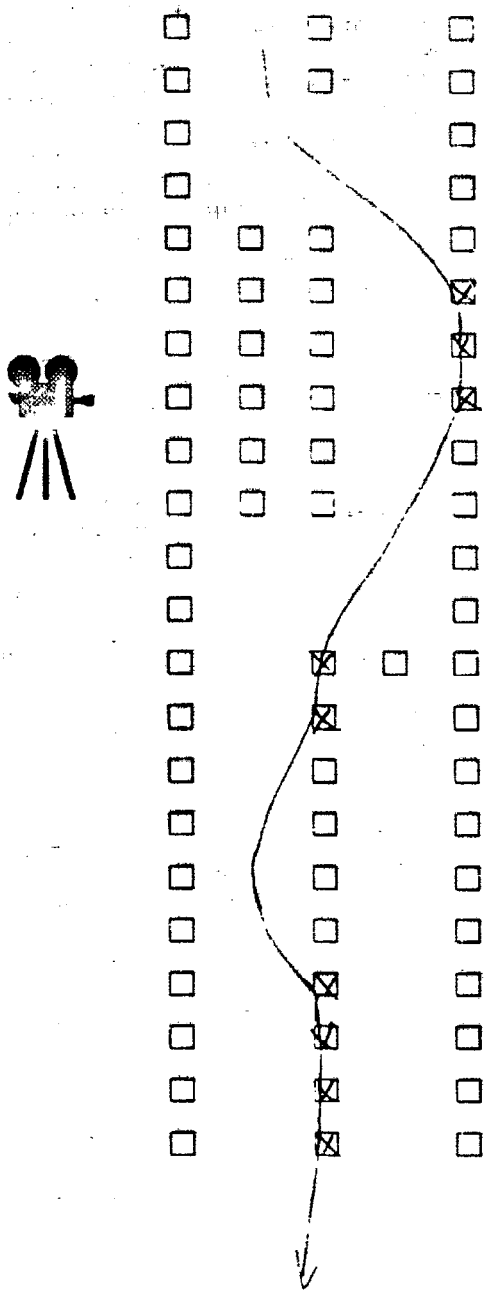
Speed 40

File number CVD 97

Number of cones hit 1



JUL 522

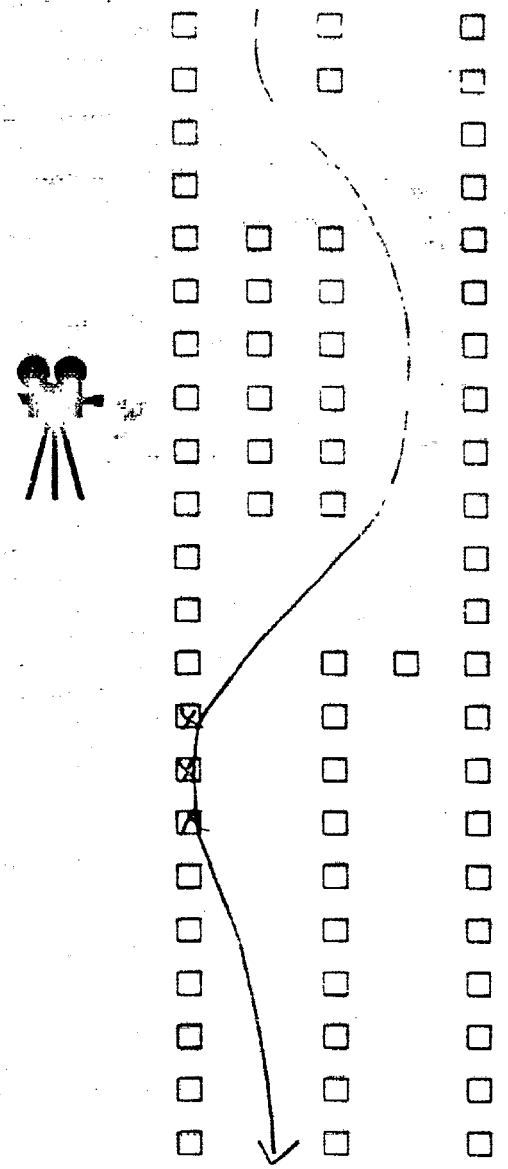


Test 36-30-30

Speed 45

File number CVD98

Number of cones hit 9



Test AG 30-50-30

Speed 35

File number CUD 99

Number of cones hit 3 *

30: 0.52*

Form FHWA-381 (Rev. 11-72)

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
MINUTE - MEMO

Use this form in lieu of transmittal slips within Dept. of Trans. when message comment is to be retained as file material. Do not prepare carbons. Not to be used in lieu of Form FHWA-121 for informal correspondence.

SUBJECT

EA94-022: Ford Crown Victoria Power Steering

TO	MESSAGE/COMMENT	FROM/DATE
FILE	This memorandum transmits to the file for the subject investigation, five accident reconstruction reports. These reports were submitted by the Calspan Corporation to ODI, as follows: . DiLauria . Schirmer . Fleming . Bagileo . Scarborough, Ontario, Canada	L. Strickland 09-MAR-95

CALSPAN EVALUATION OF FORD CROWN VICTORIA POLICE VEHICLE STEERING FAILURE ALLEGATIONS

VEHICLE: 1992 FORD CROWN VICTORIA
LOCATION: TOWN OF HARRISON, NY
DATE: MAY 11, 1993
DRIVER: STEVE DiLAURIA

SUMMARY

This crash occurred on May 11, 1993, in the Town Of Harrison, NY, on a two-lane roadway during daylight hours. The on-duty police officer lost control of his 1992 Ford Crown Victoria police vehicle as he attempted to avoid a vehicle that was stopped in his travel lane. The vehicle departed the left side of the roadway and impacted a barrier curb, a rock wall, and a small diameter tree before coming to rest on its left side. The driver of the Crown Victoria was not wearing the manual 3-point lap and shoulder belt system. He did receive crash protection from the vehicle's supplemental driver's side air bag system with deployed during the crash. The driver sustained multiple injuries which included soreness across the chest and both shoulders, pain in both thighs, and several herniated discs in the thoracic and lumbar vertebrae.

This investigation focused on the causal factors for the crash and the potential role of the Crown Victoria as a contributing factor. Data for this investigation included the Town of Harrison Police Accident Report, the police documentation of physical evidence at the crash scene, three on-scene police photographs of the physical evidence, an interview with the driver of the Crown Victoria, and an interview with a witness to the crash.

Vehicle Data

The involved 1992 Ford Crown Victoria was a marked police vehicle and was equipped with the factory police package components. In addition, the Crown Victoria was equipped with a supplemental driver's side air bag system which deployed during the crash, power-assisted four-wheel disc brakes without anti-lock (ABS), and speed-sensitive, power-assisted steering. The Crown Victoria's vehicle identification number was unknown, however, the driver stated that the vehicle had an odometer reading of approximately 15-20K miles at the time of the crash. He also noted that the vehicle was placed into service by the Department in December 1992, and that the vehicle was driven by numerous members of the Department for all three work shifts. The driver further stated that the vehicle was in good operating condition and that each officer was required to perform a walk-around inspection of the vehicles before the start of their assigned shift.

Driver Data

The driver of the Ford Crown Victoria was a 26 year old male and at the time of the crash, he stated that he was in good physical condition with a height of 71" and weight of 180 lbs. He routinely wore prescription eyeglasses for mild myopia. His driving experience/training included over seven years as a licensed New York State driver and a one week driving training course at the Police Academy. This course, which he had completed approximately two years ago, included basic driving skills, driving defensive driving techniques, and pursuit driver training. Several of these courses involved driving a police vehicle (Chevrolet Caprice) through a track layout which included numerous serpentine maneuvers.

Scene Data

In the vicinity of the crash scene, the roadway consisted of two lanes that were delineated by a double yellow centerline. The police schematic identified the width of the road at 26.3'. Concrete barrier curbs bordered both roadedges. Adjacent to the right (south) curbline was a rock wall, utility poles, and numerous trees. A rock wall, trees, and large shrubs also bordered the left curbline. The asphalt road surface was in new condition and was dry at the time of the crash. A hillcrest was located east of the crash site which the Crown Victoria crested on the approach to the scene. The police estimated the coefficient of friction of the road surface at 0.65-0.70. The posted speed limit was 40 mph.

The following scenarios of the pre-crash and crash events were obtained from interviews with the driver of the Crown Victoria and a witness, and the results of the police investigation. Calspan's reconstruction of the sequence of events follows based on these inputs and the interpretation of physical evidence from the on-scene police photographs.

Driver's Scenario

The driver of the Crown Victoria stated that he initiated this particular trip following a stop at a local deli to pickup a sandwich for lunch. He entered his patrol vehicle and proceeded in a westerly direction on the two lane road. The driver noted that he had traveled approximately 0.25 miles as he approached a hillcrest and estimated his speed at 40-42 mph. (His speed estimate was based on the police reconstructed speed from the physical evidence at the crash scene.) As he crested the hill, the driver observed a compact-size vehicle stopped in the westbound travel lane. He did not recall observing the vehicle's brake lights and/or turn signal. The driver noted that the compact-size vehicle was not visible to him as he initially crested the hill.

The driver noted that he had limited escape routes to avoid impacting the rear of the stopped vehicle. He stated that there was an 8' high rock embankment adjacent to the right curbline and estimated the lateral distance between the wall and the stopped vehicle at 4'. The driver stated that a 3' high rock wall bordered the left curbline with bushes and trees located beyond the wall. The

driver immediately braked with sufficient force to lock all four tires of the vehicle. He stated that the vehicle skidded in a tracking mode, however, the Crown Victoria did not seem to decelerate at a sufficient rate to avoid the stopped vehicle.

During the skidding of the vehicle which the driver stated lasted for several seconds, he noted an approaching eastbound vehicle and determined that he had sufficient distance to pass the stopped vehicle in the eastbound lane. The driver stated that with the brakes fully applied, he pulled the steering wheel with both hands to the left with his hands positioned at the 11 and 12 o'clock positions. He estimated that he turned the wheel to the 8-9 o'clock position as the vehicle entered the eastbound travel lane. He immediately applied a clockwise steering input, however, the driver stated that the steering wheel locked-up and he couldn't turn the wheel to the right. The driver believes that he backed off the brakes following the attempted right steering input and maintained the steering torque as the vehicle subsequently departed the left side of the roadway. He noted that the investigating police officer identified acceleration marks on the road surface, however, he could not recall if he accelerated the vehicle following the braking maneuver.

The driver stated that as the vehicle departed the left side of the road, the tires mounted the concrete curb. The vehicle subsequently impacted the rock wall and became airborne as it descended the embankment. The frontal area of the Crown Victoria impacted a tree which resulted in deployment of the driver's side air bag system. The vehicle then rolled onto its left side where it came to rest. At rest, the driver attempted to open the left door as he was dazed from the crash sequence. He called for help on the police radio then noticed smoke from a short in the wires for the console mounted radio. The driver then crawled up and opened the right front door and exited the vehicle and waited for emergency personnel to arrive on-scene. The driver was transported to a local hospital where he was treated for 3-4 herniated discs in his lower back and pain across both shoulders and thighs.

Witness Scenario

This witness was reinterviewed by Calspan during the investigation and was identified as person #2 on the Police Accident Report. The witness was traveling in an easterly direction on the two-lane roadway on an approach to the hillcrest. He observed two vehicles in the westbound travel lane that were stopped with their turn signals on waiting for traffic to clear to initiate a left turn across the eastbound lane into a private driveway. The witness stated that the lead vehicle turned into the driveway as he approached the location. The turning action of the vehicle resulted in the witness decelerating his vehicle to approximately 20-25 mph. This was a normal deceleration and not an avoidance action to a potential critical event. As the witness decelerated, he detected the squeal of brakes and observed the westbound police vehicle skidding as it crested the hill. This witness estimated the speed of the police vehicle at approximately 35 mph.

The witness noted the driver of the Crown Victoria swerve into the eastbound travel lane to avoid impact with the stopped vehicle. As he entered the eastbound lane, the officer apparently detected the approaching witness vehicle and continued to steer toward the left (south) roadedge.

The witness suspected that the driver of the Crown Victoria attempted to steer into a driveway at the south roadedge as he detected the eastbound (witness) vehicle. He stated that the police vehicle missed the driveway and mounted the north curb and traveled between a tree and a fire hydrant. The police vehicle impacted a stone wall and several trees as it traveled down an embankment where it came to rest. This witness continued past the crash scene and turned around at the next cross street and returned to the scene to offer assistance. He gave a statement to an investigating officer at the scene and departed for his destination.

This witness verified his statement and the above scenario during Calspan's interview with him. Several of the key issues of his observations where discussed in more detail during the interview. The witness estimated the speed of the Crown Victoria at 35 mph. however, his initial view of the vehicle was when it was in a full braking mode prior to initiating the left turn maneuver, therefore this speed estimate should not be considered a pre-event travel speed. Secondary, this witness estimated the distance between his vehicle and the stopped left turning vehicle at approximately 40-50'. At this point, both the witness vehicle and the police vehicle were moving in opposite directions. Based on the gap distance between the two vehicles, the witness doubted that the police vehicle could have safely maneuvered between his vehicle and the stopped left turning vehicle.

Police Investigation/Reconstruction

The investigating Police Department (Town of Harrison) conducted an on-scene and follow-up investigation of the crash. The on-scene investigation included documentation of the physical evidence at the scene and interviews with available witnesses. The follow-on investigation included additional interviews and a reconstruction of the vehicle's speed based on the documentation and police interpretation of the physical evidence.

The investigating officer identified and documented two separate sets of tire marks on the asphalt road surface. The first set was the locked wheel skid marks which he identified as left side and right side wheels. These skid marks were measured in length at 71' for the right side and 80.7' for the left side marks. He used the basic skid-to-stop formula to compute an initial speed for the Crown Victoria with estimated coefficient of friction values of 0.65 and 0.70. The officer computed speeds of 38 and 40 mph and identified these as a minimum initial velocity for the vehicle.

The police reconstructionist noted additional tire marks at the crash scene which he listed as acceleration marks. These tire marks extended from the end of the lock wheel skid marks to the initial impact with the struck south curb. In the narrative section of his report, the officer identified the length of these acceleration marks at 51.6'. There was no velocity estimate computed for the police identified *acceleration* marks.

The narrative section of the New York State Accident Report (MV-104A) noted that the driver veered to the left to avoid impacting the stopped vehicle. A police interview with the driver of the Crown Victoria at the scene and later at the hospital revealed that the driver attempted to brake to avoid a stopped vehicle and was not sure what transpired following the avoidance maneuver. He

estimated his travel speed at approximately 45 mph as he crested the hill and observed the stopped vehicle in his (westbound) travel lane.

The police interviewed four witnesses to the crash during their investigation. The *first* witness (this witness was reinterviewed by Calspan) stated that he was traveling east on the two lane roadway. This witness initially observed a westbound vehicle stopped in the travel lane with its left turn signal activated. The witness then observed the westbound police vehicle as it crested the hill behind the stopped vehicle. He stated that the police vehicle appeared to brake, then lose control, crossing the eastbound travel lane and off the roadway. This witness estimated the speed of the police vehicle at 40 mph when he first detected the vehicle..

This witness subsequently filed a written statement with the police department. In his written statement he identified a second westbound vehicle that turned left into a driveway, ahead of the stopped vehicle that had been previously identified. He decelerated for this vehicle then heard the squeal of brakes and observed the Crown Victoria as it crested the hill. This witness noted that the driver of the Crown Victoria swerved into the eastbound lane to avoid the stopped vehicle, however, as the driver observed the witness vehicle, the witness believed that he tried to enter a driveway adjacent to the left (south) roadedge. The Crown Victoria subsequently departed the roadway and struck a stone wall then went down an embankment into several trees.

The *second* witness stated to the investigating officer that she was traveling eastbound and observed a vehicle stopped in the westbound travel lane. She then noted the police vehicle approach the rear of the stopped vehicle, however, she was unable to determine a speed for the Crown Victoria. The witness then stated that the police vehicle crossed into the eastbound lane and appeared to accelerate before departing the roadway.

The *third* witness did not observe the police vehicle prior to the crash. She noted the vehicle at rest and stopped to offer assistance. The witness stated to the officer that she did not observe any vehicle in the road matching the description of the stopped vehicle.

The *fourth* witness was the driver of the vehicle that was stopped in the westbound travel lane ahead of the police Crown Victoria. She stated that she was stopped for a left turn into a private driveway when she heard the sound of a car braking. This witness checked her rear view mirror and observed the police vehicle approaching the rear of her vehicle. She accelerated her vehicle and moved approximately two feet to the right then observed the police vehicle attempt to pass her to her left and run off the road. The witness further stated that both of her front windows were open and that the officer was operating his vehicle without the emergency lights and siren.

Calspan Reconstruction

The Chief of the Town of Harrison Police Department provided the Accident Report and three Polaroid photographs of the physical evidence at the crash scene to Calspan's Accident Research

Group. In addition, Calspan interviewed the driver of the Crown Victoria. All available data was used to determine the causal factors for this crash and to determine if the steering anomaly known to the Crown Victoria police fleet contributed to the crash.

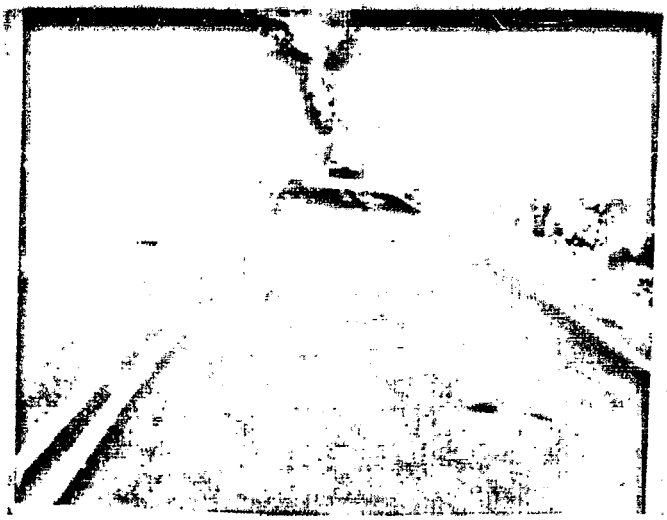
The physical evidence observed in the on-scene police photographs depicts a different scenario than the ones identified by the driver of the vehicle and the police reconstruction. The tire mark evidence at the crash scene consists of two separate patterns; one involving a tracking four wheel locked wheel skid pattern, and the second involving a counterclockwise (CCW) yaw skid pattern. Both of these patterns involve braking by the driver of the vehicle. The first set of skid marks which the police identified as left and right side marks actually involve all four tires with the rear tires tracking over the top of the front tire marks. The total police reported length was 71' for the right side and 80.7' for the left side. The equivalent velocity loss due to braking to a stop from these marks was 38-40 mph as computed by the police.

The straight locked wheel skid marks were followed by the second set of skid marks from all four wheels which indicated that the vehicle initiated a CCW yaw. Photograph #2 shows a slight break between the tracking skid marks and the CCW yaw tire marks. This break indicates that the driver released brake pedal pressure momentarily, applied a rapid CCW steering input, then reapplied the brakes in an attempt to further decelerate the vehicle. As previously noted, the police report identified the length of these CCW yaw marks at 51.6'. These marks were identified by the officer as acceleration marks. (It should be noted that these police documented acceleration marks consisted of four tire marks and since the vehicle was not all-wheel drive, it was therefore impossible that these marks were related to acceleration, but marks which contributed to the deceleration of the vehicle. These four tire marks were clearly visible in the police photographs which are attached to this summary). The equivalent velocity loss through braking to a stop over the total distance of both the tracking and CCW yaw skid marks was approximately 50.6 mph. This speed does not include the subsequent velocity changes from impacts with the curb, stone wall, tree, and overturn. Based on the available evidence, the driver's speed was higher than his estimate and the police reconstructed minimum initial velocity.

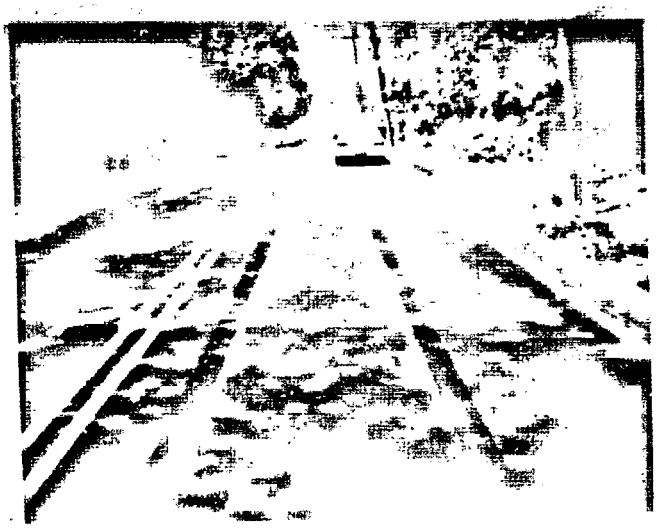
Secondary, the driver stated during our interview that he initiated the left lane change maneuver while he was braking with full force which caused the vehicle to skid. He continued to state that while countersteering to the right to continue on a straightline trajectory in the eastbound lane on his attempt to pass the stopped vehicle, he experienced the steering anomaly which prohibited him from completing the passing maneuver, thus causing the road departure and subsequent crash. It should be noted that without anti-lock brakes, it is impossible to steer a vehicle under heavy braking when the wheels are in a full locked position, therefore the initial left lane change maneuver was initiated during the break between the two sets of tire marks when the driver momentarily released the brakes. It was possible, however, that as he reapplied the brakes following the left steering input which initiated the CCW yaw, the driver may have attempted to countersteer back to the right and experienced the anomaly at this point. Due to the locked front tires, the vehicle was not able to respond to the steering input, therefore if it had occurred, the anomaly played no role in causation to the crash.

Conclusions

Based on the statements from the witnesses and a review of the evidence at the crash scene, the driver of the Crown Victoria initially braked in an attempt to avoid the stopped vehicle. Due to his initial velocity which was estimated to exceed 55 mph, and the hillcrest which obscured his early detection of the stopped vehicle, the driver was not able to stop his vehicle to avoid impact. He momentarily released brake pedal pressure and applied a CCW steering input which was followed by a braking force that was sufficient to again lock the wheels of the vehicle. The steering input was probably an attempt to enter a driveway adjacent to the left roadedge. It was doubtful that he was attempting to pass the stopped vehicle due to approaching eastbound traffic. The Crown Victoria subsequently broke traction on the dry asphalt road surface and yawed in a CCW direction across the eastbound travel lane before departing the left (south) roadedge. The CCW yaw was induced from either a rapid CCW steering input or a combination CCW steering input which resulted in vehicle understeer and subsequent heavy brake application by the driver. It was possible that the driver attempted to countersteer to the right (clockwise) and that he experienced the steering anomaly, however, due to the lock wheels by braking, the vehicle would not respond to the steering input.



1. Pre-crash trajectory and initial braking by the Crown Victoria.



2. Locked four-wheel tracking skid pattern followed by momentary brake release.

3. Counterclockwise yaw across eastbound lane and subsequent roadside departure.

New York State Department of Motor Vehicles

POLICE ACCIDENT REPORT

MV-104A (2/91) DMV COPY

Page 1 of 1 Pages

Local # 93A0268 153A

HR1-93-131-0002

copy sent 5/10/93 268

Accident Date	Day of Week	Time	No of Vehicles	No Injured	No Killed	Non-Highway	Not Investigated at Scene	Left Scene	Police Photos
05/11/93 Mo / Day / Year	Tue	1247 AM/PM	1	1	0				Yes / No

VEHICLE 1

Name — exactly as printed on license: DiLauria, Steve (Police officer)

Number and Street: 650 North St. (HARRISON Police dept)

City: HARRISON State: NY Zip Code: 10528

Date of Birth Mo / Day / Year	Sex	Unlicensed	No of Occup	Public Property Damaged	State of License
07/05/66	M		1		NY

Name — exactly as printed on registration: Town/Village HARRISON New York

Date of Birth Mo / Day / Year:

Number and Street: 650 North St.

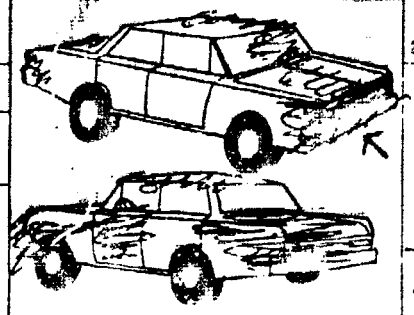
Hazardous Material Code:

City: HARRISON State: NY Zip Code: 10528

Plate Number	State of Reg	Yr. & Vehicle Make	Vehicle Type	Ins Code
43	—	92 Ford	4dsd	100

Check if involved vehicle:
- is more than 95 inches wide;
- is more than 34 feet long;
- was operated with an overweight permit;
- was operated with an overdimension ___ mit

VEHICLE 1 DAMAGE



No Damage / Undercarriage

Vehicle Towed By: Peters SAMC To:

VEHICLE 2 / BICYCLIST / PEDESTRIAN

Name — exactly as printed on license:

Number and Street:

City: State: Zip Code:

Date of Birth Mo / Day / Year	Sex	Unlicensed	No of Occup	Public Property Damaged	State of License

Name — exactly as printed on registration:

Date of Birth Mo / Day / Year:

Number and Street:

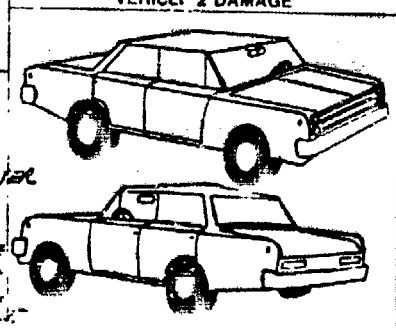
Hazardous Material Code:

City: State: Zip Code:

Plate Number	State of Reg	Yr. & Vehicle Make	Vehicle Type	Ins. Code

Check if involved vehicle:
- is more than 95 inches wide;
- is more than 34 feet long;
- was operated with an overweight permit;
- was operated with an overdimension permit

VEHICLE 2 DAMAGE



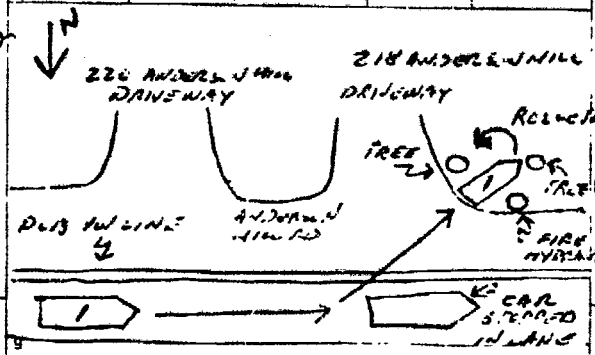
No Damage / Undercarriage

Vehicle Towed By: To:

ACCIDENT DIAGRAM

Rear End 1 | Left Turn 3 | Right Angle | Right Turn 5 | Head On 7

Overtaking 2 | Left Turn 0 | 4 | Right Turn 6 | Sideswipe 8



Reference Marker:

DMV USE ONLY:

County: West. City: Town: HARRISON Village:

Route No and Street Name: on Anderson Hill Rd

Miles / Feet / At Intersection with: N / S / W of Conway Ridge Rd

Nearest Intersecting Route/Street

Ticket/Arrest: Other; Opr 1; Opr 2; Pedestrian; Bicyclist

Ticket/Arrest Number(s):

Violation Section(s):

Accident Description/Officer's Notes: Driver of vehicle #1 was driving West on Anderson Hill Rd when he came to a hillcrest and had an unknown vehicle stop in the traffic lane. To avoid hitting the car in front of him he veered to the left going off the road by the driveway of 218 Anderson Hill Rd. vehicle struck a tree and rolled onto the driver side Rear #1 unknown vehicle stopped on hillcrest in front of vehicle #1. Depiction of witness completed by Dennis Wetsmik 2c Division 1st Greenwich Ct. (203) 869-5287 (914) 787-2025 and Elaine E Kreiger (914) 428-7037

USE COVER SHEET H

	8	9	10	11	12	13	14	15	16	17 BY	TO 18	Names - If Deceased Give Date of Death
A	1	1	4	1	26	M	10	12	6	1994	5/13	DiLauria, Steve
B												
C												
D												
E												
F												
G												

ALL INVOLVED

SIGN HERE Officer's Rank and Name: PC Howard Chiarella

Badge No	Department	Precinct/Post Troop/Zone	Station/Beat/ Sector	Reviewing Officer	Date/Time Reviewed
65	05754		5	LT Reid	5/13/93 1100

New York State
Department of Motor Vehicles

POLICE ACCIDENT REPORT

MV-104A (2/91)

* EXPLAIN IN ACCIDENT DESCRIPTION

If a question DOES NOT APPLY, enter a dash (—)

If an answer is UNKNOWN, enter an "X"

1 PEDESTRIAN/BICYCLIST LOCATION
1 Pedestrian/Bicyclist at Intersection
2 Pedestrian/Bicyclist Not at Intersection

2 PEDESTRIAN/BICYCLIST ACTION
1 Crossing With Signal
2 Crossing Against Signal
3 Crossing, No Signal Marked Crosswalk
4 Crossing, No Signal or Crosswalk
5 Riding/Walking Along Highway With Traffic
6 Riding/Walking Along Highway Against Traffic
7 Emerging from in Front of/Behind Parked Vehicle
8 Going To/From Stopped School Bus
9 Getting On/Off Vehicle Other Than School Bus
10 Pushing/Working On Car
11 Working in Roadway
12 Playing in Roadway
13 Other Actions in Roadway *
14 Not in Roadway (Indicate)

3 TRAFFIC CONTROL
1 None
2 Traffic Signal
3 Stop Sign
4 Flashing Light
5 Yield Sign
6 Officer/Guard
7 No Passing Zone
8 RR Crossing Sign
9 RR Crossing Flashing Lt.
10 RR Crossing Gates
11 Stopped School Bus-Red Lights Flashing
12 Construction Work Area
13 Maintenance Work Area
14 Utility Work Area
20 Other *

4 LIGHT CONDITIONS
1 Daylight
2 Dawn
3 Dusk
4 Dark-Road Lighted
5 Dark-Road Unlighted

5 ROADWAY CHARACTER
1 Straight and Level
2 Straight and Grade
3 Straight at Hillcrest
4 Curve and Level
5 Curve and Grade
6 Curve at Hillcrest

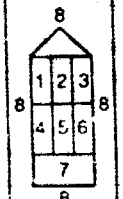
6 ROADWAY SURFACE CONDITION
1 Dry
2 Wet
3 Muddy
4 Snow/Ice
5 Slush
0 Other *

7 WEATHER
1 Clear
2 Cloudy
3 Rain
4 Snow
5 Sleet/Hail/Freezing Rain
6 Fog/Smog/Smoke
0 Other *

8 WHICH VEHICLE OCCUPIED
1 Vehicle No 1
2 Vehicle No 2
B Bicyclist
P Pedestrian
O Other *

9 POSITION IN VEHICLE
1 Driver
2-7 Passengers
8 Riding/Hanging on Outside

10 SAFETY EQUIPMENT USED
1 None
2 Lap Belt
3 Harness
4 Lap Belt/Harness
5 Child Restraint Only
6 Helmet
7 Air Bag Only
8 Air Bag/Lap Belt
9 Air Bag/Harness
A Air Bag/Lap Belt/Harness
B Air Bag/Child Restraint
0 Other *



11 EJECTION FROM VEHICLE
1 Not Ejected
2 Partially Ejected
3 Ejected

12 AGE

13 SEX M / F

14 LOCATION OF MOST SEVERE PHYSICAL COMPLAINT
1 Head
2 Face
3 Eye
4 Neck
5 Chest
6 Back
7 Shoulder-Upper Arm
8 Elbow-Lower Arm-Hand
9 Abdomen - Pelvis
10 Hip-Upper Leg
11 Knee-Lower Leg-Foot
12 Entire Body

15 TYPE OF PHYSICAL COMPLAINT
1 Amputation
2 Concussion
3 Internal
4 Minor Bleeding
5 Severe Bleeding
6 Minor Burn
7 Moderate Burn
8 Severe Burn
9 Fracture - Dislocation
10 Contusion - Bruise
11 Abrasion
12 Complaint of Pain
13 None Visible

16 VICTIM'S PHYSICAL AND EMOTIONAL STATUS
1 Apparent Death
2 Unconscious
3 Semiconscious
4 Incoherent
5 Shock
6 Conscious

17 INJURED TAKEN BY

18 TO

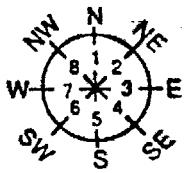
19 APPARENT CONTRIBUTING FACTORS

HUMAN
2 Alcohol Involvement
3 Backing Unsafely
4 Driver Inattention (Indicate) *
5 Driver Inexperience (Indicate) *
6 Drugs (Illegal)
7 Failure to Yield Right-of-Way
8 Fell Asleep
9 Following Too Closely
10 Illness
11 Lost Consciousness
12 Passenger Distraction *
13 Passing or Lane Usage Improper
14 Pedestrian's/Bicyclist's Error/Confusion
15 Physical Disability
16 Prescription Medication
17 Traffic Control Disregarded
18 Turning Improperly
19 Unsafe Speed
20 Unsafe Lane Changing
40 Other Human *

VEHICULAR
41 Accelerator Defective
42 Brakes Defective
43 Headlights Defective
44 Other Lighting Defects
45 Oversized Vehicle
46 Steering Failure
47 Tire Failure/Inadequate
48 Tow Hitch Defective
49 Windshield Inadequate
60 Other Vehicular *

ENVIRONMENTAL
61 Animal's Action
62 Glare
63 Lane Marking Improper/Inadequate
64 Obstruction/Debris
65 Pavement Defective
66 Pavement Slippery
67 Shoulders Defective/Improper
68 Traffic Control Device Improper/Non-Working
69 View Obstructed/Limited
80 Other Environmental *

20 DIRECTION OF TRAVEL



21 PRE-ACCIDENT VEHICLE ACTION
1 Going Straight Ahead
2 Making Right Turn
16 Making Right Turn on Red
3 Making Left Turn
17 Making Left Turn on Red
4 Making U Turn
5 Starting from Parking
6 Starting in Traffic
7 Slowing or Stopping
8 Stopped in Traffic
9 Entering Parked Position
10 Parked
11 Avoiding Object in Roadway
12 Changing Lanes
13 Overtaking
14 Merging
15 Backing
20 Other *

22 LOCATION OF FIRST EVENT
1 On Roadway
2 Off Roadway

23 TYPE OF ACCIDENT

COLLISION WITH
1 Other Motor Vehicle
2 Pedestrian
3 Bicyclist
4 Animal
5 Railroad Train
10 Other Object (Not Fixed) *

COLLISION WITH FIXED OBJECT
11 Light Support/Utility Pole
12 Guide Rail
13 Crash Cushion
14 Sign Post
15 Tree
16 Building/Wall
17 Curbing
18 Fence
19 Bridge Structure
20 Culvert/Head Wall
21 Median/Barrier
22 Snow Embankment
23 Earth Embankment/Rock Cut/Ditch
24 Fire Hydrant
30 Other Fixed Object *

NON-COLLISION
31 Overturned
32 Fire/Explosion
33 Submersion
34 Ran Off Roadway Only
40 Other *

24 FIRST EVENT

25 SECOND EVENT

Vehicle 1 — 19
Vehicle 1 — 20
Vehicle 2 — 21
Vehicle 2 — 22
Vehicle 1 — 23
Vehicle 2 — 24
Vehicle 1 — 25
Vehicle 2 — 26
Vehicle 1 — 27
Vehicle 2 — 28

CC...
SHEET
H

536

T-H

CASE NUMBER 93A0268

ACTIVITY NUMBER HRP 93131008

CASE DESCRIPTION Auto Accident

CLASS CODE 880 P

CASE TYPE A

HOW RECEIVED
- [X] CALL FOR SERVICE
- [ ] OFFICER INITIATED
- [ ] COUNTER REPORT

- [ ] ORIGINAL
- [X] SUPPLEMENT

INCIDENT REPORT

Harrison Police Department
650 North Street
Harrison, New York 10528
967-5111

DOMESTIC VIOLENCE [ ] YES [X] NO
SUBSTANCE RELATED [ ] YES [X] NO
WEAPON TYPE

REPORTED
DATE 05-11-93 1248 HRS

OCCURRED
FROM 05-11-93 1245 HRS
TO 05-11-93 1340 HRS

DESK OFFICER Sgt. Kamensky

PATROL OFFICER LT D. Hall

CASE NUMBER 93A0268

LOCATION

INCIDENT LOCATION

NBR	STREET NAME	TYPE	DIR	APT.	SECTOR
	Anderson Hill/County Ridge Rd				5

- [X] BLOCK
- [ ] INTERSECTION
- [ ] PRIVATE HOME
- [ ] COMMERCIAL BLDG.
- [ ] INDUSTRIAL BLDG.
- [ ] MULTI DWELLING
- [ ] PUBLIC BLDG.
- [ ] PUBLIC PARK
- [ ] PARKING LOT
- [ ] SCHOOL
- [ ] BANK
- [ ] CHURCH
- [ ] COUNTRY CLUB/GROUNDS
- [ ] OTHER

PERSONS

PERSON INVOLVEMENT CODES

C - COMPLAINANT, D - DRIVER, E - EMPLOYEE, F - FINDER, I - INJURED/AIDED, K - AKA, M - MISSING PERSON, O - OWNER, P - POLICE OFFICER, R - REPORTING PERSON, S - SUSPECT, V - VICTIM, W - WITNESS, X - WARRANT, Z - OTHER

PERSON	LAST NAME	FIRST	MI	ADDRESS
CODE	HOME PHONE	BUSINESS PHONE		OCCUPATION

RACE	SEX	DOB	AGE	HGT	WGT	EYES	HAIR	COMPLEXION

RACE CODES: A - ASIAN/ORIENTAL, B - BLACK, H - HISPANIC, I - AMERICAN INDIAN, O - OTHER, W - WHITE

PERSON	LAST NAME	FIRST	MI	ADDRESS
CODE	HOME PHONE	BUSINESS PHONE		OCCUPATION

RACE	SEX	DOB	AGE	HGT	WGT	EYES	HAIR	COMPLEXION

PERSON	LAST NAME	FIRST	MI	ADDRESS
CODE	HOME PHONE	BUSINESS PHONE		OCCUPATION

RACE	SEX	DOB	AGE	HGT	WGT	EYES	HAIR	COMPLEXION

Narrative (Print or Type Only)

I was directed to photograph an accident scene on Anderson Hill Rd. The photos were taken using a Roland Spectra System camera.

PROPERTY

PROPERTY INVOLVEMENT CODES

C - CONFISCATED · D - DAMAGE · E - EVIDENCE · F - FOUND · I - IMPOUNDED · K - SAFEKEEPING · L - LOST · S - STOLEN · R - RECOVERED · X - DESTROYED · U - UNKNOWN · T - RETURNED TO OWNER · Z - OTHER

ITEM	STATUS	QUANTITY	DESCRIPTION	MFG NAME	SERIAL NUMBER	VALUE
1	E	10	Photo's			
2						
3						
4						
5						
6						

VEHICLES

VEHICLE INVOLVEMENT CODES

A - ABANDONED · D - DAMAGED · F - LARCENY FROM · H - 24 HOURS · I - IMPOUNDED · M - REPOSSESSED · N - UNAUTHORIZED USE · R - RECOVERED · S - STOLEN · U - UNKNOWN · V - DISABLE · W - SUSPECT · X - SCOFFLAW · Y - RELEASE FROM IMPOUND · Z - OTHER · 8 - V & T STOP

VEH NBR	LICENSE	STATE	TYPE	EX MO YR	VEH YR	MAKE	MODEL	STYLE	COLOR(S)	TYPE
CODE	VIN			VEHICLE CONDITION		DAMAGE LOCATION		DATE & TIME TOWED		BY/TO
VEH NBR	LICENSE	STATE	TYPE	EX MO YR	VEH YR	MAKE	MODEL	STYLE	COLOR(S)	TYPE
CODE	VIN			VEHICLE CONDITION		DAMAGE LOCATION		DATE & TIME TOWED		BY/TO

MO

M.O. / SOLVABILITY INFORMATION

MODE OF ENTRY	POINT OF ENTRY	STRUCTURE TYPE	VICTIM'S ACTIVITY BEFORE CRIME	TARGET(S)
SUSPECT'S ACTIVITIES DURING CRIME			SECURITY USED	
INVESTIGATION			EVIDENCE OBTAINED	

WAS SUSPECT ARRESTED _____ · CAN SUSPECT BE NAMED _____ · CAN SUSPECT BE LOCATED _____ · CAN SUSPECT BE DESCRIBED _____

WITNESS TO CRIME _____ · SIGNIFICANT MO _____ · PROPERTY TRACEABLE _____ · SIGN PHYS EVIDENCE _____

ALL CRIME ELEMENTS PRESENT _____ · MAJOR INJURY OR RAPE INVLD _____ · CAN SUSPECT BE IDENTIFIED _____ · CAN SUSP VEH BE IDENTIFIED _____

IS THERE SIGNIFICANT REASON TO BELIEVE THIS CRIME CAN BE SOLVED ? _____

ASSISTING OFFICER(S) _____

INVESTIGATING OFFICER'S SIGNATURE Det. Ted McInnes OFF NBR 162 DATE/TIME 5-14-93

CASE STATUS CODE

A ACTIVE · C - CLEARED BY ARREST · D UNFOUNDED · E - EXCEPTIONAL CLEARANCE · F - FILE · S - SUMMONS ISSUED

CODE	REPORTING OFFICER	DATE AND TIME	FORWARD COPIES TO
A	T. McInnes	5/13/93 0850	CLOSED
		DATA ENTRY BY	DATE
			5-18-93

7-11

LH 268

E NUMBER 9340268

ACTIVITY NUMBER HRP 93 131 00024

CASE DESCRIPTION SUPP REPORT

CLASS CODE 8805 | CASE TYPE A

HOW RECEIVED
☐ CALL FOR SERVICE
☒ OFFICER INITIATED
☐ COUNTER REPORT

☐ ORIGINAL
☒ SUPPLEMENT

INCIDENT REPORT

Harrison Police Department
650 North Street
Harrison, New York 10528
967-5111

DOMESTIC VIOLENCE ☐ YES ☒ NO
SUBSTANCE RELATED ☐ YES ☒ NO
WEAPON TYPE —

N/A
PG 1 OF 5

REPORTED
DATE 5/11/93 1539 HRS

OCCURRED
FROM 5/10/93 1250 HRS
TO 5/11/93 1539 HRS

DESK OFFICER SGT KAMENSKY
PATROL OFFICER —

CASE NUMBER 9340268

LOCATION

INCIDENT LOCATION
218 NBR | ANDERSON HILL STREET NAME | RD TYPE | — DIR | — APT. | 5 SECTOR

☐ BLOCK ☐ COMMERCIAL BLDG. ☐ PUBLIC BLDG. ☐ SCHOOL ☐ COUNTRY CLUB/GROUNDS
☐ INTERSECTION ☐ INDUSTRIAL BLDG. ☐ PUBLIC PARK ☐ BANK ☐ OTHER
☐ PRIVATE HOME ☐ MULTI DWELLING ☐ PARKING LOT ☐ CHURCH

PERSONS

PERSON INVOLVEMENT CODES
C - COMPLAINANT, D - DRIVER, E - EMPLOYEE, F - FINDER, I - INJURED / AIDED, K - AKA, M - MISSING PERSON, O - OWNER, P - POLICE OFFICER, R - REPORTING PERSON, S - SUSPECT, V - VICTIM, W - WITNESS, X - WARRANT, Z - OTHER

RACE CODES
A - ASIAN/ORIENTAL, B - BLACK, H - HISPANIC, I - AMERICAN INDIAN, O - OTHER, W - WHITE

PERSON	LAST NAME	FIRST	MI	ADDRESS
1	DILAURIA	STEVEN		C/O HARRISON POLICE DEPT HARRISON N.Y.
CODE D	HOME PHONE —	BUSINESS PHONE 914 967-5111		OCCUPATION POLICE OFFICER
RACE W	SEX M	DOB	AGE	HGT / WGT / EYES / HAIR / COMPLEXION

PERSON	LAST NAME	FIRST	MI	ADDRESS
2	WETERMIK	DENNIS		20 DIVISION ST GREENWICH CT
CODE W	HOME PHONE 203-869-8287	BUSINESS PHONE 914-789-2025		OCCUPATION —
RACE W	SEX M	DOB U/K	AGE —	HGT / WGT / EYES / HAIR / COMPLEXION

PERSON	LAST NAME	FIRST	MI	ADDRESS
3	KROLIAN	B. ELEANOR		12 BELTON RD WHITE PLAINS NY
CODE W	HOME PHONE 914 428 7037	BUSINESS PHONE 914 428 7363		OCCUPATION —
RACE W	SEX F	DOB 05/16/51	AGE 39	HGT / WGT / EYES / HAIR / COMPLEXION

Narrative (Print or Type Only)

THIS DATE I RESPONDED TO THE LOCATION OF A CVE CAR AVS INVOLVING HARRISON OFFICER S DILAURIA (PERSON #1) AND POLICE U/T #43 I INTERVIEWED DILAURIA AT THE LOCATION (AND LATER AT WHITE PLAINS HOSPITAL) DILAURIA STATED THAT HE WAS OPERATING HIS VEHICLE (UNIT 43) WEST ON ANDERSON HILL RD. HE SAID THAT WHEN HE TOPPED A BLIND HILL CREST (IN THE AREA OF 200/218 ANDERSON HILL RD) THERE WAS A VEHICLE (DILAURIAS ONLY DESCRIPTION, "A SMALL CAR") STOPPED IN THE WESTBOUND TRAFFIC LANE. DILAURIA SAID HE ATTEMPTED TO BRAKE AND IS NOT SURE WHAT HAPPENED NEXT. HE REMEMBERS SOME HALL KNOCKING HIS HEADSET OFF (POSS THE CARS AIR BAG GOING OFF) AND THEN HE REMEMBERS BEING IN THE VEHICLE ON ITS SIDE). HE CLIMBED OUT (WITH THE ASSISTANCE OF SOME UNIDENTIFIED PERSONS). HE SAID THAT HE BELIEVED WAS ABOUT 45 MPH AS HE WAS TRAVELING

CONT

PROPERTY

PROPERTY INVOLVEMENT CODES

C - CONFISCATED · E - EVIDENCE · I - IMPOUNDED · L - LOST · R - RECOVERED · U - UNKNOWN · Z - OTHER
D - DAMAGE · F - FOUND · K - SAFEKEEPING · S - STOLEN · X - DESTROYED · T - RETURNED TO OWNER

ITEM	STATUS	QUANTITY	DESCRIPTION	MFG NAME	SERIAL NUMBER	VALUE
1						
2				N/A		
3						
4						
5						
6						

VEHICLES

VEHICLE INVOLVEMENT CODES

A - ABANDONED · D - DAMAGED · F - LARCENY FROM · H - 24 HOURS · I - IMPOUNDED · M - REPOSSESSED · N - UNAUTHORIZED USE · R - RECOVERED · S - STOLEN · U - UNKNOWN · V - DISABLE · W - SUSPECT · X - SCOFFLAW · Y - RELEASE FROM IMPOUND · Z - OTHER · 8 - V & T STOP

VEH NBR	LICENSE	STATE	TYPE	EX. MO YR.	VEH YR	MAKE	MODEL	STYLE	COLOR(S)	TYPE
1	(HPD) 43	—	—	—	92	FORD	CROWN VIC	4DR	WHI	
CODE	VIN	VEHICLE CONDITION	DAMAGE LOCATION	DATE & TIME TOWED	BY/TO					
D		HEAVY DAMAGE	FRONT END	5/10/93	PETACHE BELL PL W.P.					
VEH NBR	LICENSE	STATE	TYPE	EX. MO YR	VEH YR.	MAKE	MODEL	STYLE	COLOR(S)	TYPE
2	U/K	U/K	U/K	U/K	U/K	POSS JAPANESE	U/K	SW	TAN OR BEIGE	—
CODE	VIN	VEHICLE CONDITION	DAMAGE LOCATION	DATE & TIME TOWED	BY/TO					
Z	U/K	SMALL CAR	—	—	—					

MO

M.O. / SOLVABILITY INFORMATION

MODE OF ENTRY	POINT OF ENTRY	STRUCTURE TYPE	VICTIM'S ACTIVITY BEFORE CRIME	TARGET(S)
SUSPECT'S ACTIVITIES DURING CRIME			SECURITY USED	
INVESTIGATION	N/A		EVIDENCE OBTAINED	

WAS SUSPECT ARRESTED		WITNESS TO CRIME		ALL CRIME ELEMENTS PRESENT	
CAN SUSPECT BE NAMED		SIGNIFICANT MO		MAJOR INJURY OR RAPE INVLD	
CAN SUSPECT BE LOCATED		PROPERTY TRACEABLE		CAN SUSPECT BE IDENTIFIED	
CAN SUSPECT BE DESCRIBED		SIGN PHYS EVIDENCE		CAN SUSP VEH BE IDENTIFIED	

IS THERE SIGNIFICANT REASON TO BELIEVE THIS CRIME CAN BE SOLVED ? _____

NARRATIVE CONT ON PG 2

NOTE - PERSONAL AND DEPT PROPERTY WERE SECURED FROM POLICE CAR BY PO CHIRILLA

NOTE - CROSS REF W/ REPORT 93 R00688 (CHIRILLA INJURY REPORT)

ASSISTING OFFICERS PO CHIRILLA, OLIVA, P. VANHECKE, DET DINEAU (ALSO PRESENT AT LOCATION CPT MILLER LT HALL, DORIC DET SARLO)

INVESTIGATING OFFICER SIGNATURE [signature] KAMINSKY OFF NBR 41123 DATE/TIME 5/11/93 1600

CASE STATUS CODE
A - ACTIVE · C - CLEARED BY ARREST · D - UNFOUNDED · E - EXCEPTIONAL CLEARANCE · F - FILE · S - SUMMONS ISSUED

CODE	REVIEWING OFFICER	DATE AND TIME	FORWARD COPIES TO
A	Lt. D.J. Bruchel	5/12/93 - 1658	UCIS 50
		DATA ENTRY BY	DATE

HPD FORM 1 REV 2/92

INCIDENT REPORT

Harrison Police Department
650 North Street
Harrison, New York 10528
967-5111

I NUMBER: 93A0268
ACTIVITY NUMBER
HRP 93 13; 00 04
CASE DESCRIPTION: SUPP REPORT
CLASS CODE: 8805
CASE TYPE:
HOW RECEIVED
☐ CALL FOR SERVICE
☑ OFFICER INITIATED
☐ COUNTER REPORT
☐ ORIGINAL
☑ SUPPLEMENT

DOMESTIC VIOLENCE ☐ YES ☐ NO
SUBSTANCE RELATED ☐ YES ☐ NO
WEAPON TYPE
Pg 2 OF 5

REPORTED DATE: 5/11/93 1539 HRS
OCCURRED FROM: HRS
TO: Pg 1 HRS
DESK OFFICER: SLT
PATROL OFFICER:

CASE NUMBER

LOCATION

INCIDENT LOCATION
218 NBR | ANDERSON HILL STREET NAME | RD TYPE | DIR | APT. | 5 SECTOR

☐ BLOCK ☐ COMMERCIAL BLDG. ☐ PUBLIC BLDG. ☐ SCHOOL ☐ COUNTRY CLUB/GROUNDS
☐ INTERSECTION ☐ INDUSTRIAL BLDG. ☐ PUBLIC PARK ☐ BANK ☐ OTHER
☐ PRIVATE HOME ☐ MULTI DWELLING ☐ PARKING LOT ☐ CHURCH

PERSONS

PERSON INVOLVEMENT CODES
C - COMPLAINANT F - FINDER M - MISSING PERSON R - REPORTING PERSON W - WITNESS
D - DRIVER I - INJURED / AIDED O - OWNER S - SUSPECT X - WARRANT
E - EMPLOYEE K - AKA P - POLICE OFFICER V - VICTIM Z - OTHER

PERSON	LAST NAME	FIRST	MI	ADDRESS
3	GORDON	LYNNE	S	PO BOX 165 WHITE PLAINS NY

CODE	HOME PHONE	BUSINESS PHONE	OCCUPATION
W	U/K	914 935 4036	JWP INC 6 INTERNATIONAL DR RYE BROOK NY

RACE	SEX	DOB	AGE	HGT	WGT	EYES	HAIR	COMPLEXION
UK	F	08 27 48	44					

RACE CODES
A - ASIAN/ORIENTAL B - BLACK H - HISPANIC I - AMERICAN INDIAN O - OTHER W - WHITE

PERSON	LAST NAME	FIRST	MI	ADDRESS

CODE	HOME PHONE	BUSINESS PHONE	OCCUPATION

RACE	SEX	DOB	AGE	HGT	WGT	EYES	HAIR	COMPLEXION

PERSON	LAST NAME	FIRST	MI	ADDRESS

CODE	HOME PHONE	BUSINESS PHONE	OCCUPATION

RACE	SEX	DOB	AGE	HGT	WGT	EYES	HAIR	COMPLEXION

Narrative (Print or Type Only)

UP THE HILL TO THE CREST DILAURIA WAS TRANSPORTED TO WHITE PLAINS HOSPITAL, WHITE PLAINS NY BY THE HARRISON VOL. AMBULANCE CORP. BECAUSE OF DILAURIAS CONDITION AND MEDICATION (ADMINISTERED AT THE HOSPITAL) DILAURIA DID NOT COMPLETE ANY WRITTEN STATEMENTS AT THIS TIME.

AT THE INCIDENT LOCATION I SPOKE WITH DENNIS WETERMIK (PERSON #2 WITNESS) WETERMIK SAID THAT HE WAS TRAVELING EAST ON ANDERSON HILL RD. APPROACHING THE INCIDENT LOCATION WHEN HE OBSERVED WHAT HE BELIEVED TO BE A VEHICLE (DESCRIPTION UNKNOWN) GO FROM THE WEST BOUND LANE INTO A DRIVE WAY (LOCATED ON THE SOUTH SIDE OF ANDERSON HILL RD) HE SAID HE ALSO OBSERVED A VEHICLE STOPPED IN THE WEST LANE, HE BELIEVES IT HAD ITS LEFT TURN SIGNAL ON (VEHICLE #2) (ONLY DISCRIPTION SMALL BEIGE CAR, POSS JAPANESE MAKE) WETERMIK THEN OBSERVED A POLICE CAR COME OVER THE TOP OF A HILL CREST (VEHICLE #1)

PROPERTY

PROPERTY INVOLVEMENT CODES

C - CONFISCATED · D - DAMAGE · E - EVIDENCE · F - FOUND · I - IMPOUNDED · K - SAFEKEEPING · L - LOST · S - STOLEN · R - RECOVERED · X - DESTROYED · U - UNKNOWN · T - RETURNED TO OWNER · Z - OTHER

ITEM	STATUS	QUANTITY	DESCRIPTION	MFG NAME	SERIAL NUMBER	VALUE
1						
2						
3						
4						
5						
6						

VEHICLES

VEHICLE INVOLVEMENT CODES

A - ABANDONED · D - DAMAGED · F - LARCENY FROM · H - 24 HOURS · I - IMPOUNDED · M - REPOSSESSED · N - UNAUTHORIZED USE · R - RECOVERED · S - STOLEN · U - UNKNOWN · V - DISABLE · W - SUSPECT · X - SCOFFLAW · Y - RELEASE FROM IMPOUND · Z - OTHER · 8 - V & T STOP

VEH NBR	LICENSE	STATE	TYPE	EX MO YR	VEH YR	MAKE	MODEL	STYLE	COLOR(S)	TYPE
CODE	VIN			VEHICLE CONDITION		DAMAGE LOCATION		DATE & TIME TOWED		BY/TO
VEH NBR	LICENSE	STATE	TYPE	EX MO YR	VEH YR	MAKE	MODEL	STYLE	COLOR(S)	TYPE
CODE	VIN			VEHICLE CONDITION		DAMAGE LOCATION		DATE & TIME TOWED		BY/TO

MO

M.O. / SOLVABILITY INFORMATION

MODE OF ENTRY	POINT OF ENTRY	STRUCTURE TYPE	VICTIM'S ACTIVITY BEFORE CRIME	TARGET(S)
SUSPECT'S ACTIVITIES DURING CRIME			SECURITY USED	
INVESTIGATION			EVIDENCE OBTAINED	

WAS SUSPECT ARRESTED _____ · CAN SUSPECT BE NAMED _____ · CAN SUSPECT BE LOCATED _____ · CAN SUSPECT BE DESCRIBED _____

WITNESS TO CRIME _____ · SIGNIFICANT MO _____ · PROPERTY TRACEABLE _____ · SIGN PHYS EVIDENCE _____

ALL CRIME ELEMENTS PRESENT _____ · MAJOR INJURY OR RAPE INVLD _____ · CAN SUSPECT BE IDENTIFIED _____ · CAN SUSP VEH BE IDENTIFIED _____

IS THERE SIGNIFICANT REASON TO BELIEVE THIS CRIME CAN BE SOLVED ? _____

ASSISTING OFFICERS See Pg 1

INVESTIGATING OFFICER SIGNATURE [signature] KOMOSKEY OFF NBR 41/23 DATE/TIME 5/11/93

CASE STATUS CODE

A - ACTIVE · C - CLEARED BY ARREST · D - UNFOUNDED · E - EXCEPTIONAL CLEARANCE · F - FILE · S - SUMMONS ISSUED

CODE	REVIEWING OFFICER	DATE AND TIME	FORWARD COPIES TO
A	[signature]	5/12/93-1658	
		DATA ENTRY BY	DATE

HPD FORM 1 REV 2/92

Harrison Police Department
650 North Street
Harrison, New York 10528
967-5111

CASE NUMBER 93A0268
ACTIVITY NUMBER
HRP 9313100004
CASE DESCRIPTION SUPP REPORT
CLASS CODE 980 S
CLASS TYPE

Narrative (Print or Type Only)

IN THE WEST BOUND LANE BEHIND THE STOPPED VEHICLE. HE SAID THE POLICE CAR THEN APPEARED TO BRAKE, THEN LOSE CONTROL AND TRAVELED ACROSS THE EAST BOUND LANE AND OFF THE ROAD WAY. WETERMIK SAID THE POLICE CAR APPEARED TO HIM TO BE DOING ABOUT 40MPH WHEN HE FIRST SAW IT. WETERMIK TRAVELLED PAST THE INCIDENT UNTIL HE THOUGHT IT WAS SAFE TO TURN AROUND AND THEN RETURNED TO ASSIST.

WETERMIK SAID THAT HE DID HAVE A PRESSING APPOINTMENT SO I GAVE HIM DEPOSITION FORMS AND HE STATED HE WOULD COMPLETE AND FORWARD SAME TO THIS DEPARTMENT.

ALSO AT THE LOCATION I SPOKE TO A SECOND WITNESS ELEANOR B KROLIAN (PERSON #3). KROLIAN SAID SHE WAS TRAVELLING EAST ON ANDERSON HILL RD, APPROACHING THE INCIDENT LOCATION WHEN SHE OBSERVED A SMALL TAN STATION WAGON (VEHICLE #2) (W/ BOSS WHITE / FEMALE DRIVER) STOPPED IN (OR SLOWLY MOVING) IN THE WEST BOUND LANE. SHE SAID SHE THEN SAW A POLICE VEHICLE APPROACH BEHIND THE STOPPED CAR. KROLIAN SAID SHE DID NOT KNOW WHAT SPEED THE POLICE CAR WAS TRAVELING AT BUT SHE SAID THAT AT THE POINT IT CROSSED THE EAST LANE (AND LEFT THE ROADWAY) IT APPEARED TO ACCELERATE. KROLIAN SAID SHE CONTINUED PAST THE LOCATION (TO GET ASSISTANCE) CONT

INVESTIGATING OFFICER SIGNATURE S/S Kamensky KAMENSKY OFF NBR 41/23 DATE/TIME 5/11/93

CASE STATUS CODE
A-ACTIVE
C-CLEARED BY ARREST
D-UNFOUNDED
E-EXCEPTIONAL CLEARANCE
F-FILE
S-SUMMONED ISSUED

CODE	REVIEWING OFFICER	DATE AND TIME	FORWARD COPIES TO
A	Lt. A.J. Russell	5/12/93-1659	
		DATA ENTRY BY	DATE

Harrison Police Department
650 North Street
Harrison, New York 10528
967-5111

CASE NUMBER 9340268
ACTIVITY NUMBER HRP 93131 00804
CASE DESC ON SUPP REPORT
CLASS CODE 880 S | CLASS TYPE

Narrative (Print or Type Only)

AND SHE OBSERVED THE TAN VEHICLE TURN AROUND, AND SHE LAST SAW SAME IN THE EAST BOUND LANE. PO. CHIRELLA TOOK A WRITTEN DEPOSITION FROM KRULIAN.

I WAS INFORMED BY PO A VANHECK THAT HE SPOKE TO LYNNE S GORDON (PERSON #3). GORDON IS BELIEVED TO HAVE BEEN OPPERATING HER VEHICLE IN THE WEST LANE OF ANDERSON HILL RD BEHIND DILAURIA'S POLICE VEHICLE AT THE TIME OF THE INCIDENT. I DID NOT INTERVIEW GORDON AT THIS TIME, AND NO STATEMENTS WERE TAKEN. WITNESS TO BE CONTACTED AND INTERVIEWED

DET PINEDA CHECKED THE TWO DRIVEWAYS AND RESIDENCES, IN THE IMEDIATE AREA OF THE INCIDENT, FOR INFORMATION ON THE "TAN VEHICLE". PINEDA STATED THAT HE DID NOT LOCATE THE VEHICLE AND HAD FOUND NO PERSONS WHO HAD KNOWLEDGE OF IT. PINEDA ALSO TOOK PHOTOGRAPHS OF LOCATION AND POLICE VEHICLE

P.O. P. OLIVA WAS ASSIGNED TO CONTINUE ACCIDENT INVESTIGATION (HE IS ONE OF THE DEPT'S ACCIDENT INVESTIGATORS) I ASSISTED HIM IN TAKING MEASUREMENTS (INCLUDING SKIDMARKS)

THE POLICE VEHICLE WAS RECOVERED AND REMOVED BY PETAGINES TOWING (WHITE PLAINS NY 914-682-0030) AND TAKEN TO POLICE HEADQUATERS. CONT

INVESTIGATING OFFICER SIGNATURE [signature] KRAWCZYK OFF NBR 41/23 DATE/TIME 5/4/93

CASE STATUS CODE
A-ACTIVE | D-UNFOUNDED | F-FILE
C-CLEARED BY ARREST | E-EXCEPTIONAL CLEARANCE | S-SUMMONED ISSUED

CODE	REVIEWING OFFICER	DATE AND TIME	FORWARD COPIES TO
A	[signature]	5/12/93-1059	
		DATA ENTRY BY	DATE

543

Harrison Police Department
650 North Street
Harrison, New York 10528
967-5111

CASE NUMBER 93A0268
ACTIVITY NUMBER HRP 93131 0084
CASE DESCRIPTION SUPP REPORT
CLASS CODE 8705 CLASS TYPE

Name: (Print or Type Only)

AT THIS TIME THE "SMALL TAN VEHICLE" HAS NOT BEEN LOCATED (IT APPEARS TO HAVE LEFT THE LOCATION IMEDIATELY AFTER THE INCIDENT)

ALSO A FREE LANCE PHOTOGRAPHER (MIKE HORN 914-937-0951 PAGER 914 742 0202) TOOK PICTURES AT THE LOCATION (AFTER THE INCIPENT) HE APPROACHED ME AND STATED THAT HE COULD BE CONTACTED IF HIS ASSISTANCE WAS NEEDED.

INVESTIGATION TO CONTINUE.

INVESTIGATING OFFICER SIGNATURE Sgt K. Kimmerly OFF NBR 41/23 DATE/TIME 5/4/93

CASE STATUS CODE
A-ACTIVE
C-CLEARED BY ARREST
D-UNFOUNDED
E-EXCEPTIONAL CLEARANCE
F-FILE
S-SUMMONED ISSUED

CODE	REVIEWING OFFICER	DATE AND TIME	FORWARD COPIES TO
A	Lt J. Buschel	5/12/93 - 1100	
		DATA ENTRY BY	DATE 5/13/93

000345

5/11/98

OSITION OF WITNESS
ACCOMPANY COMPLAINT OR INFORMATION
SEC. 100.20 CPL

TOWN OF HARRISON POLICE

STATE OF NEW YORK)
)
County of _____) ss. Dennis G. Weternik
) (DEPONENT)
_____ of _____)

of _____, N.Y., age 41 years

occupation _____, states as follows:

It was just a little past 12:30 P.M. I was traveling east on Anderson Hill road. I just passed the convent and was coming to the top of the hill when I noticed two cars signalling to turn left into a driveway. One car had already turned into the driveway and I slowed down. Just as I was slowing I heard the squeal of brakes and saw a police car come over the rise behind the stopped (signalling) car. The police officer in his car was applying the brakes very hard and was swerving into my oncoming lane to avoid the stopped car, but seeing my car coming at him he tried or he seemed to try to enter the driveway, but missed and went between a tree and a fire hydrant into a stone wall down an embankment and into some trees. I travelled down Anderson Hill Road until I came to the bridge over 684 where I turned around and came back to see if I could help. I waited with the officer and others until more officers and emergency personnel came then I talked with some officers gave my statement and left.

NOTICE: False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

Sworn to before me this _____
day of _____ 19____

_____
(SIGNATURE)

_____
(TITLE)

Dennis G. Weternik
(SIGNATURE OF DEPONENT)

ADDRESS: 20 Division Street
(STREET OR RURAL ROUTE)

Greenwich, CT. 06830
(POST OFFICE, STATE, ZIP CODE)

*NOTE: THIS FORM NEED BE SWORN ONLY IF COURT SPECIFICALLY REQUIRES OATH.

01/26/93 ALWAYS COMPLETE THE MIS FIELD TO INDICATE WHY INQUIRY WAS MADE.
HN RALL
DRI/.* .LIC/F3C508 .TYP/* .
MIS/*

93A0268
PERSON #3
POSS WITNESS
STD

; 1513-1513 05/11/93 02321075 KWHN40170 PART 001 OF 001
:YSP TTST KWHN 1513
:Y0595400
:O RECORD NYSPIN LIC/F3C508.NY

; 1513-1513 05/11/93 02321110 KWHN40171 PART 001 OF 001
:YMV RALL KWHN 1513
NPLF3C508
:EDR 615663 12658 225597-48
IC/F3C508. LIY/0993. LIT/PC.
ORDON,LYNNE,S
'O BOX 165. WHITE PLAINS NY. 10603
DB/082748. SEX/F
/IN/JN1EB34C9MU004636. VYR/91. VMA/NISS. VST/2D. VCO/BLK
INS/011 ALLSTATE INS CO
TATUS/:VALID

N 1513-1513 05/11/93 02321116 KWHN40172 PART 001 OF 001
:YSP PTST KWHN 1513
NY0595400
NO RECORD - NYSPIN WANTED PERSONS FILE
NAM/GORDON,LYNNE S
.DOB/082748.SEX/F.RAC/U

N 1513-1513 05/11/93 02321119 KWHN40173 PART 001 OF 001
NYSP CTST KWHN 1513
NY0595400
NO RECORD NYSPIN VIN/JN1EB34C9MU004636

000547

111

CASE NUMBER 93A0268

ACTIVITY NUMBER HRP 93 132 00 04

CASE DESCRIPTION SUPP REPORT

CLASS CODE 880 S

CASE TYPE 4

HOW RECEIVED
- ☐ CALL FOR SERVICE
- ☒ OFFICER INITIATED
- ☐ COUNTER REPORT

☐ ORIGINAL ☒ SUPPLEMENT

INCIDENT REPORT

Harrison Police Department
650 North Street
Harrison, New York 10528
967-5111

DOMESTIC VIOLENCE ☐ YES ☒ NO
SUBSTANCE RELATED ☐ YES ☒ NO
WEAPON TYPE NO

REPORTED DATE 5/12/93 1303 HRS

OCCURRED FROM SAME 1300 HRS

TO 1500 HRS

DESK OFFICER —

PATROL OFFICER SGT S. CARNEVALI

CASE NUMBER 93A0268

LOCATION

INCIDENT LOCATION

218 NBR | ANDERSON HILL STREET NAME | RD TYPE | DIR | APT. | 5 SECTOR

- ☐ BLOCK
- ☐ INTERSECTION
- ☐ PRIVATE HOME
- ☐ COMMERCIAL BLDG.
- ☐ INDUSTRIAL BLDG.
- ☐ MULTI DWELLING
- ☐ PUBLIC BLDG.
- ☐ PUBLIC PARK
- ☐ PARKING LOT
- ☐ SCHOOL
- ☐ BANK
- ☐ CHURCH
- ☐ COUNTRY CLUB/GROUNDS
- ☐ OTHER

PERSONS

PERSON INVOLVEMENT CODES

C - COMPLAINANT, D - DRIVER, E - EMPLOYEE, F - FINDER, I - INJURED / AIDED, K - AKA, M - MISSING PERSON, O - OWNER, P - POLICE OFFICER, R - REPORTING PERSON, S - SUSPECT, V - VICTIM, W - WITNESS, X - WARRANT, Z - OTHER

PERSON	LAST NAME	FIRST	MI	ADDRESS
1	GORDON	LYNNE	S	63 GRANT AV WHITE PLAINS NY. PO BOX 165 WHITE PLAINS NY
CODE	HOME PHONE	BUSINESS PHONE		OCCUPATION
W	914-428-5173	MAIN 935-3600 DR 914-935-4036		JWP, INC. & INTERNATIONAL DR RYE BROOK NY

RACE	SEX	DOB	AGE	HGT	WGT	EYES	HAIR	COMPLEXION
W	F	08 27 49	44	—				

RACE CODES: A - ASIAN/ORIENTAL, B - BLACK, H - HISPANIC, I - AMERICAN INDIAN, O - OTHER, W - WHITE

PERSON	LAST NAME	FIRST	MI	ADDRESS
CODE	HOME PHONE	BUSINESS PHONE		OCCUPATION

RACE	SEX	DOB	AGE	HGT	WGT	EYES	HAIR	COMPLEXION

PERSON	LAST NAME	FIRST	MI	ADDRESS
CODE	HOME PHONE	BUSINESS PHONE		OCCUPATION

RACE	SEX	DOB	AGE	HGT	WGT	EYES	HAIR	COMPLEXION

Narrative: (Print or Type Only)

AT 1305 HRS I ATTEMPTED TO CONTACT GORDON (PERSON #1) VIA TELEPHONE AT HER PLACE OF EMPLOYMENT. SHE WAS OUT OF THE OFFICE AT THIS TIME, I LEFT A MESSAGE FOR SAME INVESTIGATION TO CONTINUE

(NOTE GORDON IS A DSS WITNESS TO THIS ACCIDENT.)

AT ABOUT 1500 HRS I SPOKE TO PERSON #1 VIA TELEPHONE (AT HER PLACE OF EMPLOYMENT) ADDITIONAL PERTINENT INFORMATION WAS OBTAINED (REFER TO PERSON INVOLVEMENT SECTION) GORDON I SAID THAT SHE OBSERVED THE ACCIDENT AFTER IT OCCURRED (THE POLICE VEHICLE WAS ALREADY OFF THE ROADWAY, SO SHE DID NOT SEE THE POLICE VEHICLE BEING OPERATED. I ASKED. (SHE WAS TRAVELING WEST ON ANDERSON HILL RD.) OVER.

PROPERTY

PROPERTY INVOLVEMENT CODES

C - CONFISCATED · D - DAMAGE · E - EVIDENCE · F - FOUND · I - IMPOUNDED · K - SAFEKEEPING · L - LOST · S - STOLEN · R - RECOVERED · X - DESTROYED · U - UNKNOWN · T - RETURNED TO OWNER · Z - OTHER

ITEM	STATUS	QUANTITY	DESCRIPTION	MFG NAME	SERIAL NUMBER	VALUE
1						
2						
3			N/A			
4						
5						
6						

VEHICLES

VEHICLE INVOLVEMENT CODES

A - ABANDONED · D - DAMAGED · F - LARCENY FROM · H - 24 HOURS · I - IMPOUNDED · M - REPOSSESSED · N - UNAUTHORIZED USE · R - RECOVERED · S - STOLEN · U - UNKNOWN · V - DISABLE · W - SUSPECT · X - SCOFFLAW · Y - RELEASE FROM IMPOUND · Z - OTHER · 8 - V & T STOP

VEH NBR	LICENSE	STATE	TYPE	EX MO YR	VEH YR	MAKE	MODEL	STYLE	COLOR(S)	TYPE
CODE	VIN			VEHICLE CONDITION		DAMAGE LOCATION		DATE & TIME TOWED		BY/TO
VEH NBR	LICENSE	STATE	TYPE	EX MO YR	VEH YR	MAKE	MODEL	STYLE	COLOR(S)	TYPE
CODE	VIN			VEHICLE CONDITION		DAMAGE LOCATION		DATE & TIME TOWED		BY/TO

N/A

MO

M.O. / SOLVABILITY INFORMATION

MODE OF ENTRY	POINT OF ENTRY	STRUCTURE TYPE	VICTIM'S ACTIVITY BEFORE CRIME	TARGET(S)
SUSPECTS ACTIVITIES DURING CRIME			SECURITY USED	
INVESTIGATION			EVIDENCE OBTAINED	

N/A

WAS SUSPECT ARRESTED ____ · CAN SUSPECT BE NAMED ____ · CAN SUSPECT BE LOCATED ____ · CAN SUSPECT BE DESCRIBED ____

WITNESS TO CRIME ____ · SIGNIFICANT MO ____ · PROPERTY TRACEABLE ____ · SIGN PHYS EVIDENCE ____

ALL CRIME ELEMENTS PRESENT ____ · MAJOR INJURY OR RAPE INVLD ____ · CAN SUSPECT BE IDENTIFIED ____ · CAN SUSP VEH BE IDENTIFIED ____

IS THERE SIGNIFICANT REASON TO BELIEVE THIS CRIME CAN BE SOLVED ? ____

I ASKED GORDON IF SHE SAW A SMALL TAN STATION WAGON BOSS JAPANESE. SHE STATED SHE DOES NOT RECALL SEEING ANY CAR OF THAT DESCRIPTION IN THE AREA OF THE ACCIDENT.

ASSISTING OFFICERS ____

INVESTIGATING OFFICER SIGNATURE [signature] OFF NBR 41/23 DATE/TIME 5/12/93 1357 HRS

CASE STATUS CODE

A - ACTIVE · C - CLEARED BY ARREST · D - UNFOUNDED · E - EXCEPTIONAL CLEARANCE · F - FILE · S - SUMMONS ISSUED

CODE	REVIEWING OFFICER	DATE AND TIME	FORWARD COPIES TO
A	[signature]	5/12/93-1657	
		DATA ENTRY BY	DATE 5/13/93

HPD FORM 1 REV 2/92

NUMBER 93A-0268

ACTIVITY NUMBER HRP 93132004*65

CASE DESCRIPTION Accident-Injury/supp.

CLASS CODE 880S | CASE TYPE A

HOW RECEIVED
- [X] CALL FOR SERVICE
- [ ] OFFICER INITIATED
- [ ] COUNTER REPORT

[ ] ORIGINAL
[X] SUPPLEMENT

INCIDENT REPORT

Harrison Police Department
650 North Street
Harrison, New York 10528
967-5111

DOMESTIC VIOLENCE [ ] YES [X] NO
SUBSTANCE RELATED [ ] YES [X] NO
WEAPON TYPE

REPORTED DATE May 12, 1993 1520 HRS

OCCURRED FROM May 11, 1993 1247 HRS
TO HRS

DESK OFFICER P.O Hassett

PATROL OFFICER Sgt. S. Carpiniello

CASE NUMBER 93A-0268

LOCATION

INCIDENT LOCATION

280 (NBR) Anderson Hill (STREET NAME) Rd. (TYPE) (DIR) (APT.) 6 (SECTOR)

- [X] BLOCK
- [ ] INTERSECTION
- [ ] PRIVATE HOME
- [ ] COMMERCIAL BLDG.
- [ ] INDUSTRIAL BLDG.
- [ ] MULTI DWELLING
- [ ] PUBLIC BLDG.
- [ ] PUBLIC PARK
- [ ] PARKING LOT
- [ ] SCHOOL
- [ ] BANK
- [ ] CHURCH
- [ ] COUNTRY CLUB/GROUNDS
- [ ] OTHER

PERSONS

PERSON INVOLVEMENT CODES

C - COMPLAINANT, D - DRIVER, E - EMPLOYEE, F - FINDER, I - INJURED / AIDED, K - AKA, M - MISSING PERSON, O - OWNER, P - POLICE OFFICER, R - REPORTING PERSON, S - SUSPECT, V - VICTIM, W - WITNESS, X - WARRANT, Z - OTHER

PERSON	LAST NAME	FIRST	MI	ADDRESS
1	Bouthillier,	Jennifer		35 Stonehedge Ln. Greenwich Ct.

CODE	HOME PHONE	BUSINESS PHONE	OCCUPATION
R	203-531-7583		

RACE	SEX	DOB	AGE	HGT	WGT	EYES	HAIR	COMPLEXION
?	F	Unknown						

RACE CODES: A - ASIAN/ORIENTAL, B - BLACK, H - HISPANIC, I - AMERICAN INDIAN, O - OTHER, W - WHITE

PERSON	LAST NAME	FIRST	MI	ADDRESS

CODE	HOME PHONE	BUSINESS PHONE	OCCUPATION

RACE	SEX	DOB	AGE	HGT	WGT	EYES	HAIR	COMPLEXION

PERSON	LAST NAME	FIRST	MI	ADDRESS

CODE	HOME PHONE	BUSINESS PHONE	OCCUPATION

RACE	SEX	DOB	AGE	HGT	WGT	EYES	HAIR	COMPLEXION

Narrative (Print or Type Only)

At approximately 1520 hours on May 12, 1993 I spoke via telephone with Ms. Boutnillier who told me that she was operating the vehicle which was stopped ahead of P.O. Di'Lauria prior to the accident. She told me that she was stopped in the west bound lane of Anderson Hill Rd. waiting to make a left turn into the Flanagan's driveway when she heard the sound of a car braking and looked in her rear view mirror and saw a police car approaching. She moved her vehicle about two feet to the right and then saw the police car pass to her left and run off the road. She then turned into the Flanagans and asked someone there to call the police. She said that Fianagan was here destination. Ms. Bouthillier said that the police car did not have any emergency lights on nor did she hear a siren although both front windows in her vehicle were open. Ms. Bouthillier said she will be at the above address for the next two months if we need to contact her.

PROPERTY

PROPERTY INVOLVEMENT CODES

C - CONFISCATED · E - EVIDENCE · I - IMPOUNDED · L - LOST · R - RECOVERED · U - UNKNOWN · Z - OTHER
D - DAMAGE · F - FOUND · K - SAFEKEEPING · S - STOLEN · X - DESTROYED · T - RETURNED TO OWNER

ITEM	STATUS	QUANTITY	DESCRIPTION	MFG NAME	SERIAL NUMBER	VALUE
1						
2						
3						
4						
5						
6						

VEHICLES

VEHICLE INVOLVEMENT CODES

A - ABANDONED · H - 24 HOURS · N - UNAUTHORIZED USE · U - UNKNOWN · X - SCOFFLAW
D - DAMAGED · I - IMPOUNDED · R - RECOVERED · V - DISABLE · Y - RELEASE FROM IMPOUND
F - LARCENY FROM · M - REPOSSESSED · S STOLEN · W - SUSPECT · Z - OTHER
8 - V & T STOP

VEH NBR	LICENSE	STATE	TYPE	EX MO YR	VEH YR	MAKE	MODEL	STYLE	COLOR(S)	TYPE
CODE	VIN			VEHICLE CONDITION		DAMAGE LOCATION		DATE & TIME TOWED		BY/TO
VEH NBR	LICENSE	STATE	TYPE	EX MO YR	VEH YR.	MAKE	MODEL	STYLE	COLOR(S)	TYPE
CODE	VIN			VEHICLE CONDITION		DAMAGE LOCATION		DATE & TIME TOWED		BY/TO

MO

M.O. / SOLVABILITY INFORMATION

MODE OF ENTRY	POINT OF ENTRY	STRUCTURE TYPE	VICTIM'S ACTIVITY BEFORE CRIME	TARGET(S)
SUSPECT'S ACTIVITIES DURING CRIME			SECURITY USED	
INVESTIGATION			EVIDENCE OBTAINED	

WAS SUSPECT ARRESTED _____ · WITNESS TO CRIME _____ · ALL CRIME ELEMENTS PRESENT _____
CAN SUSPECT BE NAMED _____ · SIGNIFICANT MO _____ · MAJOR INJURY OR RAPE INVLD _____
CAN SUSPECT BE LOCATED _____ · PROPERTY TRACEABLE _____ · CAN SUSPECT BE IDENTIFIED _____
CAN SUSPECT BE DESCRIBED _____ · SIGN PHYS EVIDENCE _____ · CAN SUSP VEH BE IDENTIFIED _____

IS THERE SIGNIFICANT REASON TO BELIEVE THIS CRIME CAN BE SOLVED ? _____

ASSISTING OFFICERS _____

INVESTIGATING OFFICER SIGNATURE G. A. Bucket OFF NBR 21 DATE/TIME 5/12/93 16:02

CASE STATUS CODE

A - ACTIVE · E - EXCEPTIONAL CLEARANCE
C - CLEARED BY ARREST · F - FILE
D - UNFOUNDED · S - SUMMONS ISSUED

CODE	REVIEWING OFFICER	DATE AND TIME	FORWARD COPIES TO
A	G. A. Bucket	5/12/93 - 16:03	
		DATA ENTRY BY	DATE 5/13/93

HPD FORM 1 REV 2/92

PROPERTY

PROPERTY INVOLVEMENT CODES

C - CONFISCATED · E - EVIDENCE · I - IMPOUNDED · L - LOST · R - RECOVERED · U - UNKNOWN · Z - OTHER
D - DAMAGE · F - FOUND · K - SAFEKEEPING · S - STOLEN · X - DESTROYED · T - RETURNED TO OWNER

ITEM	STATUS	QUANTITY	DESCRIPTION	MFG NAME	SERIAL NUMBER	VALUE
1						
2						
3						
4						
5						
6						

VEHICLES

VEHICLE INVOLVEMENT CODES

A - ABANDONED · H - 24 HOURS · N - UNAUTHORIZED USE · U - UNKNOWN · X - SCOFFLAW
D - DAMAGED · I - IMPOUNDED · R - RECOVERED · V - DISABLE · Y - RELEASE FROM IMPOUND
F - LARCENY FROM · M - REPOSSESSED · S - STOLEN · W - SUSPECT · Z - OTHER
8 - V & T STOP

VEH NBR	LICENSE	STATE	TYPE	EX MO YR	VEH YR	MAKE	MODEL	STYLE	COLOR(S)	TYPE
CODE	VIN			VEHICLE CONDITION		DAMAGE LOCATION		DATE & TIME TOWED		BY/TO
VEH NBR	LICENSE	STATE	TYPE	EX MO YR	VEH YR	MAKE	MODEL	STYLE	COLOR(S)	TYPE
CODE	VIN			VEHICLE CONDITION		DAMAGE LOCATION		DATE & TIME TOWED		BY/TO

MO

M.O. / SOLVABILITY INFORMATION

MODE OF ENTRY	POINT OF ENTRY	STRUCTURE TYPE	VICTIM'S ACTIVITY BEFORE CRIME	TARGET(S)
SUSPECTS ACTIVITIES DURING CRIME			SECURITY USED	
INVESTIGATION			EVIDENCE OBTAINED	

WAS SUSPECT ARRESTED _____ · WITNESS TO CRIME _____ · ALL CRIME ELEMENTS PRESENT _____
CAN SUSPECT BE NAMED _____ · SIGNIFICANT MO _____ · MAJOR INJURY OR RAPE INVLD _____
CAN SUSPECT BE LOCATED _____ · PROPERTY TRACEABLE _____ · CAN SUSPECT BE IDENTIFIED _____
CAN SUSPECT BE DESCRIBED _____ · SIGN PHYS EVIDENCE _____ · CAN SUSP VEH BE IDENTIFIED _____

IS THERE SIGNIFICANT REASON TO BELIEVE THIS CRIME CAN BE SOLVED ? _____

See attached;
1. Measurements of accident scene
2. Diagram of accident scene
3. Formula Sheet
4. Drag Factor Chart

ASSISTING OFFICERS Sgt KAMENSKY

INVESTIGATING OFFICER SIGNATURE [signature] / Oliva OFF NBR 25/16 DATE/TIME _____

CASE STATUS CODE

A - ACTIVE · E - EXCEPTIONAL CLEARANCE
C - CLEARED BY ARREST · F - FILE
D - UNFOUNDED · S - SUMMONS ISSUED

CODE	REVIEWING OFFICER	DATE AND TIME	FORWARD COPIES TO
F	Lt. A. J. Bushel	6/23/93-1233	
		DATA ENTRY BY BN. 5	DATE 6/24/93

HPD FORM 1 REV 2/92

11

NUMBER 13A0268

ACTIVITY NUMBER HRP 93131 00405

CASE DESCRIPTION Supplementary

CLASS CODE 880M CASE TYPE A

HOW RECEIVED
- ☒ CALL FOR SERVICE
- ☐ OFFICER INITIATED
- ☐ COUNTER REPORT

☐ ORIGINAL ☒ SUPPLEMENT

INCIDENT REPORT

Harrison Police Department
650 North Street
Harrison New York 10528
967-5111

DOMESTIC VIOLENCE ☐ YES ☐ NO
SUBSTANCE RELATED ☐ YES ☐ NO
WEAPON TYPE _____

REPORTED DATE 11 MAY 93 1257 HRS

OCCURRED FROM _____ HRS

TO _____ HRS

DESK OFFICER _____

PATROL OFFICER LT. HALL

CASE NUMBER 93A0268

LOCATION

INCIDENT LOCATION

218 NBR | ANDERSON HILL STREET NAME | RD TYPE | DIR | APT. | 6 SECTOR

- ☐ BLOCK
- ☐ INTERSECTION
- ☐ PRIVATE HOME
- ☐ COMMERCIAL BLDG.
- ☐ INDUSTRIAL BLDG.
- ☐ MULTI DWELLING
- ☐ PUBLIC BLDG.
- ☐ PUBLIC PARK
- ☐ PARKING LOT
- ☐ SCHOOL
- ☐ BANK
- ☐ CHURCH
- ☐ COUNTRY CLUB/GROUNDS
- ☐ OTHER

PERSONS

PERSON INVOLVEMENT CODES

C - COMPLAINANT, D - DRIVER, E - EMPLOYEE, F - FINDER, I - INJURED / AIDED, K - AKA, M - MISSING PERSON, O - OWNER, P - POLICE OFFICER, R - REPORTING PERSON, S - SUSPECT, V - VICTIM, W - WITNESS, X - WARRANT, Z - OTHER

PERSON	LAST NAME	FIRST	MI	ADDRESS
CODE	HOME PHONE	BUSINESS PHONE		OCCUPATION

RACE	SEX	DOB	AGE	HGT	WGT	EYES	HAIR	COMPLEXION

RACE CODES: A - ASIAN/ORIENTAL, B - BLACK, H - HISPANIC, I - AMERICAN INDIAN, O - OTHER, W - WHITE

PERSON	LAST NAME	FIRST	MI	ADDRESS
CODE	HOME PHONE	BUSINESS PHONE		OCCUPATION

RACE	SEX	DOB	AGE	HGT	WGT	EYES	HAIR	COMPLEXION

PERSON	LAST NAME	FIRST	MI	ADDRESS
CODE	HOME PHONE	BUSINESS PHONE		OCCUPATION

RACE	SEX	DOB	AGE	HGT	WGT	EYES	HAIR	COMPLEXION

Narrative (Print or Type Only)

ON 11 MAY 93 THE WRITER WAS DETAILED TO INVESTIGATE AN AUTO ACCIDENT INVOLVING A POLICE OFFICER.

WITH THE ASSISTANCE OF SGT KANENSKY THIS WRITER TOOK MEASUREMENTS OF THE ACCIDENT SCENE INCLUDING SKID MARKS. DIAGRAM OF ACCIDENT SCENE WAS COMPLETED. MEASUREMENTS WERE TAKEN BY COORDINATION.

THIS WRITER DETERMINED THAT THE AVERAGE OF THE SKID MARKS WERE 75.99 FEET. BY USING THE DRAG FACTOR CHART FOR ASPHALT-NEW/SHARP AND THE FORMULA FOR INITIAL VELOCITY, THIS WRITER WAS ABLE TO DETERMINE THAT THE MINIMUM INITIAL VELOCITY OF THE POLICE VEHICLE WAS BETWEEN 38-40 MPH.

IT SHOULD ALSO BE NOTED THAT THE VEHICLE LEFT APPROXIMATELY 5½ FEET OF ACCELERATION MARK BEFORE IMPACTING TREE.

(OVER)

N

DATE: 11 MAY / 93

REPORT #: 93A026E

HR #:

FIELD SKETCH by:

PO OLIVE

OFFICIAL NOTES:

R.P #1 IS 3 ft SOUTH of N.Y. TEL POLE #W53

R.P #2 IS 4.9 ft SOUTH of N.Y. TEL POLE # W 52 AND 124.0 ft WEST of R.P #1

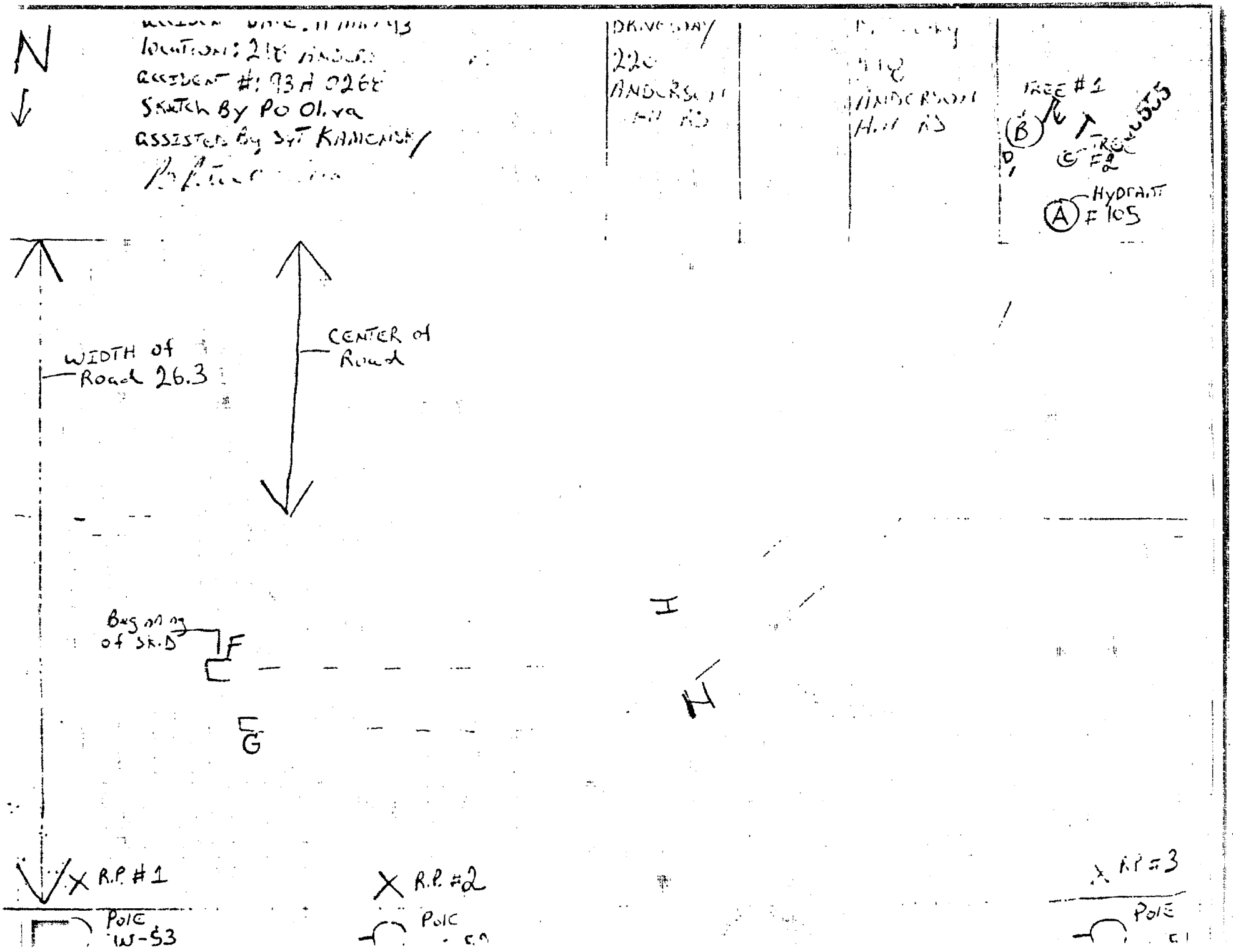
R.P #3 IS 4.6 ft SOUTH of NY TEL POLE # W 51 AND 111.7 ft WEST of R.P #2

NOTE: MEASUREMENTS FROM POLES TAKEN FROM EAST/CENTER SIDE

COORDINATION

SPOT	N/S	E/W	DESCRIPTION
A	31 1/5	216 5/W	FIRE H/DRANT
B	40 1/5	215 7/W	TREE #1
C	41 8/5	227 7/W	TREE #2
D	42 1/5	221 7/W	LEFT REAR Sheet - Final RES
E	45 5/5	2[illegible] 2/W	LEFT FRONT [illegible] - Final RES
F	9 [illegible]	48 9/W	Beginning of SKID - Left [illegible]
G	4 8/5	58 0/W	Beg[illegible] of SKID - R[illegible]
H	- [illegible]	2[illegible]	END of SK[illegible] - f[illegible] sheet
I	[illegible] 2/5	129 7/W	END of SKID - Left [illegible]

P. PITTS [illegible] 75/16


N
Location: 21c ANDERSON
Accident #: 93A 0266
Sketch By PO Oliva
Assisted By SGT KANICKY
DRIVEWAY
22c
ANDERSON
HILL RD
HINDCROFT
HILL RD
TREE #1
(B)
TREE
F2
HYDRANT
(A)
F105
WIDTH of
Road 26.3
CENTER of
Road
Beginning
of SK.D
F
G
I
N
R.P. #1
R.P. #2
R.P. #3
POLE
1W-53
POLE
POLE

11 May 03
93ACMC[illegible]

[illegible] Formula[illegible]

Drag Factor of .65 — Drag Factor of .70

a = F x g

a = .65 x 32.2

a = [illegible]

a = F x g

a = .70 x 32.2

a = 22.5

$Vi = \sqrt{V_e^2 - 2ad}$ — $Vi = \sqrt{V_e^2 - 2ad}$

$Vi = \sqrt{(0)^2 - 2(-20.93)(75.99)}$ — $Vi = \sqrt{0^2 - 2(-22.5)(75.99)}$

$Vi = \sqrt{-2(-20.93)(75.99)}$ — $Vi = \sqrt{-2(-22.5)(75.99)}$

Vi = 31[illegible]

= 56.[illegible]

= 38.[illegible]

= 38 [illegible]

= [illegible] m[illegible]

[illegible]

000556

Drag Factor Charts

If the situation arises in which it is too dangerous to do test skids, or the surface or environment is not conducive to sled tests, or too much time has passed to make fair and accurate tests, another technique exists.

A chart of possible ranges of drag factors has been established. It provides a "low" and a "high" drag factor for a number of different type surfaces. This is the least desirable method of the three discussed, but its better than no calculation at all.

DESCRIPTION OF ROAD SURFACE	DRY				WET			
	Less Than 30 MPH		More Than 30 MPH		Less Than 30 MPH		More Than 30 MPH	
	From	To	From	To	From	To	From	To
Concrete								
New, Sharp	.80	1.00	.70	.85	.50	.80	.40	.75
Travelled	.60	.80	.60	.75	.45	.70	.45	.65
Traffic Polished	.55	.75	.50	.65	.45	.65	.45	.60
Asphalt or Tar								
New, Sharp	.80	1.00	.65	.70	.50	.80	.45	.75
Travelled	.60	.80	.55	.70	.45	.70	.40	.65
Traffic Polished	.55	.75	.45	.65	.45	.65	.40	.60
Excess Tar	.50	.60	.35	.60	.30	.60	.25	.55
Brick								
New, Sharp	.75	.95	.60	.85	.50	.75	.45	.70
Traffic Polished	.60	.80	.55	.75	.40	.70	.40	.60
Stone Block								
New, Sharp	.75	1.00	.70	.90	.65	.90	.60	.85
Traffic Polished	.50	.70	.45	.65	.30	.50	.25	.50
Gravel								
Packed, Oiled	.55	.85	.50	.80	.40	.80	.40	.60
Loose	.40	.70	.40	.70	.45	.75	.45	.75
Cinders								
Packed	.50	.70	.50	.70	.65	.75	.65	.75
Rock								
Crushed	.55	.75	.55	.75	.55	.75	.55	.75
Ice								
Smooth	.10	.25	.07	.20	.05	.10	.05	.10
Snow								
Packed	.30	.55	.35	.55	.30	.60	.30	.60
Loose	.10	.25	.10	.20	.30	.60	.30	.60
Metal Grid								
Open	.70	.90	.55	.75	.25	.45	.20	.35

P.O. Box C. Allen

Test Skids (Cont)

In each of the preceding, drag factors were different. In each case, the slide distances were different. In each case, the speed was the same. There is a relationship between drag factor, slide distance and test speed. Change any of them and the remaining two will change.

DEPOSITION OF WITNESS
COMPANY COMPLAINT OR INFORMATION
100.20 CPL

TOWN OF HARRISON POLICE

STATE OF NEW YORK)
)
County of _____) ss. Dennis G. Weternik (DEPONENT)
)
_____ of _____)

_____, N.Y., age 41 years

Occupation _____, states as follows:

It was just a little past 12:30 P.M. I was traveling east on Anderson Hill Road. I just passed the convent and was coming to the top of the hill when I noticed two cars signalling to turn left into a driveway. One car had already turned into the driveway and I slowed down. Just as I was slowing I heard the squeal of brakes and saw a police car come over the rise behind the stopped (signalling) car. The police officer in his car was applying the brakes very hard and was swerving into my oncoming lane to avoid the stopped car, but seeing my car coming at him he tried or he seemed to try to enter the driveway, but missed and went between a tree and a fire hydrant into a stone wall down an embankment and into some trees. I travelled down Anderson Hill Road until I came to the bridge over 684. There I turned around and came back to see if I could help. I waited with the officer and others until more officers and emergency personnel came then I talked with some officers gave my statement and left.

NOTICE: False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

Sworn to before me this _____ day of _____ 19____

Dennis G. Weternik
(SIGNATURE OF DEPONENT)

ADDRESS: 20 Division Street
(STREET OR RURAL ROUTE)

Greenwich, CT. 06830
(POST OFFICE, STATE, ZIP CODE)

_____
(SIGNATURE)

_____
(TITLE)

NOTE: THIS FORM NEED BE SWORN ONLY IF COURT SPECIFICALLY REQUIRES OATH.

HARRISON POLICE DEPARTMENT
HARRISON, NEW YORK

SUPERVISOR'S REPORT
ACCIDENT INVOLVING DEPARTMENT VEHICLE

1) NAME OF DRIVER P.O. S. DILAURIA RANK P.O.

2) DATE OF ACCIDENT 5/4/93 ~~19~~ TIME 1447 HRS

3) MAKE, YEAR, AND # OF DEPARTMENT VEHICLE 1992 FORD (CROWN VIC)
UNIT #43

4) WAS AN ACCIDENT REPORT FILED? YES IF SO, LIST "A" & "C" #'S
#9340268 (ATTACH COPIES OF PHOTOS TO THIS REPORT)
ALSO 93R00688 PHOTOS TAKEN BY PCT DIV.

5) NOTE ANY ADDITIONAL INFORMATION NOT OTHERWISE REPORTED:
INVESTIGATION CONTINUED BY SGT ZAWOWSKY PO OLIVIA
AND LT BUSLLOTZ SEE SUPPLEMENTAL REPORTS
ORIGINAL REPORT - PO CHIRELLA

6) TIME YOU RESPONDED TO SCENE: 1250 HRS.

7) WHAT DID DRIVER DO (OR FAIL TO DO) THAT CAUSED HIM TO BECOME INVOLVED IN THIS ACCIDENT? SEE REMARKS

8) A. DOES OUR DRIVER ACCEPT BLAME FOR THIS ACCIDENT? NO

B. IF YES, HOW MUCH? — %

9) WHAT WAS OUR DRIVER'S ATTITUDE TOWARD THIS ACCIDENT? UPSET AND CONCERNED

10) WHAT IS HIS GENERAL OUTLOOK ON SAFETY PRACTICES? EXCELLENT
GOOD X AVERAGE POOR

11) IN YOUR OPINION, COULD OUR DRIVER HAVE AVOIDED THIS ACCIDENT? SEE REMARKS

A. IF AVOIDABLE, WHAT CORRECTIVE MEASURES HAVE YOU TAKEN TOWARD THE OPERATOR TO PREVENT A FUTURE REOCCURRENCE OF THE SAME NATURE?

000500

13) GIVE ANY FURTHER COMMENTS REGARDING ATTITUDE, ABILITY, AND PERFORMANCE OF THE DRIVER: _____

14) DO YOU RECOMMEND DISCIPLINARY ACTION? RECOMMENDATION PENDING RESULTS OF LT BUSCHELLS ACCIDENT INVESTIGATION

15) # OF YEARS DRIVING EXPERIENCE: TO BE COMPLETED

16) TOTAL HOURS ON DUTY AT TIME OF ACCIDENT UPON SECOND INTERVIEW WITH OFFICER

A. WAS EXCESSIVE TIME ON DUTY A FACTOR IN THIS ACCIDENT? YES (NO.)

17) LENGTH OF TIME EMPLOYED: SEE # 15/16

18) # OF ACCIDENTS BY THIS DRIVER DURING PAST 5 YEARS: SEE 15/16

19) NOTE ANY CONTRIBUTING PHYSICAL CONDITIONS OF DRIVER: NONE OBSERVED

20) REMARKS DRIVER CAME OVER A BLIND HILLCREST AND REPORTEDLY A VEHICLE WAS STOPPED IN HIS TRAFFIC LANE IN FRONT OF HIM BASED ON THE CIRCUMSTANCES AND ELAPSED TIME OF INCIDENT I FEEL THE DRIVER DID NOT FAIL TO DO ANY THING OR COULD HAVE DONE ANYTHING THAT WOULD HAVE CHANGE THE OUTCOME (CONT BELOW)

DATE OF REPORT 5/4/93 REPORTED BY: S.T. KAMENSKY.

REVIEWED BY: _____

DEPARTMENT HEAD: _____

THE ONLY OPEN QUESTION AT THIS TIME IS THE PATROL VEHICLES SPEED THIS INVESTIGATION IS CONTINUING (BOTH INTERVIEWS AND LT BOSCHELL'S AND PO OLIVA'S ACCIDENT INVESTIGATION) I AM WITHHOLDING CONCLUTION AND DISCIPLIN RECOMENDATIONS UNTIL INVESTIGATION IS COMPLETE I WILL FILE A SUPPLEMENTARY SUPERVISOR ACCIDENT REPORT AT THIS TIME.

000561

HARRISON POLICE DEPARTMENT
HARRISON, NEW YORK

SUPERVISOR'S REPORT
ACCIDENT INVOLVING DEPARTMENT VEHICLE
SUPPLEMENTAL REPORT

1) NAME OF DRIVER P.O. S DILAURIA RANK P.O.

2) DATE OF ACCIDENT 05/11/93 ~~19~~ TIME 1247 HRS

3) MAKE, YEAR, AND # OF DEPARTMENT VEHICLE 1992 FORD (CROWN VIC) UNIT # 43

4) WAS AN ACCIDENT REPORT FILED? YES IF SO, LIST "A" & "C" #'S 93A0268 / 93R00688 (ATTACH COPIES OF PHOTOS TO THIS REPORT) PHOTOS TAKEN BY DET DIV.

5) NOTE ANY ADDITIONAL INFORMATION NOT OTHERWISE REPORTED:
ORIGINAL ACCIDENT REPORT TAKEN BY PO CHIERICA
ACCIDENT INVESTIGATION DONE BY PO OLIVA

6) TIME YOU RESPONDED TO SCENE: 12 50 HRS.

7) WHAT DID DRIVER DO (OR FAIL TO DO) THAT CAUSED HIM TO BECOME INVOLVED IN THIS ACCIDENT? SEE REMARKS ON BACK

8) A. DOES OUR DRIVER ACCEPT BLAME FOR THIS ACCIDENT? NO
B. IF YES, HOW MUCH? N/A %

9) WHAT WAS OUR DRIVER'S ATTITUDE TOWARD THIS ACCIDENT?
UPSET AND CONCERNED

10) WHAT IS HIS GENERAL OUTLOOK ON SAFETY PRACTICES? EXCELLENT ____
GOOD X TOLERABLE AVERAGE ____ POOR ____

11) IN YOUR OPINION, COULD OUR DRIVER HAVE AVOIDED THIS ACCIDENT? SEE REMARKS
A. IF AVOIDABLE, WHAT CORRECTIVE MEASURES HAVE YOU TAKEN TOWARD THE OPERATOR TO PREVENT A FUTURE REOCCURRENCE OF THE SAME NATURE?

C1362

13) GIVE ANY FURTHER COMMENTS REGARDING ATTITUDE, ABILITY, AND PERFORMANCE OF THE DRIVER: _____

14) DO YOU RECOMMEND DISCIPLINARY ACTION? REFER TO DISCIPLINARY REPORT

15) # OF YEARS DRIVING EXPERIENCE: ABOUT 10 YRS

16) TOTAL HOURS ON DUTY AT TIME OF ACCIDENT ABOUT 5 HRS

A. WAS EXCESSIVE TIME ON DUTY A FACTOR IN THIS ACCIDENT? YES (NO)

17) LENGTH OF TIME EMPLOYED: APPROX 34 MONTHS

18) # OF ACCIDENTS BY THIS DRIVER DURING PAST 5 YEARS: NONE ON THE JOB

19) NOTE ANY CONTRIBUTING PHYSICAL CONDITIONS OF DRIVER: NONE OBSERVED.

20) REMARKS DRIVER CAME OVER BLIND HILLCREST AND REPORTEDLY A VEHICLE WAS STOPPED IN HIS TRAFFIC LANE IN FRONT OF HIM. PO OLIVA INFORMED C/G THAT HE IS UNABLE TO DETERMINE VEHICLE SPEED (ONLY MEASURING ABOVE 40 MPH) BUT IT APPEARS THAT THE AVERAGE STOPPING DISTANCE FOR THIS VEHICLE AT 40 MPH IS LESS THEN THE DISTANCE FROM THE STOPPED VEHICLE AND THE POINT WHERE THE

DATE OF REPORT 8/05/93 REPORTED BY: [signature]

REVIEWED BY: [signature]

DEPARTMENT HEAD: _____

CONT

OFFICER SHOULD HAVE FIRST OBSERVED IT. ALSO THE VEHICLE WAS BEING USED FOR NORMAL DRIVING (IE: NO EMERGENCY OPERATION ETC) THIS WOULD INDICATE THE POSSIBILITY THAT THE DRIVER WAS INATTENTIVE, CARELESS OR DID NOT HAVE CONTROL OF HIS VEHICLE

VC 22350

CALSPAN EVALUATION OF FORD CROWN VICTORIA POLICE VEHICLE STEERING FAILURE ALLEGATIONS

VEHICLE: 1992 FORD CROWN VICTORIA
LOCATION: TOWN OF HARRISON, NY
DATE: AUGUST 11, 1993
DRIVER: PETER SCHIRMER

SUMMARY

This follow-up investigation focused on a multiple vehicle crash that involved a 1992 Ford Crown Victoria police vehicle. The driver of the Crown Victoria was responding to an emergency police call when he initiated evasive action by steering to the left to avoid a left turning vehicle. The Crown Victoria was involved in two minor severity crashes with stopped vehicles in the opposing travel lane. The driver alleged that he experienced an anomaly in the steering system which caused the wheel to bind, thus preventing a clockwise steering input that resulted in his subsequent crash with a utility pole. The driver and his right front passenger were not wearing the 3-point lap and shoulder belt systems. Both occupants sustained incapacitating injuries and were transported by ambulance to local hospitals for treatment.

Crash Data

This crash occurred on at a five-leg signalized intersection in the Town of Harrison, NY, on August 11, 1993, at 0045 hours. The Crown Victoria was traveling in a northerly direction on a two lane roadway on an approach to the intersection. The vehicle traversed a negative grade on a straight segment of roadway as it approached the intersection on a driver reported green signal phase. The southbound travel lanes at the intersection consisted of a through lane and a designated left turn lane. The asphalt road surface was dry with a posted speed limit of 40 mph.

Vehicle Data

The 1992 Ford Crown Victoria was a marked Town of Harrison police vehicle that was equipped the factory installed police package, a 4.6 liter V-8 engine, a four-speed automatic overdrive, four-wheel power assisted disc brakes without anti-lock (ABS), and speed-sensitive, power-assisted steering. In addition, the Crown Victoria was equipped with a supplemental driver's side air bag system which deployed during the crash. The vehicle was not inspected, therefore the mileage and the vehicle identification number were unknown. The driver did state that his Department received the vehicles in December, 1992, approximately eight months prior to the crash.

Driver Data

The driver of the Crown Victoria in this particular crash was interviewed at his attorney's office on November 3, 1994, approximately 15 months after the crash. At the time of the crash, the driver was a 35 year old male with a stated height of 72" and a weight of 170 lbs. He had been employed as a uniformed police officer for approximately eight years with the Town of Harrison Police Department. The driver stated that he received his driver training at the police academy during the fall of 1986. This consisted of defensive driving and pursuit driving training.

The driver stated that his personal experience with the 1992 Ford Crown Victoria police fleet began in December of 1992, when his department received five or six Crown Victoria marked police vehicles. He had driven all of the available Crown Victorias during the eight months prior to the crash. His complaints concerning the vehicles included a soft suspension during turning maneuvers and a poor response in the steering wheel. The driver stated that the Department's previous Chevrolet police vehicles, in their well used condition, handled better than the new Ford Crown Victorias.

The reconstructions of the pre-crash and crash events were derived from an extensive interview with the driver of the Crown Victoria, a review of the Police Accident Report and reconstruction, and police reported statements from witnesses to the crash.

Driver's Scenario

The driver stated that he reported to duty for his assigned shift as a police officer at 2345 hours. Following their initial in-house duties, he and his partner entered their assigned patrol vehicle and proceeded in a southerly direction toward their patrol post. Within minutes of their departure from the Departmental Headquarters, they received a call that came in over the 911 system involving a man with a gun. They initiated a U-turn and proceeded in a northerly direction in response to the emergency call.

The driver stated that he was traveling in a northerly direction while his partner controlled the overhead emergency lights and communicated with dispatch over the police radio. He estimated his travel speed at 45 mph as he approached the intersection. The driver stated that as he approached the intersection, the overhead signal was in a green phase for northbound and southbound traffic. He backed off the accelerator pedal as he prepared to pass through the intersection with the vehicle's emergency equipment (lights and siren) activated.

On his approach to the intersection, the driver observed a southbound vehicle at the intersection in the left turn lane. This vehicle initiated a left turn across the northbound travel lane and stopped as its driver apparently detected the approaching police vehicle. The driver of the Crown Victoria stated that as he observed the left turning vehicle stop across his lane of travel, he immediately braked "as hard as he could" and skidded approximately 80-90' in a tracking mode toward the intersection. The driver noted that his escape route to the right was blocked by the stopped vehicle

and by roadside furniture (i.e., utility poles, luminaries, etc.) at the northeast quadrant of the intersection. He noted that the southbound lanes appeared clear, therefore he released brake pedal pressure and steered the vehicle to the left in an attempt to avoid the stopped vehicle. The driver stated that he initiated the left turn maneuver with both hands on the steering wheel at the 10 and 2 o'clock positions.

The driver of the Crown Victoria stated that as he initiated the left steering input, the right side door area of the Crown Victoria contacted the right rear corner area of the stopped vehicle in a minor sideswipe type collision. The driver stated that the resultant damage to his vehicle consisted of faint paint transfers on the doors of the Crown Victoria. He noted that the impact did not alter the trajectory or deflect the Crown Victoria. At this point, he also noted that there was a limousine stopped in the left turn lane directly behind the stopped left turning vehicle.

The driver stated that he attempted a right steering maneuver as he approached the stopped limousine in order to pass the limousine on its right. He had intended on passing the limousine on its right side and steering back into the northbound travel lanes to proceed on the emergency call. As he initiated the right steering input, he stated that he experienced the steering anomaly and the wheel bound and would not turn to he right. He maintained the right steering torque as the vehicle continued forward. The driver further stated that he attempted the right steering input without applying the brakes.

The driver stated that the right front corner area of the Crown Victoria impacted the right front corner area of the stopped limousine. He stated that the impact with the limousine was minor and again, it did not alter the trajectory of his vehicle. Following the minor severity impact sequence with the limousine, the driver maintained the right steering torque as the vehicle continued in a northwesterly direction. He stated that the vehicle continued in a tracking mode and crossed the southbound travel lane.

The driver stated that as he maintained the right steering torque, the wheel subsequently turned to the right, however, the vehicle did not respond to the steering input. The vehicle continued on a straight line trajectory, without a braking force applied to the pedal, and traversed the southbound travel lane. The driver stated that the vehicle departed the west road edge and the center frontal area of the Crown Victoria subsequently impacted a utility pole that was located several feet outboard of the travel lane and approximately 75-125' north of the intersection. He estimated the impact speed of the Crown Victoria at 20 mph. The driver stated that the impact deployed the driver's side air bag system.

He was not wearing the manual 3-point lap and shoulder belt system. The driver initiated a forward trajectory and contacted the deployed air bag and additional interior components of the vehicle. As a result, the driver sustained a fractured right patella, tears of the anterior and posterior cracked ligaments, meniscus damage in the left knee, and soreness over the shoulders and lower back. The right knee injury required two surgeries to repair the damage.

The right front occupant of the Crown Victoria was a 28 year old male. He was not wearing the manual 3-point lap and shoulder belt system. This occupant reportedly sustained moderate level injuries. Both occupants of the Crown Victoria were transported by ambulance to a local hospital where they received treatment for their injuries. The Crown Victoria sustained disabling damage from the pole impact and was towed from the scene. The stopped left turning vehicle fled the scene following the crash and was not identified. The limousine sustained minor damage from its involvement with the Crown Victoria and was driven from the scene. The Crown Victoria was considered a total loss by the insurance company.

Police Investigation/Reconstruction

The Town of Harrison Police Department investigated the crash. A copy of the State Accident Report (MV-104A) and the police supplemental report was obtained through the Chief's office. Inclusive in these reports were a police narrative of the crash and the events which contributed to it, statements from the driver of the Crown Victoria, driver of the limousine and his passenger, and the police reconstruction of the crash which included a speed estimated from the skid marks at the scene.

The investigating officer noted on the MV-104A that the driver and passenger of the Crown Victoria both stated that they were traveling in a northbound direction in response to an emergency police call with the emergency lights and siren activated. An unknown vehicle was involved, but they could not determine which direction the vehicle had come from. On the supplemental form dated August 26, the driver of the Crown Victoria confirmed that the narrative and the data reported on the MV-104A as correct.

The police reconstructionist identified and documented approximately 81.8' of right rear wheel skid marks on the road surface. He noted that 55.1' of the mark occurred on an asphalt road surface while the remaining 26.7' was located on a gravel surface. The accident schematic included with the supplemental report did not identify the location of the gravel surface. Using a basic skid-to-stop formula, the police reconstructionist computed a minimum initial velocity of the Crown Victoria at 28-32 mph on the asphalt road surface. He further noted that the initial minimum speed was between 34 and 39 mph when he factored into the equation the additional skid distance across the gravel surface. This computation was based on the equivalent speed loss through full locked wheel braking.

Calspan Reconstruction/Scenario

The Calspan reconstruction of the events that contributed to the crash were based upon all available sources which included the police report, the supplemental accident report, and an extensive interview with the driver of the Crown Victoria.

The police report was extremely vague and did not provide detailed information regarding driver statements and available evidence at the crash scene. The documented 81.8' of right rear skid marks suggests that the vehicle was in a locked wheel skid pattern that began in the northbound travel lane at the mouth of the intersection and continued across the southbound travel lanes before ending at

the struck utility pole. The reconstructionist computed a minimum velocity for the Crown Victoria based on this scenario. This would indicate that the driver initiated avoidance action by steering to the left, then braking with sufficient force to lock the wheel(s) of the Crown Victoria in an attempt to avoid the left turning vehicle that stopped across his lane of travel. If the brakes were applied with sufficient force to lock the wheels at this point and pedal pressure was maintained to the subsequent impact with the utility pole, than the vehicle would not have responded to the steering inputs during this locked skid pattern.

The driver's statement of the crash does not coincide with the evidence documented by the police reconstructionist. First, the driver stated that he initially braked "as hard as he could" on his approach to the intersection and skidded an estimated distance at 80-90'. His skid distance was based on police reported documentation that was either not included with this supplemental report or was misinterpreted as the 81.8' of right rear skid mark that was located between the intersection and the struck pole. An average of 85' of skidding on the dry asphalt surface with an estimated coefficient of friction of .65 would equate to an equivalent velocity loss (skid to a stop) of 40.7 mph. Following this maneuver, the driver stated that he backed off the brakes and steered to the left in an attempt to avoid the stopped left turning vehicle. The impact with the stopped vehicle (based on driver reported damage) probably resulted in a minimal speed loss of 2-3 mph. The second closely spaced impact with the limousine resulted in an estimated barrier equivalent deceleration of 5-8 mph. The driver of the Crown Victoria stated that the final leg of this sequence involved the vehicle traversing the southbound travel lanes without driver induced braking. Therefore, engine braking over the police reported distance of 81.8', which was the approximate distance between the initial brake release and the pole impact would have resulted in a estimated deceleration of approximately 2-3 mph. The driver subsequently estimated the pole impact speed at 20 mph which appears to be within range of the injury severity, air bag deployment, and vehicle damage outcome (total loss). These combined decelerations, both initial braking and impact related, equated to an initial speed of 45.9 mph.

The driver's initial speed does not appear to be excessive based on the two methods of speed reconstruction. Both should be regarded as estimates since the scene evidence identification and documentation was inexplicit.

At this point, the discussion must focus on the steering input and behavior of the vehicle. Again, supportive data for this discussion is limited to the driver interview statements and the data recorded on the police reports.

The driver stated that he initially braked in an attempt to avoid the left turning vehicle, then released pedal pressure and steered to the left into the southbound lanes. Following the initial left steering input, the Crown Victoria contacted the stopped vehicle resulting in sideswipe type damage to the right door area of his vehicle. The driver stated that he immediately applied a CW steering input in an attempt to redirect the vehicle on a path that was parallel to the roadway and reenter the northbound travel lane. At the initiation of this input, the driver stated that he experienced the steering anomaly which caused the steering wheel to bind, thus preventing the right turn maneuver.

One possible issue of concern is that if the driver detected the stopped limousine prior to impact, why would he attempt to steer toward the vehicle when he had a subsequent impact with it. A successful CW steering input would have probably increased the severity of the off-set, head-on crash sequence with the stopped limousine. Secondly, the driver stated that he experience the steering anomaly as he applied the CW steering input and that he maintained a CW steering torque on the wheel following impact with the stopped limousine. He further stated that as the vehicle continued in a northwesterly direction on a trajectory toward the utility pole, the steering anomaly dissipated and he was able to turn the steering wheel in a CW direction, however, the vehicle did not respond to the steering maneuver. The driver stated that this transpired as the vehicle tracked in a free-roll mode without him applying a brake pedal force. Unless there was a mechanical separation within the steering assembly, the front wheels should have turned in a CW direction as the driver turned the wheel to the right and at the estimated speed of 20 mph, the vehicle should have responded. A sufficient braking force which locked the front wheels would have prevented the vehicle from responding from the CW steering input.

An additional area that needs to be addressed is the 81.8' of documented right rear skid mark by the police reconstructionist. Several possible scenarios could explain this mark. First, as previously discussed, this mark does match the description of events that was relayed by the driver of the vehicle. This mark was located between the second impact event with the stopped limousine and the final crash sequence with the struck utility. The police noted that it was a skid mark, however, the driver stated that he did not apply the brakes between the second and third impact sequences. Therefore, the documented tire mark could have been a yaw mark that was deposited on the asphalt and gravel road surfaces as the driver applied a CCW steering input. The other possibility to describe this mark would be braking and since there was only one mark documented, there was the possibility that there was brake imbalance in the vehicle which allowed the right rear to lock while the remaining three wheels continued to rotate. However, based on the driver estimated speed of 20 mph, the vehicle would have braked to a stop prior to impact with the utility pole.

It was also possible that the driver initially braked prior to impact with the left turning vehicle as he stated during the interview, and that these tire marks (if visible on the asphalt road surface) were not observed or documented by the police reconstructionist. The driver could have backed off the brakes and successfully initiated a CCW steering input in an attempt to avoid the left turning vehicle, and reapplied the brakes as the vehicle continued on its trajectory toward the pole. This would account for one of two scenarios. The level of braking prior to impact with the left turning vehicle was overstated by the driver and as a result, there was a minimal loss of vehicle speed. Therefore, vehicle speed en route to the utility pole was greater than the driver estimated speed of 20 mph. The equivalent speed loss (skid to a stop) for the documented 81.8' of skid mark over the asphalt and gravel surfaces would equate to 37.3 mph. With the estimated velocity change of 20 mph factored in to this reconstruction, the Crown Victoria's speed following impact with the stopped limousine would have been approximately 42.3 mph. Therefore, the driver's initial travel speed estimate was understated, or his level of initial braking was overstated. The lack of police

photographs of the 81.8' of physical evidence to clarify the type of right rear tire mark allows for the possibility of these reconstructions for this crash sequence.

The final phase of this evaluation is to review the possible role of the power steering anomaly that the driver alleged contributed to the causation of the third impact sequence with the struck pole. He stated that the anomaly occurred as he attempted to steer the vehicle in a CW direction which followed a CCW steering input. He stated that this occurred as the vehicle was traveling at an estimated speed of 20 mph without a braking force applied to the vehicle. As he applied the CW steering input, he alleged that he experienced the anomaly which caused the wheel to bind, thus preventing him from completing the steering maneuver and redirecting the vehicle on a path parallel to the travel lanes. As the vehicle continued in a tracking mode toward the utility pole, the driver stated that he maintained a right steering torque. The steering wheel subsequently responded to the input and turned in a CW direction, however, the driver stated that the vehicle did not respond. As previously noted, there were two possible scenarios to explain why the vehicle failed to respond to the CW steering input. There was either a malfunction in the steering system which resulted in a physical separation of the components; or the front wheels were locked due to brake application which caused the tires to slid on the road surfaces and not respond to the steering input. There was no report of a steering component failure, however, the police reconstructionist did identify right rear skid marks en route to the struck pole which indicated the probability of brake application by the driver. If this right rear skid mark was a CCW yaw mark, then the yaw was initiated by a CCW steering input with probable application.

Based on the documented physical evidence by the police reconstructionist, there is an apparent discrepancy between the driver's reconstruction of the sequence of events and the police reconstruction. The single right rear skid mark that was documented by the police, in combination with the lack of photographic documentation, and driver testimony, allow for several possible scenarios of the vehicle's travel path and initial velocity. It was doubtful from these data sources that the steering anomaly contributed to the impact sequence with the utility pole.

Page 1 of 1 Pages

New York State Department of Motor Vehicles
POLICE ACCIDENT REPORT
MV-104A (2/81) DMV COPY

93R01311
Copy sent 8/12/93 -469

Local Codes: 93A0469 / HRP932230005 / 753A

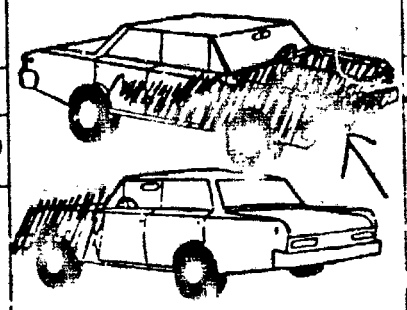
Accident Date (Mo/Day/Year)	Day of Week	Time	AM/PM	No of Vehicles	No Injured	No. Killed	Non-Highway	Not Investigated at Scene	Left Scene	Police Photos
08/11/93	WED	1245	☑ AM ☐ PM	2	2	0	☐	☐	☐	☑ Yes ☐ No

VEHICLE 1

Name — exactly as printed on license: SCHIRMER, PETER
Number and Street: C/O 650 NORTH ST
City: HARRISON State: N.Y. Zip Code: 10528
Date of Birth: 05/16/58 (Mo/Day/Year) Sex: M Unlicensed: ☐ No of Occup: 2 Public Property Damaged: ☐ State of License: N.Y
Name — exactly as printed on registration: TOWN of HARRISON
Date of Birth (Mo/Day/Year):
Number and Street: 1 HEINEMAN PL
Hazardous Material Code:
City: HARRISON State: N.Y. Zip Code: 10528
Plate Number: 47 State of Reg: — Yr. & Vehicle Make: 1992 FORD Vehicle Type: 4D Ins. Code: 183

Check if involved vehicle:
☐ is more than 95 inches wide;
☐ is more than 34 feet long;
☐ was operated with an overweight permit;
☐ was operated with an overdimension permit.

VEHICLE 1 DAMAGE



☐ No Damage ☐ Undercarriage

Vehicle Towed By VALENTINOS To TOWN GARAGE

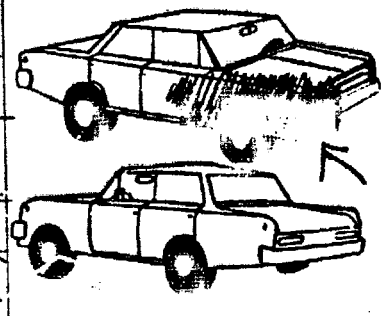
VEHICLE 2

☐ BICYCLIST ☐ PEDESTRIAN

Name — exactly as printed on license: GASPARRE, LOUIS J
Number and Street: 312A STERLING CT
City: POUGHQUAG State: N.Y. Zip Code: 12670
Date of Birth: 08/06/52 (Mo/Day/Year) Sex: M Unlicensed: ☐ No. of Occup: 2 Public Property Damaged: ☐ State of License: N.Y
Name — exactly as printed on registration: P & E PROPERTIES INC
Date of Birth (Mo/Day/Year):
Number and Street: PILGRAM Rd
Hazardous Material Code: N
City: RYE State: N.Y. Zip Code: 10580
Plate Number: N7M-339 State of Reg: N.Y Yr. & Vehicle Make: 1992 CADL Vehicle Type: 4DSD Ins. Code: 631

Check if involved vehicle:
☐ is more than 95 inches wide;
☐ is more than 34 feet long;
☐ was operated with an overweight permit;
☐ was operated with an overdimension permit.

VEHICLE 2 DAMAGE

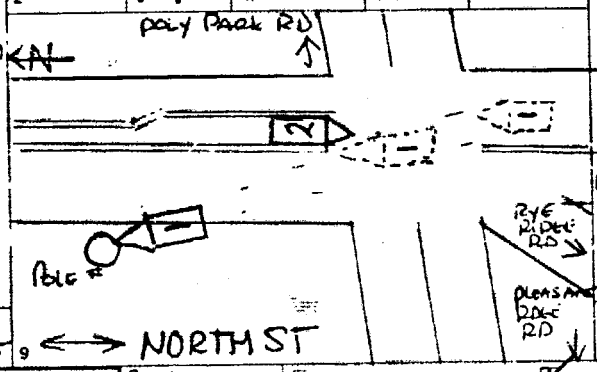


☐ No Damage ☐ Undercarriage

Vehicle Towed By VALENTINOS To SAME

ACCIDENT DIAGRAM

Rear End (1) | Left Turn (3) | Right Angle (4) | Right Turn (5) | Head On (7)
Overtaking (2) | Left Turn (0) | | Right Turn (6) | Sideswipe (8)



9 ⟷ NORTH ST

Reference Marker:
DMV USE ONLY:
County: WESTCHESTER ☐ City ☑ Town: HARRISON ☐ Village
Route No and Street Name: on NORTH ST
☐ Miles ☐ Feet ☐ N ☐ S ☐ E ☐ W of ☑ At Intersection with: Poly Park Rd
Nearest Intersecting Route/Street

Ticket/Arrest: ☐ Opr 1 ☐ Opr 2 ☐ Other ☐ Pedestrian ☐ Bicyclist
Ticket/Arrest Number(s):
Violation Section(s):

Accident Description/Officer's Notes

NOTE: DRIVER & PASSENGER OF VEH (2) STATED that AN UNKNOWN VEH (3) WAS INVOLVED BUT COULD NOT DETERMINE which direction it came from

- DRIVER & PASSENGER OF VEH (1) STATED that THEY WERE TRAVELING NORTH ON NORTH ST in RESPONSE to AN EMERGENCY CALL. USING BOTH EMERGENCY LIGHTS & SIRENS. UNKNOWN VEH (3) DISREGARDED EMERGENCY VEH made LEFT IN FRONT OF VEH (1), CAUSING VEH (1) TO VEER

USE COVER SHEET H

	8	9	10	11	12	13	14	15	16	17 BY	TO 18	Names - If Deceased Give Date of Death "TO THE RIGHT"
ALL INVOLVED A	1	1	7	1	35	M	11	9-12	5-6	HVAC	5919	SCHIRMER, PETER
B	1	3	1	1	28	M	1	9-12	5-6	HVAC	5919	MARRACCINI, ANTHONY
C	2	1	1	1	41	M	—	—	—	—	—	GASPARRE, LOUIS J
D	2	6	1	1	47	M	—	—	—	—	—	BERNSTEIN, RICHARD A
E												
F												
G												

SIGN HERE: Officer's Rank and Name: Det Sgt D'Amico | Badge No: 112 | Department: HPDCU | Precinct/Post Troop/Zone: — | Station/Beat/Sector: 2 | Reviewing Officer | Date/Time Reviewed

Harrison Police Department
650 North Street
Harrison, NY 10528
914-967-5110

CASE NUMBER 93A 0469
ACTIVITY NUMBER
HRP 93J30004
CASE DESCRIPTION
CLASS CODE | CLASS TYPE

PROPERTY CLERKS INVOICE

TAKEN FROM Peter Schinner
ADDRESS c/o 650 North St. CITY Harrison STATE NY ZIP 10528
TELEPHONE NUMBER HOME _____ WORK 967-5011

PROPERTY OWNER'S NAME Town of Harrison
ADDRESS _____ CITY _____ STATE _____ ZIP _____
PROPERTY OWNER'S TELEPHONE NUMBER HOME _____ WORK _____

INVOLVEMENT: F=FOUND S=SAFEKEEPING E=EVIDENCE C=CONFISCATED R=RECOVERED

ITEM	QUANTITY	INVL	DESCRIPTION	PROPERTY SUBTYPE	LOCATION
1	1	S	9mm Semi Model 5906	FPA	
2			SER # TCV 0461		
3			SMITH & WESSON		
4					
5					
6					
7					
8					
9					
10					

REMARKS:
Placed in gun Locker #2 Key Handed over to Sgt. Komansky.

DATE TURNED OVER TO PROPERTY CLERK: _____ TIME: _____
REPORTING OFFICER'S SIGNATURE: [signature] ID/BADGE NUMBER: 77/104
PROPERTY CLERK'S SIGNATURE: _____ ID/BADGE NUMBER: _____

ORIGINAL WITH REPORT SECOND COPY WITH PROPERTY THIRD COPY TO FINDER

HPD FORM 9 (REV 03/90)

Harrison Police Department
650 North Street
Harrison, NY 10528
914-967-5110

CASE NUMBER 93A0469
ACTIVITY NUMBER
HRP 93227300'04
CASE DESCRIPTION
CLASS CODE | CLASS TYPE

PROPERTY CLERKS INVOICE

TAKEN FROM Sgt. Anthony Moracciani
ADDRESS c/o 650 North St CITY Harrison STATE NY ZIP 10528
TELEPHONE NUMBER HOME _____ WORK 967-5111

PROPERTY OWNER'S NAME Town of Harrison
ADDRESS _____ CITY _____ STATE _____ ZIP _____
PROPERTY OWNER'S TELEPHONE NUMBER HOME _____ WORK _____

INVOLVEMENT: F=FOUND S=SAFEKEEPING E=EVIDENCE C=CONFISCATED R=RECOVERED

ITEM	QUANTITY	INVL	DESCRIPTION	PROPERTY SUBTYPE	LOCATION
1	1	S	Sw&W 9M semi # TCV1705	FPA	
2			Model 5904		
3					
4			SMITH & WESSON		
5					
6					
7					
8					
9					
10					

REMARKS: Placed in gun locker # 1 Keys Handed over to Sgt. Lunardy

DATE TURNED OVER TO PROPERTY CLERK: _____ TIME: _____
REPORTING OFFICER'S SIGNATURE: [signature] ID/BADGE NUMBER: 77/13-4
PROPERTY CLERK'S SIGNATURE: _____ ID/BADGE NUMBER: _____

ORIGINAL WITH REPORT | SECOND COPY WITH PROPERTY | THIRD COPY TO FINDER

HPD FORM 9 (REV. 03/90)

T90

CASE NUMBER 93R01311

ACTIVITY NUMBER HRP 93-238-00 24

CASE DESCRIPTION Supplementary

CLASS CODE 8805 | CASE TYPE P

HOW RECEIVED
☑ CALL FOR SERVICE
☐ OFFICER INITIATED
☐ COUNTER REPORT

☐ ORIGINAL
☑ SUPPLEMENT

INCIDENT REPORT

Harrison Police Department
650 North Street
Harrison, New York 10528
967-5111

DOMESTIC VIOLENCE ☐ YES ☑ NO
SUBSTANCE RELATED ☐ YES ☐ NO
WEAPON TYPE

REPORTED DATE 8/26/93 1250 HRS

OCCURRED FROM 8/11/93 0025 HRS
TO — — HRS

DESK OFFICER P.O. Hussett

PATROL OFFICER Sgt. S. Carpiniello

CASE NUMBER 93R01311

LOCATION

INCIDENT LOCATION

NBR	STREET NAME	TYPE	DIR	APT.	SECTOR
	North / Pleasantridge	Ln			3

☐ BLOCK ☐ COMMERCIAL BLDG. ☐ PUBLIC BLDG. ☐ SCHOOL ☐ COUNTRY CLUB/GROUNDS
☑ INTERSECTION ☐ INDUSTRIAL BLDG. ☐ PUBLIC PARK ☐ BANK ☐ OTHER
☐ PRIVATE HOME ☐ MULTI DWELLING ☐ PARKING LOT ☐ CHURCH

PERSONS

PERSON INVOLVEMENT CODES

C - COMPLAINANT, D - DRIVER, E - EMPLOYEE, F - FINDER, I - INJURED / AIDED, K - AKA, M - MISSING PERSON, O - OWNER, P - POLICE OFFICER, R - REPORTING PERSON, S - SUSPECT, V - VICTIM, W - WITNESS, X - WARRANT, Z - OTHER

PERSON	LAST NAME	FIRST	MI	ADDRESS
1	Schirmer	Peter		650 North St. Harrison, N.Y.

CODE	HOME PHONE	BUSINESS PHONE	OCCUPATION
R	835-0922	967-5113	

RACE	SEX	DOB	AGE	HGT	WGT	EYES	HAIR	COMPLEXION
W	M	5/16/58						

RACE CODES: A - ASIAN/ORIENTAL, B - BLACK, H - HISPANIC, I - AMERICAN INDIAN, O - OTHER, W - WHITE

PERSON	LAST NAME	FIRST	MI	ADDRESS

CODE	HOME PHONE	BUSINESS PHONE	OCCUPATION

RACE	SEX	DOB	AGE	HGT	WGT	EYES	HAIR	COMPLEXION

PERSON	LAST NAME	FIRST	MI	ADDRESS

CODE	HOME PHONE	BUSINESS PHONE	OCCUPATION

RACE	SEX	DOB	AGE	HGT	WGT	EYES	HAIR	COMPLEXION

Narrative: (Print or Type Only)

On the above dates & times while on patrol I was involved in a motor vehicle accident as per accident report # 93R04693. Injuries suffered include the following. Neck & back pain, severe leg injury.

PROPERTY

PROPERTY INVOLVEMENT CODES

C - CONFISCATED · E - EVIDENCE · I - IMPOUNDED · L - LOST · R - RECOVERED · U - UNKNOWN · Z - OTHER
D - DAMAGE · F - FOUND · K - SAFEKEEPING · S - STOLEN · X - DESTROYED · T - RETURNED TO OWNER

ITEM	STATUS	QUANTITY	DESCRIPTION	MFG NAME	SERIAL NUMBER	VALUE
1						
2						
3						
4						
5						
6						

VEHICLES

VEHICLE INVOLVEMENT CODES

A - ABANDONED · H - 24 HOURS · N - UNAUTHORIZED USE · U - UNKNOWN · X - SCOFFLAW
D - DAMAGED · I - IMPOUNDED · R - RECOVERED · V - DISABLE · Y - RELEASE FROM IMPOUND
F - LARCENY FROM · M - REPOSSESSED · S - STOLEN · W - SUSPECT · Z - OTHER
8 - V & T STOP

VEH NBR	LICENSE	STATE	TYPE	EX. MO.YR	VEH YR.	MAKE	MODEL	STYLE	COLOR(S)	TYPE

CODE	VIN	VEHICLE CONDITION	DAMAGE LOCATION	DATE & TIME TOWED	BY/TO

VEH NBR	LICENSE	STATE	TYPE	EX. MO.YR	VEH YR	MAKE	MODEL	STYLE	COLOR(S)	TYPE

CODE	VIN	VEHICLE CONDITION	DAMAGE LOCATION	DATE & TIME TOWED	BY/TO

MO

M.O. / SOLVABILITY INFORMATION

MODE OF ENTRY	POINT OF ENTRY	STRUCTURE TYPE	VICTIM'S ACTIVITY BEFORE CRIME	TARGET(S)

SUSPECT'S ACTIVITIES DURING CRIME	SECURITY USED
INVESTIGATION	**EVIDENCE OBTAINED**

WAS SUSPECT ARRESTED		WITNESS TO CRIME		ALL CRIME ELEMENTS PRESENT	
CAN SUSPECT BE NAMED		SIGNIFICANT MO		MAJOR INJURY OR RAPE INVLD	
CAN SUSPECT BE LOCATED		PROPERTY TRACEABLE		CAN SUSPECT BE IDENTIFIED	
CAN SUSPECT BE DESCRIBED		SIGN PHYS EVIDENCE		CAN SUSP VEH BE IDENTIFIED	

IS THERE SIGNIFICANT REASON TO BELIEVE THIS CRIME CAN BE SOLVED ? _____

ASSISTING OFFICERS _____

INVESTIGATING OFFICER SIGNATURE _____ OFF NBR 47 DATE/TIME 8-26-93

CASE STATUS CODE

A - ACTIVE · E - EXCEPTIONAL CLEARANCE
C - CLEARED BY ARREST · F - FILE
D - UNFOUNDED · S - SUMMONS ISSUED

CODE	REVIEWING OFFICER	DATE AND TIME	FORWARD COPIES TO
A	Sgt. M. Burchett	8/26/93 - 1859	
		DATA ENTRY BY	DATE
		BH G	8/27/93

HPD FORM 1 REV 2/92

T11

SE NUMBER 93AO 469

ACTIVITY NUMBER
HRP 93122300 06

CASE DESCRIPTION
Assistance

CLASS CODE 8001 | CASE TYPE A

HOW RECEIVED
☐ CALL FOR SERVICE
☒ OFFICER INITIATED
☐ COUNTER REPORT

☐ ORIGINAL
☒ SUPPLEMENT

INCIDENT REPORT

Harrison Police Department
650 North Street
Harrison, New York 10528
967-5111

DOMESTIC VIOLENCE ☐ YES ☒ NO
SUBSTANCE RELATED ☐ YES ☒ NO
WEAPON TYPE

REPORTED
DATE 08-11-93 0030 HRS

OCCURRED
FROM 08-11-93 0030 HRS
TO 08-11-93 0330 HRS

DESK OFFICER P.O. Marshall

PATROL OFFICER Sgt. Kamensky

CASE NUMBER 1 MINUTE

LOCATION

INCIDENT LOCATION

NBR | STREET NAME: NORTH / POINT PARK | TYPE: INT | DIR | APT. | SECTOR: 3

☐ BLOCK ☐ COMMERCIAL BLDG. ☐ PUBLIC BLDG ☐ SCHOOL ☐ COUNTRY CLUB/GROUNDS
☒ INTERSECTION ☐ INDUSTRIAL BLDG. ☐ PUBLIC PARK ☐ BANK ☐ OTHER
☐ PRIVATE HOME ☐ MULTI DWELLING ☐ PARKING LOT ☐ CHURCH

PERSONS

PERSON INVOLVEMENT CODES

C - COMPLAINANT, D - DRIVER, E - EMPLOYEE, F - FINDER, I - INJURED / AIDED, K - AKA, M - MISSING PERSON, O - OWNER, P - POLICE OFFICER, R - REPORTING PERSON, S - SUSPECT, V - VICTIM, W - WITNESS, X - WARRANT, Z - OTHER

PERSON	LAST NAME	FIRST	MI	ADDRESS
CODE	HOME PHONE	BUSINESS PHONE		OCCUPATION

RACE	SEX	DOB	AGE	HGT	WGT	EYES	HAIR	COMPLEXION

RACE CODES
A - ASIAN/ORIENTAL, B - BLACK, H - HISPANIC, I - AMERICAN INDIAN, O - OTHER, W - WHITE

PERSON	LAST NAME	FIRST	MI	ADDRESS
CODE	HOME PHONE	BUSINESS PHONE		OCCUPATION

RACE	SEX	DOB	AGE	HGT	WGT	EYES	HAIR	COMPLEXION

PERSON	LAST NAME	FIRST	MI	ADDRESS
CODE	HOME PHONE	BUSINESS PHONE		OCCUPATION

RACE	SEX	DOB	AGE	HGT	WGT	EYES	HAIR	COMPLEXION

Narrative (Print or Type Only)

Responded to above location to assist Sgt. Kamensky at the accident scene. I then responded to P.O. Schirmers residence at 0200 hrs. and took his wife to St. Agnes Hospital AT 0315 hrs. I then followed Valentinos to the town garage where he dropped off vehicle #47. I then took the keys to car #47 back to headquarters.

PROPERTY

PROPERTY INVOLVEMENT CODES

C - CONFISCATED · E - EVIDENCE · I - IMPOUNDED · L - LOST · R - RECOVERED · U - UNKNOWN · Z - OTHER
D - DAMAGE · F - FOUND · K - SAFEKEEPING · S - STOLEN · X - DESTROYED · T - RETURNED TO OWNER

ITEM	STATUS	QUANTITY	DESCRIPTION	MFG NAME	SERIAL NUMBER	VALUE
1	N/A					
2						
3						
4						
5						
6						

VEHICLES

VEHICLE INVOLVEMENT CODES

A - ABANDONED · D - DAMAGED · F - LARCENY FROM · H - 24 HOURS · I - IMPOUNDED · M - REPOSSESSED · N - UNAUTHORIZED USE · R - RECOVERED · S - STOLEN · U - UNKNOWN · V - DISABLE · W - SUSPECT · X - SCOFFLAW · Y - RELEASE FROM IMPOUND · Z - OTHER · 8 - V & T STOP

VEH NBR	LICENSE	STATE	TYPE	EX MO YR	VEH YR	MAKE	MODEL	STYLE	COLOR(S)	TYPE
N/A										

CODE	VIN	VEHICLE CONDITION	DAMAGE LOCATION	DATE & TIME TOWED	BY/TO

VEH NBR	LICENSE	STATE	TYPE	EX MO YR	VEH YR	MAKE	MODEL	STYLE	COLOR(S)	TYPE

CODE	VIN	VEHICLE CONDITION	DAMAGE LOCATION	DATE & TIME TOWED	BY/TO

MO

M.O. / SOLVABILITY INFORMATION

MODE OF ENTRY	POINT OF ENTRY	STRUCTURE TYPE	VICTIM'S ACTIVITY BEFORE CRIME	TARGET(S)
N/A				

SUSPECT'S ACTIVITIES DURING CRIME	SECURITY USED
INVESTIGATION	**EVIDENCE OBTAINED**

WAS SUSPECT ARRESTED	N/A	WITNESS TO CRIME	N/A	ALL CRIME ELEMENTS PRESENT	N/A
CAN SUSPECT BE NAMED		SIGNIFICANT MO		MAJOR INJURY OR RAPE INVLD	
CAN SUSPECT BE LOCATED		PROPERTY TRACEABLE		CAN SUSPECT BE IDENTIFIED	
CAN SUSPECT BE DESCRIBED		SIGN PHYS EVIDENCE		CAN SUSP VEH BE IDENTIFIED	

IS THERE SIGNIFICANT REASON TO BELIEVE THIS CRIME CAN BE SOLVED ? _____

ASSISTING OFFICERS _____

INVESTIGATING OFFICER SIGNATURE Marinelli III, Marinelli III OFF NBR 86 DATE/TIME 05-11-93 0330

CASE STATUS CODE

A - ACTIVE · C - CLEARED BY ARREST · D - UNFOUNDED · E - EXCEPTIONAL CLEARANCE · F - FILE · S - SUMMONS ISSUED

CODE	REVIEWING OFFICER	DATE AND TIME	FORWARD COPIES TO
F	[signature]	05-11-93 0905 HRS	FILE
		DATA ENTRY BY	DATE
		[illegible]	5/12/93

HPD FORM 1 REV 2/92

T11

CASE NUMBER 93A0469

ACTIVITY NUMBER HRP 93~~231001~~ 2230006

CASE DESCRIPTION SUPP REPORT

CLASS CODE 580 S | CASE TYPE A

HOW RECEIVED
☐ CALL FOR SERVICE
☒ OFFICER INITIATED
☐ COUNTER REPORT
☐ ORIGINAL
☒ SUPPLEMENT

INCIDENT REPORT

Harrison Police Department
~~650~~ North Street
Harrison, New York 10528
~~967~~-5111

PG 1 OF 3

DOMESTIC VIOLENCE ☐ YES ☐ NO
SUBSTANCE RELATED ☐ YES ☐ NO
WEAPON TYPE

REPORTED DATE 08-11-93 0045 HRS
OCCURRED FROM 08-11-93 0045 HRS
TO 08-11-93 — HRS
DESK OFFICER SGT KAMENSKY
PATROL OFFICER NA

CASE NUMBER 93A0469

LOCATION

INCIDENT LOCATION
650 NBR | NORTH STREET NAME | ST TYPE | X DIR | X APT. | 3 SECTOR

☐ BLOCK ☐ COMMERCIAL BLDG. ☐ PUBLIC BLDG. ☐ SCHOOL ☐ COUNTRY CLUB/GROUNDS
☐ INTERSECTION ☐ INDUSTRIAL BLDG. ☐ PUBLIC PARK ☐ BANK ☐ OTHER
☐ PRIVATE HOME ☐ MULTI DWELLING ☐ PARKING LOT ☐ CHURCH

PERSONS

PERSON INVOLVEMENT CODES
C - COMPLAINANT, D - DRIVER, E - EMPLOYEE, F - FINDER, I - INJURED / AIDED, K - AKA, M - MISSING PERSON, O - OWNER, P - POLICE OFFICER, R - REPORTING PERSON, S - SUSPECT, V - VICTIM, W - WITNESS, X - WARRANT, Z - OTHER

PERSON	LAST NAME	FIRST	MI	ADDRESS
1	GASPARRE	LOUIS	J	312 STERLING CT. POUGHQUAG
CODE: N	HOME PHONE: —	BUSINESS PHONE: —		OCCUPATION: LIMO DRIVER
RACE: W	SEX: M	DOB: 08-06-52	AGE: 41	HGT: — WGT: — EYES: — HAIR: — COMPLEXION: —

RACE CODES
A - ASIAN/ORIENTAL, B - BLACK, H - HISPANIC, I - AMERICAN INDIAN, O - OTHER, W - WHITE

PERSON	LAST NAME	FIRST	MI	ADDRESS
2	BERNSTEIN	RICHARD	A	5 PILGRAM Rd RYE N.Y.
CODE: W	HOME PHONE: —	BUSINESS PHONE: —		OCCUPATION: —
RACE: W	SEX: M	DOB: —	AGE: —	HGT: — WGT: — EYES: — HAIR: — COMPLEXION: —

PERSON	LAST NAME	FIRST	MI	ADDRESS
3	SCHIRMER	PETER		650 NORTH ST. HARRISON
CODE: D-I	HOME PHONE: —	BUSINESS PHONE: 967-5111		OCCUPATION: POLICE OFFICER
RACE: W	SEX: M	DOB: —	AGE: —	HGT: — WGT: — EYES: — HAIR: — COMPLEXION: —

Narrative: (Print or Type Only)

ON THE DATE of 08-11-93 THIS WRITER SPOKE WITH BOTH PERSON (1) & (2) WHO WERE WITNESSES IN ACCIDENT INVOLVING THIER VEH. and a POLICE VEH ALSO AN UNKNOWN THIRD VEH. PERSON (1) STATED THAT THERE WAS a third UNKNOWN VEH INVOLVED BUT he was unable to determine which direction said VEH Came from. HE STATED that said VEH PAST him TRAVELING DOWN NORTH ST TOWARD WHITE plains. AT THE SAME TIME HE OBSERVED POLICE VEH. coming at him with lights and SIREN. AT which TIME POLICE VEH STRUCK his car (SEE VEH 1) THEN STRIKING POLE.

PERSON (2) STATED THERE was a third VEH INVOLVED BUT DUE to THE INCIDENT occuring SO FAST he was

PROPERTY

PROPERTY INVOLVEMENT CODES

C - CONFISCATED · E - EVIDENCE · I - IMPOUNDED · L - LOST · R - RECOVERED · U - UNKNOWN · Z - OTHER
D - DAMAGE · F - FOUND · K - SAFEKEEPING · S - STOLEN · X - DESTROYED · T - RETURNED TO OWNER

ITEM	STATUS	QUANTITY	DESCRIPTION	G NAME	SERIAL NUMBER	VALUE
1						
2						
3						
4						
5						
6						

VEHICLES

VEHICLE INVOLVEMENT CODES

A - ABANDONED · D - DAMAGED · F - LARCENY FROM · H - 24 HOURS · I - IMPOUNDED · M - REPOSSESSED · N - UNAUTHORIZED USE · R - RECOVERED · S - STOLEN · U - UNKNOWN · V - DISABLE · W - SUSPECT · X - SCOFFLAW · Y - RELEASE FROM IMPOUND · Z - OTHER · 8 - V & T STOP

VEH NBR	LICENSE	STATE	TYPE	EX. MO YR	VEH YR.	MAKE	MODEL	STYLE	COLOR(S)	TYPE
1	NTM-339	N.Y.	P.C.	-	1992	CHOI	LIMO	-	BLK	
CODE	VIN		VEHICLE CONDITION	DAMAGE LOCATION	DATE & TIME TOWED		BY/TO			
2	-		M.O.O	FRONT RT	08-11-93		VALENTINES			
VEH NBR	LICENSE	STATE	TYPE	EX. MO YR	VEH YR.	MAKE	MODEL	STYLE	COLOR(S)	TYPE
2	47	-	-	-	1992	Ford	CRWN VIC	-	WHT.	
CODE	VIN		VEHICLE CONDITION	DAMAGE LOCATION	DATE & TIME TOWED		BY/TO			
2	-		TOTALED	FRONT	08-11-93					

MO

M.O. SOLVABILITY INFORMATION

MODE OF ENTRY	POINT OF ENTRY	STRUCTURE TYPE	VICTIM'S ACTIVITY BEFORE CRIME	TARGET(S)
SUSPECT'S ACTIVITIES DURING CRIME			SECURITY USED	
INVESTIGATION			EVIDENCE OBTAINED	

WAS SUSPECT ARRESTED _____ · CAN SUSPECT BE NAMED _____ · CAN SUSPECT BE LOCATED _____ · CAN SUSPECT BE DESCRIBED _____
WITNESS TO CRIME _____ · SIGNIFICANT MO _____ · PROPERTY TRACEABLE _____ · SIGN PHYS EVIDENCE _____
ALL CRIME ELEMENTS PRESENT _____ · MAJOR INJURY OR RAPE INVLD _____ · CAN SUSPECT BE IDENTIFIED _____ · CAN SUSP VEH BE IDENTIFIED _____

IS THERE SIGNIFICANT REASON TO BELIEVE THIS CRIME CAN BE SOLVED ? _____

ASSISTING OFFICERS _____

INVESTIGATING OFFICER SIGNATURE Det Neil E Mannix OFF NBR 62 DATE/TIME 08-25-93

CASE STATUS CODE

A - ACTIVE · C - CLEARED BY ARREST · O - UNFOUNDED · E - EXCEPTIONAL CLEARANCE · F - FILE · S - SUMMONS ISSUED

CODE	REVIEWING OFFICER	DATE AND TIME	FORWARD COPIES TO
A	Lt. DJ Bischof	8/29/93 - 1555	
		DATA ENTRY BY 519	DATE 8/26/93

HPD FORM 1 REV 2/92

NUMBER 93A0469

ACTIVITY NUMBER
HRP 932310011

CASE DESCRIPTION

CLASS CODE | CASE TYPE

HOW RECEIVED
- ☐ CALL FOR SERVICE
- ☐ OFFICER INITIATED
- ☐ COUNTER REPORT

☐ ORIGINAL
☐ SUPPLEMENT

INCIDENT REPORT

Harrison Police Department
650 North Street
Harrison, New York 10528
967-5111

Pg 2 of 3

DOMESTIC VIOLENCE ☐ YES ☐ NO
SUBSTANCE RELATED ☐ YES ☐ NO
WEAPON TYPE

REPORTED DATE — HRS

OCCURRED
FROM — HRS
TO — HRS

DESK OFFICER

PATROL OFFICER

CASE NUMBER

LOCATION

INCIDENT LOCATION

NBR | STREET NAME | TYPE | DIR | APT. | SECTOR

- ☐ BLOCK
- ☐ INTERSECTION
- ☐ PRIVATE HOME
- ☐ COMMERCIAL BLDG.
- ☐ INDUSTRIAL BLDG.
- ☐ MULT. DWELLING
- ☐ PUBLIC BLDG.
- ☐ PUBLIC PARK
- ☐ PARKING LOT
- ☐ SCHOOL
- ☐ BANK
- ☐ CHURCH
- ☐ COUNTRY CLUB/GROUNDS
- ☐ OTHER

PERSONS

PERSON INVOLVEMENT CODES

C - COMPLAINANT | D - DRIVER | E - EMPLOYEE | F - FINDER | I - INJURED / AIDED | K - AKA | M - MISSING PERSON | O - OWNER | P - POLICE OFFICER | R - REPORTING PERSON | S - SUSPECT | V - VICTIM | W - WITNESS | X - WARRANT | Z - OTHER

PERSON	LAST NAME	FIRST	MI	ADDRESS
4	MARRACCINI	ANTHONY		650 NORTH ST. HARRISON

CODE	HOME PHONE	BUSINESS PHONE	OCCUPATION
Z-I	—	967-5111	POLICE OFFICER

RACE	SEX	DOB	AGE	HGT	WGT	EYES	HAIR	COMPLEXION
W	M	—	—	—	—	—	—	—

RACE CODES
A - ASIAN/ORIENTAL | B - BLACK | H - HISPANIC | I - AMERICAN INDIAN | O - OTHER | W - WHITE

PERSON	LAST NAME	FIRST	MI	ADDRESS

CODE	HOME PHONE	BUSINESS PHONE	OCCUPATION

RACE	SEX	DOB	AGE	HGT	WGT	EYES	HAIR	COMPLEXION

PERSON	LAST NAME	FIRST	MI	ADDRESS

CODE	HOME PHONE	BUSINESS PHONE	OCCUPATION

RACE	SEX	DOB	AGE	HGT	WGT	EYES	HAIR	COMPLEXION

Narrative: (Print or Type Only)

UNABLE TO DETERMINE WHICH DIRECTION SAID VEH WAS TRAVELING FROM BUT HE DID OBSERVE UNKNOWN VEH TRAVEL PASSED HIS VEH DOWN NORTH ST TOWARD WHITE PLAINS. PERSON (1) THEN OBSERVED POLICE VEH. WHICH HE SAID APPEARED TO BE CHASING UNKNOWN VEH DUE TO THE LIGHTS AND SIRENS AND RATE OF SPEED AT THAT TIME POLICE VEH STRUCK VEH (2) THEN STRUCK POLE. PERSON (3) STATED THAT HE WAS TRAVELING UP NORTH ST TOWARD WHITE PLAINS RESPONDING TO AN EMERGENCY CALL IN WEST HARRISON. HE SAID THE LIGHT WAS GREEN AS HE WAS PROCEEDING TOWARD INTERSECTION AN UNKNOWN VEH #2 MADE A LEFT TURN IN FRONT OF HIM CAUSING HIM TO LOOSE CONTROL OF POLICE VEH. CAUSING IT TO STRIKE VEH (1)

PROPERTY INVOLVEMENT CODES

C - CONFISCATED · E - EVIDENCE · I - IMPOUNDED · L - LOST · R - RECOVERED · U - UNKNOWN · Z - OTHER
D - DAMAGE · F - FOUND · K - SAFEKEEPING · S - STOLEN · X - DESTROYED · T - RETURNED TO OWNER

PROPERTY

ITEM	STATUS	QUANTITY	DESCRIPTION	MFG NAME	SERIAL NUMBER	VALUE
1						
2						
3						
4						
5						
6						

VEHICLE INVOLVEMENT CODES

A - ABANDONED · H - 24 HOURS · N - UNAUTHORIZED USE · U - UNKNOWN · X - SCOFFLAW
D - DAMAGED · I - IMPOUNDED · R - RECOVERED · V - DISABLE · Y - RELEASE FROM IMPOUND
F - LARCENY FROM · M - REPOSSESSED · S - STOLEN · W - SUSPECT · Z - OTHER
8 - V & T STOP

VEHICLES

VEH NBR	LICENSE	STATE	TYPE	EX. MO.YR.	VEH YR.	MAKE	MODEL	STYLE	COLOR(S)	TYPE
3	UNKNOWN			—	—	—	—	—	—	
CODE	VIN			VEHICLE CONDITION		DAMAGE LOCATION		DATE & TIME TOWED		BY/TO
2	—			—		—		—		—
VEH NBR	LICENSE	STATE	TYPE	EX. MO.YR.	VEH YR.	MAKE	MODEL	STYLE	COLOR(S)	TYPE
CODE	VIN			VEHICLE CONDITION		DAMAGE LOCATION		DATE & TIME TOWED		BY/TO

M.O. / SOLVABILITY INFORMATION

MO

MODE OF ENTRY	POINT OF ENTRY	STRUCTURE TYPE	VICTIM'S ACTIVITY BEFORE CRIME	TARGET(S)
SUSPECT'S ACTIVITIES DURING CRIME			SECURITY USED	
INVESTIGATION			EVIDENCE OBTAINED	

WAS SUSPECT ARRESTED ____ · WITNESS TO CRIME ____ · ALL CRIME ELEMENTS PRESENT ____
CAN SUSPECT BE NAMED ____ · SIGNIFICANT MO ____ · MAJOR INJURY OR RAPE INVLD ____
CAN SUSPECT BE LOCATED ____ · PROPERTY TRACEABLE ____ · CAN SUSPECT BE IDENTIFIED ____
CAN SUSPECT BE DESCRIBED ____ · SIGN PHYS EVIDENCE ____ · CAN SUSP VEH BE IDENTIFIED ____

IS THERE SIGNIFICANT REASON TO BELIEVE THIS CRIME CAN BE SOLVED ? ____

THEN POLE. PERSON (3) STATED HE DID NOT HAVE SEATBELT ON. PERSON (4) STATED THEY WE WERE TRAVELING UP NORTH ST TOWARD WHITE PLAINS RESPONDING TO EMERGENCY IN WEST HARRISON AS WE WERE APPROACHING INTERSECTION OF NORTH AND POLY PARK USING BOTH LIGHTS AND SIRENS

ASSISTING OFFICERS ____

INVESTIGATING OFFICER SIGNATURE Det Ned Pillard · OFF NBR 62 · DATE/TIME 05-05-93

CASE STATUS CODE

A - ACTIVE · C - CLEARED BY ARREST · D - UNFOUNDED · E - EXCEPTIONAL CLEARANCE · F - FILE · S - SUMMONS ISSUED

CODE	REVIEWING OFFICER	DATE AND TIME	FORWARD COPIES TO
A	Lt. D. Bushell	5/25/93	UC
		DATA ENTRY BY	DATE

HPD FORM 1 REV 2/92

E NUMBER 93A0469

ACTIVITY NUMBER HRP 932310011

CASE DESCRIPTION

CCASS CODE | CASE TYPE

HOW RECEIVED
- ☐ CALL FOR SERVICE
- ☐ OFFICER INITIATED
- ☐ COUNTER REPORT

☐ ORIGINAL
☐ SUPPLEMENT

INCIDENT REPORT

Harrison Police Department
650 North Street
Harrison, New York 10528
967-5111

PS 3 & 3

DOMESTIC VIOLENCE ☐ YES ☐ NO
SUBSTANCE RELATED ☐ YES ☐ NO
WEAPON TYPE

REPORTED DATE HRS

OCCURRED
FROM HRS
TO HRS

DESK OFFICER

PATROL OFFICER

CASE NUMBER

LOCATION

INCIDENT LOCATION

NBR | STREET NAME | TYPE | DIR | APT. | SECTOR

- ☐ BLOCK
- ☐ INTERSECTION
- ☐ PRIVATE HOME
- ☐ COMMERCIAL BLDG.
- ☐ INDUSTRIAL BLDG.
- ☐ MULTI DWELLING
- ☐ PUBLIC BLDG.
- ☐ PUBLIC PARK
- ☐ PARKING LOT
- ☐ SCHOOL
- ☐ BANK
- ☐ CHURCH
- ☐ COUNTRY CLUB/GROUNDS
- ☐ OTHER

PERSONS

PERSON INVOLVEMENT CODES

C - COMPLAINANT | F - FINDER | M - MISSING PERSON | R - REPORTING PERSON | W - WITNESS
D - DRIVER | I - INJURED / AIDED | O - OWNER | S - SUSPECT | X - WARRANT
E - EMPLOYEE | K - AKA | P - POLICE OFFICER | V - VICTIM | Z - OTHER

PERSON	LAST NAME	FIRST	MI	ADDRESS
CODE	HOME PHONE	BUSINESS PHONE		OCCUPATION

RACE	SEX	DOB	AGE	HGT	WGT	EYES	HAIR	COMPLEXION

RACE CODES
A - ASIAN/ORIENTAL | B - BLACK | H - HISPANIC | I - AMERICAN INDIAN | O - OTHER | W - WHITE

PERSON	LAST NAME	FIRST	MI	ADDRESS
CODE	HOME PHONE	BUSINESS PHONE		OCCUPATION

RACE	SEX	DOB	AGE	HGT	WGT	EYES	HAIR	COMPLEXION

PERSON	LAST NAME	FIRST	MI	ADDRESS
CODE	HOME PHONE	BUSINESS PHONE		OCCUPATION

RACE	SEX	DOB	AGE	HGT	WGT	EYES	HAIR	COMPLEXION

Narrative: (Print or Type Only)

a VEH. made a LEFT TURN IN FRONT of the PATROL CAR causing P.O. SCHIEMEN to lose CONTROL of VEH which caused VEH to STRIKE VEH (1) THEN STRIKE POLE. PERSON (4) STATED HE WAS NOT USING SEAT BELT AT TIME of ACCIDENT.

PROPERTY

PROPERTY INVOLVEMENT CODES

C - CONFISCATED · D - DAMAGE · E - EVIDENCE · F - FOUND · I - IMPOUNDED · K - SAFEKEEPING · L - LOST · S - STOLEN · R - RECOVERED · X - DESTROYED · U - UNKNOWN · Z - OTHER · T - RETURNED TO OWNER

ITEM	STATUS	QUANTITY	DESCRIPTION	MFG NAME	SERIAL NUMBER	VALUE
1						
2						
3						
4						
5						
6						

VEHICLES

VEHICLE INVOLVEMENT CODES

A - ABANDONED · D - DAMAGED · F - LARCENY FROM · H - 24 HOURS · I - IMPOUNDED · M - REPOSSESSED · N - UNAUTHORIZED USE · R - RECOVERED · S - STOLEN · U - UNKNOWN · V - DISABLE · W - SUSPECT · X - SCOFFLAW · Y - RELEASE FROM IMPOUND · Z - OTHER · 8 - V & T STOP

VEH NBR	LICENSE	STATE	TYPE	EX MO YR	VEH YR	MAKE	MODEL	STYLE	COLOR(S)	TYPE
CODE	VIN		VEHICLE CONDITION	DAMAGE LOCATION	DATE & TIME TOWED		BY/TO			
VEH NBR	LICENSE	STATE	TYPE	EX MO YR	VEH YR	MAKE	MODEL	STYLE	COLOR(S)	TYPE
CODE	VIN		VEHICLE CONDITION	DAMAGE LOCATION	DATE & TIME TOWED		BY/TO			

MO

M.O. / SOLVABILITY INFORMATION

MODE OF ENTRY	POINT OF ENTRY	STRUCTURE TYPE	VICTIM'S ACTIVITY BEFORE CRIME	TARGET(S)
SUSPECT'S ACTIVITIES DURING CRIME			SECURITY USED	
INVESTIGATION			EVIDENCE OBTAINED	

WAS SUSPECT ARRESTED _____ · CAN SUSPECT BE NAMED _____ · CAN SUSPECT BE LOCATED _____ · CAN SUSPECT BE DESCRIBED _____

WITNESS TO CRIME _____ · SIGNIFICANT MO _____ · PROPERTY TRACEABLE _____ · SIGN PHYS EVIDENCE _____

ALL CRIME ELEMENTS PRESENT _____ · MAJOR INJURY OR RAPE INVLD _____ · CAN SUSPECT BE IDENTIFIED _____ · CAN SUSP VEH BE IDENTIFIED _____

IS THERE SIGNIFICANT REASON TO BELIEVE THIS CRIME CAN BE SOLVED ? _____

ASSISTING OFFICERS _____

INVESTIGATING OFFICER SIGNATURE Det Neil S Nanna OFF NBR 62 DATE/TIME 08-25-93

CASE STATUS CODE

A - ACTIVE · C - CLEARED BY ARREST · D - UNFOUNDED · E - EXCEPTIONAL CLEARANCE · F - FILE · S - SUMMONS ISSUED

CODE	REVIEWING OFFICER	DATE AND TIME	FORWARD COPIES TO
A	Lt. W. Bischel	8/25/93 - 1555	
		DATA ENTRY BY	DATE

HPD FORM 1 REV 2/92

T11

CASE NUMBER 93A04409

INCIDENT REPORT

Harrison Police Department
650 North Street
Harrison, New York 10528
967-5111

ACTIVITY NUMBER HRP 93223000#2

CASE DESCRIPTION SUPPLEMENT

CLASS CODE 8502 | CASE TYPE A

HOW RECEIVED
☐ CALL FOR SERVICE
☐ OFFICER INITIATED
☑ COUNTER REPORT

☐ ORIGINAL
☑ SUPPLEMENT

DOMESTIC VIOLENCE ☐ YES ☑ NO
SUBSTANCE RELATED ☐ YES ☑ NO
WEAPON TYPE YES

REPORTED DATE 8/11/93 0043 HRS

OCCURRED
FROM _____ _____ HRS
TO _____ _____ HRS

DESK OFFICER MARSHALL

PATROL OFFICER SGT. KAMENSKY

CASE NUMBER 93A04409

LOCATION

INCIDENT LOCATION

NBR	STREET NAME	TYPE	DIR	APT.	SECTOR
	NORTH / POLY PARK	UNT			01

☐ BLOCK ☑ INTERSECTION ☐ PRIVATE HOME
☐ COMMERCIAL BLDG. ☐ INDUSTRIAL BLDG. ☐ MULTI DWELLING
☐ PUBLIC BLDG. ☐ PUBLIC PARK ☐ PARKING LOT
☐ SCHOOL ☐ BANK ☐ CHURCH
☐ COUNTRY CLUB/GROUNDS ☐ OTHER

PERSON INVOLVEMENT CODES

C - COMPLAINANT D - DRIVER E - EMPLOYEE F - FINDER I - INJURED / AIDED K - AKA M - MISSING PERSON O - OWNER P - POLICE OFFICER R - REPORTING PERSON S - SUSPECT V - VICTIM W - WITNESS X - WARRANT Z - OTHER

PERSONS

PERSON	LAST NAME	FIRST	MI	ADDRESS
1	MARRACCINI	ANTHONY		c/o 650 North St, Harrison
CODE P	HOME PHONE	BUSINESS PHONE (914) 967-5110		OCCUPATION POLICE OFFICER

RACE	SEX	DOB	AGE	HGT	WGT	EYES	HAIR	COMPLEXION
W	M	9/15/64						

RACE CODES: A - ASIAN/ORIENTAL B - BLACK H - HISPANIC I - AMERICAN INDIAN O - OTHER W - WHITE

PERSON	LAST NAME	FIRST	MI	ADDRESS
2	SCHRAMEL	PETER		c/o 650 North St, Harrison
CODE P	HOME PHONE	BUSINESS PHONE (914) 967-5110		OCCUPATION POLICE OFFICER

RACE	SEX	DOB	AGE	HGT	WGT	EYES	HAIR	COMPLEXION
W	M	5/16/58						

PERSON	LAST NAME	FIRST	MI	ADDRESS
CODE	HOME PHONE	BUSINESS PHONE		OCCUPATION

RACE	SEX	DOB	AGE	HGT	WGT	EYES	HAIR	COMPLEXION

Narrative (Print or Type Only)

While off Duty R/O observed at Traffic Accident at above incident location involving a marked Patrol vehicle #47 at that time R/O approached Patrol vehicle to see if there were any injuries. P/1 was Bleeding from the face + P/2 was complaining of leg injury. H.V.A.C. arrived on scene + R/O secured P/2 Firearm so he could be transported to St. Agnes ER, + R/O Advised SGT. KAMENSKY AT that time. Once P/2 was in Ambulance P/2 was Advised to go to ER as well + R/O secured P/1 Firearm + Rig.

R/O went to H.Q. + Secured

PROPERTY

PROPERTY INVOLVEMENT CODES

C - CONFISCATED · E - EVIDENCE · I - IMPOUNDED · L - LOST · R - RECOVERED · U - UNKNOWN · Z - OTHER
D - DAMAGE · F - FOUND · K - SAFEKEEPING · S - STOLEN · X - DESTROYED · T - RETURNED TO OWNER

ITEM	STATUS	QUANTITY	DESCRIPTION	MFG NAME	SERIAL NUMBER	VALUE
1	K	S	9mm	Smith + Wesson	TCV-1705	
2	K	S	9mm	Smith Wesson	TCV-0481	
3						
4						
5						
6						

VEHICLES

VEHICLE INVOLVEMENT CODES

A - ABANDONED · D - DAMAGED · F - LARCENY FROM · H - 24 HOURS · I - IMPOUNDED · M - REPOSSESSED · N - UNAUTHORIZED USE · R - RECOVERED · S - STOLEN · U - UNKNOWN · V - DISABLE · W - SUSPECT · X - SCOFFLAW · Y - RELEASE FROM IMPOUND · Z - OTHER · 8 - V & T STOP

VEH NBR	LICENSE	STATE	TYPE	EX MO YR	VEH YR	MAKE	MODEL	STYLE	COLOR(S)	TYPE
1	47				92	Ford	Victoria	4D	WHITE	

CODE	VIN	VEHICLE CONDITION	DAMAGE LOCATION	DATE & TIME TOWED	BY/TO

VEH NBR	LICENSE	STATE	TYPE	EX MO YR	VEH YR	MAKE	MODEL	STYLE	COLOR(S)	TYPE

CODE	VIN	VEHICLE CONDITION	DAMAGE LOCATION	DATE & TIME TOWED	BY/TO

MO

M.O./SOLVABILITY INFORMATION

MODE OF ENTRY	POINT OF ENTRY	STRUCTURE TYPE	VICTIM'S ACTIVITY BEFORE CRIME	TARGET(S)

SUSPECT'S ACTIVITIES DURING CRIME	SECURITY USED
INVESTIGATION	EVIDENCE OBTAINED

WAS SUSPECT ARRESTED ____ · WITNESS TO CRIME NO ____ · ALL CRIME ELEMENTS PRESENT ____
CAN SUSPECT BE NAMED ____ · SIGNIFICANT MO NO ____ · MAJOR INJURY OR RAPE INVLD ____
CAN SUSPECT BE LOCATED ____ · PROPERTY TRACEABLE ____ · CAN SUSPECT BE IDENTIFIED ____
CAN SUSPECT BE DESCRIBED ____ · SIGN PHYS EVIDENCE ____ · CAN SUSP VEH BE IDENTIFIED ____

IS THERE SIGNIFICANT REASON TO BELIEVE THIS CRIME CAN BE SOLVED ? ____

ITEM #1 Belonging to P/A in gun locker #1 & ITEM #2 Belonging to P/A was stored in gun locker #2 P/O went back to incident location & gave gun locker keys to Sgt. Kamensky.
No further action taken by P/O

ASSISTING OFFICER ____ 1050
INVESTIGATING OFFICER SIGNATURE [signature] OFF NBR 77/104 DATE/TIME 8-11-93

CASE STATUS CODE
A - ACTIVE · C - CLEARED BY ARREST · D - UNFOUNDED · E - EXCEPTIONAL CLEARANCE · F - FILE · S - SUMMONS ISSUED

CODE	REVIEWING OFFICER	DATE AND TIME	FORWARD COPIES TO
F	[signature]	08-11-93 1935	FILE
		DATA ENTRY BY	DATE
			8/12/93

HPD FORM 1 REV 2/92

711

NUMBER 93A0469

ACTIVITY NUMBER 93 223 0003

CASE DESCRIPTION SUPPLEMENTARY

CLASS CODE 8A2S CASE TYPE A

HOW RECEIVED
- ☒ CALL FOR SERVICE
- ☐ OFFICER INITIATED
- ☐ COUNTER REPORT

☐ ORIGINAL ☒ SUPPLEMENT

INCIDENT REPORT

Harrison Police Department
650 North Street
Harrison, New York 10528
967-5111

DOMESTIC VIOLENCE ☐ YES ☒ NO
SUBSTANCE RELATED ☐ YES ☒ NO
WEAPON TYPE

REPORTED DATE WED 8-11-93 01:52 HRS

OCCURRED FROM WED 8-11-93 01:52 HRS

TO WED 8-11-93 02:00 HRS

DESK OFFICER PO MARSHALL

PATROL OFFICER SGT. KAMENSKY

CASE NUMBER 93A0469

LOCATION

INCIDENT LOCATION

650 NBR | NORTH STREET NAME | ST TYPE | DIR | APT. | 3 SECTOR

- ☐ BLOCK
- ☐ INTERSECTION
- ☐ PRIVATE HOME
- ☐ COMMERCIAL BLDG.
- ☐ INDUSTRIAL BLDG.
- ☐ MULTI DWELLING
- ☐ PUBLIC BLDG.
- ☐ PUBLIC PARK
- ☐ PARKING LOT
- ☐ SCHOOL
- ☐ BANK
- ☐ CHURCH
- ☐ COUNTRY CLUB/GROUNDS
- ☒ OTHER

PERSONS

PERSON INVOLVEMENT CODES

C - COMPLAINANT, D - DRIVER, E - EMPLOYEE, F - FINDER, I - INJURED / AIDED, K - AKA, M - MISSING PERSON, O - OWNER, P - POLICE OFFICER, R - REPORTING PERSON, S - SUSPECT, V - VICTIM, W - WITNESS, X - WARRANT, Z - OTHER

PERSON	LAST NAME	FIRST	MI	ADDRESS
CODE	HOME PHONE	BUSINESS PHONE		OCCUPATION
RACE	SEX	DOB	AGE	HGT	WGT	EYES	HAIR	COMPLEXION

RACE CODES: A - ASIAN/ORIENTAL, B - BLACK, H - HISPANIC, I - AMERICAN INDIAN, O - OTHER, W - WHITE

PERSON	LAST NAME	FIRST	MI	ADDRESS
CODE	HOME PHONE	BUSINESS PHONE		OCCUPATION
RACE	SEX	DOB	AGE	HGT	WGT	EYES	HAIR	COMPLEXION

PERSON	LAST NAME	FIRST	MI	ADDRESS
CODE	HOME PHONE	BUSINESS PHONE		OCCUPATION
RACE	SEX	DOB	AGE	HGT	WGT	EYES	HAIR	COMPLEXION

Narrative: (Print or Type Only)

AT THE ABOVE TIME AND DATE I RESPONDED TO H.P.D TO TRANSPORT UNIT K9-1 & K9 TO SGT. MARRACCINI'S RESIDENCE.

PROPERTY

PROPERTY INVOLVEMENT CODES

C - CONFISCATED
D - DAMAGE
E - EVIDENCE
F - FOUND
I - IMPOUNDED
K - SAFEKEEPING
L - LOST
S - STOLEN
R - RECOVERED
X - DESTROYED
U - UNKNOWN
T - RETURNED TO OWNER
Z - OTHER

ITEM	STATUS	QUANTITY	DESCRIPTION	MFG NAME	SERIAL NUMBER	VALUE
1						
2						
3						
4						
5						
6						

VEHICLES

VEHICLE INVOLVEMENT CODES

A - ABANDONED
D - DAMAGED
F - LARCENY FROM
H - 24 HOURS
I - IMPOUNDED
M - REPOSSESSED
N - UNAUTHORIZED USE
R - RECOVERED
S - STOLEN
U - UNKNOWN
V - DISABLE
W - SUSPECT
X - SCOFFLAW
Y - RELEASE FROM IMPOUND
Z - OTHER
8 - V & T STOP

VEH NBR	LICENSE	STATE	TYPE	EX. MO.YR.	VEH YR.	MAKE	MODEL	STYLE	COLOR(S)	TYPE
CODE	VIN			VEHICLE CONDITION		DAMAGE LOCATION	DATE & TIME TOWED		BY/TO	
VEH NBR.	LICENSE	STATE	TYPE	EX. MO.YR.	VEH YR.	MAKE	MODEL	STYLE	COLOR(S)	TYPE
CODE	VIN			VEHICLE CONDITION		DAMAGE LOCATION	DATE & TIME TOWED		BY/TO	

MO

M.O. / SOLVABILITY INFORMATION

MODE OF ENTRY	POINT OF ENTRY	STRUCTURE TYPE	VICTIM'S ACTIVITY BEFORE CRIME	TARGET(S)
SUSPECT'S ACTIVITIES DURING CRIME			SECURITY USED	
INVESTIGATION			EVIDENCE OBTAINED	

WAS SUSPECT ARRESTED ____
CAN SUSPECT BE NAMED ____
CAN SUSPECT BE LOCATED ____
CAN SUSPECT BE DESCRIBED ____

WITNESS TO CRIME ____
SIGNIFICANT MO ____
PROPERTY TRACEABLE ____
SIGN PHYS EVIDENCE ____

ALL CRIME ELEMENTS PRESENT ____
MAJOR INJURY OR RAPE INVLD ____
CAN SUSPECT BE IDENTIFIED ____
CAN SUSP VEH BE IDENTIFIED ____

IS THERE SIGNIFICANT REASON TO BELIEVE THIS CRIME CAN BE SOLVED ? ____

ASSISTING OFFICERS ____

INVESTIGATING OFFICER SIGNATURE Sgt R. Dibuono OFF NBR 54 DATE/TIME 8-11-93

Richard Dibuono

CASE STATUS CODE

A - ACTIVE
C - CLEARED BY ARREST
D - UNFOUNDED
E - EXCEPTIONAL CLEARANCE
F - FILE
S - SUMMONS ISSUED

CODE	REVIEWING OFFICER	DATE AND TIME	FORWARD COPIES TO
F	Sgt. [illegible] / Zietter	08-11-93 1915 hrs	File
		DATA ENTRY BY [illegible]	DATE 8/12/93

HPD FORM 1 REV 2/92

911

CASE NUMBER 93A0469

ACTIVITY NUMBER
HRP 93 223000 4

CASE DESCRIPTION

CLASS CODE 880 P | CASE TYPE A

HOW RECEIVED
☒ CALL FOR SERVICE
☐ OFFICER INITIATED
☐ COUNTER REPORT

☐ ORIGINAL
☒ SUPPLEMENT

INCIDENT REPORT

Harrison Police Department
650 North Street
Harrison, New York 10528
967-5111

DOMESTIC VIOLENCE ☐ YES ☒ NO
SUBSTANCE RELATED ☐ YES ☒ NO
WEAPON TYPE

REPORTED
DATE 08-11-93 0100 HRS

OCCURRED
FROM 08-11-93 0100 HRS
TO HRS

DESK OFFICER P.O. Marshall

PATROL OFFICER

CASE NUMBER 93A0469

LOCATION

INCIDENT LOCATION North St / Polly Park Rd

NBR | STREET NAME | TYPE | DIR | APT. | SECTOR

☐ BLOCK ☐ COMMERCIAL BLDG. ☐ PUBLIC BLDG. ☐ SCHOOL ☐ COUNTRY CLUB/GROUNDS
☒ INTERSECTION ☐ INDUSTRIAL BLDG. ☐ PUBLIC PARK ☐ BANK ☐ OTHER
☐ PRIVATE HOME ☐ MULTI DWELLING ☐ PARKING LOT ☐ CHURCH

PERSONS

PERSON INVOLVEMENT CODES

C - COMPLAINANT F - FINDER M - MISSING PERSON R - REPORTING PERSON W - WITNESS
D - DRIVER I - INJURED / AIDED O - OWNER S - SUSPECT X - WARRANT
E - EMPLOYEE K - AKA P - POLICE OFFICER V - VICTIM Z - OTHER

PERSON	LAST NAME	FIRST	MI	ADDRESS
CODE	HOME PHONE	BUSINESS PHONE		OCCUPATION

RACE	SEX	DOB	AGE	HGT	WGT	EYES	HAIR	COMPLEXION

RACE CODES
A - ASIAN/ORIENTAL B - BLACK H - HISPANIC I - AMERICAN INDIAN O - OTHER W - WHITE

PERSON	LAST NAME	FIRST	M.	ADDRESS
CODE	HOME PHONE	BUSINESS PHONE		OCCUPATION

RACE	SEX	DOB	AGE	HGT	WGT	EYES	HAIR	COMPLEXION

PERSON	LAST NAME	FIRST	M.	ADDRESS
CODE	HOME PHONE	BUSINESS PHONE		OCCUPATION

RACE	SEX	DOB	AGE	HGT	WGT	EYES	HAIR	COMPLEXION

Narrative (Print or Type Only)

I was detailed to the incident location to photograph an accident scene. Six photo's were taken using a Canon AE-1 camera. I also assisted PO Oliva with taking measurements of the scene.

CC

PROPERTY

PROPERTY INVOLVEMENT CODES

C - CONFISCATED
D - DAMAGE
E - EVIDENCE
F - FOUND
I - IMPOUNDED
K - SAFEKEEPING
L - LOST
S - STOLEN
R - RECOVERED
X - DESTROYED
U - UNKNOWN
T - RETURNED TO OWNER
Z - OTHER

ITEM	STATUS	QUANTITY	DESCRIPTION	MFG NAME	SERIAL NUMBER	VALUE
1						
2						
3						
4						
5						
6						

VEHICLES

VEHICLE INVOLVEMENT CODES

A - ABANDONED
D - DAMAGED
F - LARCENY FROM
H - 24 HOURS
I - IMPOUNDED
M - REPOSSESSED
N - UNAUTHORIZED USE
R - RECOVERED
S - STOLEN
U - UNKNOWN
V - DISABLE
W - SUSPECT
X - SCOFFLAW
Y - RELEASE FROM IMPOUND
Z - OTHER
8 - V & T STOP

VEH NBR	LICENSE	STATE	TYPE	EX MO YR	VEH YR	MAKE	MODEL	STYLE	COLOR(S)	TYPE

CODE	VIN	VEHICLE CONDITION	DAMAGE LOCATION	DATE & TIME TOWED	BY/TO

VEH NBR	LICENSE	STATE	TYPE	EX MO YR	VEH YR	MAKE	MODEL	STYLE	COLOR(S)	TYPE

CODE	VIN	VEHICLE CONDITION	DAMAGE LOCATION	DATE & TIME TOWED	BY/TO

MO

M.O. / SOLVABILITY INFORMATION

MODE OF ENTRY	POINT OF ENTRY	STRUCTURE TYPE	VICTIM'S ACTIVITY BEFORE CRIME	TARGET(S)

SUSPECT'S ACTIVITIES DURING CRIME	SECURITY USED
INVESTIGATION	EVIDENCE OBTAINED

WAS SUSPECT ARRESTED ______
CAN SUSPECT BE NAMED ______
CAN SUSPECT BE LOCATED ______
CAN SUSPECT BE DESCRIBED ______
WITNESS TO CRIME ______
SIGNIFICANT MO ______
PROPERTY TRACEABLE ______
SIGN PHYS EVIDENCE ______
ALL CRIME ELEMENTS PRESENT ______
MAJOR INJURY OR RAPE INVLD ______
CAN SUSPECT BE IDENTIFIED ______
CAN SUSP VEH BE IDENTIFIED ______

IS THERE SIGNIFICANT REASON TO BELIEVE THIS CRIME CAN BE SOLVED ? ______

ASSISTING OFFICERS ______

INVESTIGATING OFFICER SIGNATURE Det. M. Peri M. Pineau OFF NBR 108 DATE/TIME [illegible]-11-93

CASE STATUS CODE
A - ACTIVE
C - CLEARED BY ARREST
D - UNFOUNDED
E - EXCEPTIONAL CLEARANCE
F - FILE
S - SUMMONS ISSUED

CODE	REVIEWING OFFICER	DATE AND TIME	FORWARD COPIES TO
A	Sgt. [illegible] / ZIEHTER	081193 2000 hrs	File
		DATA ENTRY BY [illegible]	DATE 8/12/93

HPD FORM 1 REV 2/92

T11

NUMBER 93A0469

ACTIVITY NUMBER

HRP 93223 0038

CASE DESCRIPTION ACCIDENT INVESTIGATION

CLASS CODE 880S | CASE TYPE A

HOW RECEIVED
- ☑ CALL FOR SERVICE
- ☐ OFFICER INITIATED
- ☐ COUNTER REPORT

☐ ORIGINAL ☑ SUPPLEMENT

INCIDENT REPORT

Harrison Police Department
650 North Street
Harrison, New York 10528
967-5111

DOMESTIC VIOLENCE ☐ YES ☒ NO
SUBSTANCE RELATED ☐ YES ☒ NO
WEAPON TYPE

REPORTED DATE 11 Aug 93 0130 HRS

OCCURRED FROM HRS

TO HRS

DESK OFFICER

PATROL OFFICER Sgt. Kamensky

CASE NUMBER 93A0469

LOCATION

INCIDENT LOCATION

NBR | STREET NAME North/Polly Park | TYPE Int | DIR | APT. | SECTOR 3

- ☐ BLOCK
- ☒ INTERSECTION
- ☐ PRIVATE HOME
- ☐ COMMERCIAL BLDG.
- ☐ INDUSTRIAL BLDG
- ☐ MULTI DWELLING
- ☐ PUBLIC BLDG
- ☐ PUBLIC PARK
- ☐ PARKING LOT
- ☐ SCHOOL
- ☐ BANK
- ☐ CHURCH
- ☐ COUNTRY CLUB/GROUNDS
- ☐ OTHER

PERSONS

PERSON CODE

PERSON INVOLVEMENT CODES

C - COMPLAINANT, D - DRIVER, E - EMPLOYEE, F - FINDER, I - INJURED / AIDED, K - AKA, M - MISSING PERSON, O - OWNER, P - POLICE OFFICER, R - REPORTING PERSON, S - SUSPECT, V - VICTIM, W - WITNESS, X - WARRANT, Z - OTHER

PERSON CODE	LAST NAME	FIRST	MI	ADDRESS
	HOME PHONE	BUSINESS PHONE		OCCUPATION
RACE	SEX	DOB	AGE	HGT	WGT	EYES	HAIR	COMPLEXION

RACE CODES

A - ASIAN/ORIENTAL, B - BLACK, H - HISPANIC, I - AMERICAN INDIAN, O - OTHER, W - WHITE

PERSON CODE	LAST NAME	FIRST	MI	ADDRESS
	HOME PHONE	BUSINESS PHONE		OCCUPATION
RACE	SEX	DOB	AGE	HGT	WGT	EYES	HAIR	COMPLEXION

PERSON CODE	LAST NAME	FIRST	MI	ADDRESS
	HOME PHONE	BUSINESS PHONE		OCCUPATION
RACE	SEX	DOB	AGE	HGT	WGT	EYES	HAIR	COMPLEXION

Narrative (Print or Type Only)

ON 11 Aug 93 THIS WRITER WAS DETAILED TO INVESTIGATE AN AUTO ACCIDENT INVOLVING POLICE OFFICERS.

UPON ARRIVAL AT SCENE, THIS WRITER EXAMINED INTERIOR OF POLICE VEHICLE #47 AND OBSERVED THAT THE TOGGLE SWITCHES THAT CONTROL THE EMERGENCY ROOF LIGHTS WERE IN THE ON POSITION, INDICATING THAT THE EMERGENCY LIGHTS HAD BEEN ACTIVATED. FURTHER OBSERVED THAT THE KNOB THAT CONTROLS SIREN WAS IN THE WAIL POSITION INDICATING THAT THE SIREN HAD BEEN ACTIVATED.

WITH THE ASSISTANCE OF DET. PINCAU, THIS WRITER TOOK MEASUREMENTS OF ACCIDENT SCENE INCLUDING SKIDMARKS. MEASUREMENTS TAKEN BY COORDINATION. DIAGRAM OF ACCIDENT SCENE COMPLETED.

THIS WRITER DETERMINED THAT THE POLICE VEHICLE LEFT 55.1 FEET OF SKID MARK ON THE ASPHALT AND 26.7 FEET ON THE GRAVEL.

(CONTINUED)

PROPERTY INVOLVEMENT CODES

C - CONFISCATED
D - DAMAGE
E - EVIDENCE
F - FOUND
I - IMPOUNDED
K - SAFEKEEPING
L - LOST
S - STOLEN
R - RECOVERED
X - DESTROYED
U - UNKNOWN
T - RETURNED TO OWNER
Z - OTHER

PROPERTY

ITEM	STATUS	QUANTITY	DESCRIPTION	MFG NAME	SERIAL NUMBER	VALUE
1						
2						
3						
4						
5						
6						

VEHICLE INVOLVEMENT CODES

A - ABANDONED
D - DAMAGED
F - LARCENY FROM
H - 24 HOURS
I - IMPOUNDED
M - REPOSSESSED
N - UNAUTHORIZED USE
R - RECOVERED
S - STOLEN
U - UNKNOWN
V - DISABLE
W - SUSPECT
X - SCOFFLAW
Y - RELEASE FROM IMPOUND
Z - OTHER
8 - V & T STOP

VEHICLES

VEH NBR	LICENSE	STATE	TYPE	EX MO YR	VEH YR	MAKE	MODEL	STYLE	COLOR(S)	TYPE
CODE	VIN			VEHICLE CONDITION		DAMAGE LOCATION	DATE & TIME TOWED		BY/TO	
VEH NBR	LICENSE	STATE	TYPE	EX MO YR	VEH YR	MAKE	MODEL	STYLE	COLOR(S)	TYPE
CODE	VIN			VEHICLE CONDITION		DAMAGE LOCATION	DATE & TIME TOWED		BY/TO	

M.O. / SOLVABILITY INFORMATION

MO

MODE OF ENTRY	POINT OF ENTRY	STRUCTURE TYPE	VICTIM'S ACTIVITY BEFORE CRIME	TARGET(S)
SUSPECT'S ACTIVITIES DURING CRIME			SECURITY USED	
INVESTIGATION			EVIDENCE OBTAINED	

WAS SUSPECT ARRESTED ______
CAN SUSPECT BE NAMED ______
CAN SUSPECT BE LOCATED ______
CAN SUSPECT BE DESCRIBED ______
WITNESS TO CRIME ______
SIGNIFICANT MO ______
PROPERTY TRACEABLE ______
SIGN PHYS EVIDENCE ______
ALL CRIME ELEMENTS PRESENT ______
MAJOR INJURY OR RAPE INVLD ______
CAN SUSPECT BE IDENTIFIED ______
CAN SUSP VEH BE IDENTIFIED ______

IS THERE SIGNIFICANT REASON TO BELIEVE THIS CRIME CAN BE SOLVED? ______

ASSISTING OFFICERS Det. P. Aguon

INVESTIGATING OFFICER SIGNATURE P. [signature] / Oliva OFF NBR 75/116 DATE TIME 11 Aug 93

CASE STATUS CODE

A ACTIVE
C CLEARED BY ARREST
D UNFOUNDED
E EXCEPTIONAL CLEARANCE
F [illegible]
S SUMMONS ISSUED

CCC F [illegible]

DATE AND TIME 8/17/93 1446

FORWARD COPIES TO [illegible]

GPD FORM [illegible]

650 North Street
Harrison, New York 10528
967-5111

ACTIVITY NUMBER HRP 93223 0088
CASE DESCRIPTION AI 93 A 0469
CLASS CODE | CLASS TYPE

Narrative (Print or Type Only)

By using THE Drag Factor chART For Asphalt - Travelled And Gravel - loose AND, THE Formula For Minimum Initial Velocity, This WRITER Was ABLE To DETERMINE That THE Minimum Initial Velocity of THE Police Vehicle was BETWEEN 28 AND 32 MPH ON THE Asphalt AND INCREASED TO 34 AND 39 ON THE gravel.

THE Following ARE attached;
Pages 1 & 2 NARRATIVE
page 3 Formula AND computation sheet
page 4 Measurements
page 5 Diagram
page 6 Drag Factor chART
page 7 DEFINITION minimum Initial Speed

INVESTIGATING OFFICER'S SIGNATURE [signature] OFF NBR 73/116 DATE/TIME 11 May 93

CASE STATUS CODE
A ACTIVE D UNFOUNDED F FILE
C CLEARED BY ARREST E EXCEPTIONAL CLEARANCE I SUMMONS ISSUED

CODE [illegible] DATE AND TIME 5/10/93-1446 FORWARD COPIES TO [illegible]

PAGE 3 of ____

Harrison Police Department
650 North Street
Harrison, New York 10528
967-5111

ACTIVITY NUMBER 1240401
HRP 9322300-38
CASE DESCRIPTION ACCIDENT INVESTIGATION
CLASS CODE CLASS TYPE

Narrative (Print or Type Only)

THE FOLLOWING ARE THE FORMULA AND COMPUTATIONS USED TO DETERMINE MINIMUM INITIAL VELOCITY; GRADE OF ROADWAY = $\frac{RSC}{Level} = \frac{1.75}{24} = .072$

MINIMUM INITIAL VELOCITY - ASPHALT

Drag Factor .55 - grade .07 = .48

$a = F \times g$

$a = .48 \times 32.2$

$a = 15.46$

$V_i = \sqrt{V_e^2 - 2ad}$

$V_i = \sqrt{(0)^2 - 2(-15.46)(55.1)}$

$V_i = \sqrt{-2(-15.46)(55.1)}$

$V_i = \sqrt{1703}$

$V_i = 41.28$ FPS

CONVERT TO mpH

Velocity ÷ 1.466

41.28 ÷ 1.466 = 28 mpH

MINIMUM INITIAL VELOCITY - ASPHALT

Drag Factor .70 - grade .07 = .63

$a = F \times g$

$a = .63 \times 32.2$

$a = 20.29$

$V_i = \sqrt{V_e^2 - 2ad}$

$V_i = \sqrt{(0)^2 - 2(-20.29)(55.1)}$

$V_i = \sqrt{-2(-20.29)(55.1)}$

$V_i = \sqrt{2236}$

$V_i = 47.28$ FPS

CONVERT TO mpH

Velocity ÷ 1.466

47.28 ÷ 1.466 = 32 mpH

MINIMUM INITIAL VELOCITY - GRAVEL

Drag Factor .40 - grade .07 = .33

$V_i = \sqrt{V_e^2 - 2ad}$

$V_i = \sqrt{(41.28)^2 - (2 \times 75.46 \times 26.7)}$

$V_i = \sqrt{(1704) - (-825)}$

$V_i = \sqrt{2529}$

$V_i = 50.29$ FPS

CONVERT TO mpH

50.29 ÷ 1.466 = 34 mpH

MINIMUM INITIAL VELOCITY - GRAVEL

Drag Factor .70 - grade .07 = .63

$V_i = \sqrt{V_e^2 - 2ad}$

$V_i = \sqrt{(47.28)^2 - (2 \times 20.29 \times 26.7)}$

$V_i = \sqrt{(2235) - (-1083)}$

$V_i = \sqrt{3318}$

$V_i = 57.60$ FPS

CONVERT TO mpH

57.60 ÷ 1.466 = 39 mpH

INVESTIGATING OFFICER SIGNATURE Robert Allen OFF NBR 25/116 DATE/TIME 11 Aug 93

CASE STATUS CODE
A ACTIVE
C CLEARED BY ARREST
D UNFOUNDED
E EXCEPTIONAL CLEARANCE
F FILE
S SUMMONED ISSUED

CODE F NAME OF OFFICER Robert Allen DATE AND TIME 9/1/93 1146 DATA ENTRY BY

FORWARD COPIES TO Dep Chief DATE 9/21/93

DATE: 11 Aug 93

REPORT #: 93A0469

HRI #: 932230006

* FIELD SKETCH by:

P.O. C/IVA

OFFICER'S NOTES:

REF. POINT #1 IS 9 6/W of Pole # W114

REF. POINT #2 IS 8 0/W of Pole # W113 AND 104 1/S of REF. POINT #1

REF. POINT #3 IS 7 5/W of Pole # W112 AND 214 0/S of REF. POINT #2

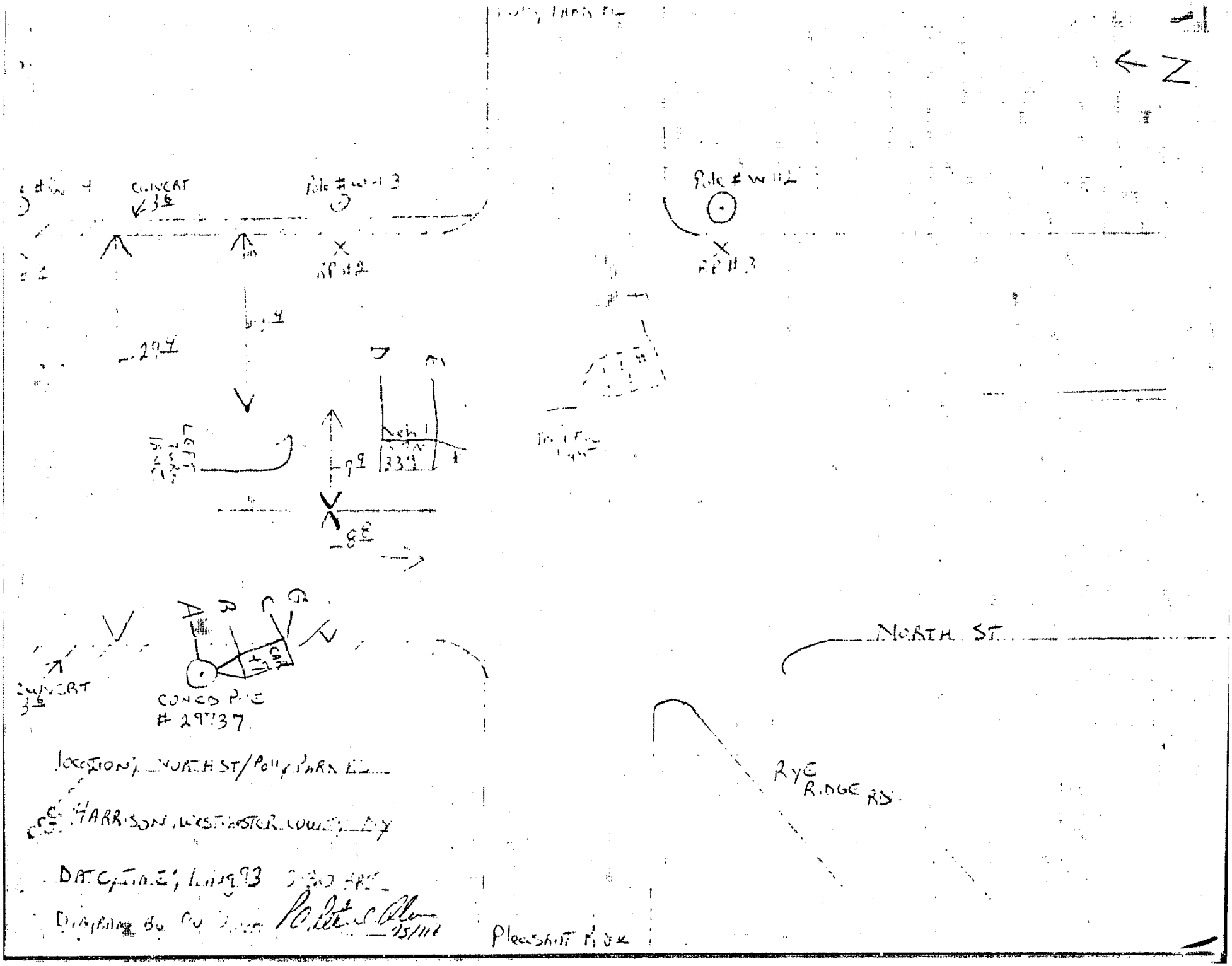
* MEASUREMENTS FOR REF. POINTS WERE TAKEN FROM SOUTH CRATER SIDE of POLES.

RECEIVED BY DET. [illegible]

COORDINATION

SPOT	N/S	E/W	DESCRIPTION
A	50 6/S	41 8/W	NORTH/CRATER SIDE of CON-ED Pole #2973
B	52 6/S	38 0/W	PASSENGER S.DE FRONT wheel Police Veh #47
C	61 1/S	35 1/W	PASSENGER S.DE REAR wheel Police Veh #47
D	91 6/S	15 1/W	DRIVERS S.DE REAR wheel Veh 2 NY Reg NJM-3*
E	104 7/S	12 6/W	DRIVERS S.DE FRONT wheel Veh 2 NY Reg NJM-33*
F	142 9/S	14 5/W	Beginning of SKID - Right Rear wheel - Veh #47
G	61 1/S	35 1/W	END of SKID - Passenger S.DE Rear wheel Veh #47

[illegible]


N
NORTH ST.
RYE RIDGE RD.
CULVERT
CONCRETE PIPE
#29137
LOCATION: NORTH ST/POLLY PARK DR
CITY: HARRISON, WESTCHESTER COUNTY, NY
DATE TIME: Aug 93
DRAWING BY:
Pleasantside Rd

Drag Factor Charts

If the situation arises in which it is too dangerous to do test skids, or the surface or environment is not conducive to sled tests, or too much time has passed to make fair and accurate tests, another technique exists.

A chart of possible ranges of drag factors has been established. It provides a "low" and a "high" drag factor for a number of different type surfaces. This is the least desirable method of the three discussed, but its better than no calculation at all.

DESCRIPTION OF ROAD SURFACE	DRY				WET			
	Less Than 30 MPH		More Than 30 MPH		Less Than 30 MPH		More Than 30 MPH	
	From	To	From	To	From	To	From	To
Concrete								
New, Sharp	.80	1.00	.70	.85	.50	[illegible]	.40	.75
Travelled	.60	.80	.60	.75	.45	.70	.45	.65
Traffic Polished	.55	.75	.50	.65	.45	.65	.45	.60
Asphalt or Tar								
New, Sharp	.80	1.00	.65	.70	.50	.80	.45	.75
Travelled	.60	.80	.55	.70	.45	.70	.40	.65
Traffic Polished	.55	.75	.45	.65	.45	.65	.40	.60
Excess Tar	.50	.60	.35	.60	.30	.60	.25	.55
Brick								
New, Sharp	.75	.95	.60	.85	.50	.75	.45	.70
Traffic Polished	.60	.80	.55	.75	.40	.70	.40	.60
Stone Block								
New, Sharp	.75	1.00	.70	.90	.65	.90	.60	.85
Traffic Polished	.50	.70	.45	.65	.30	.50	.25	.50
Gravel								
Packed, Oiled	.55	.85	.50	.80	.40	.80	.40	.60
Loose	.40	.70	.40	.70	.45	.75	.45	.75
Cinders								
Packed	.50	.70	.50	.70	.65	.75	.65	.75
Rock								
Crushed	.55	.75	.55	.75	.55	.75	.55	.75
Ice								
Smooth	.10	.25	.07	.20	.05	.10	.05	.10
Snow								
Packed	.30	.55	.35	.55	.30	.60	.30	.60
Loose	.10	.25	.10	.20	.30	.60	.30	.60
Metal Grid								
Open	.70	.90	.55	.75	.25	.45	.20	.35

Speed from skid marks

During our earlier discussion of drag factor, we found that there is a relationship between a vehicle's speed and the distance it slid in a panic stop. We even discovered that we could determine how far a vehicle should slide by knowing the speed and the drag factor of the road surface.

The common points of both formula's are: drag factor, distance of skid and the speed prior to locking up the brakes. So, if I can determine how far a vehicle slid and the drag factor of the road surface. It should be possible to determine the speed prior to locking the brakes.

Minimum initial speed - is the estimation of a vehicle's speed from skid mark evidence. Rarely will you find an accident vehicle that slid to a stop without impacting something. Since some of the vehicle's speed was lost during a collision, any measurement or pre-collision skid distance will yield less than 100% of the vehicle's true speed. Minimum initial speed does not account for the energy lost during an impact, but can be used to determine speed prior to impact. It is also possible for a vehicle to increase speed following an impact with a heavier and/or faster moving vehicle. This is why skid marks past the point of offset are not used to determine minimum initial speed.

To calculate minimum initial speed, you must determine two facts:

1. Length of the skid
2. Drag factor of the roadway.

HARRISON POLICE DEPARTMENT
HARRISON, NEW YORK

SUPERVISOR'S REPORT

ACCIDENT INVOLVING DEPARTMENT VEHICLE

1) NAME OF DRIVER PO PETER SCHIRMER RANK PO

2) DATE OF ACCIDENT 10/1/93 ~~19~~ TIME 0020 HRS

3) MAKE, YEAR, AND # OF DEPARTMENT VEHICLE 1992 FORD CROWN VICTORIA UNIT #47

4) WAS AN ACCIDENT REPORT FILED? YES IF SO, LIST "A" & "C" #'s 93A0469 (ATTACH COPIES OF PHOTOS TO THIS REPORT)

5) NOTE ANY ADDITIONAL INFORMATION NOT OTHERWISE REPORTED: PHOTOS WERE TAKEN BY DET BW (DET RIVERA) ACCIDENT INVESTIGATOR PO CLUPA RESPONDED AND CONDUCTED INVESTIGATION

6) TIME YOU RESPONDED TO SCENE: 0022 HRS.

7) WHAT DID DRIVER DO (OR FAIL TO DO) THAT CAUSED HIM TO BECOME INVOLVED IN THIS ACCIDENT? SEE REMARKS

8) A. DOES OUR DRIVER ACCEPT BLAME FOR THIS ACCIDENT?

B. IF YES, HOW MUCH? % SEE REMARKS

9) WHAT WAS OUR DRIVER'S ATTITUDE TOWARD THIS ACCIDENT? SEE REMARKS

10) WHAT IS HIS GENERAL OUTLOOK ON SAFETY PRACTICES? EXCELLENT GOOD AVERAGE POOR

11) IN YOUR OPINION, COULD OUR DRIVER HAVE AVOIDED THIS ACCIDENT? SEE REMARKS

A. IF AVOIDABLE, WHAT CORRECTIVE MEASURES HAVE YOU TAKEN TOWARD THE OPERATOR TO PREVENT A FUTURE REOCCURRENCE OF THE SAME NATURE?

13) GIVE ANY FURTHER COMMENTS REGARDING ATTITUDE, ABILITY, AND PERFORMANCE OF THE DRIVER: _____

14) DO YOU RECOMMEND DISCIPLINARY ACTION? NO RECOMMENDATION UNTIL I CAN COMPLETE INTERVIEWS

15) # OF YEARS DRIVING EXPERIENCE: _____

16) TOTAL HOURS ON DUTY AT TIME OF ACCIDENT LESS THEN 1/2 HOUR

A. WAS EXCESSIVE TIME ON DUTY A FACTOR IN THIS ACCIDENT? YES (NO)

17) LENGTH OF TIME EMPLOYED: _____

18) # OF ACCIDENTS BY THIS DRIVER DURING PAST 5 YEARS: UNABLE TO ACCESS THESE RECORDS AT THIS TIME

19) NOTE ANY CONTRIBUTING PHYSICAL CONDITIONS OF DRIVER: NONE NOTED AT THIS TIME

20) REMARKS I WAS UNABLE TO INTERVIEW SGT. BAUER (OR PASSENGER SGT MARRACCINI) BECAUSE OF INJURIES (NO WORK BEING PERFORMED AT SCENE AND TREATMENT AT HOSPITAL COMPLETE (REVISED) TO BE FILED UPON COMPLETION OF MY INVESTIGATION

DATE OF REPORT 8/11/93 REPORTED BY: [signature] 8/11/93

REVIEWED BY: _____

DEPARTMENT HEAD: _____

CALSPAN EVALUATION OF FORD CROWN VICTORIA POLICE VEHICLE STEERING FAILURE ALLEGATIONS

VEHICLE: 1993 FORD CROWN VICTORIA
LOCATION: PRINCE GEORGES COUNTY, MD
DATE: OCTOBER 27, 1992
DRIVER: ROGER P. FLEMING

SUMMARY

This review of police reported data focused on the probable causal factors for this crash which involved a 1992 Ford Crown Victoria marked police vehicle that was involved in a high-speed pursuit on an urban expressway. The driver lost control of the vehicle as it departed the right roadedge and contacted a curb in a gore area with the right rear tire and wheel. The Crown Victoria subsequently yawed in a counterclockwise (CCW) direction across two travel lanes and mounted the median curb in a broadside orientation. The vehicle traversed the grass median as it continued to rotate in a CCW direction prior to impact with a 16" diameter oak tree. The right B-pillar area of the vehicle impacted the tree which resulted in an impact force that was estimated to be within the 3-4 o'clock sector. As a result of the crash, the Crown Victoria sustained severe right side damage and intrusion of the passenger compartment. The adult male driver sustained massive injuries and expired following his arrival to a local trauma center.

Crash Data

The crash occurred near the junction of the Baltimore-Washington (BW) Parkway and the John Hanson Highway on October 27, 1992, at 0006 hours. The weather was reported as dry with overcast skies and a temperature of 50 degrees F. The BW Parkway was a four lane divided highway with a wide grass median and asphalt curbs bordering the edges of the northbound and southbound travel lanes. In the vicinity of the crash site, the southbound travel lanes expanded to form three lanes, with the right and center lanes providing access to the John Hanson Highway and the center and left lanes continuing for the southbound Parkway. The gore area between these travel lanes was reportedly curbed and surfaced with dirt. The southbound travel lanes of the BW Parkway curved to the left with a police reported radius of curvature of 2140'. The grade was identified as level at the crash site which was located at the base of a long downgrade. The dry asphalt road surface had a police measured coefficient of friction of .75 while the gras median was measured at .66. The speed limit was posted at 45 mph.

Vehicle Data

The involved 1992 Ford Crown Victoria was a marked police vehicle that was equipped with the factory police package. Specifications for this vehicle listed the standard features as a 4.6 liter V-8 engine, an automatic overdrive transmission, four-wheel power disc brakes (unknown if ABS equipped), speed-sensitive, power-assisted steering, tilt-steering wheel, a supplemental driver's side air bag system, and manual 3-point lap and shoulder belts in the four outboard seated positions. The

vehicle was owned by the Prince Georges County Police Department and was driven at the time of the crash by an on-duty police officer. The police report listed the mileage on the vehicle at the time of the crash at 9,978 miles. The Crown Victoria was identified by the following vehicle identification number (VIN): 2FACP72W7NX209849.

Driver Data

The involved driver was identified on the police report by name only. The driver was an adult male of an unknown age. His driving experience, history, and level of training was not reported. This driver was reported as restrained by the manual 3-point lap and shoulder belt system.

Witness Statements

The pursuit was initiated by the police officer as he attempted to stop a 1992 Honda Accord at or near the intersection of Kenilworth Avenue and Westchester Park Drive in the northeast quadrant of Prince Georges County. The Honda reportedly fled by traveling in a northerly direction on Kenilworth Avenue for approximately 0.8 miles. Numerous police reported witnesses observed the vehicles at various points throughout the pursuit.

A witness (witness #9 on police report) observed a small dark colored vehicle traveling in a northerly direction on Kenilworth Avenue at an estimated speed of 100 mph. This witness visually tracked the vehicle as it entered the on-ramp for southbound I-95. She added that a marked police vehicle was apparently in pursuit of the speeding vehicle and was approximately five seconds behind the vehicle.

Another witness (witness #10) was traveling in the second southbound lane on I-95 when he observed the police vehicle's emergency lights in his rearview mirror. This witness initiated a lane change maneuver to provide the police vehicle with an additional travel lane. As he initiated the lane change maneuver, he stated that he nearly struck a small dark colored vehicle traveling at a high rate of speed (estimated in excess 105 mph) without its headlights on. This witness observed the Honda exit I-95 onto westbound Route 450. He estimated that the police vehicle was approximately 0.25 - 0.5 miles behind the dark colored vehicle as he continued to travel south on I-95.

The driver of the Honda entered the on-ramp to southbound I-95 which required a sweeping right turn maneuver then continued southbound for approximately 0.3 miles. The Honda exited I-95 onto the ramp for westbound Route 450 and proceeded in a westerly direction. The pursuing police vehicle followed the Honda onto Route 450 as the officer apparently notified his department of his direction of travel over the police radio. Several other officers from the Prince George's County Police Department entered the pursuit on westbound Route 450.

Witness # 8 was an on-duty police officer. He monitored the radio transmission and positioned his police vehicle with the emergency lights activated in the left turn lane of the 6100 block of Route 450, east of the Baltimore-Washington Expressway. This officer observed the Honda traveling with its lights off at a speed in excess of 100 mph. He estimated that the pursing police vehicle was approximately 7-8 car lengths behind the Honda as the vehicles passed his position. This officer accelerated his vehicle and joined the pursuit. He did not observe the events immediately prior to, and including the crash of the pursuing Crown Victoria.

One of the officers (witness #7) monitored the radio transmission regarding the pursuit. He observed the Honda traveling westbound on Route 450 at a high rate of speed with the pursuing police vehicle trailing approximately 30 yards (90') behind. This officer followed the pursuit onto the BW Parkway, however, he did not observed the subsequent crash.

Another officer (witness #6) had monitored the radio transmissions regarding the pursuit. He observed the fleeing Honda as it traveled west on Route 450 in the right lane in excess of 80 mph with its lights off. The officer followed the pursuit, however, he did not observe the crash.

The driver of the Honda had traveled approximately 3.0 miles on Route 450 before entering the right lane entrance ramp for the Baltimore-Washington Parkway. This ramp continued in a clockwise direction for approximately 270 degrees which carried traffic onto the southbound lanes of the Parkway. The Honda continued to travel in a southbound direction on the Parkway at a high rate of speed with its lights in the off position.

A police officer who engaged in the pursuit on Route 450 at I-95 (witness #5), followed the pursuing Crown Victoria. He estimated that the pursuing 1992 Ford Crown Victoria was approximately 150-200 yards ahead of his vehicle. This officer stated that the Honda was weaving in and out of traffic on the Parkway at speeds in excess of 105 mph with its headlights in the off-position. Witness #5 reported that the Honda was traveling in the right (outboard) lane of the three southbound travel lanes of the divided Parkway as it approached the Y-junction of the BW Parkway and John Hanson Highway. He further stated that it appeared the Honda was going to exit the Parkway onto the westbound John Hanson Highway, however, the driver initiated a rapid lane change maneuver to the left in front of a civilian vehicle and proceeded through the gore area of the Y-junction and continued south on the Parkway. At this point, witness stated that dirt and dust obscured his view of the crash.

Another officer who joined the pursuit on the Parkway south of Route 450 (witness #2), stated that as the pursuit approached his position from behind, he accelerated and attempted to gain speed. This officer maneuvered his vehicle into the left lane and observed the Honda pass his vehicle in the right lane at a high rate of speed with its lights off. He subsequently allowed the pursuing Crown Victoria to pass his vehicle as he followed in pursuit. On the approach to the Y-junction, this witness observed two civilian vehicles ahead of the Honda, one of these vehicles were in lane 1 while the other was in lane 2. He stated that the Honda proceeded to travel to the right of these vehicles as it approached the junction. At the last moment, the driver of the Honda turned on his headlights and veered to the left to continue south on the Parkway. This maneuver forced the

civilian vehicle in lane # 2 to brake and drift to the left. This witness noted that this maneuver forced the driver of the Crown Victoria to brake to avoid the vehicle. He stated that the braking action by the driver of the Crown Victoria caused the rear of his vehicle slide to the left (indicative of a CW yaw). This witness further stated that the driver appeared to straighten out the vehicle prior to the Crown Victoria yawing to the right (CCW) immediately prior to the crash. At this point, the witness estimated that he was approximately 0.25 miles behind the Crown Victoria.

Witness #1, an on-duty police officer joined the pursuit at the BW Parkway and Route 450. He stated that as they proceeded south on the Parkway, the pursuing Crown Victoria was approximately 100-150 yards ahead of his position. As they approached the y-junction, he thought the Crown Victoria was positioned in the center travel lane and that it appeared that the driver was going to exit onto the John Hanson Highway. This witness noted that the Crown Victoria's brake lights illuminated and the vehicle appeared to fishtail, skidding from right to left. He observed the vehicle as it skidded through the right median (gore area), across the southbound travel lanes, and into the median where it struck a tree.

Two civilian witnesses, a driver (witness #3) and right front passenger (witness #4) of a southbound vehicle on the Parkway, stated that the fleeing Honda had passed their vehicle on the right on the approach to the junction of the John Hanson Highway at a speed of approximately 100 mph. Witness #3 noted that there was another vehicle ahead of his vehicle in lane #1. He stated that the Honda contacted the curb at the outboard edge of the right southbound travel lane, then cut sharply into lane #1, ahead of the other vehicle. This witness stated that he slowed his vehicle and several seconds later the pursuing Crown Victoria began to pass him on the right. He noted that the Crown Victoria overrode the right curb which appeared to cause the driver to lose control of his vehicle. The Crown Victoria subsequently spun sideways across the road between the two civilian vehicles, entered the grass median, and struck a tree. The witness stated that the air was filled with smoke, dust, dirt, and debris. Witness #4's statement concurred with the statement of Witness #3.

Police Investigation/Reconstruction

Physical Evidence

The police identified and documented four sliding tire marks that originated at the outboard edge of the right southbound travel lane of the Parkway. These tire marks continued across the southbound travel lanes and through the grass median to the struck tree. In addition, the police documented a deep gouge, which was apparently caused by the right rear wheel of the Crown Victoria, in the asphalt median curb. The police also noted a side sliding tire mark located in the dirt surface of the gore area that separated the Parkway and the John Hanson Highway. Numerous fresh gouges and scrapes were documented along the top surface of the asphalt curb that bordered the gore area. The total length of these tire marks was approximately 381'6", from the initial contact with the gore curb, to the final rest position of the vehicle.

Crash Sequence

The police report narrative of the crash noted that driver of the Crown Victoria was an on-duty Prince Georges County Police Officer. He attempted to stop the suspect vehicle (Honda) at the intersection of Kenilworth Avenue and Westchester Park Drive. At this location, the driver of the Honda attempted to flee by proceeding north on Kenilworth Avenue. He continued to southbound I-95 to westbound Route 450, to the southbound BW Parkway. The report noted that speeds exceeded 100 mph and that the Honda was weaving in and out of traffic with its lights off at several times throughout the pursuit.

As the pursuit continued southbound on the BW Parkway, the Honda initially appeared to be exiting the Parkway onto the westbound ramp for the John Hanson Highway. The driver of the Honda swerved to the left and continued south on the Parkway.

The pursuing Crown Victoria struck a curb at the gore area which separated the BW Parkway from the John Hanson Highway. The report noted that the right rear wheel went up and over the curb. This caused the frame of the Crown Victoria to drag and gouge the top surface of the curb. At his point, the vehicle initiated a CCW yaw which caused the driver to completely lose control of the vehicle. The vehicle slid down the curb for approximately 109' as it continued to rotate CCW. The Crown Victoria came back completely onto the southbound travel lanes, sliding to the right (CCW). The vehicle crossed the southbound travel lanes and struck the median curb of the Parkway. The vehicle continued across the grass median and struck a 16" diameter tree with its right side. The vehicle came to rest against the tree with the driver entrapped in the vehicle. He was subsequently removed from the vehicle and transported to a local trauma center where he expired at 0034 hours.

Police Speed Calculations

The Prince Georges County Police Department computed a minimum speed of 74 mph for the Crown Victoria. This velocity was computed using the skid distance of the Crown Victoria over the across the asphalt travel lanes and the grass median. It does not include the energy that was dissipated by the impact with the tree.

As a result of the investigation, the police concluded the following:

1. The primary cause of this collision is ROADWAY DEFECT. The raised curb was a traffic hazard and caused the vehicle to begin rotating. This in turn caused the driver to completely lose control of his vehicle.

2. Vehicle #1 was involved in a collision with a hit and run vehicle. The contributory factors of this hit and run vehicle have not been determined. The collision with the hit and run vehicle may have caused the driver to initially strike the curb.

3. There was no evidence of contact between vehicle #1 and the fleeing Honda.

Calspan's Reconstruction

The witnesses established the speed of the fleeing Honda to be in excess of 80-105 mph throughout the pursuit which covered approximately 9 miles on four different roadways. Six of these witnesses were on-duty police officers who engaged in the pursuit and followed the Honda and the lead 1992 Ford Crown Victoria that was driven by Officer Fleming. None of the witness statements identified a travel speed for the Crown Victoria, however, the speed for this vehicle probably mirrored the speed of the Honda since the officer remained within a close proximity of the Honda.

The police reconstructed a minimum speed for the Crown Victoria at 74 mph. This was based on the skid distance across the asphalt road surface and the grass median. It did not include the speed loss from the vehicle's travel distance over the gore area and the impacts with the curbs and the tree. Estimated values for these impacts would increase the minimum velocity of the vehicle to approximately 86 mph at the initial point of departure at the gore area.

The driver of the Ford Crown Victoria was in pursuit of a vehicle and was traveling at a high rate of speed over a distance estimated at approximately 9 miles. During the pursuit, the driver had successfully negotiated numerous turns, ramps, and lane change maneuvers without incident. On the approach to the accident scene, witness testimony indicated that the driver of the Honda initially indicated that he was exiting the Parkway onto the John Hanson Highway. He steered to the left and allegedly contacted the gore curb before proceeding south on the Parkway. Witnesses following the Crown Victoria also indicated that it appeared the driver of the Crown Victoria was going to exit the Parkway onto the westbound exit ramp, however, he followed the Honda and continued south on the Parkway on the outboard travel lane.

Witness #2 stated that the driver of the Crown Victoria apparently braked to avoid the civilian vehicle and that the braking action appeared to cause the vehicle to yaw in a clockwise direction. The driver of the Crown Victoria apparently released brake pedal pressure and applied a left steering input to steer the vehicle out of the yaw. At this point, the witness stated that the vehicle appeared to straighten out as the right side tires of the vehicle probably contacted and overrode the asphalt curb onto at the gore area. The police documented physical evidence indicates that both right side tires probably contacted the gore curb. The evidence also indicates that the driver braked with sufficient force to lock the wheels of the vehicle as he attempted to regain control of the Crown Victoria. The vehicle subsequently yawed in a CCW direction as its center of gravity continued in a southerly direction.

The Crown Victoria rotated across the southbound travel lanes of the Parkway and departed the inboard edge of the roadway in a broadside orientation. As the front wheels mounted the median curb, the vehicle had rotated approximately 90 degrees in a CCW direction. As the rear wheels mounted the curb, the vehicle had exceeded 90 degrees of yaw. The Crown Victoria continued to yaw CCW as it traversed the grass median.

The right B-pillar area of the Crown Victoria subsequently impacted the 16" diameter tree which resulted in an impact force of 3:30-4 o'clock. The impact, which was located rearward of the vehicle's center of gravity, induced a CW rotation. The vehicle remained engaged against the struck tree as rotated approximately 90 degrees CW to final rest. At rest, the front of the vehicle was facing in a southerly direction.

Conclusions

Based on witness testimony and the police documented physical evidence, the Crown Victoria initially broke traction as the driver braked to avoid the civilian vehicle. He released brake pedal pressure and applied a left (CCW) steering input to regain control of the vehicle. The right side tires of the Crown Victoria contacted and overrode an asphalt curb at the right roadedge and as a result the driver reapplied the brakes which, in combination with the curb impact, induced a CW yaw at a high rate of speed which the driver was unable to negate. He maintained a braking force as the vehicle yawed across the southbound travel lanes and the grass median.

The witness testimony and physical evidence at the crash scene supports that loss of control was due to the curb contact and application of the vehicle's brakes. The steering anomaly known to this vehicle does not appear to be a contributing factor for the causation of the crash since the driver apparently successfully steered the vehicle out of the initial CW yaw as stated by witness #2. The driver induced left steering input could have resulted in understeer, thus causing the vehicle to drift toward the curb which resulted in impact with the curb and driver braking.

The police identified a possible cause of the crash as hit and run incident. This was ruled out by all witnesses who responded to the police regarding this allegation.

MOTOR VEHICLE ACCIDENT REPORT

CASE NO.	4 ACCIDENT DATE MO	DAY	YR	5 TIME (MILITARY)	6 DAY OF WEEK	7 REPORT TYPE	COUNTY	9 TIME NOTIFIED (MILITARY)	10 TIME ARRIVED (MILITARY)
-300-1172	10	27	92	0006	TUE	[1] 1 - TRAFFIC ACCIDENT 2 - NON TRAFFIC ACCIDENT	16	0006	0006

RECONSTRUCTION / REPORT OF INVESTIGATION

LOCATION:

Southbound Baltimore Washington Parkway (MD 0295) approximately 242 feet south of the exit ramp for westbound John Hanson Highway (US 0050), Cheverly, Prince George's County, Maryland

DATE / TIME:

Tuesday
October 27, 1992
0006 hours / 12:06 AM

COLLISION TYPE:

Fixed Object
MAARS Type: 09
Subsequent Events: Fixed Object (09), Fixed Object (09)
Single vehicle
Fatal collision, one fatality no personal injuries

WEATHER:

Partly cloudy, cool, temperature approximately 50°

ROAD TYPE:

The Baltimore Washington Parkway is a four lane highway divided by a wide grass median. At the collision site, southbound Baltimore Washington Parkway is a two lane roadway bordered by raised asphalt curbs. Lanes were delineated by painted edge lines and a broken center line. North of the collision site there are three southbound lanes. These lanes divide into a "Y" configuration with the right and center lanes forming the exit ramp to westbound John Hanson Highway and the left and center lanes continuing for the southbound Baltimore Washington Parkway. The southbound lanes and the exit ramp are divided by a widening dirt area. At the

11 INVESTIGATING OFFICER	7 OFFICER ID NO	3 AGENCY	4 INSTALLATION
Sgt. David L. Demrison	758	DA	S.O.D.

PATROL AREA	6 DATE	7 SPECIAL STUDY	8 SUPER APPROVAL	9 ID NO	10 REVIEWED
S-6	11/20/92	N/A			

ROAD TYPE, continued:

collision site the southbound lanes curve slightly to the left with a 2140 foot radius arc. The collision site is basically level and is located at the base of a long downhill grade. Approximately 0.2 miles north of the collision site the Baltimore Washington Parkway curves to the right and immediately after the collision site the roadway curves to the left. The road surface was dry asphalt with a measured coefficient of friction of 0.75. The measured coefficient of friction of the grass median was 0.66. The speed limit was posted at 45 miles per hour. The median area is grass with hardwood trees scattered throughout. There is a wooded area to the west of the Baltimore Washington Parkway and an industrial complex to the east.

IDENTIFICATION:

DRIVER #1:

Roger Peck FLEMING
Prince George's County Police Department
7600 Barlowe Road
Landover, Maryland 20785
W/ (301) 336-8800
Maryland Driver's License # F-455-744-680-369
Fatal injuries

VEHICLE #1:

1992, Ford, Crown Victoria, Maryland Registration-PG0795/ #15, Owner: PRINCE GEORGE'S COUNTY MARYLAND, 9201 Basil Court, Landover, Maryland 20785

WITNESSES:

WITNESS #1:

Corporal Douglas EASTER #1322
Prince George's County Police Department
7600 Barlowe Road
Landover, Maryland 20785
W/ (301) 336-8800

A written statement was obtained from Witness #1 on November 11, 1992.

Witness #1 was an on-duty police officer. Witness #1 monitored Driver #1's radio transmission regarding the pursuit of a fleeing Honda. Witness #1 joined the pursuit at the Baltimore Washington Parkway and Route 450. Witness #1 stated that as they proceeded south on the Parkway, Driver #1 was approximately 100 to 150 yards ahead of him. Witness #1 stated that as they neared the exit ramp to westbound John Hanson Highway he believes that Vehicle #1 was in the center lane and it appeared as if Driver #1 was going to take the exit ramp. Witness #1 stated that Vehicle #1's brake lights came on and Vehicle #1 appeared to fishtail, skidding from right to left. Witness #1 stated that Vehicle #1 skidded through the right median, across the southbound lanes and into the center median striking a tree. Witness #1 stated that he could not see the suspect's Honda. Witness #1 stated that at no time did he observe Vehicle #1 strike any other vehicles.

WITNESS #2:

Corporal Richard DELABRER #1446
Prince George's County Police Department
7600 Barlowe Road
Landover, Maryland 20785
W/ (301) 336-8800

A written statement was obtained from Witness #2 on October 28, 1992. Witness #2 was interviewed again at the scene of the collision on November 2, 1992.

WITNESS #2, continued:

Witness #2 was a police officer operating an unmarked police vehicle. Witness #2 monitored Driver #1's radio transmission regarding the pursuit of a fleeing Honda. Witness #2 joined the pursuit on the Baltimore Washington Parkway south of Route 450. Witness #2 stated that as the pursuit approached his location on the Parkway from behind, he accelerated and attempted to gain speed. Witness #2 stated that he observed the suspect Honda approaching. Witness #2 pulled his vehicle to the left and the suspect Honda passed him at a high rate of speed with its lights off. Witness #2 allowed Vehicle #1 to also pass and then followed the pursuit. Near the exit ramp, Witness #2 observed two civilian vehicles ahead of the suspect Honda. One of these vehicles was in lane #1 and the other was in Lane #2. Witness #2 stated that the suspect Honda stayed to the far right of these vehicles as he approached the exit ramp. At the last moment, the suspect turned on his lights and veered to the left to continue south on the Parkway. This forced the civilian vehicle in lane #2 to brake and drift slightly left. Witness #2 stated that Driver #1 was forced to apply his brakes to avoid this civilian vehicle. When Vehicle #1 began to brake, its rear end slid to the left. Witness #2 stated that Vehicle #1 appeared to straighten then its rear end jerked strongly to the right and the collision occurred. Witness #2 stated that at this time he was approximately 1/4 mile behind Vehicle #1. Witness #2 stated that he did not see Vehicle #1 strike any other vehicles.

WITNESS #3:

Philip A. ROWCLIFFE
1249 1/2 C Street, SE
Washington, D.C. 20003
H/ (202) 544-6218 W/ (703) 329-3700
DOB: 09/21/62

A written statement was obtained from Witness #3 after the collision on October 27, 1992. Witness #3 responded to the office of the Collision Analysis and Reconstruction Unit on November 3, 1992, and a more

WITNESS #3, continued

extensive interview was conducted. Additionally, Witness #3 and this investigator also revisited the collision site on this day.

Witness #3 stated that he was operating his vehicle southbound on the Baltimore Washington Parkway in Lane #1, traveling at 45-50 miles per hour. In the area of the exit ramp for John Hanson Highway, Witness #3 stated that he was passed on the right by what appeared to be a Honda. Witness #3 stated that this Honda appeared to be traveling "well over 100". There was another unknown vehicle traveling in Lane #1 ahead of Witness #3. Witness #3 stated that the Honda grazed the right curb then cut sharply into lane #1 ahead of the vehicle in front. Witness #3 stated that the Honda disappeared around the curve. Witness #3 stated that he slowed down and several seconds later the police cruiser, Vehicle #1, began to pass him on the right. Witness #3 stated that Vehicle #1 ran up onto the right curb and this appeared to cause Driver #1 to lose control. Witness #3 stated that Vehicle #1 spun sideways across the road between he and the unknown vehicle, entered the grass median and struck the tree. Witness #3 stated that the air was filled with smoke, dust, dirt and flying debris. Witness #3 stated that he did not see Vehicle #1 strike or be struck by any other vehicles. Witness #3 did not recall any other vehicles immediately behind him or to his right.

WITNESS #4:

Neal Allen HYDE
1249 1/2 C Street, SE
Washington, D.C. 20003
H/ (202) 544-6218
DOB: 03/18/66

A written statement was obtained from Witness #4 after the collision on October 27, 1992. Witness #4 responded to the office of the Collision Analysis and Reconstruction Unit on November 3, 1992, and a more extensive interview was conducted. Additionally, Witness

WITNESS #4, continued

#4 and this investigator also revisited the collision site on this day.

Witness #4 was a front seat passenger in Witness #3's vehicle and stated that they were traveling in the left lane. Witness #4 stated that a dark Honda passed their vehicle at a high rate of speed on the right. Witness #4 estimates the speed of this Honda to be 100 miles per hour. Witness #4 stated that seconds later Vehicle #1 also passed them on the right. Witness #4 stated that Vehicle #1 struck the curb on the right, went out of control, skidded across both lanes, into the median and struck the tree. Witness #4 stated that he did not see the Honda interfere with the travel of Vehicle #1 in any way. Witness #4 did not see Vehicle #1 strike, or be struck by any other vehicles. This witness stated that he believes that the driver of the Honda's last minute decision to go left at the exit ramp contributed to Driver #1's loss of control.

WITNESS #5:

Police Officer D. M. WELLER #1881
Prince George's County Police Department
7600 Barlowe Road
Landover, Maryland 20785
W/ (301) 336-8800

A written statement was obtained from Witness #5 on November 3, 1992.

Witness #5 was an on-duty police officer. Witness #5 monitored Driver #1's radio transmission regarding the pursuit of a fleeing Honda. Witness #5 joined the pursuit on Route 450 at Route 95. Witness #5 followed Vehicle #1 and the suspect vehicle west on Route 450 onto the Baltimore Washington Parkway. Witness #5 stated that as they proceeded south on the Parkway, Driver #1 was approximately 150 to 200 yards ahead. Witness #5 stated that as they proceeded south on the Baltimore Washington Parkway the Honda was weaving in and out of traffic with its lights off at speeds in excess 105 miles per hour.

WITNESS #5, continued:

Witness #5 stated that the Honda was in the far right lane and appeared to be taking the John Hanson Highway exit. Witness #5 stated that at the last moment the Honda cut to the left in front of another vehicle, through the median and continued south on the Parkway. At this point Witness #5 stated that dirt and dust obscured his view of the collision.

WITNESS #6:

Corporal Trent L. TOLSON #1396
Prince George's County Police Department
7600 Barlowe Road
Landover, Maryland 20785
W/ (301) 336-8800

A written statement was obtained from Witness #6 on November 3, 1992.

Witness #6 was an on-duty police officer. Witness #6 monitored Driver #1's radio transmission regarding the pursuit of a fleeing Honda. Witness #6 observed the Honda traveling west on Route 450 in the right lane in excess of 80 miles per hour with its lights off. Witness #6 followed the pursuit onto the Baltimore Washington Parkway but did not observe the collision.

WITNESS #7:

Police Officer Jeffery SCOTT #1874
Prince George's County Police Department
7600 Barlowe Road
Landover, Maryland 20785
W/ (301) 336-8800

A written statement was obtained from Witness #7 on October 28, 1992.

Witness #7 was an on-duty police officer. Witness #7 monitored Driver #1's radio transmission regarding the pursuit of a fleeing Honda. Witness #6 observed the

WITNESS #7, continued:

Honda traveling west on Route 450 at a high rate of speed. Witness #7 states that Vehicle #1 was approximately 30 yards behind the Honda at this time. Witness #7 followed the pursuit onto the Baltimore Washington Parkway but did not observe the collision.

WITNESS #8:

Corporal Edward C. BURKE Jr. #673
Prince George's County Police Department
7600 Barlowe Road
Landover, Maryland 20785
W/ (301) 336-8800

A written statement was obtained from Witness #8 on November 3, 1992.

Witness #8 was an on-duty police officer. Witness #8 monitored Driver #1's radio transmission regarding the pursuit of a fleeing Honda. Witness #8 positioned his vehicle, emergency lights activated, in the left turn lane in the 6100 block of Route 450. Witness #8 observed the Honda westbound on Route 450 with its lights off and traveling at approximately 100 miles per hour. Witness #8 stated that Vehicle #1 was approximately 7 to 8 car lengths behind the Honda. Witness #8 followed the pursuit onto the southbound Baltimore Washington Parkway but did not observe the collision.

WITNESS #9:

Bonnie N. GOLLUP
4617 Winding Brook Lane
Lothian, Maryland 20711
H/ (410) 741-1733

Witness #9 phoned the office of the Collision Analysis and Reconstruction Unit on November 2, 1992. A telephone interview was conducted at this time.

WITNESS #9, continued:

Witness #9 stated that she was on Kenilworth Avenue near Route 95. Witness #9 observed a small dark car traveling northbound on Kenilworth Avenue at approximately 100 miles per hour. Witness #9 observed this vehicle exit onto southbound Route 95. Witness #9 stated that she observed a marked police cruiser apparently in pursuit of this vehicle and that this cruiser was about five seconds behind. Witness #9 did not observe the cruiser (Vehicle #1) strike or be struck by any other vehicles.

WITNESS #10:

Ted Louis HICKS
2307 South 26th Street #4
Arlington, Virginia 22206
H/ (703) 521-0806

A telephone interview of Witness #10 was conducted on November 2, 1992, at 1020 hours.

Witness #10 stated that he was operating a Ryder truck southbound on Route 95 in Lane #2, north of Route 450. Witness #10 stated that he observed a police cruiser's (Vehicle #1) emergency lights in his mirrors. Witness #10 stated that he decided to change lanes to make sure he was out of this cruiser's way. Witness #10 stated that as he changed from Lane #2 to Lane #3 he almost struck a small dark car with no lights on. Witness #10 stated that this car was traveling at over 105 miles per hour. Witness #10 stated that when the dark car passed him the cruiser was 1/4 to 1/2 miles behind. Witness #10 stated that the dark car went around another vehicle and exited Route 95 at westbound Route 450. Witness #10 continued south on Route 95. Witness #10 never saw Vehicle #1 other than in his mirrors.

STATEMENTS:

DRIVER OF THE FLEEING HONDA:

Anthony Jerome WALKER
784 Irving Street
Washington, D.C. 20010
DOB/ 3-20-69
H/ (202) 829-1731

On October 27, 1992, a written statement was obtained from the driver of the fleeing Honda.

WALKER stated that in an attempt to flee from and elude a police officer (Driver #1) he traveled at speeds around 80 miles per hour, weaved in and out of traffic, and turned his vehicle's lights off. WALKER stated that they were southbound on the Baltimore Washington Parkway ~~toward Washington, D.C. WALKER stated that at the split~~ (Ramp to John Hanson Highway), he went around to the right of another car that was in the middle lane. WALKER stated that he turned his lights off so that Driver #1 could not tell which way he was going to go. WALKER stated that he turned toward Washington, D.C. (back onto the southbound Parkway) but did not go through the dirt area. WALKER stated that after that he went around a curve and did not see Vehicle #1 again. WALKER stated that his vehicle and Vehicle #1 never made contact at any time during the pursuit.

OCCUPANT #1 OF THE FLEEING HONDA:

Antoine Markee MITCHELL
1705 Mount Pisgah Lane #24
Silver Spring, Maryland
DOB/ 11-23-75
H/ (301) 431-3176

On October 27, 1992, a written statement was obtained from Occupant #1 of the fleeing Honda.

MITCHELL stated that he was an occupant of the Honda fleeing from the police officer (Driver #1). MITCHELL stated that WALKER was the driver of the Honda. MITCHELL

OCCUPANT #1 OF THE FLEEING HONDA, continued:

stated while attempting to flee, WALKER was traveling at speeds over 100 miles per hour, weaving in and out of traffic, and turning his lights off. MITCHELL stated that WALKER was driving recklessly. MITCHELL stated that as they approached the "Y", WALKER slowed down, then sped up and turned across the median real fast. At this time Vehicle #1 was about five car lengths behind them. MITCHELL stated that Vehicle #1 pursued them across the median. MITCHELL stated that was the last time he saw Vehicle #1. MITCHELL stated that he did not see the collision.

OCCUPANT #2 OF THE FLEEING HONDA:

Jenniffer Lee MALCOLM
~~10710 Timberline Drive~~
Upper Marlboro, Maryland 20772
DOB/ 7-25-73
H/ (301) 372-8748

On October 28, 1992, a written statement was obtained from Occupant #2 of the fleeing Honda.

MALCOLM stated that WALKER was the driver of the fleeing Honda. MALCOLM stated that WALKER was driving at speeds around 90 miles per hour, weaving in and out of traffic, and turning his lights off.

SITE EXAMINATION:

This investigator was notified of this collision at 0014 hours and responded to the scene arriving at 0046 hours. A direct examination of the collision site was initiated immediately upon arrival. The scene had been secured by patrol officers and all traffic had been diverted. An additional examination of the collision site was conducted after sunrise on October 27, 1992, at approximately 0730 hours. Photographs and measurements that accurately depict the collision scene were taken on both occasions. During the direct examinations of the collision site the following observations were made:

SITE EXAMINATION, continued:

* General topographic observations as described in ROAD TYPE.

* Vehicle #1 was located in its position of final rest against a 16 inch diameter oak tree.

* In the area of Vehicle #1 right front there is evidence of fire extinguisher use. A discharged fire extinguisher is located in the grass north of Vehicle #1.

* Four side sliding tire marks from Vehicle #1 lead through the grass median from the edge of southbound Baltimore Washington Parkway directly to the tree.

* Four side sliding tire marks were located across both southbound lanes of the Parkway. These marks continued in line with the sliding tire marks in the median and continued directly to Vehicle #1. The arc of these sliding tire marks remains consistent as they cross both southbound lanes. There is no additional loading or deviation present which would have indicated impact with another vehicle during the slide.

* A very deep gouge, apparently caused by the right rear wheel of Vehicle #1, was located on the median curb.

* There is a dirt area that divides southbound Baltimore Washington Parkway from the exit ramp to westbound John Hanson Highway. This dirt area is eroded from the elements and vehicular traffic. The dirt has eroded away from the outside of the Baltimore Washington Parkway's southbound right curb. This has caused the curb to protrude upward as much as 5 inches, causing a hazard to traffic.

* There is a side sliding mark from Vehicle #1's right rear tire located in the dirt to the outside of the right curb. There are numerous fresh gouges and scrapes along the top surface of this curb from

SITE EXAMINATION, continued:

the undercarriage of Vehicle #1 in the same area. There is a tire strike scuff on the outside of the curb at the end of this tire mark.

* There were numerous tire tracks from unknown vehicles located throughout the dirt area.

MEASUREMENTS:

Measurements that accurately depict the collision scene were taken using the coordinate method. A base point was established along the median curb of southbound Baltimore Washington Parkway at the southern corner of a storm drain. A base line was then extended north and south along the edge of the median curb. All measurements were taken perpendicular to this base line. Measurements are depicted on the DIAGRAM OF MEASUREMENT POINTS.

Point A: Base point on curb at storm drain, also location of a large gouge in the curb
Point B: Right front wheel of Vehicle #1
Point C: Right rear wheel of Vehicle #1
Point D: Tire strike on curb
Point E: Tire strikes on curb, front tires' side slide skid marks crossover
Point F: Rear tires' side slide skid marks crossover
Point G: Left rear side slide skid mark begins
Point H: Right rear tire strikes outside of curb
Point I: Right front side slide skid mark begins
Point J: Left front side slide skid mark begins
Point K: Widest point in the arc of the right rear sliding tire mark in the dirt
Point L: Beginning of sliding tire mark in the dirt

MEASUREMENTS, continued:

Point A to B: South 139'5", East 18'7"
Point A to C: South 132'6", East 17'10"
Point A to D: South 20', on Base Line
Point A to E: North 40'to 50', on Base Line
Point A to F: North 55'8", West 12'
Point A to G: North 123', West 21'
Point A to H: North 140', on right curb
Point A to I: North 157', West 19'6"
Point A to J: North 162', West 15'8"
Point A to K: North 207', West 26'3"
Point A to L: North 249', West 25'

VEHICLE INSPECTION:

Vehicle #1 was examined on the scene of the collision and again on October 27, 1992, during daylight hours at the Prince George's County Police Department's Automotive Service's Lot, Upper Marlboro, Maryland. During this direct inspection of Vehicle #1 the following observations were made:

* Make- Ford
* Model- Crown Victoria
* Year- 1992
* VIN- 2FACP72W7NX209849
* Registration- Maryland PG0795
* Marked Prince George's County Police cruiser #15
* Color- White with blue interior
* Mileage- 9978
* Automatic transmission

* Extreme regression to the entire right side. Initial impact was just to the rear of the right "B" pillar. Entire vehicle is twisted to the right along its longitudinal axis.

* Right portion of the is frame crushed to the left.

* Right front door forced open during rescue operations. Pry marks evident near latching mechanism. Black transference evident on door's

VEHICLE #1, continued:

exterior.

* Wood fibers and bark are embedded in the right rear door, right "B" pillar and roof.

* Right "A" pillar crushed downward and left.

* Right "C" pillar bent to the left.

* Roof buckled upward, forced to the left and rearward.

* Police emergency light bar torn from roof, wires still attached.

* Contact damage to the right rear fender. Fender is crushed inward, plastic rear bumper is torn on the right rear corner. Blue paint transference is evident across fender. Paint is smeared in a front to rear fashion. Black transference is evident on the lower portion of the fender. On the upper portion of the fender, mixed in the blue paint, there are glass fragments. Additionally, in this same area Vehicle #1's paint is scratched and gouged in a pock marked pattern which is indicative of safety glass impact.
** THIS INDICATES THAT AT SOME POINT VEHICLE #1 WAS INVOLVED IN A COLLISION WITH ANOTHER VEHICLE **

* Induced damage to right front fender.

* Hood forced up and rearward on right side. Evidence of fire extinguisher residue in the engine compartment.

* All windows with the exception of the smaller secondary window on the left rear door are shattered.

* Induced and contact damage across entire windshield. Left side of windshield has been torn outward during rescue operations.

VEHICLE #1, continued:

* Trunk lid has been sprung.

* Induced damage to left rear fender.

* Left rear door is jammed rearward. Window frame was bent outward and down during rescue operations.

* Left front fender is buckled downward above the wheel from induced damage.

* Front bumper is undamaged. Front bumper and head lamp cowl are separated.

* Driver's seat is crushed from the right, forced and twisted to the left.

* Right front seat is crushed, twisted and forced to the left. The cloth fibers of this seat are crushed and torn apparently from impacting Driver #1.

* Driver #1's right shoe wedged into pedal area by floor pan intrusion.

* Police radio assembly torn from vehicle. Federal signals control box torn from vehicle.

* AM/FM radio was on, volume low.

* Heat is on, temperature control set on medium cool, fan set on low.

* Driver's side air bag is deployed.

* Driver's safety belt harness has been cut during rescue operations. Safety belt latch plate is still attached to the latch. DRIVER #1 WAS RESTRAINED BY A SAFETY BELT DURING THE COLLISION.

* Instrument panel is buckled upward in the center.

* Rear seat is completely crushed.

EXAMINATION OF SUSPECT VEHICLE:

The vehicle being pursued by Driver #1 was examined on October 27, 1992, at the Prince George's County Police Department's Evidence Bay. The vehicle was fully photographed and processed at this time. During the examination of this vehicle the following observations were made:

* Make- Honda
* Model- Accord
* Year- 1992
* Color- Black w/ gold pin stripe
* Registration- None displayed
* VIN- 1HGCB7276NA047594 ** FROM FEDERAL SAFETY STICKER **

* There is minor contact damage to the left front corner of the front bumper. Damage appears to be a scraping of the plastic bumper in a front to rear motion. This contact damage is 14 1/2" to 22 1/4" high. There is a brown transference and embedded within this damaged area appears to be creosote wood fibers and a thin green colored transference that is possibly vegetation.

* There is no evidence of any vehicle to vehicle contact.

EVIDENCE ANALYSIS:

In an effort to identify the vehicle that was involved in the collision with Vehicle #1, paint samples from the right rear fender of Vehicle #1 were submitted to the Federal Bureau of Investigation for analysis. As of November 20, 1992, this analysis has not been completed.

5490394
92-300-1172
October 27, 1992

SPEED CALCULATIONS:

The following data was used to determine to minimum speed of Vehicle #1:

Center of mass side sliding distance on asphalt:
112 feet
Asphalt coefficient of friction: 0.75

Center of mass side sliding distance on grass:
152 feet
Grass coefficient if friction: 0.66

The minimum speed of Vehicle #1 was determined to be 74 miles per hour.

SEQUENCE OF EVENTS:

Driver #1 was an on-duty Prince George's County Police Officer operating a marked police patrol cruiser (Vehicle #1). At the intersection of Kenilworth Avenue and Westchester Park Drive, Driver #1 attempted to initiate a traffic stop on the listed suspect vehicle. The driver of the suspect vehicle, WALKER, attempted to flee from Driver #1. The pursuit went north on Kenilworth Avenue to southbound Route 95, south on Route 95 to westbound Route 450 (Annapolis Road), west on Route 450 to southbound Baltimore Washington Parkway and south on the Baltimore Washington Parkway. Speeds exceeded 100 miles per hour and the suspect vehicle was weaving in and out of traffic. Several times the suspect, WALKER, turned off his vehicle's lights.

As the pursuit continued south on the Baltimore Washington Parkway the suspect vehicle initially appeared to be exiting the Parkway at the westbound John Hanson Highway ramp. The suspect vehicle swerved to the left and continued south on the Parkway.

SEQUENCE OF EVENTS, continued:

Just south of the exit ramp, Vehicle #1 struck a raised curb with its right rear wheel. Vehicle #1's right rear wheel went up and over this curb. This caused the frame of Vehicle #1 to drag and gouge the top surface of the curb. Vehicle #1 began rotate counter-clockwise and started sliding to the right. This caused Driver #1 to completely lose control. Vehicle #1 slid down the curb for approximately 109 feet continuing to rotate counter-clockwise. Vehicle #1 came back completely onto the southbound lanes, now sliding sideways to the right. Vehicle #1 crossed both southbound lanes of the Baltimore Washington Parkway and struck the median curb. Vehicle #1 continued over the median curb. Vehicle #1 slid southbound through the grass median and struck an oak tree with its right side. Vehicle #1 came to final rest against this tree and Driver #1 was trapped within the vehicle.

Driver #1 was transported to the Washington Hospital Center's Med Star Unit and pronounced at 0034 hours by Doctor Sykes.

Evidence on Vehicle #1's right rear fender indicates that a collision with another vehicle occurred at some point. The exact location of this collision is unknown. The identity of this vehicle's driver is also unknown. This unknown vehicle failed to stop and remain at the scene of this collision and failed to make any report of the collision. No witnesses observed any contact between Vehicle #1 and any another vehicles. Numerous efforts to identify this hit and run driver have been unsuccessful.

5490394
92-300-1172
October 27, 1992

CONCLUSIONS:

1. The primary cause of this collision is ROADWAY DEFECT. The raised curb was a traffic hazard and caused Vehicle #1 to begin rotating. This in turn caused Driver #1 to completely lose control of his vehicle.

2. Vehicle #1 was involved in a collision with a hit and run vehicle. The contributory factors of this hit and run vehicle have not been determined. The collision with the hit and run vehicle may have caused Driver #1 to initially strike the raised curb.

3. There was no evidence of contact between Vehicle #1 and the fleeing Honda.

CLOSURE:

This case was reviewed with the Office of the State's Attorney on November 10, 1992. This case will remain OPEN, pending the identification of the hit and run driver.

PRINCE GEORGE'S COUNTY
POLICE DEPARTMENT

COLLISION ANALYSIS & RECONSTRUCTION UNIT

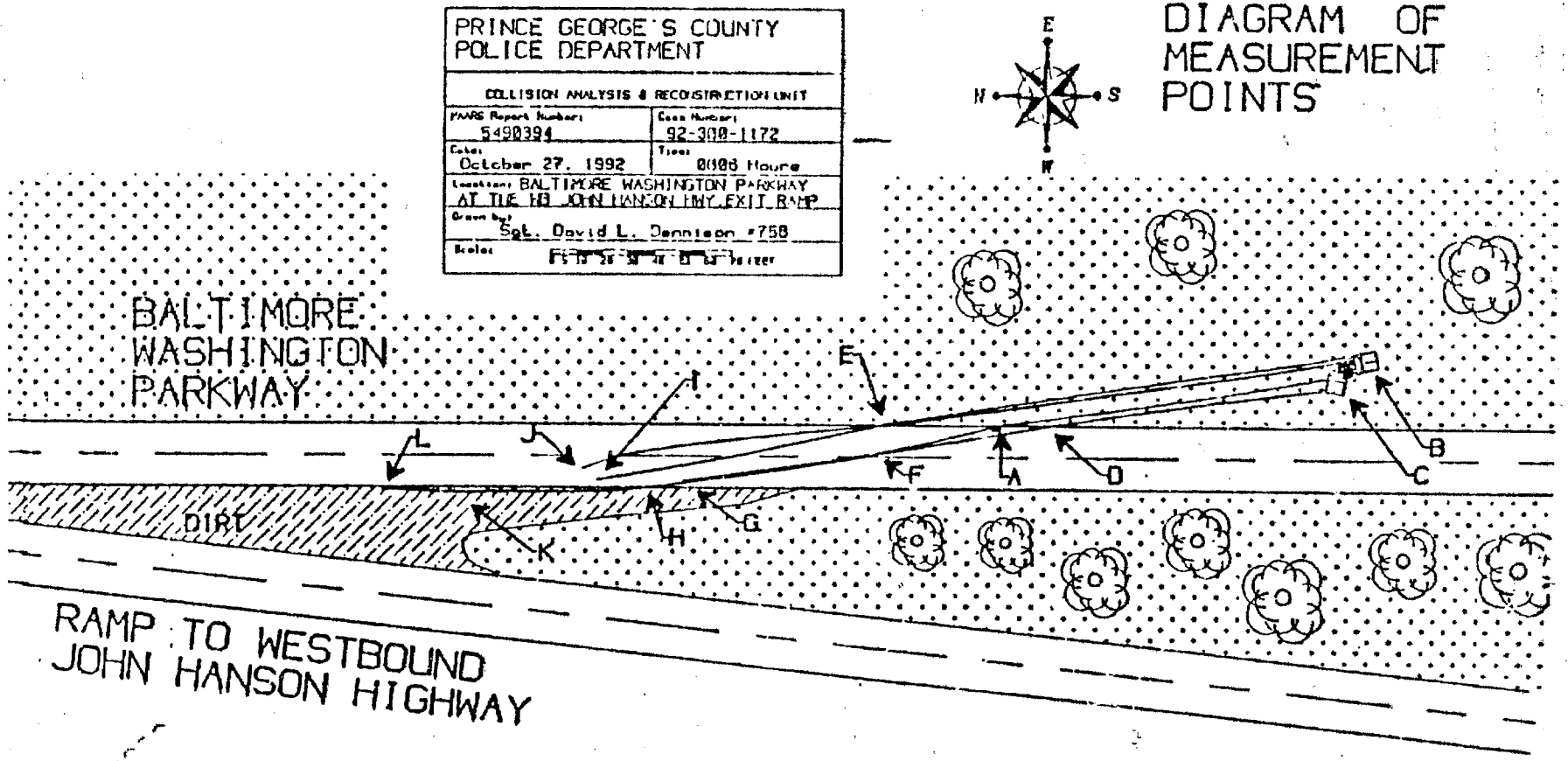
PARS Report Number: 5490394	Case Number: 92-300-1172
Date: October 27, 1992	Time: 0008 Hours

Location: BALTIMORE WASHINGTON PARKWAY AT THE NB JOHN HANSON HWY EXIT RAMP

Drawn by: Sgt. David L. Dennison #758

Scale: Not to scale

DIAGRAM OF MEASUREMENT POINTS



CALSPAN EVALUATION OF FORD CROWN VICTORIA POLICE VEHICLE STEERING FAILURE ALLEGATIONS

VEHICLE: POLICE 1993 FORD CROWN VICTORIA
LOCATION: PRINCE GEORGES COUNTY, MD
DATE: FEBRUARY 28, 1994
DRIVER: JOHN L. BAGILEO

SUMMARY

This crash involved a 1993 Ford Crown Victoria marked police vehicle that was responding to a police call with the emergency overhead lights and siren activated. The Crown Victoria was traveling at a police reported high rate of speed when the driver apparently lost control of the vehicle and yawed in a clockwise (CW) direction. The police vehicle departed the right edge of the roadway in a near broadside orientation as it overrode a concrete barrier curb and impacted a fire hydrant with the left quarter panel area. The impact sheared the hydrant and induced a lateral roll to the vehicle. The Crown Victoria subsequently impacted and fractured a wooden utility pole with its left side passenger compartment and roof areas. The police report noted that the vehicle came to rest on its left side engaged with the base of the fractured pole. A fire ensued which consumed the vehicle. The driver was not belted and remained in the vehicle where he expired.

Crash Data

The crash occurred on Martin Luther King Jr. Highway (MD 704) approximately 286' west of Greig Street, in Seat Pleasant, MD, on February 28, 1994, at 2156 hours. Route 704 was reported as a six lane divided highway with three lanes in both the eastbound and westbound directions. The lanes were divided by a curbed concrete and grass median. The north outboard edge of Route 704 was bordered by a concrete curb with grass and sidewalk parallelling the curb. Located east of the crash site on the north edge of Route 704 was an intersecting street identified as Greig Street which formed a three-leg T intersection. Traffic entering onto Route 704 from Greig Street was controlled by a stop sign. There were no traffic controls for east/westbound traffic on Route 704 traveling through the intersection. In the vicinity of the crash site, the asphalt road surface was straight with a police measured the road coefficient of friction at 0.81. The posted speed limit was 40 mph. The light conditions were dark, however, the roadway was illuminated by overhead luminaires. Weather conditions were reported as partly cloudy and dry with a temperature of 30 degrees F.

Vehicle Data

The 1993 Ford Crown Victoria was a marked police vehicle that was equipped with an overhead light bar. The vehicle was owned by the Prince Georges County Police Department and was identified by the following vehicle identification number (VIN): 2FACP71W9PX188474. The vehicle was also identified as police vehicle number 631 with a Maryland license registration number of PG1187. This Ford Crown Victoria was equipped with the factory police package components, four-wheel power-assisted disc brakes (unknown if ABS equipped), a 4.6 liter V-8 engine with an automatic overdrive transmission, speed-sensitive, variable-assist power steering, and a supplemental driver's side air bag system. The pre-crash condition of the vehicle was unknown.

Driver Data

The driver of the 1993 Ford Crown Victoria was a 26 year old male on-duty police officer. His driver experience, training, and familiarity with the ford Crown Victoria was unknown. The police report noted that he was not wearing the manual 3-point lap and shoulder belt system.

The following scenarios of the pre-crash and crash events were obtained from the police reconstruction of the crash and from police reported witness statements. Calspan's reconstruction of the crash was derived from this data and a review of the physical evidence that was documented by the police and plotted on the schematic of the crash scene.

Police Reconstruction

The Prince Georges County Police Department investigated the crash and reconstructed the vehicle's initial speed. They reported that the driver of the Crown Victoria was an on-duty police officer who was responding to a complaint of a tampering with an automobile in the 4700 block of Mann Street, in Seat Pleasant, MD. He was responding to the call by traveling in a westerly direction on Route 704 in the center or inboard travel lane. A witness (witness #1) was stopped on Greig Street at Route 704 with the intention of initiating a left turn to proceed eastbound on Route 704. As the Crown Victoria approached the intersection of Greig Street, he apparently activated the emergency lights and siren. Witness #1 initiated the left turn and observed the Crown Victoria approaching the intersection. The witness stopped her vehicle in the outboard travel lane as the Crown Victoria passed through the intersection in the inboard travel lane. The driver of the Crown Victoria apparently swerved to the left in fear that the witness was not going to stop for his emergency vehicle. The driver lost control of the Crown Victoria as it yawed to the right (clockwise). The vehicle struck the right curb, then continued over the curb and struck a fire hydrant with the left rear quarter panel area of the vehicle. The vehicle sheared the hydrant as it continued in a westerly direction and began to overturn. The vehicle subsequently struck a utility pole with its left side and roof area. The Crown Victoria came to rest engaged with the pole on its left side facing in an westerly direction. A fire ensued which consumed the vehicle. The driver was trapped in the vehicle and expired.

The police concluded the following from their investigation:

1. The Crown Victoria was traveling at a speed that was too great for traffic and road conditions. The speed of the vehicle was calculated at 104 mph.

2. The driver apparently lost control after reacting to the approach of witness #1's vehicle.

3. The driver was not restrained by a seat belt.

Witness Statements

The police report identified the 24 year old female driver of a non-contact vehicle as witness #1. This witness was driving her vehicle in an easterly direction on Greig Street on an approach to the intersection of Route 704. She reportedly stopped her vehicle at the stop sign in preparation for a left turn across the westbound travel lanes of Route 704 to proceed in an easterly direction. This witness stated to the investigating police officer that as she was stopped, she checked for approaching traffic on Route 704 in both the eastbound and westbound directions. She noted that the intersection was clear of approaching traffic and accelerated to initiate her left turn. As this witness began to accelerate into the turn, she observed the police vehicle approaching from her left with its emergency lights and siren activated. She immediately stopped her vehicle in the outboard lane of Route 704 to yield to the emergency vehicle.

A 27 year old male driver was stopped behind witness #1 on Greig Street at the intersection of Route 704. He was identified on the police report as witness #2. This witness had intended to turn right onto Route 704 and proceed in a westerly direction. He observed the brake lights go off on witness #1's vehicle for approximately 2-5 seconds as she accelerated forward to initiate her left turn. Witness #1's vehicle subsequently stopped in the outboard travel lane as she yielded to the police vehicle. Witness #2 stated in the police report that the police vehicle was traveling in the center lane and that when it passed the intersection, witness #1's vehicle was stopped approximately 7' into the outboard lane (police reported lane #3).

Another witness, identified on the police report as witness #3, stated that he was traveling eastbound on Route 704 approximately 300' west of the impending crash site. He reported that he had a clear view of westbound traffic and observed the police vehicle as the officer activated the overhead emergency lights. This witness reported that as the emergency lights illuminated, the vehicle appeared to be out of control. He also stated that he did not observe any other vehicles interfere with the police vehicle's path of travel.

Witness #4 identified on the police report was located in a parking lot and reported that he heard the skidding of tires and observed the 1993 Ford Crown Victoria police vehicle strike the utility pole. He did not observe the pre-crash events, however, he did confirm that the vehicle's overhead emergency lights were activated.

The fifth witness identified on the police report was traveling in an easterly direction on Route 704 and was approaching the impending crash site. This witness positioned the Ford Crown Victoria in the center lane and stated that the "vehicle immediately jetted into the pole after its emergency lights came on." He further stated that "the police vehicle seemed to turn into the direction (of the pole) with a sharp jerk and accelerated into the light post". Witness #5 did not observe any other vehicles interfere with the police vehicle's path of travel.

The witnesses established that the police vehicle was initially traveling in the center lane of the three westbound travel lanes. Witness #1 first detected the westbound police vehicle as she initiated a left turn from Greig Street onto Route 704 across the westbound travel lanes. As she observed the vehicle, its overhead lights and siren were activated. Witness #2 was stopped on Greig Street behind witness #1 and observed the police vehicle pass through the intersection with the emergency equipment activated. Witness #'s 3 and 5 were both traveling in an easterly direction approaching the crash site and stated that the police Ford Crown Victoria appeared to go out of control as the driver activated the emergency lights.

Calspan's Reconstruction

The driver of the Ford Crown Victoria was traveling in a westerly direction on Route 704 in response to an emergency police call on Mann Street. On his approach to the intersection of Route 704 and Greig Street, the officer was approximately 2.2 miles east of his destination on Mann Street. The driver had negotiated a slight right curve with a positive grade before traveling on a straight segment of road which toward the impending crash site. Several witnesses observed the Crown Victoria traveling in the center westbound travel lane as it approached the intersection with the emergency overhead lights and siren activated.

Witness #1 was stopped on Greig Street at the intersection of Route 704 attempting a left turn across the westbound lanes to proceed eastbound on Route 704. This witness initially failed to detect the approaching police vehicle and initiated the left turn. She subsequently stopped her vehicle in the outboard travel lane of Route 704 as she observed the Crown Victoria approaching the intersection. The driver of the Ford Crown Victoria attempted a lane change maneuver to the left to avoid the witness vehicle stopped in the outboard travel lane. The physical evidence on the scaled schematic attached with the police report, supports the witness statements which initially placed the police vehicle in the center travel lane. The left side tire marks from the Crown Victoria began approximately at the mid point of the inboard travel lane which indicates that the driver did initiate an avoidance maneuver by steering to the left as he detected witness #1 initiate her left turn from Greig Street. In addition, the police schematic indicates that as the left side tires began to mark on the dry asphalt road surface, the vehicle was already in a clockwise yaw. The lateral offset between the left front and the left rear tires at the onset of the yaw pattern was approximately seven inches (7") which equates to 3.5 degrees of clockwise yaw. This lane change maneuver would have involved initially involve two steering maneuvers. The driver initially applied a counterclockwise (CCW) steering input to redirect the vehicle to the left followed by a clockwise maneuver (CW) to maintain his westerly direction of travel on a parallel trajectory to the inboard travel lane.

Based on the police schematic and the documented physical evidence, the driver of the Crown Victoria probably initiated a third steering maneuver which involved a CW input, or he continued with the initial CW steering input to redirect the vehicle back toward the center travel lane. During this maneuver, the driver probably experienced understeer, in which the vehicle would not respond to the steering maneuver due to the high rate of speed. The driver subsequently braked in an attempt to decelerate the vehicle. The braking force was probably excessive which induced a CW yaw and resulted in total loss of control of the vehicle.

The Ford Crown Victoria continued to yaw in a CW direction as it traversed the westbound travel lanes. The left front tire impacted the outboard curb of Route 704 at approximately 227' west of the west curbline of Greig Street. The physical evidence on the police schematic identifies that the front tire marks crossed at the curb impact which indicated that the vehicle had rotated approximately 90 degrees in a clockwise direction. The rear tires subsequently impacted the curb as the vehicle departed the north roadside on a broadside orientation. The total length of the tire marks was 288'. The left rear quarter panel area of the vehicle impacted and sheared a fire hydrant that was located several feet outboard of the curbline. The fire hydrant impact induced a lateral roll to the vehicle's left as the Crown Victoria's center of gravity continued in a westerly direction. The hydrant impact, having occurred rearward of the vehicle's center of gravity probably reversed the vehicle's rotation to a CCW direction. The left passenger side and roof area of the vehicle impacted and fractured a wooden utility pole with an overhead luminaire. This pole was located approximately 15' west of the struck hydrant and 15' north of the north curb. The pole impact produced severe damage to the vehicle. The Crown Victoria rotated a police reported 90 degrees in a CCW direction around the fractured pole where it came to rest on its left side. A fire ensue which consumed the vehicle.

The Prince Georges County Police Department documented the physical evidence at the crash scene and the physical layout of the roadway. A drag sled was apparently utilized to measure the coefficient of friction of the asphalt road surface. This value was reported at 0.81. The Department computed an initial velocity of the vehicle at 104 mph (153 ft/sec) using the available evidence and the critical curve speed formula.

Conclusions

The following conclusions can be determined from the available police reported data. These area as follows:

1. The Crown Victoria was traveling at a speed that was approximately 2.6 times faster than the posted speed limit of 40 mph.

2. Witness #1 successfully detected the Crown Victoria which prevented a potentially fatal front to side crash.

3. The driver of the police vehicle initiated a lane change maneuver to the left as he detected witness #1 emerge from Greig Street. This was determined by witness statements who initially placed the Crown Victoria in the second lane and from the documentation of the left side tire marks that extend approximately 6'2" and 6'7" into the left (inboard) travel lane.

4. The physical evidence consists solely of clockwise yaw marks which extended for 288'. This yaw pattern probably resulted from a clockwise steering input which resulted in vehicle understeer followed by braking which induced the CW yaw and loss of control.

5. The velocity of the vehicle mitigated any attempts by the driver to countersteer in an attempt to recover from the CW yaw. Typically, a vehicle that rotates beyond 15 degrees in either direction will not recover from the yaw by driver induced steering inputs. The window for recovery reduces as vehicle velocity increases. Based on the police reported tire marks, this Crown Victoria had deposited approximately 40' of tire marks as it rotated to the 15 degree point. This rotation occurred in approximately 0.27 seconds. The velocity loss at this point was minimal.

6. Due the severe deformation and post-crash fire to the involved vehicle, and the death of the driver, an accurate assessment of the vehicle components could not be made to determine deficiencies with the steering and/or braking systems. The police did not observe vehicle evidence on the road surface prior to the yaw marks which could indicate a component(s) failure.

State of Maryland Motor Vehicle Accident Report

REPORT NO	PAGE OF	ACCIDENT DATE	ACCIDENT TIME	REPORT TYPE	RESEARCH	LOCAL CASE NUMBER	PHOTOS
06277151	1 10	02 28 94	2156 hrs.	☒ FATAL ☐ INJURY ☐ PDO ☐ HIT & RUN ☐ NON-TRAFFIC		94-059-1008	☐ NO ☒ YES

INVESTIGATING OFFICER	AGENCY AND AREA	SUPERVISING OFFICER ID	REVIEWER ID#	CODE - AND NAME OF MUNIC.	COUNTY
#758 Sgt. D. Dennison	DA G-6			1,3,4 Seat Pleasant	16

RECONSTRUCTION / REPORT OF INVESTIGATION

LOCATION:

Martin Luther King Jr. Highway (MD 0704) approximately 286 feet west of Greig Street (MU 0160), Seat Pleasant, Prince George's County, Maryland

DATE / TIME:

February 28, 1994
2156 hours / 9:56 P.M.
Monday

TYPE OF COLLISION:

Fixed Object Struck
MAARS Type / 09
Subsequent Events, Fixed object struck, Fixed object struck, Overturned,
MAARS Type / 09, 09, 11
Fatal collision
One fatality, no personal injuries

WEATHER:

Partly cloudy, temperature approximately 30°

ROAD TYPE:

Martin Luther King Highway at the collision site is a six lane highway with three lanes each traveling east and west, divided by a raised concrete and grass median. This collision occurred completely on the westbound side of Martin Luther King Highway. The roadway is bordered on the right by a concrete curb. Travel lanes are delineated by painted broken white lines. The road surface was dry asphalt with a measured coefficient of friction of 0.81. The speed limit is posted at 40 miles per hour. The roadway is artificially illuminated with street lights. Greig Street intersects Martin Luther King Highway from the north, east of the collision scene. Traffic entering Martin Luther King Highway from Greig Street is controlled by a stop sign. East of Greig Street, Martin Luther King Highway curves to the north and there is a high concrete wall running parallel to the westbound lanes. The site distance between westbound Martin Luther King Highway and Greig Street is reduced by the curve and wall. At the collision site, there are garden style apartments bordering Martin Luther King Highway.

06277151
94-059-1008
February 28, 1994
Sgt. David L. Dennison #758

IDENTIFICATION:

DRIVER #1:

John Louis BAGILEO
7600 Barlowe Road
Landover, Maryland 20785
W/ (301) 336-8800
DOB/ 08-21-67
Maryland Driver's License # B-240-429-549-653
Fatal injuries

NEXT OF KIN:

Nancy BAGILEO
Wife of Driver #1
Mrs. Bagileo was notified of Driver #1's death on February 28, 1994

VEHICLE #1:

1993, Ford, Crown Victoria, Maryland registration- PG1187, owned by PRINCE GEORGE'S COUNTY MARYLAND, 425 Brightseat Road, Landover, Maryland 20785.

OWNER OF FIXED OBJECTS STRUCK:

CURB (undamaged):

MARYLAND STATE HIGHWAY ADMINISTRATION

FIRE HYDRANT (destroyed):

WASHINGTON SUBURBAN SANITARY COMMISSION

UTILITY POLE (destroyed):

POTOMAC ELECTRIC POWER COMPANY, pole #827388-5238

06277151
94-059-1008
February 28, 1994
Sgt. David L. Dennison #758

WITNESSES:

WITNESS #1:

Tracey HARLEY
1101 Elsa Avenue
Landover, Maryland 20786
H/ (301) 350-6160
W/ (301) 779-1900
DOB/ 01-21-7

A written statement was obtained from Witness #1 at her home on March 2, 1994 by Corporal Steven Markley #1134.

View of Witness # 1

Witness #1 stated that she was on Greig Street and stopped at the intersection of Martin Luther King Highway. Witness #1 intended to turn left and proceed eastbound. Witness #1 stated that she checked for traffic both ways on Martin Luther King Highway and it was clear. Witness #1 stated that she started across westbound Martin Luther King Highway when she noticed a police car (Vehicle #1) westbound with its emergency lights and siren on. Witness #1 places Vehicle #1 in Lane #2 at this time. Witness #1 stated that she stopped in the slow lane, Lane #3. Witness #1 stated that Vehicle #1 changed lanes and started to slide sideways. Witness #1 stated that Vehicle #1 struck the median curb then slid across all lanes of Martin Luther King Highway. Witness #1 states that after Vehicle #1 struck the pole she went to her home and called the police.

WITNESS #2:

James Arthur BRISBON
6002 Martin Luther King Highway #202
Seat Pleasant, Maryland 20786
H/ (301) 925-6298
W/ (301) 423-4400
DOB/ 08-14-66

A written statement was obtained from Witness #2 at his place of employment on March 2, 1994.

Witness #2 states that he was stopped on Greig Street at Martin Luther King Highway with one car in front of him (WITNESS #1). Witness #2 states that he intended to turn right and proceed west on Martin Luther King Highway. Witness #2 states that he observed the car in

WITNESSES (Continued):

front of him start forward into Martin Luther King Highway. Witness #2 states that this vehicle's brakes lights went off for 2 to 5 seconds and that this vehicle moved forward 1 to 2 feet. Witness #2 states that when the police car went past them the other car was approximately 7 feet into Lane #3. Witness #2 stated that Vehicle #1 was in Lane #2. Witness #2 stated that Vehicle #1 had its emergency lights and siren activated. Witness #2 stated that after Vehicle #1 went past him it struck the pole. Witness #2 believes that Driver #1's reaction to Witness #1's vehicle caused Driver #1 to lose control and strike the pole.

WITNESS #3:

Vincent Christopher FENWICK
9205 Pinehurst Drive
Fort Washington, Maryland 20744
H/ (301) 248-5674
W/ (202) 708-3506
DOB/ 10-23-59

Witness #3 was interviewed by telephone on March 2, 1994 at 1025 hours.

Witness #3 states that he was eastbound on Martin Luther King Highway and approximately 100 yards west of the collision site. Witness #3 states that he could clearly see on-coming westbound traffic. Witness #3 states that suddenly Vehicle #1's emergency lights came on. Witness #3 states that when the emergency lights came on Vehicle #1 appeared to be out of control. "The car seemed to be twirling". Witness #3 watched Vehicle #1 strike the utility pole and stated that for a few moments the emergency lights continued to turn. Witness #3 describes hearing a "click", then a "boom" and Vehicle #1 started to burn slowly. Witness #3 stated that at the speed Vehicle #3 was traveling, the emergency lights should have been on sooner. Witness #3 did not see any oth. vehicles interfere with Vehicle #1 s travel prior to the collision.

WITNESS #4:

James HENRY
935 Clopper Road #T-2
Gaithersburg, Maryland 20878
H/ (301) 341-3686
W/ (301) 948-9482
DOB/ 09-15-68

A written statement was obtained from Witness #4 on the scene of the collision.

Witness #4 was in a parking lot on George Palmer Court. Witness #4 stated that he heard the skidding of tires and saw Vehicle #1 strike the utility pole. Witness #4 states that the emergency lights of Vehicle #1 were still on after the impact.

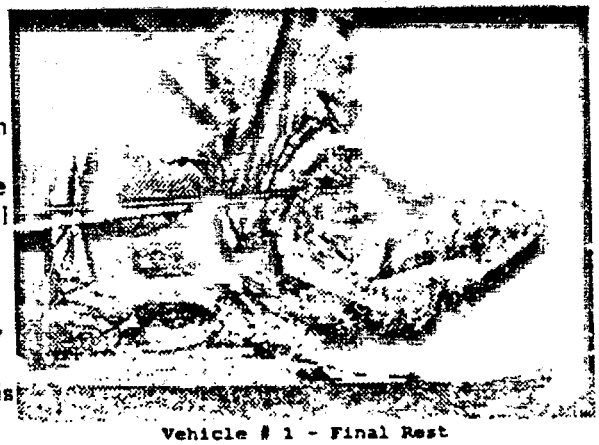
WITNESS #5:

Larry Duval TYLER
1014 Pansy Street #B
Lynchburg, Virginia
H/ (804) 845-4768
W/ (301) 731-6151
DOB/ 08-05-57

A written statement was obtained from Witness #5 on the scene of the collision.

Witness #5 states that he was eastbound on Martin Luther King Highway approaching the point of the collision. Witness #5 places Vehicle #1 westbound in Lane #2. Witness #5 states that Vehicle #1 immediately "jetted" into the pole after its emergency lights came on. Witness #5 describes the movement of Vehicle #1 as "(Vehicle #1) seemed to turn into the direction with a sharp jerk and accelerated into the light post". Witness #5 stated that he did not observe any other vehicles interfere with the travel of Vehicle #1.

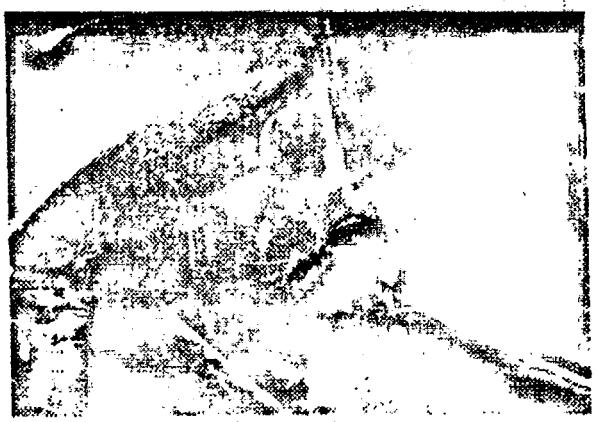
SITE EXAMINATION:


Vehicle # 1 - Final Rest

This investigator was notified of this collision at 2206 hours and responded from his residence to the scene of the collision, arriving at 2234 hours. The collision scene had been secured by Patrol Officers and all traffic had been diverted. Photographs and video were taken at this time. Measurements that accurately depict the scene were taken by Corporal P. R. Burley and Corporal R. B. Ratcliffe at this time. The locations of items of importance to this investigation were marked with optic orange spray paint for future reference and analysis. The scene was examined again on March 1, 1994 during daylight hours. Although a heavy snowfall had begun, additional photographs were taken at this time. During the direct examination of this collision site the following observations were made:

* General topographic observations as described in ROAD TYPE.

* Vehicle #1 was in its position of final rest, off of the northern road edge, facing west, lying partially on its left side and with the utility pole fully embedded from left to right into the occupant compartment. The Fire Department was on the scene and fire suppression efforts were underway. Driver #1, deceased, remained trapped within the vehicle.


Collision Scene

* P.E.P.C.O. pole #827388-5238 had been struck by Vehicle #1. This was a 45 foot Class 2 utility pole. Attached to this pole were electric and telephone wires, three transformers and a street light. This pole was fractured at the base and again approximately 20 feet above the ground. Several electric wires had fallen to the ground. Two telephone cables had broken loose from the pole and had fallen onto Vehicle #1. This pole had been burned by the vehicle and re-ignited several times.

* A fire hydrant had been struck by Vehicle #1 and broken at its base. A large quantity of water was flowing from this hydrant.

* A critical scuff yaw mark from Vehicle #1 started in Lane #1, within the intersection of Greig Street. As this yaw continued westbound, arcing toward the right road edge, marks from all four tires could be observed. This critical scuff yaw eventually becomes a four wheel side slide and continues to Vehicle #1's impact with the right curb.

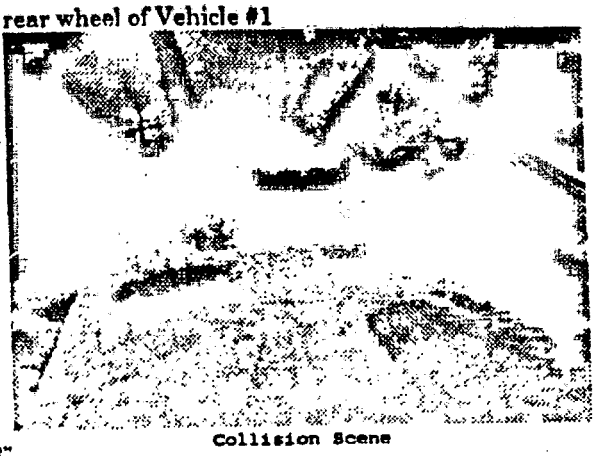
* A tire scuff on the right curb indicated the initial point of impact of Vehicle #1.

MEASUREMENTS:

Measurements of the collision scene were taken using the coordinate method. A base point was established on the northern curb perpendicular to P.E.P.C.O. Pole #827388-6751 This base line was then extended east and west along the northern edge of the center island. All measurements were taken perpendicular to this base line. Measurements are depicted on DIAGRAM OF MEASUREMENT POINTS.

Point A: Base point
Point B: Yaw marks begin from left wheels of Vehicle #1

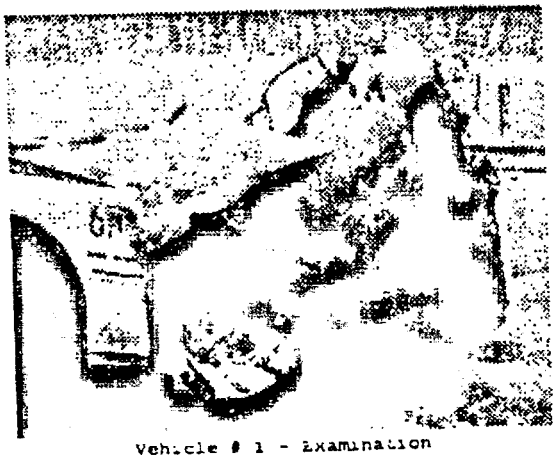
Point C: Yaw mark begins from right rear wheel of Vehicle #1
Point D: Side sliding tire mark begins from right front wheel of Vehicle #1
Point E: First crossover of tire marks of Vehicle #1
Point F: Tire scuff on curb
Point G: Tire scuff on curb
Point H: Left rear wheel of Vehicle #1
Point I: Left front wheel of Vehicle #1
Point J: Fire hydrant
Point K: P.E.P.C.O. pole #827388-5238
Point A to B: East 137'0" , North 5'3" & North 5'10"
Point A to C: East 100'0" , North 8'11"
Point A to D: East 33'6" , North 13'0"
Point A to E: East 10'7" , North 20'0"
Point A to F: West 91'4" , On curb
Point A to G: West 104'0", On curb
Point A to H: West 173' , North 41'5"
Point A to I: West 179' , North 46'6"
Point A to J: West 160' , North 35'6"
Point A to K: West 176'6" , North 45'3"


Collision Scene

VEHICLE EXAMINATION:

VEHICLE #1:

A cursory examination of Vehicle #1 was conducted on the scene of the collision. An in-depth examination of Vehicle #1 was conducted on March 1, 1994, at the Prince George's County Police Department's Automotive Services Lot, Upper Marlboro, Maryland. Additional daylight photographs of Vehicle #1 were taken at this time. During this direct examination of Vehicle #1 the following observations were made:


Vehicle # 1 - Examination

06277151
94-059-1008
February 28, 1994
Sgt. David L. Dennison #758

* Make: Ford
* Model: Crown Victoria, 4 door
* Year: 1993
* Registration: Maryland/ PG1187
* VIN: 2FACP71W9PX188474
* Color: White, marked uniformed police cruiser #631
* Milenge: Unknown,
* Automatic transmission

* Extreme regression on left side. Entire vehicle is bent in a "V" shape from left to right and downward in the center.

* The entire vehicle has suffered severe fire damage.

* Left front door is crushed downward and rearward.

* Left rear door is crushed behind the driver's door and forced rearward.

* There is contact damage to the left rear fender from impact with the fire hydrant.
* The rear portion of the differential housing has been torn open from impact with the fire hydrant.

* The trunk has sprung open and there is evidence of contact damage to the underside of the lid from falling wires.

* There is a cylindrical indentation to the top of the right rear fender from the impact of the falling wires.

* The roof was removed by the Fire Department during the extrication of Driver #1. The roof had been crushed downward and into the occupant compartment.

* Induced damage is evident on the right front fender.

* Both right doors are forced outward at the B pillar. The upper portion of the window frames are bent downward.

* Fuel filler cap has been burned off.

* Front bumper is twisted but exhibits no contact damage.

* Rear tires have been destroyed by fire.

* The interior of the vehicle has been destroyed by fire. The driver's seat back is in contact with the back of the rear seat.

* Driver's seat belt latching mechanism was located. The seat belt latch is not connected. Driver #1 was not restrained by a seat belt.

* The transmission housing was broken open during impact with the pole and several large holes are apparent.

* Gas tank has been crushed, there are no apparent holes or rips in the tank.

* All steering components were checked and appear intact.

* Left front tire is intact, 34 PSI, 8/32" tread. There is a rotational scratch on the lip of the wheel.

* Left rear wheel is bent inward from curb impact.

CALCULATIONS:

The following data was used to determine the speed of Vehicle #1.

Cord of critical speed yaw: 100 feet
Middle ordinate of critical speed yaw: 1 foot, 4 1/2 inches
Coefficient of friction: 0.81
Radius of yaw: 909 feet

The speed of Vehicle #1 was determined to be 104 miles per hour.

SEQUENCE OF EVENTS:

Driver #1 was an on-duty Prince George's County police officer operating Vehicle #1, a marked police cruiser. Driver #1 was responding to the complaint of a tampering with an automobile at 4700 Mann Street, Seat Pleasant, Maryland (CCN 94-059-1008). Vehicle #1 was westbound on Martin Luther King Jr. Highway in Lane #2 or Lane #1. Witness #1 was stopped on Greig Street at Martin Luther King Highway, intending to turn left and proceed eastbound. As Driver #1 approached the intersection of Greig Street, he apparently activated his emergency lights and siren. Witness #1 had just started into the intersection when she observed Vehicle #1 approaching. Witness #1 stopped within Lane #3. Vehicle #1 was in Lane #1 as it passed through the intersection of Greig Street. Driver #1 apparently swerved to the left fearing that Witness #1 was not stopping. Driver #1 lost control of the vehicle and yawed to the right. Vehicle #1 struck the right curb. Vehicle #1 continued over the curb and struck a fire hydrant with its left rear fender. Vehicle #1 sheared off the fire hydrant, continued westbound and started to overturn. Vehicle #1 struck P.E.P.C.O. Pole #827388-5238 with its left side and roof. Impact with the pole caused two heavy telephone cables to break loose and fall onto Vehicle #1.

Vehicle #1 came to final rest, facing westbound and laying on its left side still in contact with the pole. Vehicle #1 began to burn and eventually became completely engulfed in flames. Driver #1, deceased, remained trapped within the vehicle Medical Examiner, Dr. Devore responded to the scene and pronounced Driver #1 dead at 2335 hours.

CONCLUSIONS:

1. Vehicle #1 was traveling at a speed that was too great for the road and traffic conditions.

2. Driver #1 apparently lost control after reacting to the approach of another vehicle (Witness #1).

3. Driver #1 was not restrained by a seat belt.

CLOSURE:

This case will be closed as UNFOUNDED, pending review of the State's Attorney's Office for Prince George's County.

94-059-1008
February 28, 1994
Martin Luther
King Jr. Hgwy.

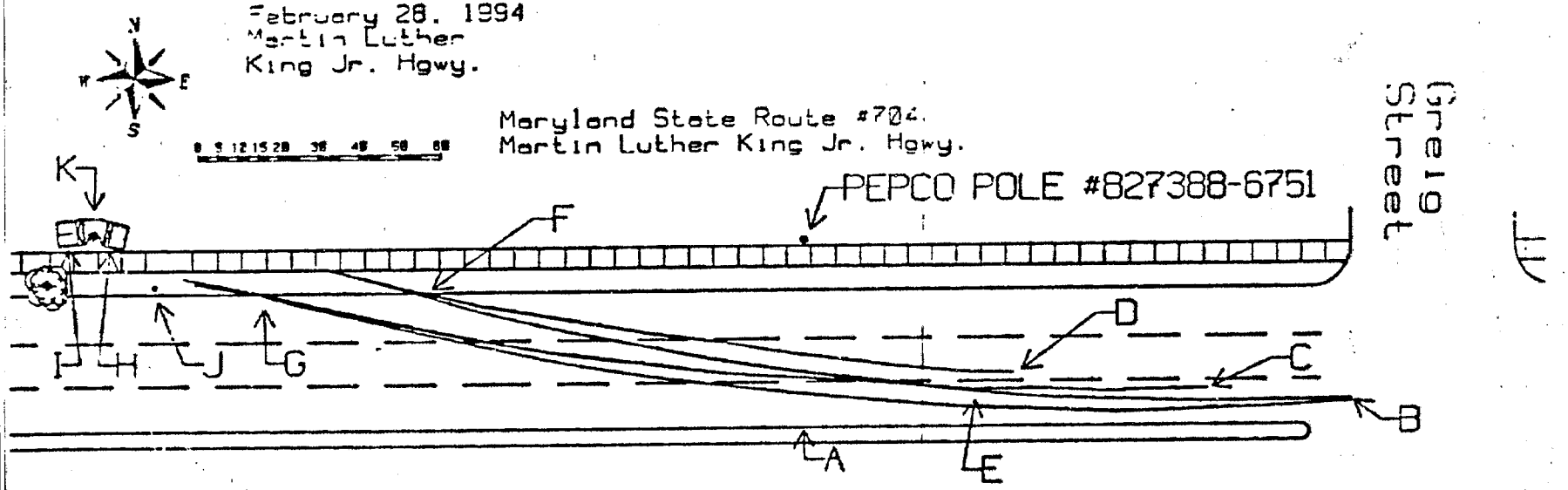
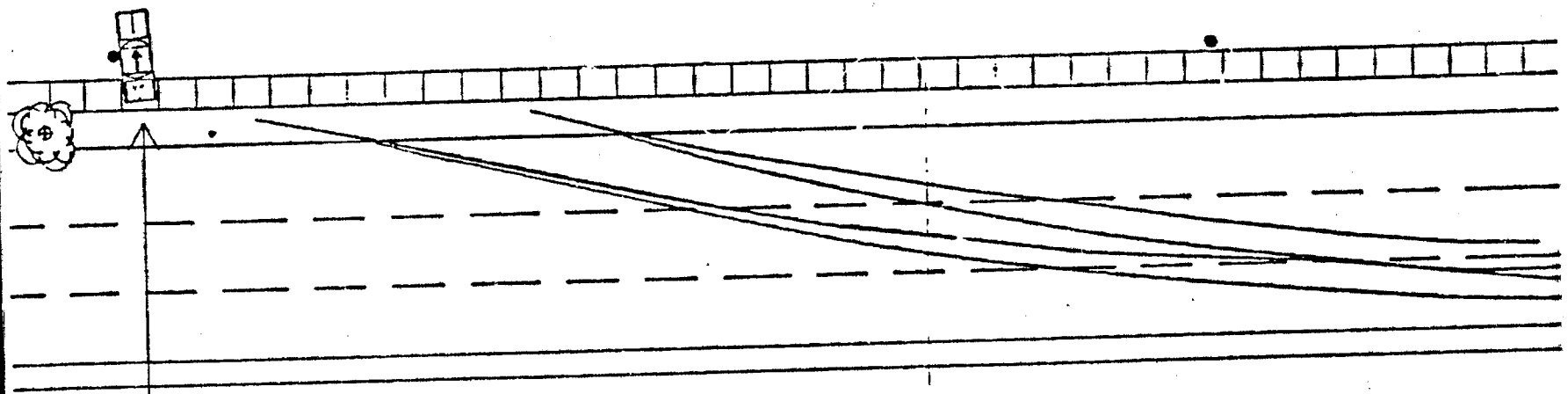


DIAGRAM OF MEASUREMENT POINTS

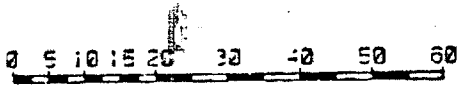
94-059-1008
February 28. 1994
Martin Luther
King Jr. Hgwy.

Maryland State Route #704
Martin Luther King Jr. Hgwy.

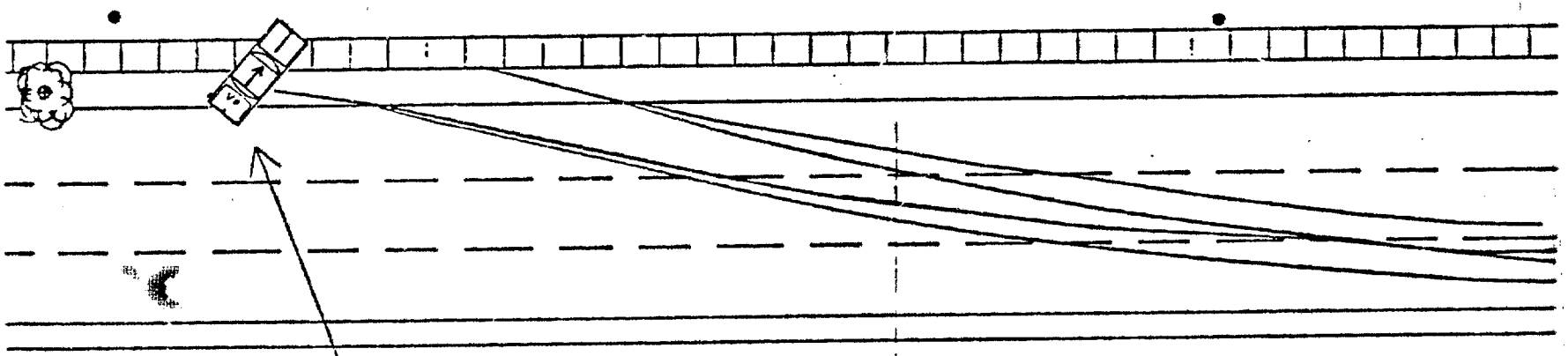


VEHICLE #1 STARTS TO OVERTURN
AND STRIKES PEPCO POLE

94-059-1008
February 28. 1994
Martin Luther
King Jr. Hgwy.



Maryland State Route #704
Martin Luther King Jr. Hgwy.

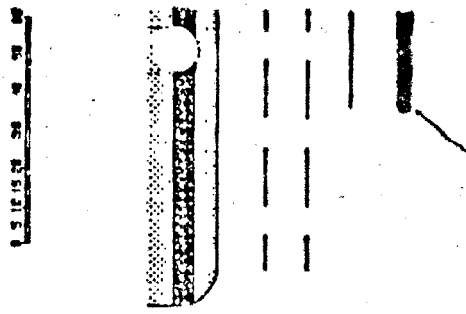


VEHICLE #1 STRIKES FIRE HYDRANT

94-073-1008
02/28/1994
Martin Luther
King Jr. Hgwy.

Page #D1
General Roadway
Diagram of the
West Bound Lanes

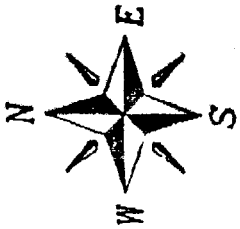
94-059-1008
62/28/1994
Martin Luther
King Jr. Hgwy.



Raised Concrete Island

Greig
Street

Page #D3
General Roadway
Identifiers



Maryland State Route #704
Martin Luther King Jr. Hgwy.

Raised Concrete Island

Grass Tree-Box Space

Concrete Sidewalk

C & P Pole #827388-6751

Grass

Blacktop / Asphalt Surface

Raised Concrete Island

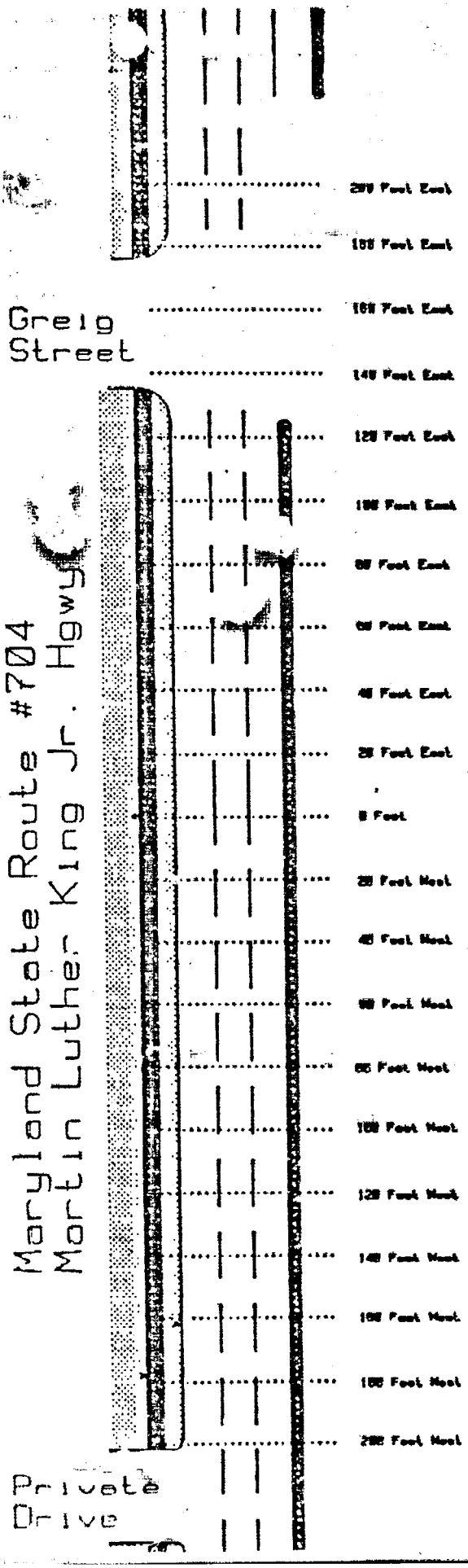
Fire Hydrant

C & P Pole Struck

Tree

Raised Concrete Island

Private
Drive



C4-059-1008
02/28/1994
Martin Luther King Jr. Hgwy.

Page #D2
General Scale
West Bound Lanes

CALSPAN CRASH INVESTIGATION REPORT
CALSPAN CASE NO. 94-33
VEHICLE: 1992 FORD CROWN VICTORIA POLICE UNIT
LOCATION: SCARBOROUGH, ONTARIO (CANADA)
DATE : SEPTEMBER 28, 1994

SUMMARY

This report focuses on a follow-up reconstruction and review of the police data for a single vehicle roadside departure crash that involved a 1992 Ford Crown Victoria marked police unit. The vehicle was in pursuit of a stolen late model Ford 5.0 liter Mustang at a high rate of speed when the driver lost control of the vehicle and crashed into a concrete luminaire. The left side impact fractured the pole and the vehicle continued across a four-leg intersection and impacted a wooden utility pole with the center frontal area. The secondary frontal impact resulted in approximately 46 cm (18") of bumper crush and fractured the pole near the base. The driver was wearing the manual three-point lap and shoulder belt system, however, he expired due to massive thoracic injuries that occurred from the pole impact. He did not benefit from air bag deployment due to the massive intrusion of the left side structure and the lateral impact force.

Inputs for this report were obtained from the Metro Toronto Police Interim Reconstruction Report, a meeting with the investigating officers/reconstructionists, a review of the on-scene and follow-on police photographs, and data from a research investigator from the Ryerson Polytechnical Institute of Traffic Safety. Attached to this summary is the police reconstruction report, schematics from Ryerson Safety Research, and police photographs.

Vehicle Data

The involved vehicle was a 1992 Ford Crown Victoria police unit that was presumably equipped with the OEM police package. In addition to the police package components, the Crown Victoria was equipped with a driver and passenger side supplemental air bag system, variable rate-power assisted steering, anti-lock (ABS) power assisted four-wheel disc brakes, an overhead light bar, and a safety cage between the front and rear seats. The vehicle had an odometer reading of 129,011 km (80,131 miles) and was identified by the following vehicle identification number(VIN): 2FALP72W4NX193957.

Crash Data

The crash occurred in the City of Scarborough, Ontario (Canada), on September 28, 1994, at approximately 0110 hours. The weather conditions involved cool temperatures and overcast skies which resulted in a light rainfall following the crash. Viewing conditions were dark, however, the roadway was lighted by overhead mast arm luminaries at both roadedges.

In the vicinity of the crash scene, the roadway was approximately 15.5 m (50.8') in width which consisted of two through travel lanes in both the north and southbound directions and a southbound left turn lane. The road surface was dry asphalt and was in worn condition with a police measured coefficient of friction of 0.69. The roadway had a negative grade to the south which averaged approximately -4 percent. The roadway leveled-off at a four-leg offset intersection which was controlled by an overhead signal system. Barrier curbs bordered both roadedges. Utility poles and concrete luminaires were located several feet outboard of the curblines along both roadedges. The posted speed limit was 64 km h.

Driver Data

The driver of the 1992 Ford Crown Victoria was a 38 year old male with an estimated height of 76" and weight of 240 lbs. He was identified as an aggressive driver by members of the Metro Toronto Police Accident Reconstruction Division. They further stated that he was involved in three crashes during a three month period that extended from December, 93 through February, 94. Two of these crashes involved single vehicle run-off-the-road types while the third involved a collision with a transit bus. One of these crashes occurred during an emergency response. This driver had approximately 18-20 years of police experience and had received pursuit driving and anti-lock (ABS) brake training. He was apparently scheduled for additional driver training. The driver's vision was rated as good since he did not wear corrective lenses. Members of the Department thought that the driver routinely drove the police vehicle with both feet, right foot operating the accelerator pedal and his left foot operating the brake pedal.

Police Reconstruction

The involved police officer was traveling in a southerly direction on the inboard travel lane of the four lane roadway while on routine patrol. He observed a vehicle in the outboard travel lane and for an unknown reason, he decided to verify the vehicle's license plate through his dispatcher. The driver of the Crown Victoria was apparently steering the vehicle with his left hand while operating the police radio microphone with his right hand. His vehicle was positioned behind the vehicle that he was investigating. During this process, a late model Ford Mustang approached the vehicles from behind at a high rate of speed. The driver of the Mustang either failed to detect the marked police vehicle or deliberately sped past the vehicles. He passed the police vehicle on the right then initiated a lane change maneuver to the left in front of the Crown Victoria. The Ford Mustang accelerated as it continued to travel on the inboard southbound lane. The police officer notified his dispatcher of the situation and accelerated to proceed after the Mustang. He proceeded after the Mustang without activating the overhead lights and the police siren. The officer had completed two radio transmissions within a 10 second time frame. During the initial chase, the driver probably steered the vehicle with his left hand while he maintained radio communications with his right hand.

The Ford Mustang crested a hill where the north and southbound travel lanes were divided by a curbed median. The vehicle descended the hill at witness estimated speeds of 150 km/h. The average downgrade was approximately -4 percent. The police officer continued to follow the

Mustang and had reached a speed that was approximately equal to the speed of the Mustang. Witnesses estimated that the Mustang was leading the Crown Victoria by approximately 200 meters as the vehicles descended the hill on an approach to a four-leg intersection.

The north and southbound legs of the roadway widened to five lanes, inclusive of a left turn lane, on the approach to the mouth of the intersection. Three driveways intersected the west edge (outboard) of the roadway. These driveways were located approximately 57, 83, and 95 m north of the center of the intersection. A 1990 Chevrolet Caprice marked police vehicle was traveling in a northerly direction in the outboard travel lane of the accident roadway on an approach to the intersection. This vehicle was occupied by two police officers who were monitoring radio communications on a different frequency that the driver of the Crown Victoria, therefore they were unaware of his presence or radio broadcasts.

The officers in the Caprice observed the Ford Mustang pass them in a southerly direction at a high rate of speed as the Caprice passed through the intersection. These officers were unaware of the pursuing Crown Victoria as it was traveling without its emergency equipment activated. The driver of the Caprice subsequently initiated a left turn into the most southerly driveway between the Mustang and the Crown Victoria. The driver probably detected the headlights of the approaching Crown Victoria, however, he misjudged the speed of the vehicle. The police reported that there was another vehicle stopped in the center driveway facing the roadway, waiting for traffic to clear to initiate a left turn across the southbound travel lanes.

At this point, the pursuing police officer activated his emergency lights by depressing a switch located on the center console. He subsequently broadcasted his third transmission within a 13 second period of time. The police tape of these transmissions revealed that the driver's voice was excited at the time of the third transmission. The Metro Toronto Police Accident Reconstructionists identified a single, lightly deposited tire mark(s) that was 8.9 m in length located at the outboard edge of the left southbound travel lane located approximately 140 m north of the intersection. Directly forward of this tire mark(s) were three short segments of a tire mark that were in line with the previously identified tire mark. The segmented tire marks were 12.1 m in length which included the gaps between the marks. The police suspect that these marks probably resulted from the Crown Victoria's right front tire, or right side tires, as the driver initially braked the ABS equipped vehicle as he descended the grade toward the intersection.

Due to the left turning police vehicle, and/or the potential threat of the stopped vehicle from entering the roadway, the driver of the Crown Victoria initiated a lane change maneuver to his left. As a result of the left evasive steering maneuver, the Crown Victoria crossed the centerline of the roadway and entered the inboard northbound travel lane. Witnesses reported that there was no northbound traffic approaching, or traveling through the intersection. The Metro Police identified two counterclockwise (CCW) yaw tire marks on the asphalt road surface that began on the inboard southbound travel lane. The police suspected that these marks were the rear tires as the vehicle initiated a counterclockwise (CCW) yaw. They further suspected that since the vehicle was equipped with ABS, the driver had applied a maximum braking force and countersteered the vehicle

to the right. At this point, the Crown Victoria was in a CCW yaw as its center of gravity (CG) was continuing in a southerly direction with the front tires turned to the right and rolling on a path that was nearly parallel to the road and the vehicle's CG path. The outboard yaw mark was approximately 41 m in length while the inboard yaw mark was 18.5 m in length.

Due to the CW steering input and possible brake release by the driver in an attempt to redirect the vehicle into the southbound travel lanes, or attempt to regain control of the Crown Victoria, the vehicle began to reverse its rotation from CCW to a tracking mode. The vehicle's center of gravity continued on a southerly direction toward the northeast quadrant of the intersection. A second set of tire marks were more visible on the asphalt road surface which began in the outboard northbound travel lane. At the initiation of these tire marks, the vehicle was in a tracking mode. This was determined from a separation point of the left side tire marks that was located approximately 2 m inboard of the east curb.

The Crown Victoria subsequently yawed in a CW direction as evidence by the above referenced left side tire separation. The vehicle's left front tire and wheel impacted the east barrier curb as the left rear tire mounted the curb. The curb impact resulted in moderate damage to the left front wheel and produced an air out of the front tire. The rear wheel was not damaged, however, the sidewall of the tire was scuffed. The left front tire remained engaged with the curb as the vehicle continued to rotate in a CW direction with its center of gravity (CG) continuing on a southerly trajectory. The rear tires of the Crown Victoria marked across the concrete sidewalk as the front tires remained on the asphalt road surface. The police schematic indicates that the vehicle yawed approximately 80 degrees in a CW direction as it traveled approximately 13.2 m to impact with a concrete luminaire.

The left front door and B-pillar area of the Crown Victoria impacted the concrete luminaire at a police computed speed of 118 km/h (73 mph). The narrow pole impact crushed the left side structure of the vehicle. In addition to the vehicle deformation, the impact fractured the concrete luminaire at its base which allowed the vehicle to continue in a southerly direction. The police report noted that the impact force for the luminaire collision was approximately -30 degrees (11 o'clock). Schematics provided by Ryerson Safety Research based on the documented physical evidence at the crash scene, identified the initial impact angle with the luminaire at approximately 28 degrees.

The Crown Victoria continued through the intersection across the northbound travel lanes on a trajectory toward the southwest quadrant of the intersection. The front wheels were turned to the right which the police suspect compensated for the left front airout and the bowing of the vehicle and caused the vehicle to turn to the right as it traversed the intersection. A fluid spill marked the vehicle's trajectory. The Crown Victoria crossed the southbound lanes of the roadway and departed the west curbline in a near tracking mode approximately 67 m (220') south of the struck luminaire. The frontal area of the vehicle subsequently impacted a wooden utility pole that was located 2 m outboard of the west curbline. The impact was located approximately 25 cm (10") right of the vehicle's centerline and resulted in approximately 46 cm (18") of front bumper crush. The police estimated a conservative velocity (impact speed) of 30 km/h (18.6 mph) for the secondary 12 o'clock

direction of force impact. The impact fractured the pole at the base near the bumper level of the vehicle. On-scene police photographs indicated that the vehicle rebounded approximately 1 m from the wooden utility pole impact before coming to rest diagonal to the outboard southbound travel lane, facing in a southwesterly direction.

The driver of the Crown Victoria was wearing the manual 3-point lap and shoulder belt system. He sustained massive thoracic injuries and expired on arrival at a local hospital. The driver and passenger side air bags deployed during the crash, however, due to the lateral impact force and severe left side intrusion, the driver did not benefit from the supplemental system.

The police computed an initial maximum velocity of 165 km/h (102 mph) for the Crown Victoria at the initiation of the first tire mark with the assumption that the vehicle was under full braking. A police calculated minimum speed for the vehicle was 147 km/h (91 mph). The police concluded that the high speed of the Crown Victoria was the primary factor for the driver's loss of control and that the issue of power steering loss was not considered to be a significant factor in the causation of the crash.

Calspan's Reconstruction/Causal Analysis

The primary causal factor for this run-off-the-road single vehicle crash was excessive speed. The driver was in pursuit of a speeding (stolen) vehicle and was traveling at an estimated speed of 150 km/h. In addition, the driver of the Crown Victoria was forced to initiate a lane change maneuver to the left as the 1990 Chevrolet Caprice police unit turned left across the Ford's path of travel. The severity of the lane change maneuver was unknown due to the lack of scene physical evidence and driver inputs (deceased).

The evidence at the crash scene which indicates that the Crown Victoria yawed in a CCW direction is questionable as to its relation to this crash. The police identified these tire marks as the left rear and right rear. They further concluded that as the vehicle was in the CCW yaw, the front tires of the Crown Victoria were turned in a CW direction approximately parallel to the vehicle's CG travel path, therefore the front tires were rotating and not marking on the asphalt surface. The scaled schematics provided by the police and Ryerson Safety Research have the tire marks drawn with much less arc that the photographs depict. The police noted that the scene photographs were taken with a 35 mm SLR camera equipped with a zoom lens which would have compressed and distorted the images. In the photographs, the outboard tire mark (right rear of the CCW yawed vehicle) appears to extend beyond the right side tire marks from the Crown Victoria. The schematic shows a gap between these tire marks which the police state is accurate. If these tire marks are related to this crash, then the evidence supports a rapid change of rotation in the vehicle's pre-crash trajectory at a high rate of speed. It is possible that these tire marks are not related to this crash and were attributed to another vehicle that descended the grade on an approach to the intersection. It should be noted that Calspan reinterviewed a witness who was following the police vehicle and was located near the hillcrest when the vehicle spun out of control. This witness stated that he did not observe

the Crown Victoria's headlights illuminate the left side of the road edge which would be indicative of the CCW yaw. He only observed the vehicle rotate in a CW direction prior to the luminaire impact.

Based on the physical evidence at the crash scene that was documented by the Metro Toronto Police Department, there are three possible pre-impact scenarios for the loss of control of the Crown Victoria. The first reconstruction of the sequence of events involves the inclusion of the CCW yaw tire marks. The driver of the Crown Victoria initially applied the ABS brakes which deposit a faint right side tire mark of the asphalt road surface followed by three short tire impressions. The driver subsequently applies a left steering input probably with his left hand since he was communicating over his police radio and using his right hand to control the microphone. As a result of the left steering input, the driver experiences understeer and applies the brakes which initiates a CCW yaw across the centerline and into the northbound travel lanes. The left rear and rear tires mark on the asphalt surface as the vehicle begins to slide sideways. The vehicle continues in this yaw pattern for approximately 41 m (118') as the driver applies a CW steering input and redirects the vehicle into a tracking mode. Due to his CW steering input, and probable momentary release of the ABS brakes, the vehicle began to reverse its rotation to a CW direction. The detailed Ryerson schematic identified this reverse in rotation to occur within approximately 22 m (72'). This involved a change from a maximum CCW rotation of approximately 40 degrees to a tracking mode within the 22 m at a police computed speed of over 120 km/h. The vehicle subsequently mounted the east curb and continued on its CG heading and impacted the concrete luminaire. The initial left steering maneuver redirected the vehicle's CG heading and the subsequent steering inputs redirected the heading of the vehicle which resulted in the left side impact.

The second scenario rules out the initial CCW yaw marks for the reasons previously identified. The driver responded to the left turning police vehicle by steering to the left to avoid impact with the other police vehicle and possibly to avoid a potential conflict with the vehicle that was stopped in the driveway at the right (west) curbline. He subsequently steers to the right to keep the vehicle on a travel path parallel to the road. At this point, the driver experiences understeer, and the vehicle fails to respond to the right maneuver. He subsequently brakes as the vehicle's CG continues toward the northeast quadrant of the intersection. At the initiation of this maneuver, the vehicle's velocity was approximately 150 km/h which equates to approximately 140 ft/sec. The Crown Victoria contacts the left curb and yaws in a CW direction. The left front tire impact with the curb deflected the front of the vehicle toward the road as the rear mounted the curb which resulted in a rapid CW rotation. The vehicle rotated approximately 60 degrees CW in approximately 16 m (52') and impacted the concrete pole at the police computed speed of 118 km/h.

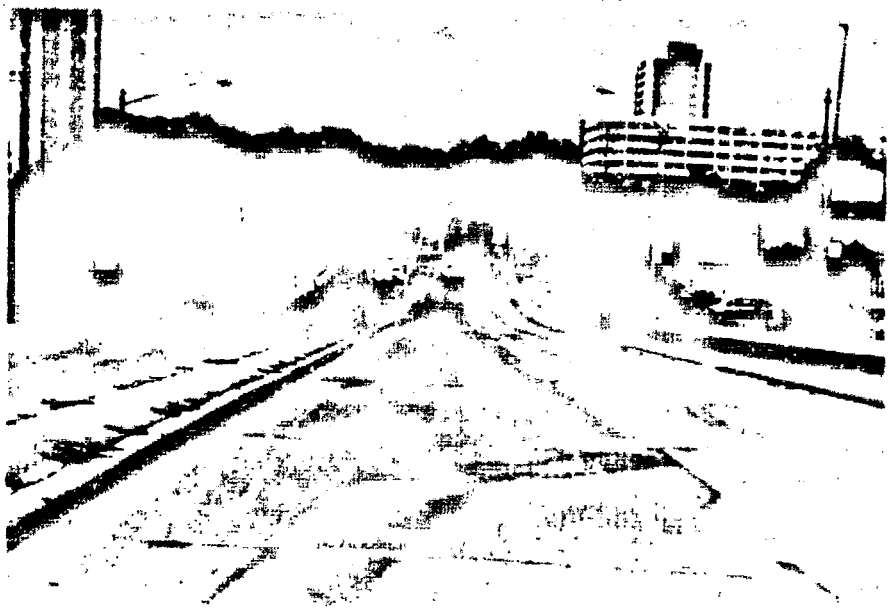
The third scenario involves the above situation, however, the driver experiences the steering anomaly as he steers in a CW direction. Although, a steering input at this point in time will not redirect the vehicle's CG heading, it does cause the driver to apply a maximum braking force which contributes to the CW yaw as the vehicle impacts the left curb.

The police reconstruction indicated that the driver of the Crown Victoria was steering the vehicle throughout the pre-crash trajectory and successfully redirected the heading angle of the vehicle, but could not alter the vehicle's CG heading following the initial left steer maneuver. Therefore, the vehicle was on a collision course with the concrete luminaire and there was no possible inputs by the driver to redirect the vehicle from the impending crash. His only option was to brake to reduce the speed of the vehicle at impact, thus reducing the severity of the crash.

If the vehicle did not initially yaw in the CCW direction, loss of control would have probably resulted from a maximum braking force by the driver after he experienced understeer from the right steering input which followed his initial left input. At this point, the driver could have experienced the steering anomaly which prevented him from completing the right steering input, thus causing a panic situation. A driver's immediate reaction would be to apply the brakes which would have contributed to the CW yaw as the vehicle impacted the curb as its CG continued in a southerly direction toward the concrete luminaire.

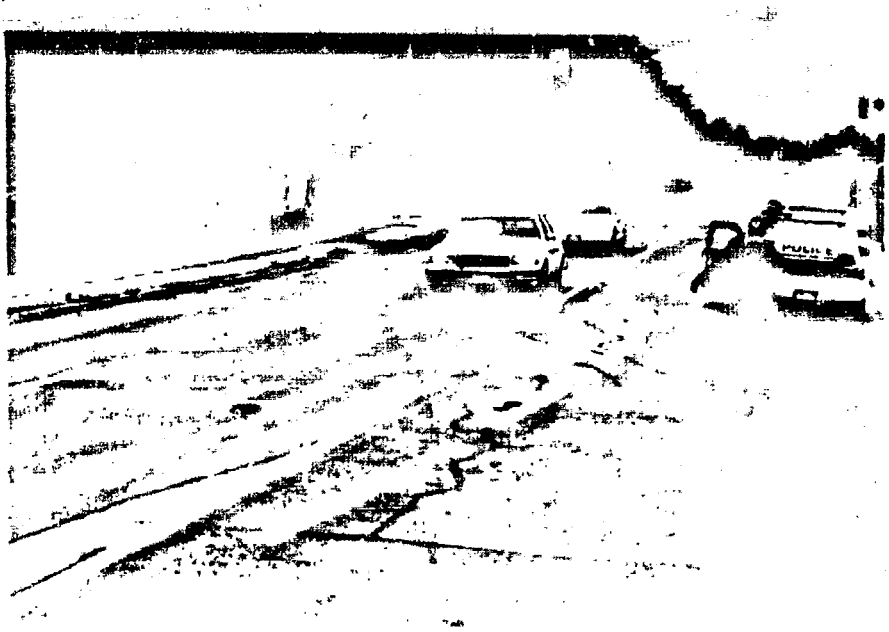
As previously noted, the primary causal factor for this crash was excessive speed as the driver attempted to pursue the stolen vehicle. The driver's action to avoid the left turning police vehicle redirected the vehicle on an imminent collision course with the luminaire. His subsequent steering inputs only redirected the vehicle's heading angle and not the vehicle's CG heading, therefore if the steering anomaly occurred after the initial left input, it was not a factor in crash causation or possible prevention.

SELECTED PRINTS

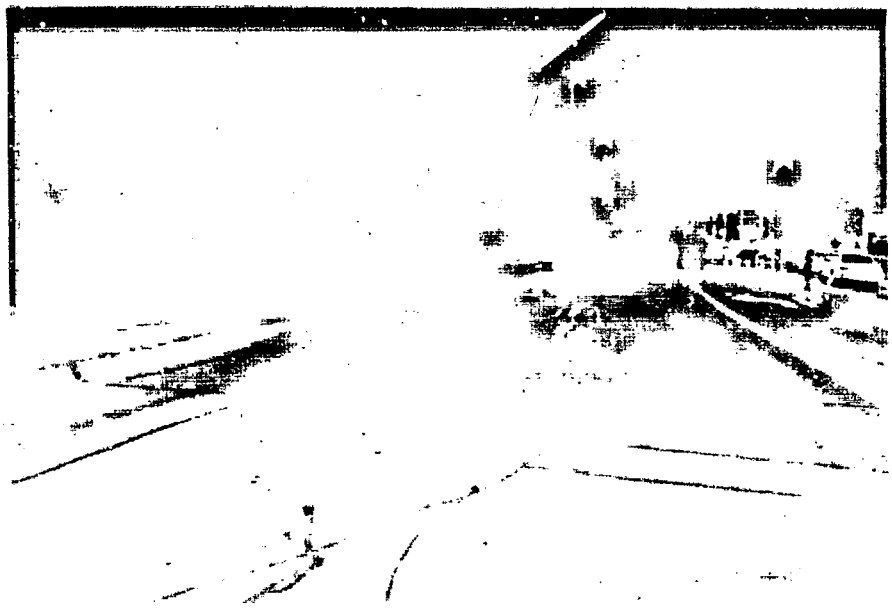


1. Pre-crash trajectory of the 1992 Ford Crown Victoria.

2. Counterclockwise yaw marks.



3. Counterclockwise yaw marks and the clockwise yaw tire marks from the Crown Victoria.



4. Nighttime view of the tire marks

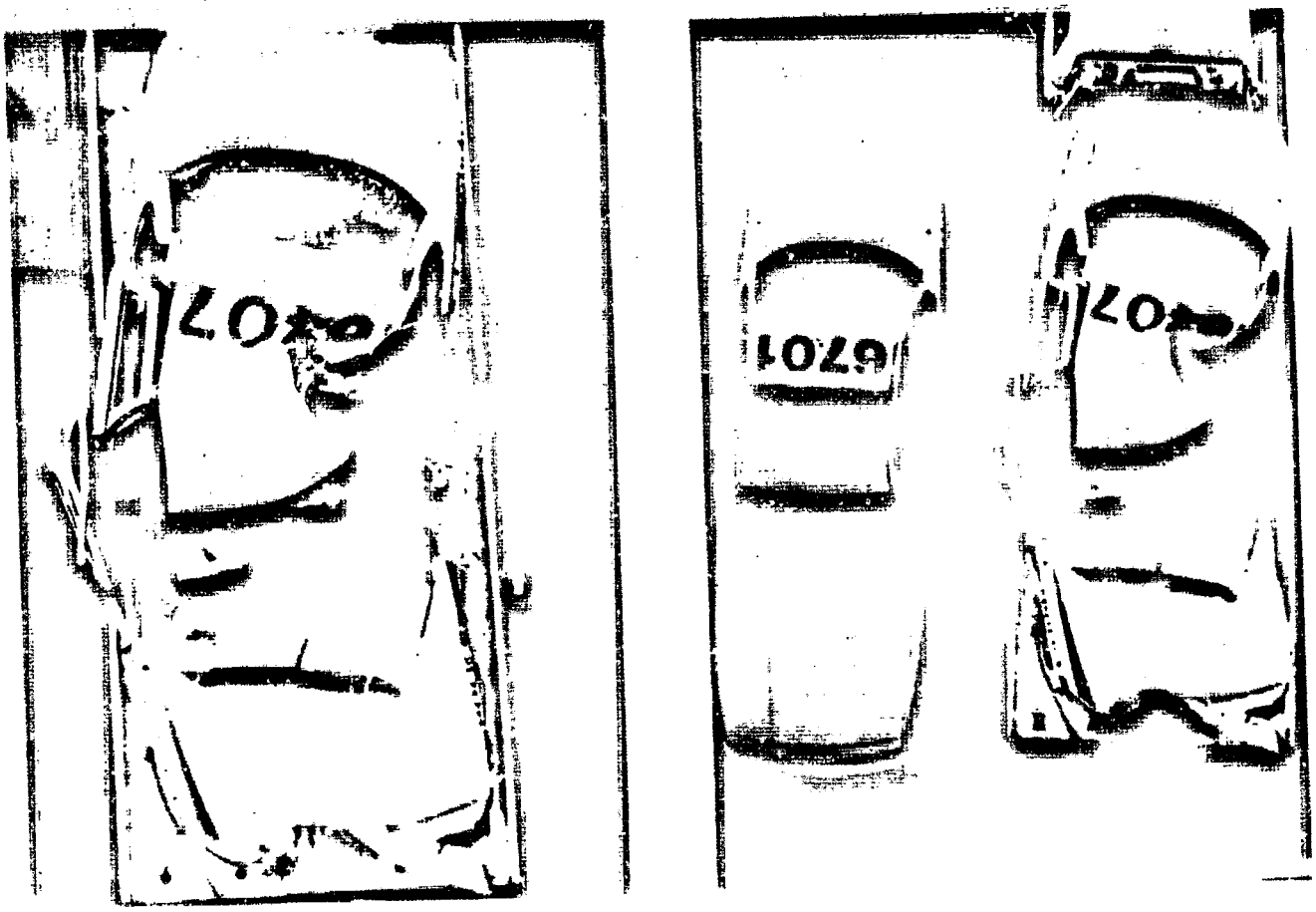
5. Clockwise yaw marks from the Crown Victoria en route to impact with the luminaire.

6. Fragmented concrete pole and final rest of the Crown Victoria.

7. Overhead view of the crash scene.

8. [illegible] view of the yaw marks.

9. Fractured utility pole and final rest of the Crown Victoria



ATTACHMENT A

Metropolitan Toronto Police
Interim Reconstruction Report

INTERIM RECONSTRUCTION REPORT

TRAFFIC FATALITY # 44 /94

LOCATION: MARKHAM ROAD AT COUGAR COURT

DATE AND TIME: WEDNESDAY, SEPTEMBER 28TH, 1994

1:10 a.m.

INVESTIGATING OFFICER Fergus REYNOLDS
Detective # 5868
Central Traffic Investigative Services

REPORT BY: Roy Buchanan Sergeant # 3755
West Traffic Unit

John Johnston Constable # 6403
Central Traffic Unit

Reconstruction Report

RECONSTRUCTION REPORT OF: **Roy BUCHANAN Sgt. (3755)**
West Traffic Unit

John JOHNSTON P.C.(6403)
Central Traffic Unit

Both officers are members of the Metropolitan Toronto Police Force. Roy Buchanan has been so employed since, July 1972, and he currently holds the rank of Sergeant. He is presently attached to West Traffic where he performs his duties in a uniform capacity.

John Johnston has been so employed since, February 1987, and currently holds the rank of Police Constable. He is presently attached to Central Traffic where he performs his duties in a uniform capacity.

Both officers have successfully completed several technical accident investigation courses and have been designated by the Metropolitan Toronto Police Force as Collision Reconstructionists.

On Wednesday, September 28th, 1994 both officers were assigned to work on the night shift. They started working at 10:00 PM. on Tuesday, September 27th, 1994 until 6:00 am. on Wednesday, September 28th, 1994. The officers were working at their own units on this date.

Reconstruction Report

On Wednesday, September 28th, 1994 both officers received information from the Officer in Charge at Central Traffic, Staff Sgt. J. Krastins concerning a serious personal injury motor vehicle collision involving a Police vehicle from East Traffic.

As a result of this information both officers attended Markham Road at the intersection of Cougar Court within the City of Scarborough that is located within the Municipality of Metropolitan Toronto.

At approximately 3.00 a.m. both officers arrived at the collision location on Markham Road at Cougar Court and observed a single motor vehicle collision.

After viewing the collision scene the officers spoke to numerous Officers on the scene.

The area of Markham Road at Cougar Court had been closed to traffic and the scene had been protected.

It was a clear , cool morning, and the roads in the area of the collision were dry and in good repair.

It was dark however there were street lights on in this area and due to this lighting, the visibility was good.

COLLISION SCENE

Markham Road in this area is a 4 lane roadway with two lanes for northbound traffic and two lanes for southbound traffic. At the intersection of Cougar Court there is also a left turn lane from southbound Markham Road to eastbound Cougar Court. There is also a left turn lane from northbound Markham Road to westbound Luella Street.

The roadway is divided into northbound and southbound lanes of traffic by a solid yellow line and the passing and curb lanes are separated by a white intermittent line.

The road is a well-traveled roadway that consists of older asphalt. The road surface was in good condition and was dry at the time I arrived at the collision scene. During the investigation at the scene it however did rain and the road surface became wet.

Toronto Transit Commission buses use this section of Markham Road due to a bus route as well as all types of passenger cars.

Markham Road is a posted 60 km/h speed zone and this is a residential area on the east side, and a commercial area on the west side with a residential area west of Markham Road.

On Markham Road north of the intersection of Cougar Court there is a large overpass that allows traffic to pass over the railway tracks underneath. This overpass causes a large hill that starts to descend north of Dunelm Street.

In the area of the bridge there is a raised concrete median that separates the northbound and southbound lanes of Markham Road.

Vehicles traveling westbound on Dunelm Street are only able to turn right to go northbound on Markham Road due to the raised concrete median.

South of the bridge on Markham Road there is a small strip plaza on the west side of Markham Road. There are three driveways to this small plaza. Two driveways are located on the west side of Markham Road north of Luella Street. The third driveway is on the north side of Luella Street just west of Markham Road.

South of the plaza on Markham Road is the intersection of Cougar Court. Cougar Court is a small street that runs east and west from the east side of Markham Road.

Cougar Court is a two lane roadway, 1 lane westbound and 1 lane eastbound. The roadway has no markings to separate the eastbound and westbound lanes.

The roadway is asphalt that was dry and in good repair. The street had no posted speed limit that would indicate it was a 50 km/h speed zone area.

Cougar Court is a roadway that is used primarily for the residents of the apartments located on the east side of Markham Road both on the north and south side of Cougar Court.

This is an offset intersection with Luella Street that runs east and west from the west side of Markham Road. The north edge of Luella Street is just north of the south curb of Cougar Court.

Luella Street is a two lane roadway with 1 lane westbound, and 1 lane eastbound. The roadway has no markings on the road surface to separate the westbound and eastbound lanes.

The road surface was asphalt and it was dry and in good repair. The street had no posted speed limit that would indicate it was a 50 km/h speed zone area. Luella Street is used primarily by residents of the subdivision in this area.

The intersection of Markham Road and Luella Street as well as Cougar Court is controlled by automatic traffic signals. The signals were checked during the investigation and found to be in working order.

Markham Road was the main road in this intersection and the traffic light sequence for Luella Street or Cougar Court had to be either vehicle or pedestrian activated.

DAMAGE TO INVOLVED VEHICLE

The primary vehicle had been occupied by one uniform Police Constable. The motor vehicle was resting across the southbound curb lane and the west sidewalk of Markham Road a short distance south of Luella Street.

The victim from the motor vehicle had already been transported to hospital.

This motor vehicle came to rest facing in a south westerly direction.

This vehicle was a 1992, Ford, Crown Victoria, 4 door, white, marked Police car, scout # 6407, Licence : 265 PXV. There was extensive damage to the complete motor vehicle.

The primary impact to this motor vehicle was to the driver's side front door just in front of the "B" pillar.

This primary impact was a typical pole impact and the intrusion into the vehicle was cylindrical at the driver's door. The roof also had a cylindrical intrusion mark near the center of the driver's side.

The roof of the motor vehicle had been removed by emergency personnel, and was now lying on the grass just north of the resting position of the vehicle.

The motor vehicle also had a secondary impact that was located at the front of the motor vehicle just to the right or towards the passenger side from the center area.

This impact was also a typical pole impact and the intrusion into the motor vehicle was cylindrical to the hood and engine area.

Due to the two impacts the entire vehicle was severely damaged. The front bumper was pushed out at both sides from its usual position due to the damage from the impact with the pole.

The front left corner of the bumper was pushed out. The front right corner of the bumper appeared to be bent out on an angle with the front right quarter panel.

The front of the hood was bent down, and the hood was pushed up towards the middle, then down towards rear of the hood where it would be attached to the main section of the motor vehicle.

The front windshield was lying on the hood just in front of the front dash of the motor vehicle.

The front right door of the motor vehicle was dented near the front where the door would extend from the body of the car.

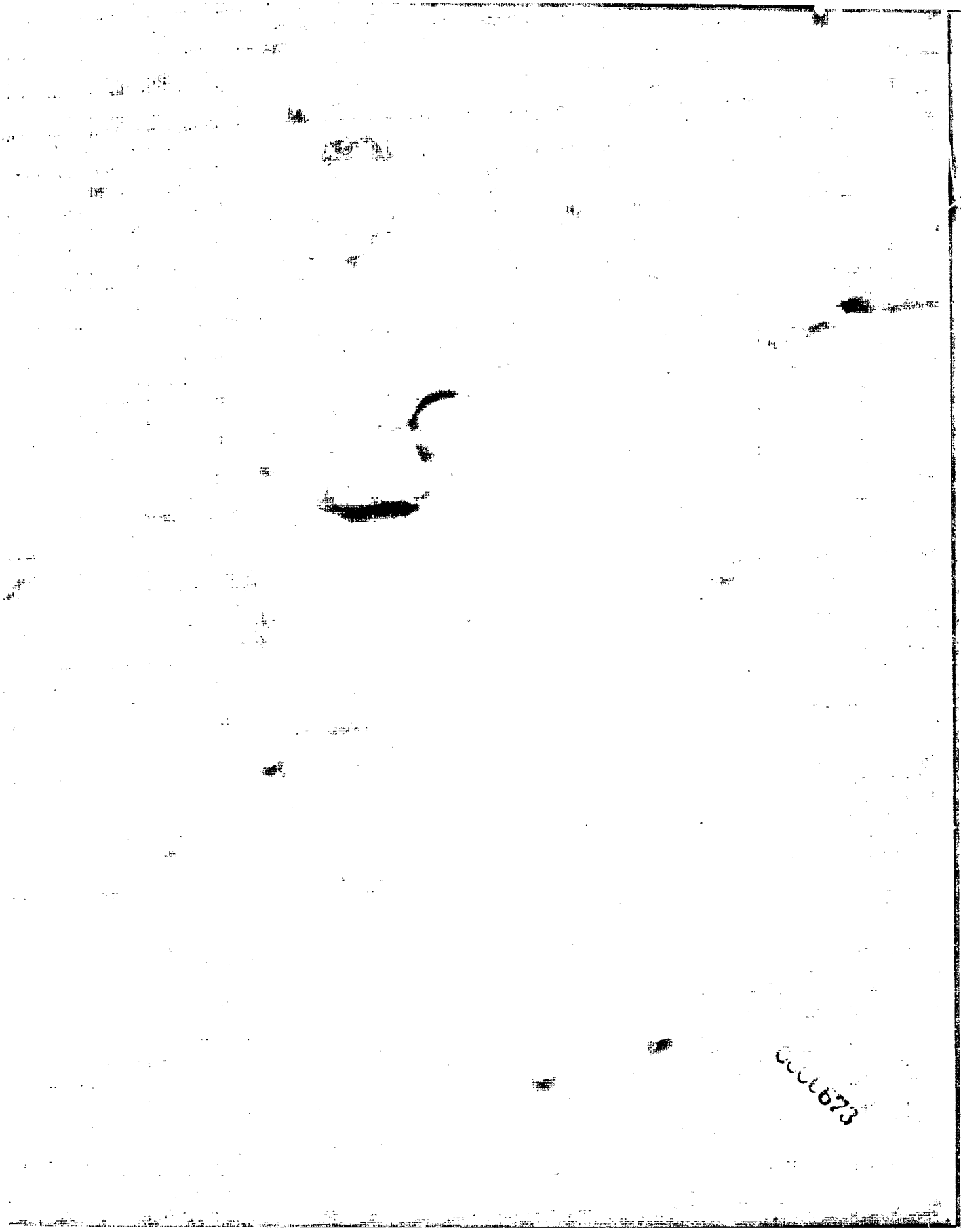
The rear of the front right door was also dented however these marks appeared to be pry marks possibly from emergency personnel attempting to open the door.

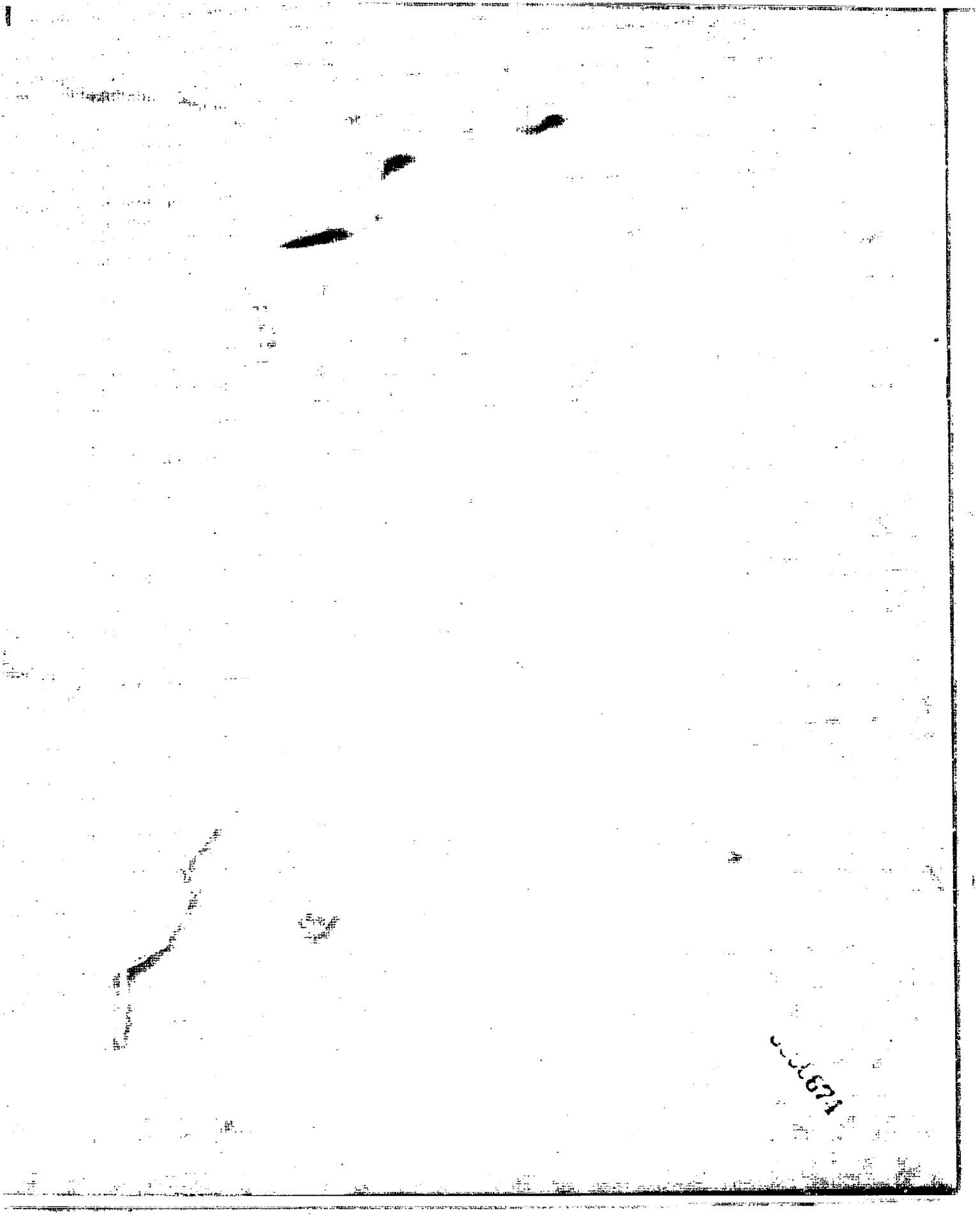
The door frame was also cut where the window would extend to if the window was in the "up" position. The front door was open and the upper section of the window frame was bent outwards from the door. There was no visible window in this door.

The rear right door also had pry marks to the front of it. These marks were possibly caused by people prying the front right door open.

The rear window was broken and there was a large amount of glass lying on the rear deck of the back seat. The rear posts that extend to the roof had also been cut so the roof could be removed.

The rear left door post at the rear of the door had also been cut so the roof could be removed and the window from this door was missing.





The "B" pillar of the rear left door was pushed towards the passenger compartment. This occurred in the area of the primary pole impact to the left side.

The rear left door bent out from this location and was bowed slightly near the bottom of the window.

The front left door was extending out from the side of the vehicle. The area where the door hinges to the frame of the motor vehicle was completely detached. The main area of the door was pushed into the passenger compartment due to the intrusion from the pole.

The intrusion into the motor vehicle from the pole appeared to be at an approximate angle of 30 degrees.

The front left quarter panel was dented down slightly in the area above the front left wheel.

INTERIOR EXAMINATION

There was extensive damage to the passenger compartment of this motor vehicle a 1992, Ford, Crown Victoria.

The roof of the motor vehicle had been removed by the emergency personnel. To remove the roof from the motor vehicle all of the posts that extend from the main section of the car to the roof had to be cut.

The cloth area of the interior of the roof was checked during the investigation and a contact point was located in the area where a driver would normally occupy. The extreme left side of the roof was pushed down slightly due to the impact with the hydro pole.

The drivers seating area was greatly reduced due to the intrusion of the door into the passenger compartment. The bottom of the seat was detached from the seat back, the right side was forward a short distance, and appeared to be slightly higher than its normal position.

The left side of the bottom of the seat appeared to be in its normal position and it also seemed to be pushed down towards the floor due to the intrusion of the door.

The inside panel of the driver's door was moved into the drivers seating area on an angle towards the steering wheel.

The seat back of the driver's seat was on an angle with the head rest towards the left side door post. Most of the door post was removed when the roof was taken off the vehicle.

The right side of the seat back was angled to the right side against the rear left side of the console this motor vehicle was equipped with.

The complete console was shifted towards the passenger side seating area and the rear of the console was pushed up causing the front of the console to be pushed down.

The passenger seat was also damaged due to the damage to the drivers seating area as well as the console.

The left side of the console was broken at the back and the left side was now on the inside of the left side of the passenger seat back. The left side of the passenger's seat back was pushed in towards the middle of the seat.

The bottom of the passenger seat was folded in on both sides due to the movement of the complete console. Both sides of the bottom of the seat were pushed slightly up and in towards the middle of the seat.

The top left side of the dash of the motor vehicle was angled up and the top section was detached from the main part of the dash. The lower left side of the dash beside the steering wheel was pushed down and out slightly from its normal position.

The left side of the steering wheel and the column of the steering wheel was pushed out and towards the passenger side of the vehicle. The right side of the steering wheel was resting against the support for the Mobile Data Terminal (M.D.T.). The terminal is located between the two front seats of the motor vehicle.

The end of the gear shift that extends out from the right side of the steering wheel was resting underneath the top portion of the dash to the right of the steering wheel.

This motor vehicle was equipped with a safety screen that extends across the vehicle behind the front seats. This safety screen is plexiglass-glass at the top with a metal frame at the bottom.

The safety screen was resting on an angle with the left side almost touching the rear seat, the bottom section of the seat was wedged between the screen and the rear seat. The right side of the safety screen appeared to be in its normal position.

The lower metal section of the safety screen was bent out behind the driver's seat as well as the console.

The gas pedal appeared to be normal. Due to the amount of damage to this area of the vehicle, no physical testing was completed.

The brake pedal appeared to be in its normal position. The bottom right corner of the brake pedal appeared to be bent slightly towards the floor of the car.

Property in the vehicle was in disarray, including a hat, flashlight, tonfa stick as well as a metal clipboard.

TIRE EXAMINATION

At the final resting position of the vehicle the front wheels were turned slightly to the right.

The front left tire was flat and the outer edge of the rim was damaged. The outer edge of the rim was pushed in at one point and the rim then continued in the same pattern. This continued until another point in the rim where the edge was bent further in and after this point the damage to the rim stopped.

The damage to the rim was done, most likely by a curb due to the concrete transfer on the side wall of this tire. The transfer appeared to go around the complete side of the tire.

There were also light scuff marks on the side wall of the tire which would be characteristic of a vehicle that has gone into " YAW ".

"YAW " is a term used when a vehicle has rotated around its vertical axis or center of mass.

There was no damage to the rim on the rear left wheel. There was also visible scuff marks on the side wall of this tire.

There was also no visible damage to the rim of the rear right wheel. There was also visible scuff marks on the side wall of this tire.

The front right tire was relatively clean, there was no scuff marks and no rim damage visible.

RADIO EQUIPMENT

The Mobile Data Terminal (M.D.T.) was extensively damaged. The plastic frame holding the screen in place had been broken, and vital internal parts of the terminal were now visible and out in the open.

The screen of the terminal had been moved, it was now resting up and down where its normal position is resting right to left.

During examination of the terminal it was determined that the power button on the rear of the terminal was still in the on position.

The radio was still in the console and it appeared to be in its normal position. At the time the vehicle was examined the radio was turned off.

The microphone for the radio was on the floor of the vehicle in front of the driver's seat. Both antennae were still attached to the vehicle. The radio was not tested or examined.

EMERGENCY LIGHTS AND SIREN

This Marked Police vehicle was equipped with roof-top emergency lights as well as a siren. During the interior examination of the motor vehicle the console where the controls for the emergency lights and siren are mounted was also examined.

The controls for the emergency lights consisted of a touch pad system located just behind the Police radio near the front of the console. At the time the console was examined none of the touch pads were activated.

For the touch pads to visible show they were activated, there would have to be battery power available. The battery power had been cut by the Fire Department during the extrication of the occupant from the motor vehicle.

The touch pad system works by a person touching the pad to choose a specific function, and when the function is activated, a small red light appears in the top left corner of the on button. The touch pad system has an on button as well as a separate off button for each function.

The touch pad system this vehicle was equipped with has buttons for specific functions as well as an emergency button that would activate the full red emergency lighting system. Witnesses to the collision advise that just before the collision took place the emergency lights of the Police vehicle were on. Due to this information the emergency lights were later turned over to John MUSTARD of the Centre of Forensic Sciences in Toronto to be independently examined.

The siren box in the vehicle was also examined. It was found that the siren box was on and the switch was placed on the wail setting.

For the siren to activate, either the siren or horn touch pad would have to be activated on the console. The siren would also activate if the emergency touch pad was activated. By using the siren this way there is a short delay from activating the touch pad and hearing the siren of approximately 2 seconds.

SEAT BELT AND AIR BAG EXAMINATION

The driver of the motor vehicle was wearing the combination lap and torso, seat belt's at the time of the collision.

The driver's seat belt was still being worn when emergency personnel cut the belt portion in able to remove the driver from the vehicle.

The belt portion of the seat belt had not retracted due to the damage to the door post area. This area was obviously damaged due to the first impact with the hydro pole.

The latch of the driver's seat belt was still connected inside the buckle. The latch however was extending outside the buckle a short distance further than its normal position. The seat belt was later examined by Murray Dance from Transport Canada.

This motor vehicle was equipped with both a driver's side and passenger's side airbag. During examination of the motor vehicle it was found that both air bags had deployed during the collisions.

It has not been determined which collision caused the air bags to deploy.

Both air bags were examined and no transfer marks could be found.

An expert mechanical examination was also completed by a Metropolitan Toronto Police mechanic.

COLLISION SCENE MEASUREMENTS

The complete collision scene including the general street layout was measured.

The measurements were done by using a " TOTAL STATION " with the assistance of Dr. Pat Robins from the Ryerson Road Safety Research group that is part of Transport Canada. Dr. Robins is trained on the operation of the " TOTAL STATION ".

The measurements from the " TOTAL STATION " were used so that a scale diagram could be made from the information taken at the collision location.

Police Constable Michael HEPBOURNE # 533 of Traffic Support Services a person known to me as a qualified Police photographer attended the accident location. This officer was directed through the collision scene to take several photographs of the motor vehicles involved , markings on the roadway as well as the general layout of the collision scene.

The coefficient of friction , or the " drag factor ", of the road surface of Markham Road and the boulevard were calculated. This was done by using a 10.5 kg drag sled.

The drag factors at three different locations on the asphalt road surface of Markham Road were determined to be:

1) 0.69
2) 0.71
3) 0.70

The drag factor on the asphalt boulevard on the east side of Markham Road just north of Cougar Court was determined to be:

0.67

ROAD EVIDENCE

During the on scene investigation the road surface of Markham Road was examined. During this examination there were tire marks located that were left by the Police vehicle scout car # 6407.

These tires marks started in the southbound passing lane approximately 114.6 metres north of the first impact location. The first impact was with a concrete hydro pole.

These tire marks went from the southbound passing lane and veered towards the northbound lanes of Markham Road.

The tire marks continued to the east curb of Markham Road and then onto the boulevard just east of the east side curb of Markham Road. The tire marks ended at the first impact near the concrete hydro pole.

The first tire mark was a straight skid mark that was 8.9 metres long. This tire mark was in the right side of the southbound passing lane just in from the white intermittent line that separates the passing lane from the curb lane. This mark was apparently left by a tire or tires on the right vehicle.

This straight skid mark had two visible parallel lines at the start which continued until the mark ended. As the skid mark progressed the tread pattern of the tires that left the mark also became more visible.

Knowing the Police vehicle, Scout # 6407 was a 1992, Ford, Crown Victoria, we know the vehicle was equipped with an Anti-Lock Braking System(A.B.S,). This system allows the driver to still steer the vehicle even when its under maximum braking.

This mark would be characteristic of a mark left by a vehicle equipped with an Anti-Lock braking system.

Since this tire mark may have been left by 2 tires on the right side of the vehicle overlapping the same mark, the wheel base must be subtracted from the total distance of the mark as seen in the calculations that follow.

After the first tire marks were located there was a gap of approximately 4.9 metres before the next tire marks appeared.

The next tire marks consisted of 4 separate straight skip skids. The total length of the skip skids including the gaps was approximately 12.1 metres. The skips skids ranged in length from 0.4 to 1.3 metres and they were separated by 3 gaps that were approxi.nately 3 metres in length.

These skip tire marks are also characteristic that the Anti-Lock braking system that the vehicle was equipped with was activated, which means maximum braking efficiency.

Since these tire marks may also be overlapping the wheel base must also be subtracted from the total length when completing the calculations

There was another gap where there were no tire marks visible and this was approximately 23.6 metres.

The next tire mark was a curved tire mark which started on the right side of the southbound passing lane and then veered left, before disappearing in the northbound passing lane. The total length of the tire mark was approximately 42.1 metres.

This tire mark had visible striation marks through it however the total tire mark was very difficult to see while at the scene. It was very difficult to accurately define the outside edges of this tire mark in some spots.

The striations seen in the tire mark indicate the tire that made the mark would have been a slide slipping rotating tire. The striations indicated it may have been a "YAW" mark however it did not meet the criteria for a " YAW " mark.

This tire mark was caused by the rear right wheel of the Police vehicle. During examination of the rear right wheel, scuff marks were found on the sidewall of this tire.

The next tire mark started in the area of the centre line of Markham Road and continued on an angle in a south easterly direction. This mark appeared to end on the east side of the northbound passing lane.
This mark was very faint and only became visible for a short period of time after it started raining about 2 hours after the collision.

This tire mark was from the rear left tire of the Police vehicle as it started to rotate slightly in a counter clockwise direction.

The next tire mark started near the middle of the northbound curb lane of and stopped at the east side of Markham Road. This mark was 15.7 metres long , and at the end of this tire mark there was a scrape to the top edge of the raised curb.

This tire mark was caused by the front left wheel of the Police vehicle. The scrape at the end of the tire mark was caused by the rim of the front left wheel. Upon examining the front left rim, damage to the outer edge was found.

As the front left wheel of the Police vehicle came in contact with the east side curb of Markham Road this caused the vehicle to rotate in a clockwise direction.

The next tire mark was approximately 13.5 metres from the first point of impact. This tire mark started at the east curb of Markham Road and stopped at the east edge of the asphalt boulevard. The tire mark was approximately 10.6 metres in length.

This tire mark was caused by the rear left wheel as the vehicle was in its clockwise rotation. This wheel was slide slipping and upon examining the rear left wheel , scuff marks were visible on the sidewall of the tire.

The last tire mark prior to impact started near the white intermittent line that separates the northbound curb and passing lanes of Markham Road. This mark was approximately 23 metres long , ending 1 metre south of the first impact and just west of the east curb.

This tire mark was caused by the front right tire.

There was another short tire mark just east of the first point of impact. This mark may have been left due to the severe rotation of the vehicle at the point of impact.

The head of the light standard which was attached to the hydro pole which was the first impact was lying on the edge of the northbound curb lane a short distance west of the east side curb of Markham Road. The hydro pole which the Police vehicle struck was now lying on the asphalt boulevard on a slight angle near the northeast corner of Markham Road and Cougar Court.

The bottom of the hydro pole was actually extending just over the north curb of Cougar Court east of Markham Road. The hydro pole had been completely pulled out from its base and the metal retaining rods were sheared.

South of the first impact location there was a few scrapes to the asphalt boulevard from the damaged Police vehicle. The Police vehicle continued in a southbound direction just missing the automatic traffic signal pole on the north east corner of Markham Road and Cougar Court.

A clearly visible fluid trail extended from the northeast corner of Cougar Court and Markham Road to the west side of Markham Road just south of Luella Street. The fluid trail crossed Markham Road in a southwesterly direction towards the second impact. The fluid spray details the Police vehicle route from the first impact to the second impact.

The second impact was a hydro pole on the west side of Markham Road. The fluid spill ended in the area of the hydro pole. In the area of the fluid spill no tire marks were visible.

QUESTIONS

1: What was the speed of The Crown Victoria Police Vehicle (Fleet 6407) immediately before the collision?

2: What was the separation distance between the Crown Victoria and the Mustang?

3: What distance separated the northbound Caprice Police Vehicle (Fleet 4211) and the Crown Victoria when the Caprice started to turn left?

4 How much time would it take for the Caprice to make its left turn from northbound Markham into the plaza?

5: How much time would it take for the Crown Victoria to close in on the Caprice while the Caprice was turning?

6: If 6407 had not veered to the left, would it have collided with 4211 in its left turn?

7: Were the 2 Police vehicles visible to each other when the Caprice started to turn left?

8: Are there any violations against the Criminal Code or a Provincial statute with regards to this collision?

9: What is considered to be the Primary Cause of this collision?

10: What are considered to be contributing factors leading to this collision?

Question # 1: What was the speed of The Crown Victoria Police Vehicle (Fleet 6407) immediately before the collision?

This question can be answered using 3 different methods:

1) Physical Evidence at the scene of the collision and damage to the Crown Victoria Police vehicle

2) Time and Distance calculations from information of witnesses who were southbound on Markham Road and saw the collision.

3) Time and Distance calculations making use of the communications tapes and information from a southbound witness.

Speed Calculation Method # 1: Scene Evidence:

At the scene of the collision, there was some physical evidence[1] that could be used in speed calculations for the Crown Victoria Police Vehicle, which will be referred to hereafter as "6407".

This evidence consisted of tire marks left by 6407 as it traveled southbound on Markham Road in the southbound passing lane, and moved to the left across the northbound lanes to the point of impact. At this point it struck and dislodged a concrete light standard, causing extensive intrusion into the driver's seating area of 6407. It then left a fluid trail as it continued southbound and crossed to the west side of Markham Road, where it struck a wooden hydro pole, causing considerable damage to the front end of 6407 [2]. It bounced back off this pole about a metre and came to rest.

This evidence is analyzed with a view to obtaining a speed calculation in the following order of steps:

1) Estimate the speed at which 6407 struck the wooden hydro pole (final impact) from the damage to the front end of the vehicle.

2) Calculate the speed loss of 6407 in traveling from first to second impact. Combine this result with step # 1's result to determine departure speed from the first impact point.

3) Estimate the speed loss that 6407 would have experienced from the damage sustained when it's left side struck the concrete light standard. Add this result to the result of step # 2.

4) Calculate the energy loss of 6407 in leaving the tire marks before striking the concrete light standard. Combine these results together with the result from step # 3.

[1] See scene scale diagram in appendix
[2] See photos in appendix for damage profile of 6407

Step # 1: **Estimate the speed at which 6407 struck the wooden hydro pole (final impact) from the damage to the front end of the vehicle.**

The final impact with the wooden hydro pole was with the right side of the front bumper of 6407. The intrusion here was about 0.4 metres (1.5 ft). A conservative estimate of the speed required to produce this damage is 30 km/h.

Step # 2: **Calculate the speed loss of 6407 in traveling from first to second impact. Combine this result with step # 1's result to determine departure speed from the first impact point.**

6407 traveled 67 metres from the first impact with the concrete light standard to the wooden hydro pole.

It did not leave tire marks in this distance. It did leave a fluid trail of antifreeze indicating that it's path over this distance was arc shaped. It follows that it had to be under the influence of steering rather than sliding. If it had been sliding, it would have gone in a straight line.

The vehicle had been severely damaged when it struck the concrete light standard in the first impact. The entire vehicle had been bowed [3] toward the passenger side. The wheel base was therefore shorter on the driver's side than the passenger's side.

The front left tire was also flattened immediately after the first impact by being slammed sideways against the curb.

These 2 factors (the bowing and the flat front left tire) would tend to make the vehicle go to the left.

[3] Bowing means the application of a force into the side centre area of a vehicle strong enough to bend the opposite side of the vehicle outward.

However, the front wheels of 6407 were turned to the right. This caused the steering action which overcame the tendency to go to the left, resulting in the vehicle traveling to the right.

The forces trying to make the car go to the left, and the steering to the right would cause a level of resistance within the vehicle causing it to slow down. Again it is necessary to make an estimate of the level of resistance. This is expressed as a "drag factor" [4]. The calculation here uses a drag factor of 0.15 (1.47 metres per second per second)

The energy loss of 6407 over the distance of 67 metres with a resistance factor of 0.15 is calculated as follows:

$S = 15.9\sqrt{df}$

$S = 15.9\sqrt{67 x .15}$

$S = 15.9\sqrt{10.05}$

$S = 15.9 x 3.17$

$S = 50.4$

S: *Speed Energy loss in distance from first to second impact.*

d: *Distance of travel from first to second impact.*

f: *Estimated resistance (slowing) factor within 6407 during travel from first to second impact..*

Equivalent Speed Energy Loss in traveling from first to second impact is 50 km/h.

To calculate the departure speed of 6407 from the first impact with the concrete light standard, we combine the above result with the estimate of speed loss at impact with the wooden hydro pole (2nd impact):

[4] Drag factor is expressed as a decimal fraction of 1 g (gravity). Gravity has an acceleration rate of 9.81 metres per second per second.

$$Sc = \sqrt{S1^2 x S2^2}$$
$$Sc = \sqrt{30^2 + 50^2}$$
$$Sc = \sqrt{900 + 2500}$$
$$Sc = \sqrt{3400}$$
$$Sc = 58.3$$

Sc: Combined speed. Represents departure speed of 6407 from first impact with concrete light standard.

S1: Estimated approach speed of 6407 into second impact point at wooden hydro pole from Step 1..

S2: Calculated Speed/energy loss during travel of 6407 from first to second impact from Step 2 above.

The approximate departure speed of 6407 from the concrete light standard is 58 km/h.

Step # 3: **Estimate the speed loss that 6407 would have experienced from the damage sustained when it's left side struck the concrete light standard. Add this result to the result of step # 2.**

Visual examination of 6407 reveals severe intrusion into the driver occupied area of the vehicle. Overhead photos show that this intrusion is in excess of 2 feet.

During the investigation of this collision, documents were received from the office of the County Prosecutor of the county of Bergen, New Jersey. These documents pertained to the investigation of a similar collision involving a Crown Victoria Police vehicle. The impact damage to the driver's side of the vehicle in the New Jersey case was remarkably similar to that of 6407. Intrusion was in excess of 2 feet into the driver occupied area. In a report from the American Standards Testing Bureau in New York, they indicate that the impact speed would have been 40 to 45 mph, which converts to 64 to 72 km/h.

Using the information from the New Jersey report, in conjunction with estimates of speed damage from Metro Toronto Police reconstructionists based on their broad experience in investigating motor vehicle collisions, **we have estimated a direct speed loss at impact with the concrete light standard at 60 km/h.**

Since 6407 did not come to a stop after hitting the concrete light standard, we must add the estimated direct speed loss at impact with the light standard to it's calculated post impact speed from the light standard.

$S = S1 + S2$
$S = 58 + 60$
$S = 118$

S: *Approach speed into concrete light standard*
S1: *Calculated post impact speed from light standard.*
S2: *Estimated direct speed loss from damage at impact with light standard.*

The calculated approach speed into the light standard is 118 km/h.

Step # 4) **Calculate the energy loss of 6407 in leaving the tire marks before striking the concrete light standard. Combine these results together with the result from step # 3.**

There were tire marks[5] left by 6407 before impact with the light standard. These marks started 114.6 metres north of the first impact point, and 181.3 metres north of the second impact point.

We will label these pre-impact tire marks as 1 through 6 for the purpose of combining them for speed calculations.

Mark # 1 was a straight skid 8.9 metres long. This was in the southbound passing lane apparently left by a tire or tires on the right side of the vehicle.

[5]Refer to attached scene scale diagram in appendix

Since this mark may have been left by 2 tires on the right side of the car overlapping over the same mark, we subtract the wheel base of the Crown Victoria (2.9 metres). *8.9 - 2.9 = 6.0 metres.*

The minimum sliding distance for mark # 1 is 6.0 metres.

There was a gap of 4.9 metres before the next marks appear.

Mark # 2 consisted of straight skip skids 4 skip skids. They ranged in length from 0.4 to 1.3 metres. They were separated by 3 gaps of 3 metres. The total length including the gaps was 12.1 metres. These skip skids are evidence that the ABS braking system of the vehicle was activated, which means maximum braking was in effect.

Since these marks may also be overlapping, we subtract the wheelbase of 2.9 metres from the total length of 12.1 metres. The result is a minimum sliding distance over Mark # 2 of (12.1 - 2.9) 9.2 metres

There was then a gap of 23.6 metres before a curved tire mark became visible.

Mark # 3 started on the right side of the southbound passing lane 65.5 metres north of the first impact point. It veered left for total length of 42.1 metres before disappearing in the northbound passing lane.

Yaw Consideration

This tire mark had striations in it indicating that it may have been a yaw mark[6]. However, it did not fit all the criteria for qualifying it for measuring as a yaw mark. The criteria are as follows:

1) Contains striations indicating a - side slipping tire.
2) There must be marks indicating that the rear tire behind the front leading tire was tracking outside the front leading tire. It is the front leading tire whose mark must be measured.

[6] A curved tire mark which can be measured to give a speed calculation of a side slipping vehicle as it is leaving this mark.

3) There must be a decreasing radius in the curved tire mark in the direction of travel for the vehicle leaving the mark.

This tire mark fit the first criteria. However, it did not fit the 2nd and 3rd criteria for measuring it as a yaw mark.

It also seems likely that this mark was made by the rear right tire. The walls of the rear right tire had scuff marks consistent with side slipping, whereas the front right tire did not.

Also, it was not clearly visible and it did not have clearly defined edges visible to the human eye. Measuring a yaw mark requires very accurate measurements to arrive at a proper speed result. Since we could not see clearly defined edges, these accurate meassurements could not be made.

Therefore, measurements of this mark could not be made for yaw calculations.

Mark # 4 started 45.1 metres north of the first impact point. This mark was **17.2 metres long**. It was apparently left by the front left tire. It started in the area of the centre line and continued to the east side of the northbound passing lane. This mark was very faint and only became visible for a short period of time after it started raining about 2 hours after the collision, at which time it was noticed and marked for measuring.

Mark # 5 started 29.2 metres north of the first impact point. It was apparently left by the rear left tire of 6407, indicating that it has started side-slipping to the left side of the vehicle This mark was **15.7 metres long** ending at the east curb of Markham Road.

Mark # 6 started on the east curb of Markham Road where mark # 5 ended, indicating that it was also left by the rear left tire. It started 13.5 metres north of the first impact point. **It was 10.6 metres long.**

Mark # 7 started 22.3 metres north of the first impact point on the west side of the northbound curb lane. It was apparently left by the leading front left tire of 6407 as it was side-slipping to the left side. It was 23.0 metres long, ending 1 metre south of the first impact point in the northbound curb lane.

There was another mark 1.5 metres in length apparently left by the rear left tire of 6407 just east of the point of impact. this may have been left during the severe dynamic rotation of the vehicle at the point of impact, so it is not included in the calculations.

Combined Speed Calculation for Step # 4:

The drag factor (coefficient of friction) or the asphalt road surface was measured using a drag sled and spring scale as being **0.69**.

The drag factor or the asphalt surface on the east side of Markham Road between the road surface and the sidewalk was **0.67**.

For tire marks 1 and 2, we assume full braking for the vehicle. A mechanical inspection of the vehicle did not reveal any defects in the braking components. Therefore, if the brakes were applied hard enough to leave tire marks from one or two tires on one side of the vehicle, and the vehicle continued in a straight line, all 4 brakes must have been working and slowing the vehicle at the rate of the calculated drag factor.

The speed loss calculation for Tire Mark # 1 is as follows:

$S1 = 15.9\sqrt{dfn}$

$S1 = 15.9\sqrt{6x.69x1}$

$S1 = 15.9\sqrt{4.14}$

$S1 = 15.9x2.03$

$S1 = 32.27$

S1: Speed/energy loss from Tire mark 1.
d: Sliding distance over tire mark 1.
f: Drag factor of asphalt road surface.
n: Braking efficiency expressed as decimal fraction of 1.

The speed/energy loss from Tire mark # 1 is 32 km/h.

The speed/energy loss for tire mark # 2 is calculated as follows:

$S2 = 15.9\sqrt{dfn}$

$S2 = 15.9\sqrt{8.2x.69x1}$

$S2 = 15.9\sqrt{5.65}$

$S2 = 15.9x2.37$

$S2 = 37.68$

S2: Speed/energy loss from Tire mark 2.
d: Sliding distance over tire mark 2.
f: Drag factor of asphalt road surface.
n: Braking efficiency expressed as decimal fraction of 1.

The speed/energy loss for tire mark # 2 is 37 km/h.

For the rest of the tire marks, there is evidence of steering and side slipping. Therefore, the brakes may or may not have been applied in view of the fact that the vehicle was equipped with ABS braking system. The ABS brakes allow the vehicle's wheels to still rotate under maximum braking.

We will make 2 calculations to determine the speed of 6407 at the start of tire mark # 1. The first will assume maximum braking over marks 3 to 7. The second will assume no braking over these marks other than that of the tire leaving the mark, to which we will assign 30 percent braking.. This will provide a range of speeds for 6407 when it first activated it's brakes.

For the first calculation, tire marks 3 through 7 were visible for 65.5 metres north of the first impact point. We will assume 100% braking over this distance using a drag factor of 0.69. This is combined with the speed calculation for marks 1 and 2 at 100% braking and the approach speed calculation into the first impact point of 118 k/h.

$S3 = 15.9\sqrt{dfn}$

$S3 = 15.9\sqrt{65.5x.69x1}$

$S3 = 15.9\sqrt{45.19}$

$S3 = 15.9x6.72$

$S3 = 106.8$

S3: Speed/energy loss from Tire marks 3 to 7.

d: Sliding distance over tire mark 1.

f: Drag factor of asphalt road surface.

n: Braking efficiency expressed as decimal fraction of 1.

The speed/energy loss from tire marks 3 to 7 assuming full braking is 106 km/h.

We now combine the speed energy loss results of the tire marks with the calculated approach speed into the first impact point at the concrete light standard.

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$$Sc = \sqrt{S1^2 + S2^2 + S3^2 + S4^2}$$
$$Sc = \sqrt{32^2 + 37^2 + 106^2 + 118^2}$$
$$Sc = \sqrt{1024 + 1369 + 11236 + 13924}$$
$$Sc = \sqrt{27553}$$
$$Sc = 165.99$$

Sc: Speed of 6407 at start of first tire mark.
S1: Speed/energy loss from tire mark 1.
S2: Speed/energy loss from tire mark 2.
S3: Speed/energy loss from tire marks 3 to 7.
S4: Calculated approach speed into first impact point of concrete light standard.

From visible physical evidence, assuming full braking where tire marks appear, the speed for 6407 at the start of the first tire mark was 165 km/h.

We will make another calculation assuming that only the visible tire marks are under any braking. We will assign 30% braking for each of these marks.

Tire Mark # 3:

$$S3 = 15.9\sqrt{dfn}$$
$$S3 = 15.9\sqrt{42.1x.69x.3}$$
$$S3 = 15.9\sqrt{8.71}$$
$$S3 = 15.9x2.95$$
$$S3 = 46.9$$

S3: Speed/energy loss from tire mark 3.
d: Sliding distance over tire mark 3.
f: Drag factor of asphalt road surface.
n: Braking efficiency expressed as decimal fraction of 1.

The speed/energy loss for tire mark 3 is 46 km/h.

Tire Mark # 4:

$S4 = 15.9\sqrt{dfn}$
$S4 = 15.9\sqrt{17.2x.69x.3}$
$S4 = 15.9\sqrt{3.56}$
$S4 = 15.9x1.88$
$S4 = 29.8$

S4: *Speed/energy loss from tire mark 4.*
d: *Sliding distance over tire mark 4.*
f: *Drag factor of asphalt road surface.*
n: *Braking efficiency expressed as decimal fraction of 1.*

The speed/energy loss for tire mark # 4 is 29 km/h.

Tire Mark # 5:

$S5 = 15.9\sqrt{dfn}$
$S5 = 15.9\sqrt{15.7x.69x.3}$
$S5 = 15.9\sqrt{3.25}$
$S5 = 15.9x1.80$
$S5 = 28.66$

S5: *Speed/energy loss from tire mark 5.*
d: *Sliding distance over tire mark 5.*
f: *Drag factor of asphalt road surface.*
n: *Braking efficiency expressed as decimal fraction of 1.*

The speed/energy loss for tire mark # 5 is 28 km/h.

Tire Mark # 6:

$S6 = 15.9\sqrt{dfn}$
$S6 = 15.9\sqrt{10.6x.69x.3}$
$S6 = 15.9\sqrt{2.19}$
$S6 = 15.9x1.48$
$S6 = 23.55$

S6: *Speed/energy loss from tire mark 6.*
d: *Sliding distance over tire mark 6.*
f: *Drag factor of asphalt road surface.*
n: *Braking efficiency expressed as decimal fraction of 1.*

The speed/energy loss for tire mark # 6 is 23 km/h.

Tire Mark # 7:

$S7 = 15.9\sqrt{dfn}$

$S7 = 15.9\sqrt{23x.69x.3}$

$S7 = 15.9\sqrt{4.76}$

$S7 = 15.9x2.18$

$S7 = 34.69$

S7: *Speed/energy loss from tire mark 7.*
d: *Sliding distance over tire mark 7.*
f: *Drag factor of asphalt road surface.*
n: *Braking efficiency expressed as decimal fraction of 1.*

The speed/energy loss for tire mark # 7 is 34 km/h.

To calculate a minimum speed at the start of tire mark # 1, we combine the results of each tire mark's speed/energy loss with the approach speed at the light standard.

$$Sc = \sqrt{S1^2 + S2^2 + S3^2 + S4^2 + S5^2 + S6^2 + S7^2 + S8^2}$$

$$Sc = \sqrt{32^2 + 37^2 + 46^2 + 29^2 + 28^2 + 23^2 + 34^2 + 118^2}$$

$$Sc = \sqrt{1024 + 1369 + 2116 + 841 + 784 + 529 + 1156 + 13924}$$

$$Sc = \sqrt{21743}$$

$$Sc = 147.45$$

Sc: *Minimum Speed at start of first tire mark.*
S1-S7: *Speed/Energy loss from pre-impact tire marks.*
S8: *Approach speed of 6407 into first impact at concrete light standard.*

The minimum calculated speed from visible physical evidence at the scene is 147 km/h.

The calculated speed range from physical evidence at the scene is from 147 km/h to 165 km/h.

Speed Calculation Method 2: Time and Distance calculations based on information from witnesses who were southbound on Markham Road.

It was learned during the investigation into this collision that there were 2 vehicles southbound on Markham Road who had been passed by both the Mustang and the Crown Victoria (6407) shortly before the collision. The occupants of these vehicles both say that they saw the Crown Victoria police vehicle lose control and crash.

The lead witness vehicle was driven by **Dan MATTIMOE.** He was alone in the vehicle.

The second witness vehicle was driven by **Peter KIEL.** He was accompanied by **Mario BILSKI.**

Both drivers give their speed as 65 km/h.

On Friday, September 30, 1994, at about 9:00 PM, these witnesses were returned to Markham Road and Cougar Court.

Individually, they were taken in a Police vehicle southbound on Markham following the approach path to the accident scene. They were asked to the best of their recollection to point out where they were when certain events leading up to the collision took place. As they indicated these key points, the police vehicle was stopped and the position was marked and later measured.

The results of this information were used to make certain time and distance calculations[7].

Witness **Dan MATTIMOE**, being in the lead vehicle, had the best view of the scene, and was able to recall more about the collision than the occupants of the second witness vehicle.

[7]The original notes containing these measurements are contained in the appendix.

The points he was able to recall were noted and measured from the north curb of Cougar Court. The measurements were made using a metric measuring wheel.

Mattimoe's distance information is itemized as follows:

1) Mustang passed Mattimoe:_____350 metres north.
2) 6407 passed Mattimoe at approximate crest of hill:_____321 metres north.
3) Mattimoe first noticed second police vehicle (4211)_____387 metres north.
4) Mattimoe's position when 4211 started to turn left_____267 metres north.
5) Position of 6407 when 4211 started to turn left_____163 metres north.
6) Position of 6407 when 4211 was across both S/B lanes_____129 metres north
7) Position of 6407 when it started to swerve_____113 metres north.
8) Position of 4211 when Mattimoe first noticed it_____18 metres north
9) Position of Mustang when 4211 turned left_____4 metres north.

With the information from items 2 and 4, along with Mattimoe's stated speed of 65 km/h, it is possible to calculate the time that it took Mattimoe to get from his position at item 2 (6407 passes Mattimoe) to his position at item 4 (Mattimoe's position when 4211 started to turn left).

The distance Mattimoe traveled between these 2 points is (321-267=) 54 metres.

At 65 km/h Mattimoe's velocity in metres per second is (65 x 0.278=) 18.07 m/s.

To travel 54 metres at 18 m/s, Mattimoe would have taken $(\frac{54}{18})$= 3 seconds.

Fleet # 6407 was at the same location as Mattimoe's vehicle in item # 2 (321 metres north). Position 5 (163 metres north) indicates the position of 6407 when Fleet # 4211 started to turn left, which would have been 3 seconds after 6407 passed Mattimoe's vehicle.

6407 would have traveled (321-163) = **158 metres in 3 seconds.**

6407's velocity in metres per second to travel this distance would be $(\frac{158}{3}) = 52.66$ m/s.

This converts to a speed of $(\frac{52.66}{0.278}) = 189.42$ km/h

Time Distance evidence from witness Mattimoe yields an average speed for 6407 immediately before leaving tire marks as 189 km/h..

The distance data given by Mattimoe when he refers to positions of 6407 near the collision scene is consistent with physical evidence at the scene. This enhances his reliability in the accuracy of the distances he gives.

There is a recognizable margin for error using this method. But even taking this margin for error into consideration, this calculation corroborates a belief that 6407 was traveling in excess of 150 km/h when he approached the accident scene.

Witnesses **Kiel and Bilski** were not able to provide sufficient information to apply a similar time/distance calculation, but their statements and information confirm that very high speeds were involved.

Speed Calculation Method 2: Time and Distance from communications audio tapes and information from a southbound witness.

Constable Knight was in radio contact with the Police dispatcher for about 30 seconds before the collision[8].

The information he gave indicated that he was trying to catch up to a Mustang traveling at a high rate of speed southbound on Markha . approaching Eglinton Ave.

The collision took place about 2 hundred metres north of Eglinton Avenue at Markham and Cougar Court.

It is very likely that Constable Knight lost control of his vehicle immediately after his last radio broadcast. There are 2 reasons for this conclusion:

1) Scout car 4211 put over a request for an ambulance only 11 seconds after P.C. Knight's last broadcast. Assuming an approach speed of 150 km/h, from the time that P.C. Knight began to lose control until he came to a stop at the second impact point would require almost all of that 11 seconds.

2) Immediately before ending his last radio broadcast, a quiver was audible in P.C. knight's voice. This could have been caused by the perception of a hazard in front of his vehicle, for which he was moving quickly to react to.

About 1 minute before the collision, P.C. Knight had checked out a plate on his MDT[9]. This plate was registered to one Edith McIntosh. She indicates that she was southbound on Markham Road from Lawrence in the curb lane with P.C. Knight's police car behind her in the passing lane. She says they were both going at 60 km/h. Her evidence is that the Mustang came up from behind her in the curb lane at a high rate of speed and changed to the passing lane to pass her. According to Ms. McIntosh, this took place at Eastpark Blvd.

[8] See communications tapes transcript in appendix.
[9] MDT means Mobile Digital Terminal (in car computer)

Eastpark Blvd. is about 1100 metres north of the point where 6407 went out of control.

It can be assumed that P.C. Knight started broadcasting within a few seconds after this event described by Ms. McIntosh.

Taking acceleration into consideration, it would take about 5 seconds for P.C. Knight to reach a point 100 metres south of Eastpark Blvd. This would be the approximate position from where P.C. Knight first started broadcasting the information about the Mustang.

This approximate position from where he started broadcasting is about 1000 metres north of where P.C. Knight lost control of his vehicle.

To travel 1000 metres in 30 seconds requires an average velocity of $(\frac{1000}{30}) = 33.33$ metres per second.

This converts to an average speed of $(\frac{33.33}{0.278}) =$ **119 km/h** over the distance he traveled while in communication with the dispatcher for 30 seconds.

Taking acceleration from 60 km/h into consideration, it can be assumed that P.C. Knight had accelerated to about 80 km/h before starting his transmission.

If the acceleration rate was constant from 80 km/h over this distance, 6407 would have to accelerate to {119+(119-80)} = 158 km/h to cover this distance with an average speed of 119.

Although the acceleration rate would not be constant, and 6407's maximum speed could have been something less than 158 km/h using this information, **the information still tends to corroborate the other evidence placing 6407's speed approaching the accident scene in excess of 150 km/h.**

Speed Conclusion

At the scene of the collision, the first impression given to experienced reconstructionists was that very high speeds were involved in this collision.

This belief was based on the fact that 6407 had traveled over 180 metres from where tire marks first appeared to where the vehicle ended up. During this distance it had destroyed a concrete light standard, and a wooden hydro pole, both of which require a significant amount of speed to sustain the damage they did.

At 100 km/h, on a surface with a drag factor of 0.69, a vehicle would require a distance of only 57 metres to come to a stop with full braking[10]. From the point where tire marks first appeared, this would have brought 6407 to a stop in about half of the distance that it took it to slide into the concrete light standard.

At 150 km/h, on a surface with a drag factor of 0.69, a vehicle would require a distance of 128 metres to come to a stop with full braking[11]. From the point where the tire marks first appeared, this would have brought 6407 to a stop 13 metres beyond the concrete light standard. If it had struck the light standard after sliding with full braking from 150 km/h, his speed would have been 48 km/h. This probably would have been a survivable impact.

These facts, along with the evidence using the 3 methods of speed calculation, all tend to indicate that the speed of 6407 when it lost control was 150 km/h or higher.

150 km/h will be the presumed minimum speed in completing the calculations to answer remaining questions in this report.

[10]See Appendix for calculation
[11]See Appendix for calculation

Question # 2: What was the separation distance between the Crown Victoria and the Mustang?

According to witnesses, the Mustang motor vehicle that P.C. Knight was trying to catch up to was traveling at a high rate of speed. All witnesses estimated its speed to exceed 100 km/h. Witness Puneet Singh Chadha estimated the Mustang's speed to be 120 to 140 km/h. Witness Dan Mattimoe estimated its speed to be around 150 km/h.

It was obviously P.C. Knight's intention to catch up to the Mustang. Therefore he may have been going faster than the Mustang, and closing in on it.

Witness Dan Mattimoe, when asked how much time elapsed between the two cars passing him, said 4 or 5 seconds. At 150 km/h, this would place the separation distance at 167 to 209 metres[12].

Witness Peter Kiel estimated the separation distance to be 100 to 150 metres.

The most reliable witness for placing separation distance is probably Pat WATTERS, who resides at 25 Cougar Court, Apt. 505. Her view of Markham Road is obstructed by another apartment building, so that she has a clear view of the intersection of Markham Road and Cougar Court, and she can see the crest of the hill about 325 metres north of Cougar Court, but she can not see anything in between. This view obstruction adds credibility to her evidence.

Ms. Watters says she was on her balcony when her attention was drawn to a bright light coming southbound over the hill at a high rate of speed. This light disappeared behind the building obstructing her view. She turned her head to her left and saw the Mustang traveling at a high rate of speed southbound through the intersection at Cougar Court. She then heard the sound of the police vehicle hitting the concrete light standard.

She feels that no more than 4 seconds elapsed between seeing the light (which was 6407) coming over the hill, and seeing the Mustang going through the intersection.

The distance between the 2 events is about 325 metres.

[12] See Appendix for calculation

In 2 seconds, at 150 km/h, 6407 would have traveled about 83 metres[13]

This would place the separation distance at (325-83) = 245 metres.

This distance is about 100 metres further than the Kiel's estimate, but is closer to that of Mattimoe. Since these events happen unexpectedly in a matter of a few seconds, witnesses from a different perspective may err by a second in time estimates or by up to 50 metres in distance estimates.

Therefore, a logical estimate of the separation distance between the Crown Victoria Police vehicle and the Mustang just before the collision was about 200 metres.

[13]See Appendix for calculation

Question # 3: **What distance separated the northbound Caprice Police Vehicle (Fleet 4211) and the Crown Victoria (Fleet 6407) when the Caprice started to turn left?**

Information from occupants of Scout 4211:

Constable Mark HARVEY # 7329, states that he was driving Scout car 4211 northbound on Markham Road. He and his escort, Constable Bart MORETON # 451, saw a Mustang traveling southbound at a high rate of speed. Moreton estimated its speed at over 100 km/h.

After the Mustang passed, Harvey turned his vehicle left into the driveway of the plaza at 256 Markham Road. This is on the northwest corner of Markham Road and Cougar Court.

Neither Officer noticed any on-coming traffic before making the turn. After turning into the driveway, P.C. Moreton was the first to notice 6407 hitting the light standard across the street. They both say that Scout 4211 was completely off the road at this time.

Distance Estimate:

In answering Question # 2, which asked "What was the separation distance between the Crown Victoria and the Mustang", the estimated distance from witnesses was about 200 metres.

It is not likely that more than 1 second had elapsed after the Mustang passed them that Scout 4211 would have commenced making its turn.

In one second, at 150 km/h, 6407 would have traveled 42 metres. From an initial separation distance of about 200 metres, this places the distance of the Crown Victoria from the Caprice at 158 metres.

Therefore, a logical estimate of the separation distance between the 6407 and 4211 when 4211 started its turn is 160 metres.

Question # 4: How much time would it take for the Caprice to make its left turn from northbound Markham into the plaza?

Information from Constable Harvey, who was driving the Caprice (Sc 4211), he started to turn left into the driveway just after the Mustang passed him.

There is conflicting information about whether 4211 made his left turn from the northbound curb lane or the passing lane.

The Officers both say they were in the northbound passing lane. Witness Mattimoe says they were in the northbound curb lane.

Time for Caprice to make left turn:

On Friday, September 30, 1994, at about 9:00 PM, the authors of this report returned to Markham Road and Cougar Court with the Fleet # 4211.

Sgt. Buchanan # 3755 drove the vehicle northbound on Markham Road slowing from 50 km/h at Cougar Court to about 20 km/h and making a normal speed left turn into the south driveway of the plaza at 256 Markham Road. This test was repeated 5 times from the northbound passing lane, and 5 times from the northbound curb lane[14].

The average time from starting the turn from the **northbound passing lane** to a complete stop with the rear of the car about 2 metres into the driveway was **3.2 seconds.**

The average time from starting the turn from the **northbound curb lane** to a complete stop with the rear of the car about 2 metres into the driveway was **3.7 seconds.**

In both cases, since the car was slowing while making the turn, it was virtually **clear of both southbound lanes of Markham Road within 3 seconds after making the turn.**

[14]See Appendix for copy of original notes

Question # 5: How much time would it take for the Crown Victoria to close in on the Caprice while the Caprice was turning?

In Question # 2, we estimated the separation distance between the Crown Victoria and the Mustang, based on information from witnesses, at about 200 metres.

In Question # 3, we estimated the separation distance between the Crown Victoria Police vehicle and the Caprice Police vehicle when the Caprice started its turn at 160 metres

At 150 km/h, it would take 3.8 seconds for the Crown Victoria to reach the point where the Caprice was turning.

Question # 6: If 6407 had not veered to the left, would it have collided with 4211 in its left turn?

Reconciling the answers to Questions 4 and 5, 4211 would have cleared the southbound lanes of Markham Road 3 seconds or less after the Mustang passed its location.

At 150 km/h, 6407 would have passed the location of 4211's turn about 3.8 seconds after 4211 started its turn.

Therefore, 4211 would have been clear of the southbound lanes at least 0.8 seconds before 6407 reached its the driveway where 4211 was turning.

It follows that the answer to this question is that 6407 did not have to veer to the left to avoid colliding with 4211.

Question # 7: Were the 2 Police vehicles visible to each other when the Caprice started to turn left?

On the morning of the collision, Sgt. Buchanan placed a Chev Caprice Police vehicle in the northbound passing lane of Markham Rd at a position where it would be about to turn into the south driveway of the plaza.

P.C. Johnston drove a Crown Victoria Police vehicle southbound on Markham Road over the crest of the overpass north of the accident scene.

When the headlights of the Crown Victoria became visible to Sgt. Buchanan, he advised P.C. Johnston by radio. P.C. Johnston then marked the location. When the full vehicle became visible, P.C. Johnston also marked that position.

The results were as follows:

Headlights at crest or hill visible:	267 metres.
Full Vehicle Visible at crest:	184 metres.

Question # 3 resulted in an answer to the separation distance between 6407 and 4211 when 4211 started its turn. The answer was approximately 160 metres.

Our speed estimate for 6407 was approximately 150 km/h, which is 42 metres per second.

Using the above data, when 4211 started its turn, the headlights of 6407 would have been visible for about 2.5 seconds[15]

The full vehicle would have been visible for about 0.6 seconds[16]

[15]See Appendix for calculation
[16]See Appendix for calculation

View Obstruction:

About 100 metres north of the driveway where 4211 was turning, there is a raised centre island dividing the northbound from the southbound lanes of Markham Road. At the south end of this island, there is an international sign advising northbound traffic to "Keep Right".

This sign would have posed as a partial view obstruction between the two police vehicles until 6407 would have been about 10 metres north of the sign (110 metres north of 4211).

Therefore, the two police vehicles would not have had an unobstructed view of each other until about 1.2 seconds after 4211 started its turn[17].

[17]See Appendix for calculation

Question # 8: Are there any violations against the Criminal Code or a Provincial statute with regards to this collision?

One question leading into this investigation was whether or not there was any culpability that could be assigned to anyone with respect to a Criminal code of Highway Traffic Act offence. Of particular interest was the possibility of Fleet 4211 turning left in the path of 6407, causing 6407 to lose control.

This report concludes that **there is no basis for charges against either of the occupants of 4211**. The speed at which 6407 was traveling would not be reasonably expected by anyone turning in front of it. Also, this investigation has determined that the times and distances involved indicate that it is likely that 4211 would have cleared the southbound lanes before being reached by 6407.

In our opinion, the only person criminally responsible in this collision is the driver of the Mustang. In view of the evidence of witnesses before and after P.C. Knight's collision, **there is clear justification for criminal driving charges against the Mustang driver.**

Primary Reason for Loss of Control

The primary reason for this devastating collision was clearly the high speed of Fleet # 6407 immediately before losing control. The speed limit is 60 km/h at this location. The speeds involved here are about 2½ times the legal limit.

We do not pass judgement on P.C. Knight. He was operating in the capacity of a Police Officer trying to apprehend an offender who was driving in a dangerous manner. The Highway Traffic Act allows for Police Officers to exceed the speed limit in the execution of his or her duty. If the scenario had been different, in that he had not attempted to stop the vehicle, and it had subsequently crashed, P.C. Knight might very well have been investigated for Neglect of Duty.

Question # 9: What are considered to be contributing factors leading to this collision?

1) Hazard perceived by P.C. Knight in front of him.

It is clear that as 6407 descended the hill from the railway overpass, he perceived something in front of him that prompted him to apply the brakes and steer. This may have been one of 3 things:

a) Scout 4211 turning left.
b) A car stopped facing east toward Markham Road in the north driveway of the plaza preparing to enter Markham Road.
c) Traffic lights at Markham & Cougar Court.

a) SCOUT CAR 4211 TURNING LEFT

P.C. Knight would have seen Scout car 4211 turning left in front of him, but as previously indicated through this report, the time and distances would have been such that had P.C. Knight continued at the same speed, it is likely that 4211 would have cleared both lanes of Markham Road before 6407 reached it's position.

Also, as indicated in this report, the time after clearing the road that 6407 would have reached 4211's position would have been less than one second. Therefore, because of the speed of 6407, it was "*cutting it close*" as far as separation times were concerned between the two vehicles.

Because of the closeness that the 2 vehicles would approach each other, P.C. Knight may have applied brakes and steered to the left moderately to provide for a *safety margin* of distance between the two police vehicles before he reached the driveway.

Because of the speed of his vehicle, and other possible factors with regards to the vehicle itself, the rear wheels of the vehicle lost their grip on the road surface and side slipped to the right, starting off the sequence of events leading up to the crash.

Maneuver to the left:

Another piece of evidence corroborating this theory is the fact that the steering maneuver P.C. Knight initially made was to the left.

If his vehicle was so close to 4211 when 4211 started its turn that he felt that he had to make a sudden emergency maneuver, it would be instinct to drive away from the hazard. This would have caused him to steer to the right, away from the approaching 4211.

Since his initial maneuver was to the left, it stands to reason that if he was steering to avoid a hazard, it was coming from the right.

b) A CAR STOPPED FACING EAST TOWARD MARKHAM ROAD IN THE NORTH DRIVEWAY OF THE PLAZA PREPARING TO ENTER MARKHAM ROAD.

There is evidence from witness Edith McIntosh that when she came into view of the accident scene immediately after the crash, she saw a vehicle stopped facing east in the north driveway of the plaza on the northwest corner of Markham & Cougar Court. (4211 had turned into the south driveway).

The north driveway was closer to the approach of 6407 than the south driveway where 4211 was turning.

The possibility exists that this vehicle was at the driveway when 6407 approached. According to Edith McIntosh, the lights of the car were on and it gave the appearance of planning to enter Markham Road.

If P.C. Knight perceived the same thing, this may have been another reason for him to apply his brakes and make a moderate steering maneuver to the right, starting the sequence of events leading up to the crash.

There is no other evidence of the existence of this vehicle other than Edith McIntosh's information. There is no evidence of any hazardous driving maneuver made by the driver of this unknown vehicle that may have lead to the crash.

c) TRAFFIC LIGHTS AT MARKHAM AND COUGAR COURT.

There is a set of automatic traffic lights at Markham Road and Cougar Court.

There is also a set of lights 200 metres south of these at the major intersection of Markham Road and Eglinton Avenue.

These lights at Cougar Court are activated in one of 2 ways:

1) A vehicle stops over the sensors which allows the lights controlling north and south traffic to turn amber and red at the next cycle.
2) A pedestrian pushes a button to allow the north and south lights to turn amber and red.

There is no evidence that these lights were turning amber or red at the time of the collision.

However, their very existence may have been a consideration in P.C. Knight's mind when he applied the brakes. He may have considered his excessive speed and began to slow down in the interest of approaching these 2 sets of lights at a slower speed.

2) Physical Limitations of the Driver in Steering

P.C. Knight had been transmitting on the radio for several seconds immediately before losing control. In doing this, he was holding the microphone in one hand while steering with the other hand. Further evidence supporting this belief is that after the collision, the radio microphone was found hanging out the left side of the vehicle in the area of the intrusion of the light standard. Although not conclusive, it indicates that the microphone was probably out of its cradle at the time of the crash.

There is also evidence from witnesses that he activated his emergency lights just before losing control. This would also require holding on to the steering wheel with only one hand.

It is commonly known that it is much more difficult to control a vehicle while steering with only one hand than with two hands on the wheel.

3) Reports of Crown Victoria Steering Problems

About 2 months before this collision, Sgt. Buchanan, one of the authors of this report, noticed a report in the *Accident Reconstruction Journal* about a law suit pending against the Ford Motor Company. This pertained to a collision involving a *Paramus Police Department* Officer in New Jersey who was killed in a single motor vehicle accident involving a Ford Crown Victoria Police vehicle. It alleged a loss of power steering assist after braking and sudden steering input.

A copy of this article was forwarded to Metro Police Fleet Management.

A response was subsequently received by telephone from Fleet Administrator Mr. Norm Henderson, that although this problem may exist, our Officers are trained to drive in such a way (e.g. both hands on the wheel) that it is not considered to be a hazardous condition.

During this investigation, the United States *National Highway Transportation Safety Administration* (NHTSA) contacted investigating Officers in this matter. They had been investigating Crown Victoria motor vehicle accidents through *CALSPAN* an engineering company contracted by the United States government.

On October 26, 1994, the authors of this report (Buchanan and Johnston) met with 2 investigators from CALSPAN. They were Tom SCHEIFLEE and James PAGE.

They were given information on the dynamics of this collision, and asked how it reconciles with their other investigations of motor vehicle collisions.

They advised that although the power steering loss was initially thought to be related to braking, they now belief that it has little to do with the brakes; that it is strictly the power steering components that are the source of the problem.

They state that the problem does not happen with only one steering maneuver. **It occurs after an initial sharp steering input in one direction, followed by a sharp input in the opposite direction.**

When applying the potential problem to this collision, it is their opinion that P.C. Knight would not have experienced any power steering loss in his initial maneuver to the left. **Although it is possible that he could have experienced power steering fade in the return maneuver to the right, it is likely that his path toward the concrete light standard was set, and that the collision was unavoidable by that point.**

4) Weight Distribution in Crown Victoria Police Vehicle (Propensity to spin out)

On October 27, 1994, Sgt. Buchanan arranged for the weighing of two Ford Crown Victoria Police Vehicles. One was Fleet # 2205, a 1993 Crown Victoria. The other was Fleet # 6203, a 1992 Crown Victoria, which is also a Traffic car identical to Fleet # 6407. Also weighed was Fleet # 62S1, a 1990 Chev Caprice.

The weighing took place at the Etobicoke Works Department scales located at 320 Bering Avenue, Etobicoke.

The scale operator was Mr. Bill TREMBLETT.

62S1 and 6203 had about 50 kgs of equipment in the trunk in addition to a spare tire. 2205 had only about 20 kgs of equipment and a spare tire.

The driver was in 62S1 and 2205 when they were weighed. There was no driver in 6203 when it was weighed.

The results were as follows:

62S1 (1990 Caprice):	Front Axle:	980 kgs
	Rear Axle:	1050 kgs
	Total:	2030 kgs
6203 (1992 Crown Vic):	Front Axle:	1070 kgs
	Rear Axle:	920 kgs
	Total:	1990 kgs
2205 (1993 Crown Vic):	Front Axle:	1070 kgs
	Rear Axle:	920 kgs
	Total:	1990 kgs

This data indicates that the centre of mass of the Crown Victoria Police Vehicle is fairly far forward in the car, much farther than that of the 1990 Chev Caprice. **Therefore, its propensity for the rear wheels to lose their grip on the road surface is greater than that of the Caprice.**

This propensity is increased further when it is considered that 6407 was braking as the back end side slipped, and he was driving down hill. These factors would transfer weight from the back wheels to the front wheels.

It is calculated that this weight shift from the rear to the front axle would be between 300 and 400 kgs[18].

This weight shift, in addition to the static weight difference between the front and rear axles, would leave more than twice as much weight on the front axle than the rear axle when 6407 lost control.

During this investigation, contact was made with Sgt. Juergen GRAGE of the R.C.M.P. in Vancouver.

He had conducted testing using vehicles equipped with ABS brakes, and is considered an expert in analyzing tire marks left by vehicles with ABS brakes.

The sequence of marks left on the road were explained to him.

His opinion from the description was that the ABS brakes were activated during the initial portion of the braking (where the straight and skip skids were found) and while the curved tire mark to the left was being made.

This opinion would mean that there was much more braking than was considered in the minimum speed calculation of 147 km/h, which further corroborates a conclusion of speeds in excess of 150 km/h when 6407 lost control.

Sgt. Grage was also interested in the fact that we have concluded that the curved tire mark was left by the rear right tire. He advised that in his testing, he had been unable to get

[18] See Reference in Appendix

a vehicle's rear tires to side slip at speeds under 100 km/h. As speeds increase beyond 100 km/h, the propensity for losing traction with the rear wheels increases.

This information also leads to a conclusion that 6407 was traveling at a very high speed when he lost control.

Further Investigation

At the time of the submission of this report, we intend to do the following:

1) Monitor investigations of other Agencies with regards to the Crown Victoria Police Vehicles. This may lead to the necessity to conduct our own tests on these vehicles.

   If it is decided that we should conduct our own tests, and if these tests should include an attempt to recreate the dynamics experienced by 6407, a high speed test facility would be required. The ideal facility would be that of Transport Canada located in Blainville Quebec. The reported cost is $1500 per day.

2) Check P.I. departmental accidents from 1988, 1991, 1992, and 1993. This is to find if there has been an increase in *spin out* type of accidents involving Crown Victorias, compared to Plymouths and General Motors vehicles which we had in the late 1980s and early 1990s. (The above years are the only ones available from Accident Records to compare).

CONCLUSION

All physical evidence and witnesses' statements lead to the conclusion that both 6407 and the Mustang that he was attempting to catch up to were traveling at very high speeds.

Therefore, as indicated in detail in this report, **speed is the main contributing factor to this accident.**

Another important conclusion in this report is that **there is no justification for charges against anyone other than the driver of the Mustang, who has not at this point been apprehended.**

The issue of reported problems with the Crown Victoria Police Vehicle has been touched on in this report, and there is some evidence that it can experience power steering difficulties, and that it has a greater propensity to lose traction on the back end at high speeds than other vehicles. **But further investigation will be conducted before a final conclusion can be drawn on the safety of this model of Police vehicle.**

In this collision there is a possibility that P.C. Knight experienced a power steering loss as he turned to the right to correct the initial loss of traction with the rear wheels. However, if he was turning back to the right sharply enough to experience this problem, he would have been over correcting his steering and there is nothing he could have done to prevent this collision beyond that point. **Therefore, the issue of power steering loss is not considered to be a significant factor in this collision.**

INDEX

Would 6407 have struck 4211, 50
Yaw, 32

APPENDIX

A) Field Notes

B) Scale Diagrams

C) Calculations

FIELD NOTES: ACCIDENT Inc # 212

MTP331, 1991/08

Accused Surname	Officer's Case No.	No. of Persons
	Recon	

Dept. ☒ FATAL ☐ PI ☐ PD ☐ PTR

Date of Accident (Y M D)	Day	Time of Accident
94 09 28	WED.	01 13 hrs

Officer's Surname	Badge No.	Unit	Radio Call	On Scene
Johnston	6703	cTU.	0215 hrs	0243 hrs

LOCATION

Rt. - Street, Road, Highway, House No., etc.	Distance (Circle one)	Direction (Circle one)
Markham Road	m km	N S E W
Rt. - Intersecting Road or Other Keypoint	Patrol Area	Municipality
Luella Street	4115	Scarborough

Diagram - P.O.I.

See Post Collision Sketch Enclosed.

Position of Vehicles on Arrival

Vehicle 1 ☐ at P.O.I. ☐ at F.R.P. ☐ Moved

Vehicle 2 ☐ at P.O.I. ☐ at F.R.P. ☐ Moved

Road No. 1	Width	No. of Lanes	Posted Speed	Advisory Speed	Road Character	Condition
		4+1 HOV Lanes	60	—		
Road No. 2	**Width**	**No. of Lanes**	**Posted Speed**	**Advisory Speed**	**Road Character**	**Condition**
		2				

Weather

Cool, Clear. Dry. Rds - Dry.

Lighting

Dark Streetlights On Visibility - Good

Traffic Control

A.T.S working properly at intersection. Lane Markings on R.A.T.S at Eglinton working properly

Synopsis

Markham Road - comes 2/3 from bridge downhill into level area and starts uphill slightly at Luella St. Markham

1733

A — INVOLVED

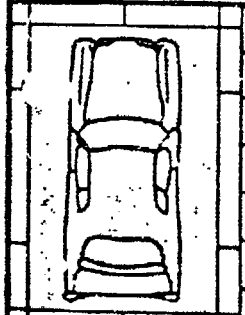
Driver (Surname, G1): KNIGHT, John W ##7068
Address: 4610 Finch Ave. E
Telephone (Res.): 224-0545
Postal Code: M1S 4Z2
Telephone (Bus.):
Driver's Licence No.: K5734-40795-61005
Prov.: Ont
Class: G M
Cond.:
Sex: M
D.O.B.: Y 50 M 01 D 00
Proper Lic. to drive Class of vehicle: ☒ Y ☐ N
Lic. Issue Reg.: G
Breathalyzer, Blood Test Administered: ☐ Y ☒ N

VEHICLE — INDIRECTLY INVOLVED

Make: Ford
Year: 92
Model: CVS
Colour: White
Body Type: 4D
Air Brakes: ☐ Y ☐ N
Plate No.: 205 PXV
Year: 94
Prov.: Ont
No. of Occupants: 1
Owner (Surname, G1): ☐ as Above Munic. of Metro Toronto
Address: 40 College St ##6707
Telephone: 324-2222
Postal Code: Toronto Ont M5G 2J3
Insurance Company: ☐ None Ont. Municipal Ins Exch.
Policy No.: A-00003.
C.V.O.R.
Vehicle Taken ? By: SS 2 Fire Ave
Motor Lic.: Metro Police
Make
Plate No.
Prov.

TRAILER

Owner (Surname, G1): ☐ as Vehicle Above
Address
Telephone
Postal Code
Insurance Company: ☐ as Vehicle Above
Policy No.



Approx. $
Describe Damage to Vehicle

Additional Information

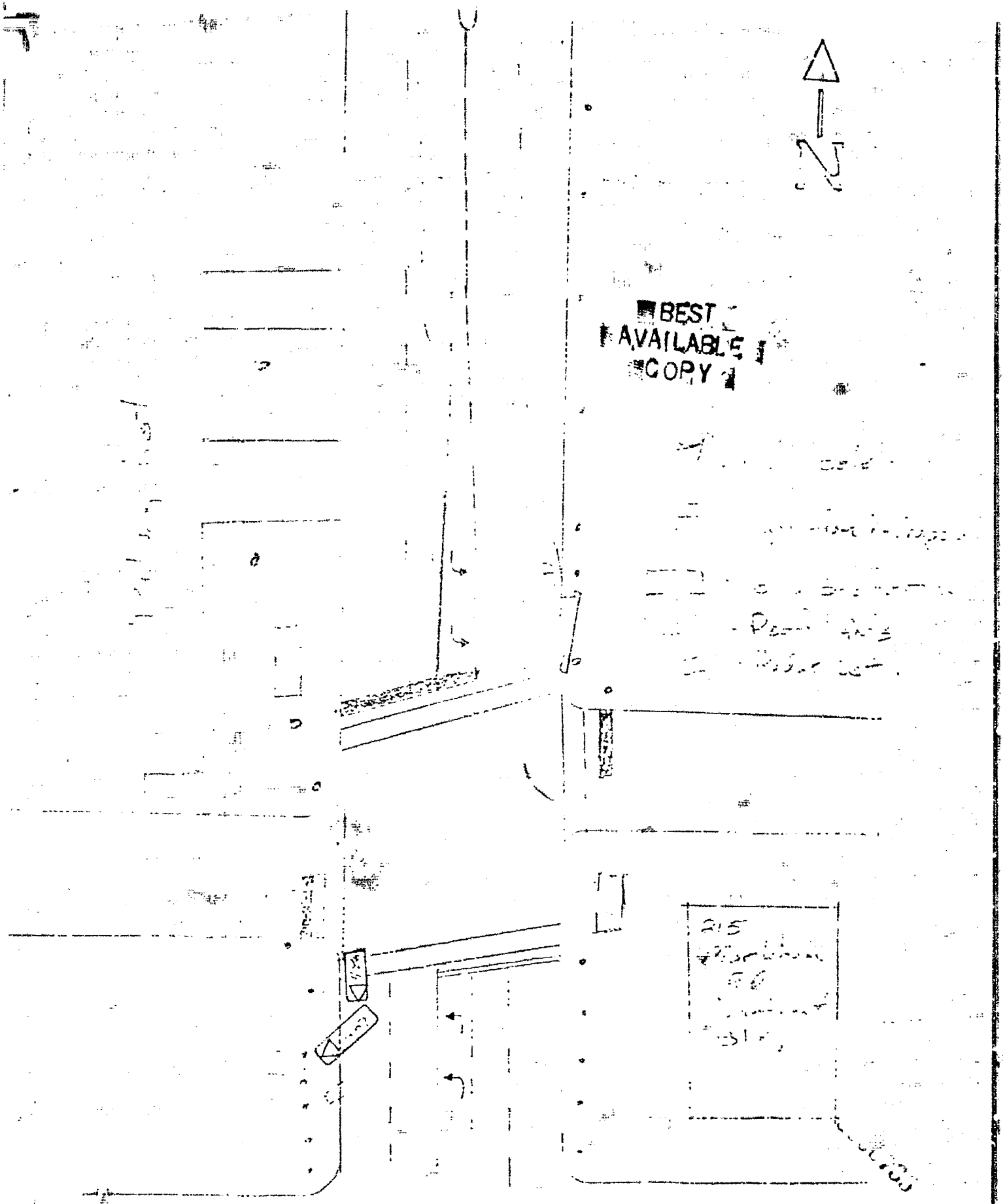
STATEMENT Driver No. ____ ☐ Verbatim ☐ Synopsis

O/S
Det Reynolds CTN MR
PC Brittin CTN MR
PC DeSilva CTN MR
S/Sgt Mellan Callaway
PC Thomas ETN
Sgt Buchanan WTN
Scarborough Fire.
Supt Deamoth CTN
attended.

INVOLVED PERSONS

Involved Person (Surname, G1, Address, Telephone No.)	Age	Sex	Pos.	Ejct.	Safety Equip.	Injury List

No. Injured Involved Person — Taken To/By — Injuries
No. Injured Involved Person — Taken To/By — Injuries
No. Injured Involved Person — Taken To/By — Injuries
No. Injured Involved Person — Taken To/By — Injuries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AVAILABLE
COPY

Message: 94.10.20 12:17:59 Page: 1

CA 11028
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ME.THE MUNICIPALITY OF METROPOLITAN TORONTO
G 2J3 ADDR: 40 COLLEGE ST,TORONTO

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TATUS:FIT POWER:GAS
C:265PXV STATUS:ATTACHED

G:1199796 EXPIRES:30NOV94

RMIT:56452912 ISSUED:24APR92

QUIRY RESPONSE COMPLETE##

Accident 41

*** CONFIDENTIAL POLICE USE ONLY *****

Field Notes

MTP 335, 1993/07

Defendant's Surname	Given	Date of Offence (YYMMDD)	Page	of

Synopsis	Additional Information	Statement	Person No	Case No.

List of Charges	Act	Section No.	P.O.T./Form 104
1			
2			
3			

Scene Observations

- Mckinnon Rd well travelled asphalt
  - clearly marked
  - posted 60 km/h zone
  - 4 lanes - 2 N/B, 2 S/B + left turn lanes
- N/E corner Mckinnon Rd and [illegible] light bulb section on E/S edge of N/B curb lane, broken glass around N/B curb lane
- hydro pole on E/S sidewalk N/O [illegible] missing
- hydro pole lying on E/S sidewalk against E/S standing in N/E corner glass and [illegible] pieces
- cement and glass throughout entire N/B lanes of Mc[illegible] and [illegible]
- liquid spray from N/E corner and follows to [illegible]
- large piece metal debris along E/S curbline in front of N/B [illegible]
- hub cap [illegible] along [illegible] of [illegible] just E/O Mckinnon

E/O curb N/O post black tire marks then scrape scratching along top of [illegible] curb to gouge marks on boulevard

Officer's Signature	Officer's Surname	Rank	Badge No	Unit	Continued ☐ Yes ☐ No

DISTRIBUTION Original - Officer's File
Involved Person's Statement - Copy to be forwarded to Accident Records

Field Notes

MTP 335, 1993/07

Defendant's Surname	Given	Date of Offence (YYMMDD)	Page	of

☐ Synopsis ☐ Additional Information ☐ Statement | Person No. | Case No.

List of Charges	Act	Section No.	P.O.T./Form 104
1			
2			
3			

Time Distance

Position 1 - South Driveway.
(Headlights visible)
P' = 0
P'H = 267 m

Position 1 - South Driveway.
(full vehicle)
P' = 0
P' Veh = 184 m.

Position 2 - North Driveway.
(Headlights visible)
P² = 28 m
P² H = 253 m

Position 2 - North Driveway.
(full vehicle)
P² = 28 m
P² Veh = 197 m.

Officer's Signature	Officer's Surname	Rank	Badge No	Unit	Continued	☐ Yes ☐ No

DISTRIBUTION *Original* - *Officer's File*
Involved Person's Statement - *Copy to be forwarded to Accident Records*

Left Turn Timing

Moderate	Fast
6.0 secs	3.4 secs
5.0 secs	3.7 secs
5.7 secs	3.8 secs
4.9 secs	4.0 secs
5.1 secs	3.8 secs

Field Notes

MTP 335, 1993/07

Defendant's Surname	Given	Date of Offence (YYMMDD)	Page	of

☐ Synopsis ☐ Additional Information ☐ Statement | Person No | Case No

List of Charges	Act	Section No.	P.O.T./Form 104
1			
2			
3			

Drag sled tests

total weight = 10.5 kgs.

Position # 1 - start timing 3/8 pass line

(1) 7	(11) 7.5	(1) 7	(6) 7.5
(2) 7.5	(12) 7.5	(2) 7	(7) 7.5
(3) 8	(13) 7	(3) 7	(8) 7
(4) 7.5	(14) 7	(4) 7	(9) 7
(5) 7	(15) 7.5	(5) 7.5	(10) 8

f = .69 .70 f = .70

Position #2

POSITION #4

(1) 7	(6) 7	(1) 6.5	(6) 7
(2) 8	(7) 7.5	(2) 7	(7) 7
(3) 7.5	(8) 7.5	(3) 7.5	(8) 7.5
(4) 7.5	(9) 8	(4) 7.5	(9) 7
(5) 7.5	(10) 7.5	(5) 7	(10) 7

f = .71 .67

Officer's Signature	Officer's Surname	Rank	Badge No	Unit	Continued ☐ Yes ☐ No

DISTRIBUTION Original · Officer's File
Involved Person's Statement · Copy to be forwarded to Accident Records

Left Turn Timing - from 50 km/h to turn.

N/B curb lane

	Start of Turn	Finish
1)	3.66	7.91
2)	3.59	6.53
3)	2.77	6.55
4)	3.03	6.91
5)	3.12	6.75

N/B passing lane

	Start of Turn	Finish
1)	3.41	6.56
2)	3.32	6.22
3)	3.65	6.62
4)	3.75	7.15
5)	3.25	6.70

Curbs - Left Turn - only.

1. 4.51 secs.
2. 4.42
3. 4.43
4. 4.17
5. 4.50

Passm - Left Turn - only.

1. 4.20
2. 4.90
3. 3.80
4. 4.30
5. 4.45.

October 12, 1994

ATTENTION: Constable Johnston (6403)

Constable Johnston:

In reply to your request, our records indicate that the signal timing at the intersection of Markham Road and Cougar Court/Luella Street on Wednesday, September 28th, 1994, at approximately 1:15 a.m. was as follows:

North/South Green	53.0 seconds
North/South Amber	5.0 seconds
All Red	2.0 seconds
East/West Green and Walk	24.0 seconds
East/West Amber and Don't Walk	4.0 seconds
All Red	2.0 seconds
Cycle Length	90. seconds

The above timings would only apply when a vehicle or pedestrian wishing to cross Markham Road had actuated the detecting devices which in turn would cause the signal to cycle. If no actuations were received the traffic signals would display green for Markham Road and red for Cougar Court/Luella Street for an indefinite period.

The traffic control signal at this location was computer controlled at the noted time and date.

If you have any questions please call me at 397-5776.

Sincerely Yours

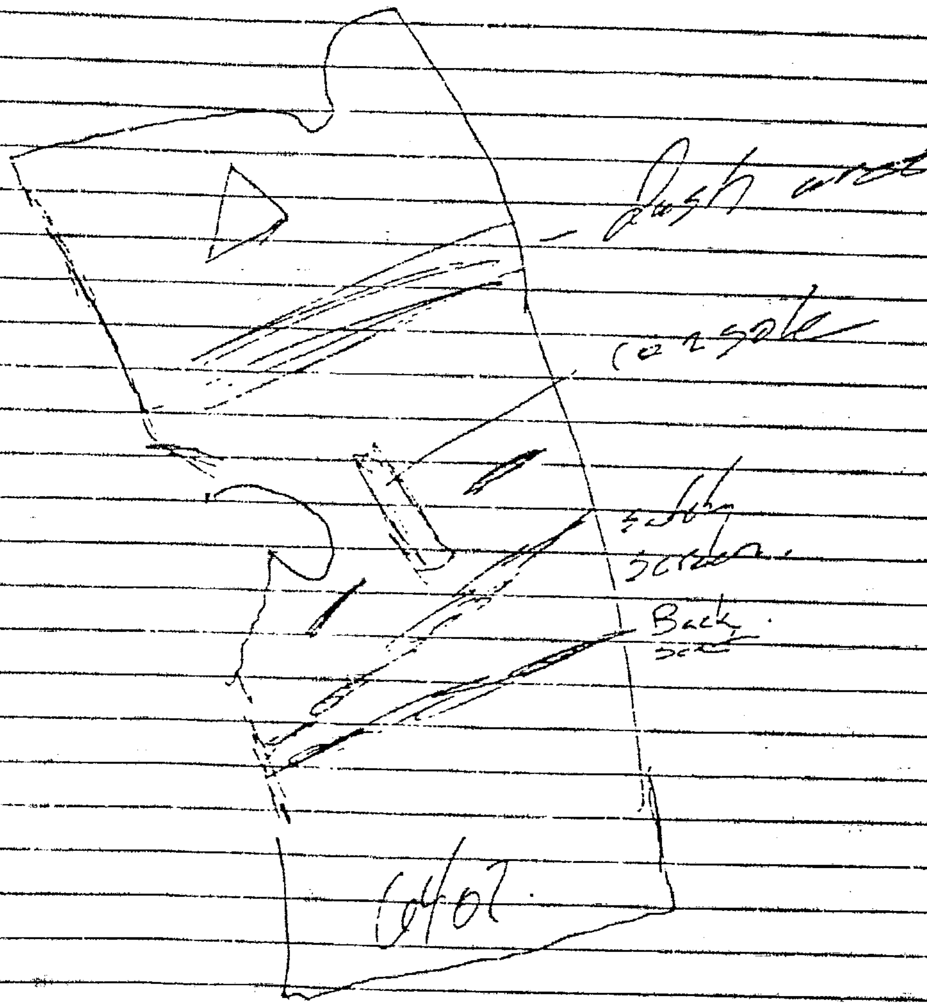
Zhuqiang Liu

Field Notes

MTP 335, 1993/07

Defendant's Surname	Given	Date of Offence (YYMMDD)	Page 1 of 2
Synopsis / Additional Information / Statement	Person No.		Case No.

List of Charges	Act	Section No.	P.O.T./Form 104
1			
2			
3			



Officer Signature	Officer's Surname	Rank	Badge No	Unit	Continued: Yes / No

DISTRIBUTION
Original - Officer's File
Involved Person's Statement - Copy to be forwarded to Accident Records

Car examination 94.10.14. FKL

- Drivers seat belt examined by Murray Dance from Transport Canada / Ottawa.
- seat belt removed by Murray Dance and turned over to me at 15⁵⁵ hrs.

- pole impact front of vehicle, just to right of centre.
- front bumper completely damaged. both corners pushed out.
- hood dented in and up at pole impact.
- middle of hood pushed up.
- windshield lying on hood.
- front right corner pushed in towards centre of car.
- front right door dented at front near hinge position.
- door obviously forced open (pry marks) by emergency personnel.
- door frame cut near front of window
- roof totally cut off by emergency personnel.
- rear right door pry marks at front slightly out of normal position
- rear window smashed
- pole damage, left side - both doors area.
- passenger area of car pushed down towards ground.
- front left 1/4 panel dented down over wheel

Field Notes

MTP 335, 1993/07

(8)

Defendant's Surname	Given	Date of Offence (YYMMDD)	Page	of
			2	2

☐ Synopsis ☐ Additional Information ☐ Statement | Person No. | Case No.

List of Charges	Act	Section No.	P.O.T./Form 104
1			
2			
3			

Interior

- both air bags deployed
- pass. front seat shifted towards right side. Sides of seat pushed in towards middle of seat.
- console shifted towards right side
- roof of passenger pushed down from front
- pushed down and slightly towards driver.
- M.D.T. destroyed
- back of drivers seat at angle headrest towards left side of car, bottom towards console
- left side of roof pushed down due to roof impact area driver normally sits
- impact mark on roof in area driver normally sits
- bottom left seat detached from rear seat rail
- bottom of seat right side up, front left side down curved door shape from impact w/ pole.
- dash left side pushed upwards and top left corner torn/detached from main dash portion.

Officer Signature	Officers Surname	Rank	Badge No	Unit	Continued
					☐ Yes ☐ No

DISTRIBUTION: Original - Officer's File
Involved Person's Statement - Copy to be forwarded to Accident Records

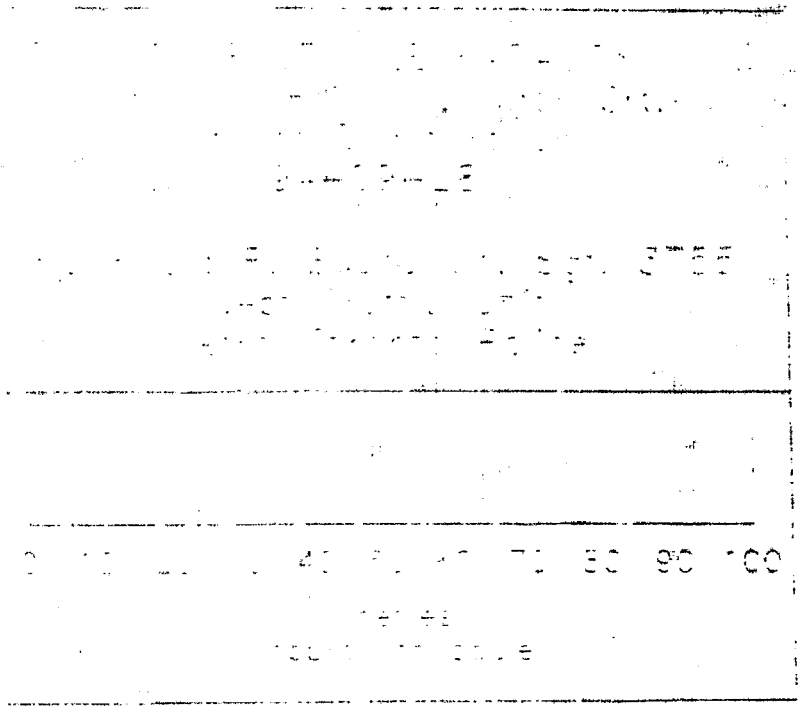
- left [illegible] of dash possible steering wheel pushed towards driver.
- includes wheel well [illegible] area

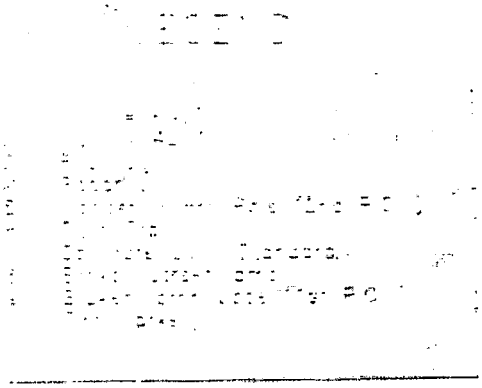
- steering wheel column pushed out slightly and towards right side of car
- steering wheel resting against MDT support
- gear shift wedged under dash -

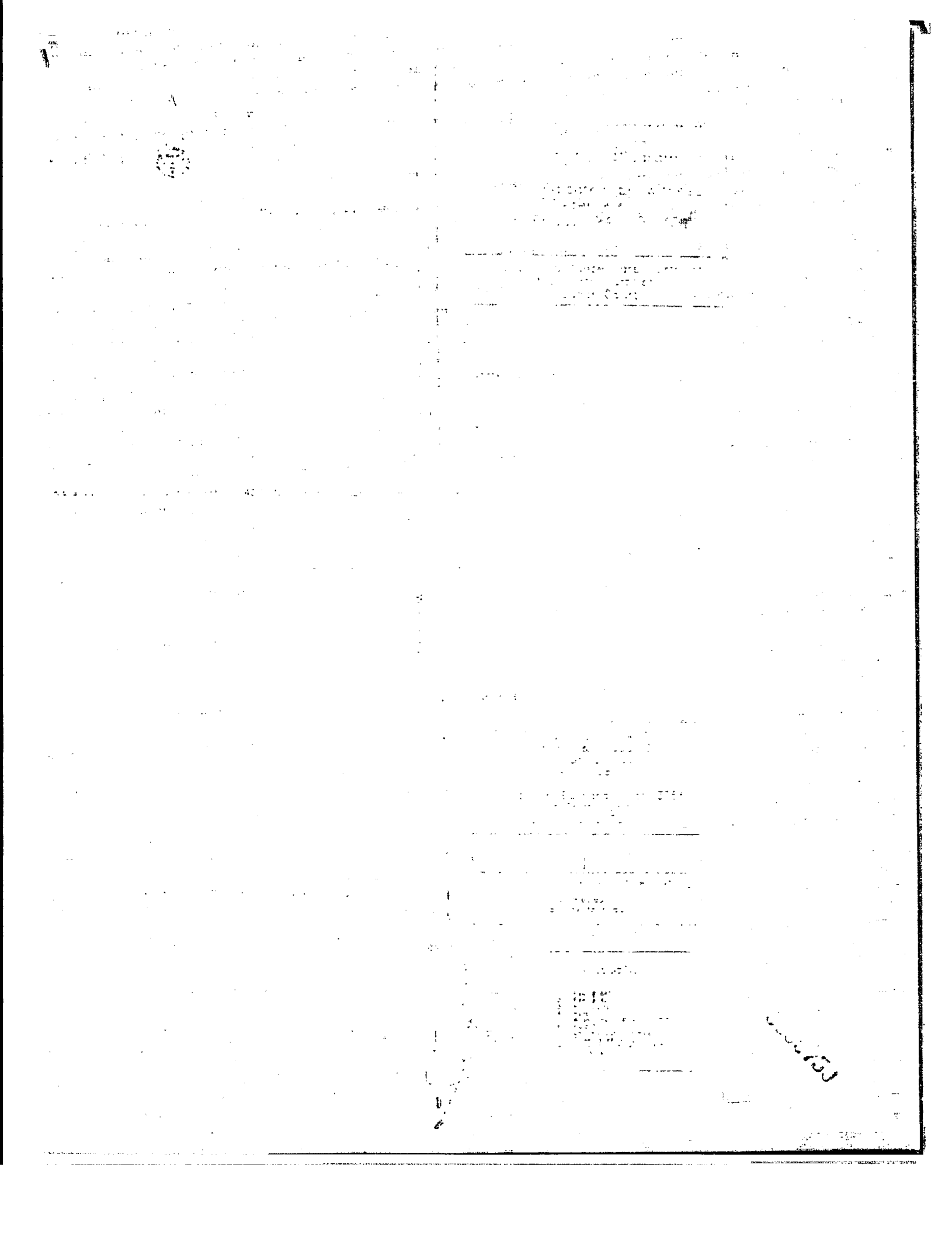
Odometer - 12981

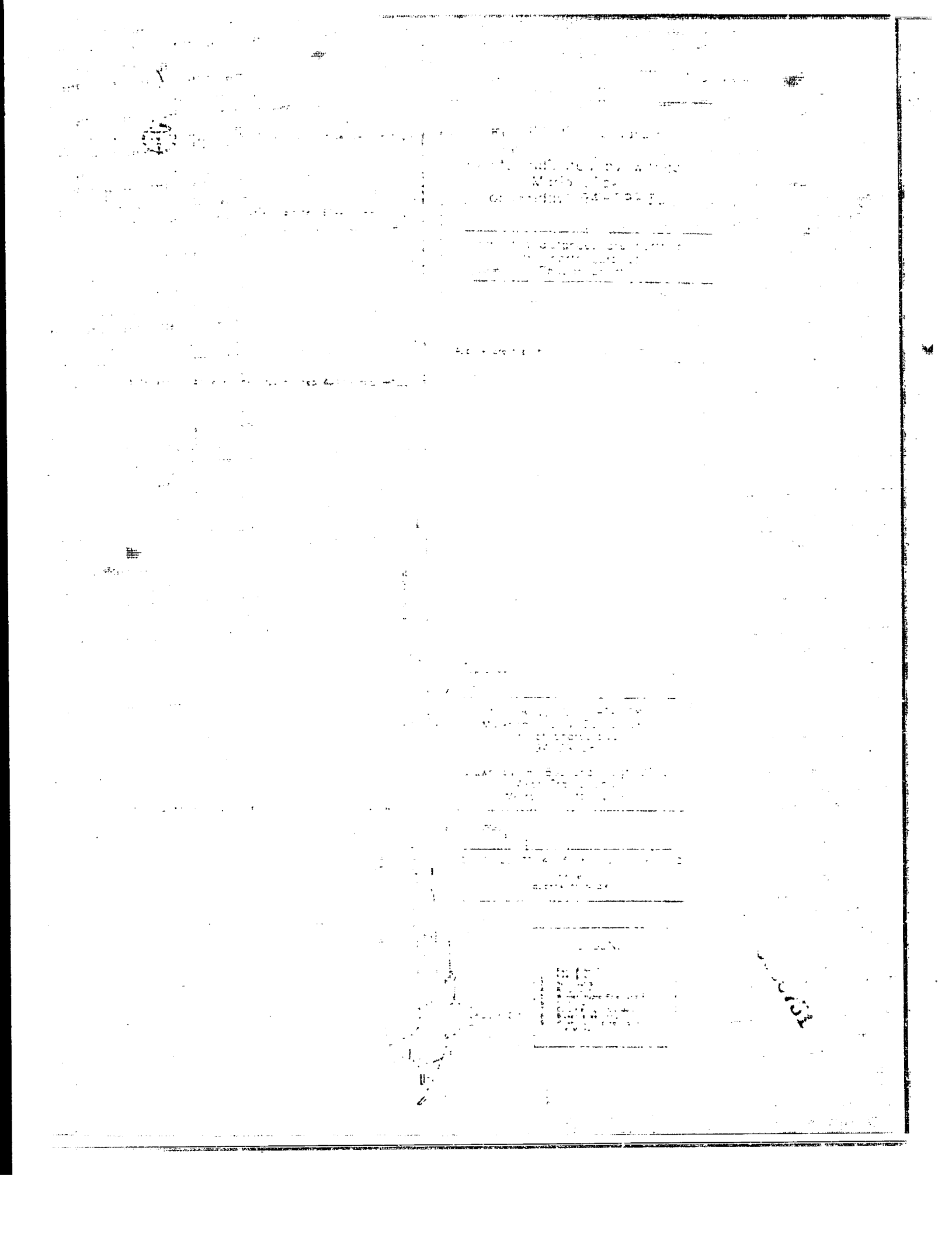
- safety screen - left side pushed back almost touching rear seat back.
right side almost in original position.
- top of screen no apparent damage.
- Bottom of screen bent behind drivers seat and console.

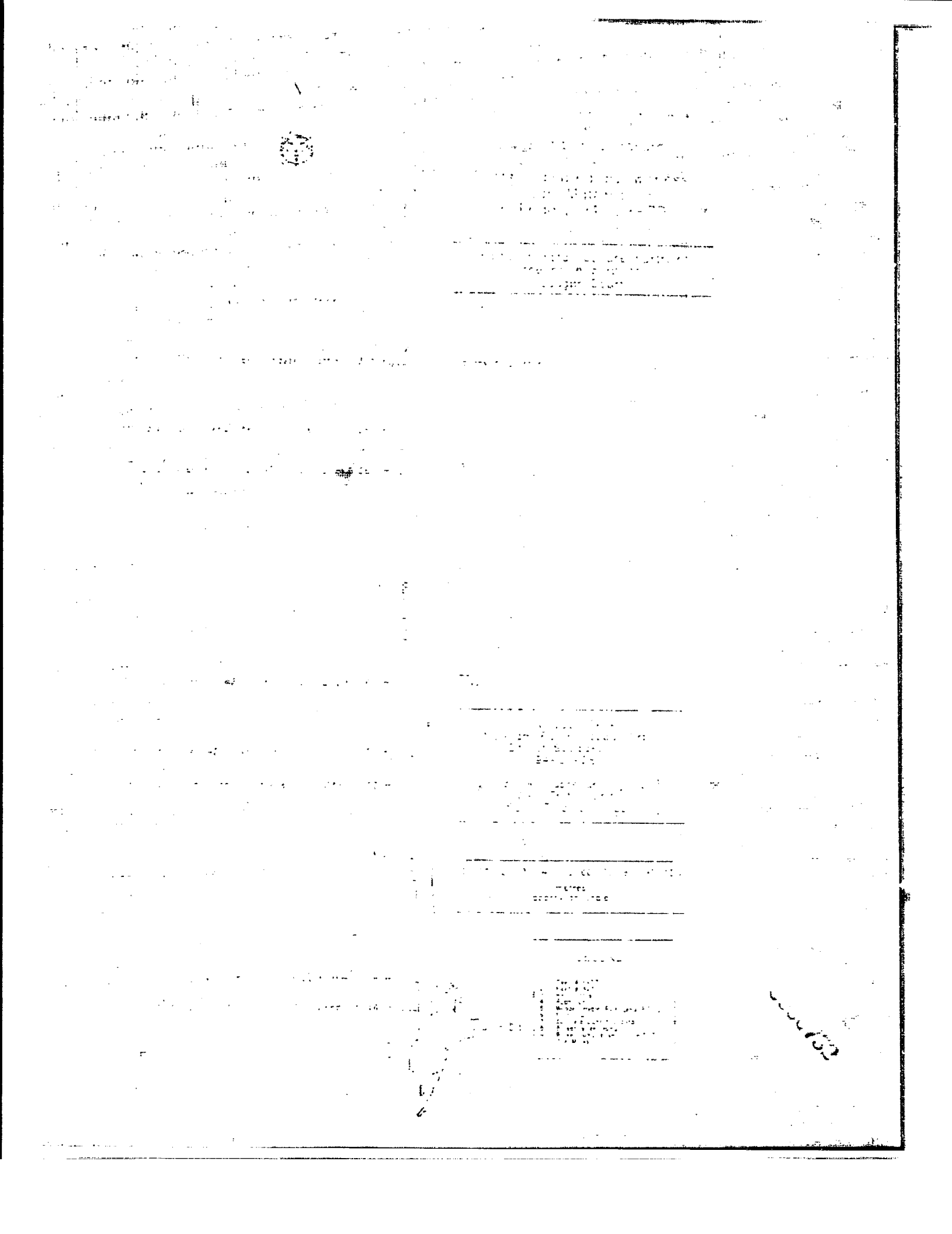
- Vehicle taken back to secure parking area EIS Control [illegible] by tow truck
Sealed [illegible] 1455 hrs
Seal # 8002795











SKID DISTANCE TO STOP FROM KNOWN SPEED AND DRAG FACTOR

Reference footnote # 10

Known Quantities

Drag Factor f	.69
Accel Rate	6.77 m/s/s
Speed S	100 km/h
Velocity	27.8 m/s

Calculated Results

Distance d	57.06 m

FORMULA

d : Distance
f : Drag Factor
S : Speed

$$d = \frac{S^2}{254\,f}$$

SKID DISTANCE TO STOP FROM KNOWN SPEED AND DRAG FACTOR

Reference footnote # 11

Known Quantities

Drag Factor f	69
Accel Rate	6 77 m/s/s
Speed S	150 km/h
Velocity	41 7 m/s

Calculated Results

Distance d	128 38 m

FORMULA

d : Distance
f : Drag Factor
S : Speed

$$d = \frac{S^2}{254\, f}$$

CONSTANT VELOCITY DISTANCE DATA
Reference footnote # 12(a)

Velocity:	41.7 m/s
Speed:	150 km/h
me:	4 seconds
DISTANCE:	166.8 m

CONSTANT VELOCITY DISTANCE DATA
Reference footnote # 12(b)

Velocity:	41.7 m/s
Speed:	150 km/h
Time:	5 seconds
DISTANCE:	208.5 m

CONSTANT VELOCITY DISTANCE FROM VELOCITY AND TIME

Reference footnote # 13

Known Quantities

Speed: 150 km/h

Velocity V: 41.7 m/s

Time t: 2 sec

Calculated Results

Distance d: 83.4 m

FORMULA

V : Velocity
d : Distance
t : Time

$$d = v\,t$$

CONSTANT VELOCITY TIME FROM VELOCITY AND DISTANCE

Reference footnote # 15

Known Quantities

Distance	d	107 m
Speed		150 km/h
Velocity	V	41.7 m/s

Calculated Results

Time	t	2.57 sec

FORMULA

V : Velocity
d : Distance
t : Time

$$t = \frac{d}{V}$$

CONSTANT VELOCITY TIME FROM VELOCITY AND DISTANCE

Reference Footnote # 16

Known Quantities

Distance	d	24 m
Speed		150 km/h
Velocity	V	41.7 m/s

Calculated Results

Time	t	.58 sec

FORMULA

V : Velocity
d : Distance
t : Time

$$t = \frac{d}{V}$$

CONSTANT VELOCITY TIME FROM VELOCITY AND DISTANCE

Reference formula: E 17

Known Quantities

Distance d: 50 m

Speed: 150 km/h

Velocity V: 41.7 m/s

Calculated Results

Time t: 1.2 sec

FORMULA

V : Velocity
d : Distance
t : Time

$$t = \frac{d}{V}$$

WEIGHT SHIFT

Estimated minimum weight shift of 640/ when he applied brakes (added 4% to drag factor for down grade)

Known Quantities	
Height of Center of Mass (cm) h	60 cm
Length of Wheel Base (cm) l	290 cm
Weight on front wheels (static) Wf	1070 kgs
Weight on rear wheels (static) Wr	920 kgs
Deceleration factor for front wheels ff	.73
Deceleration factor for rear wheels fr	.73

Calculated Results	
Weight Shift to Front Axle △W	300.56 kgs

FORMULA

h : Height of center of mass
l : Length of wheel base
Wf : Weight on front wheels (static)
Wr : Weight on rear wheels (static)
ff : Deceleration factor for front wheels
fr : Deceleration factor for rear wheels
△W : Weight Shift to Front Axle

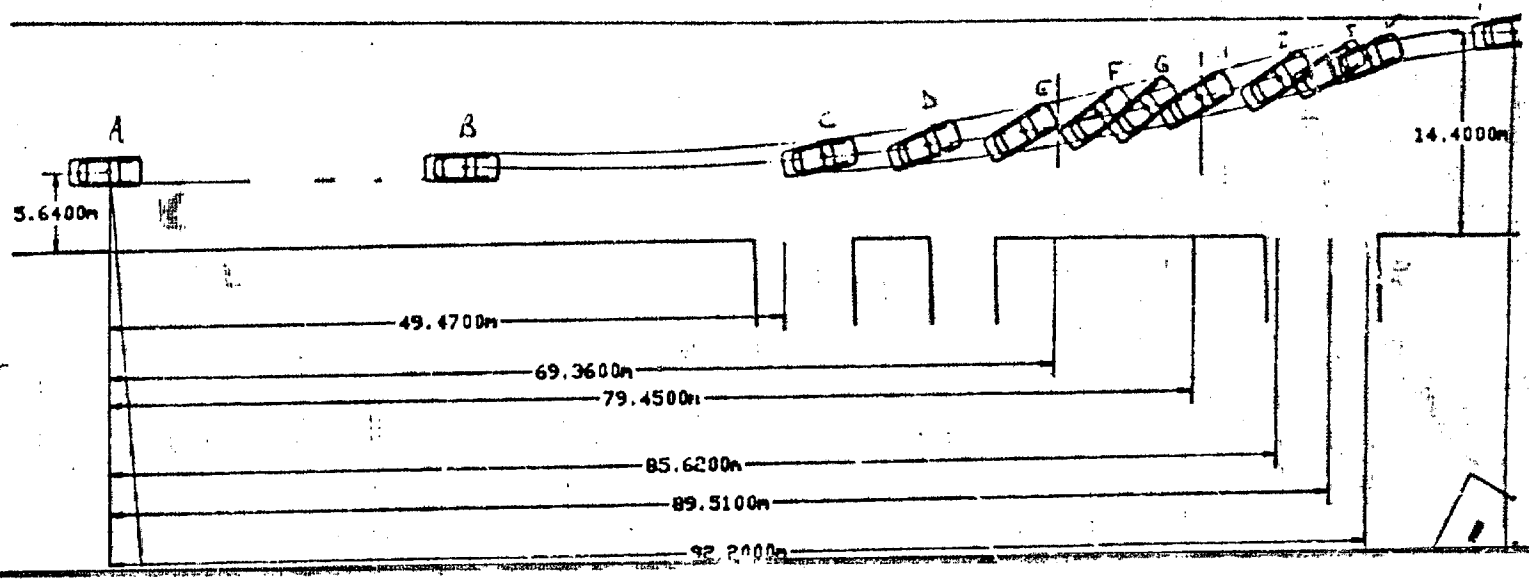
$$\triangle W = \frac{(Wf\ ff + Wr\ fr)\ h/l}{(1 - ff\ h/l) + (fr\ h/l)}$$

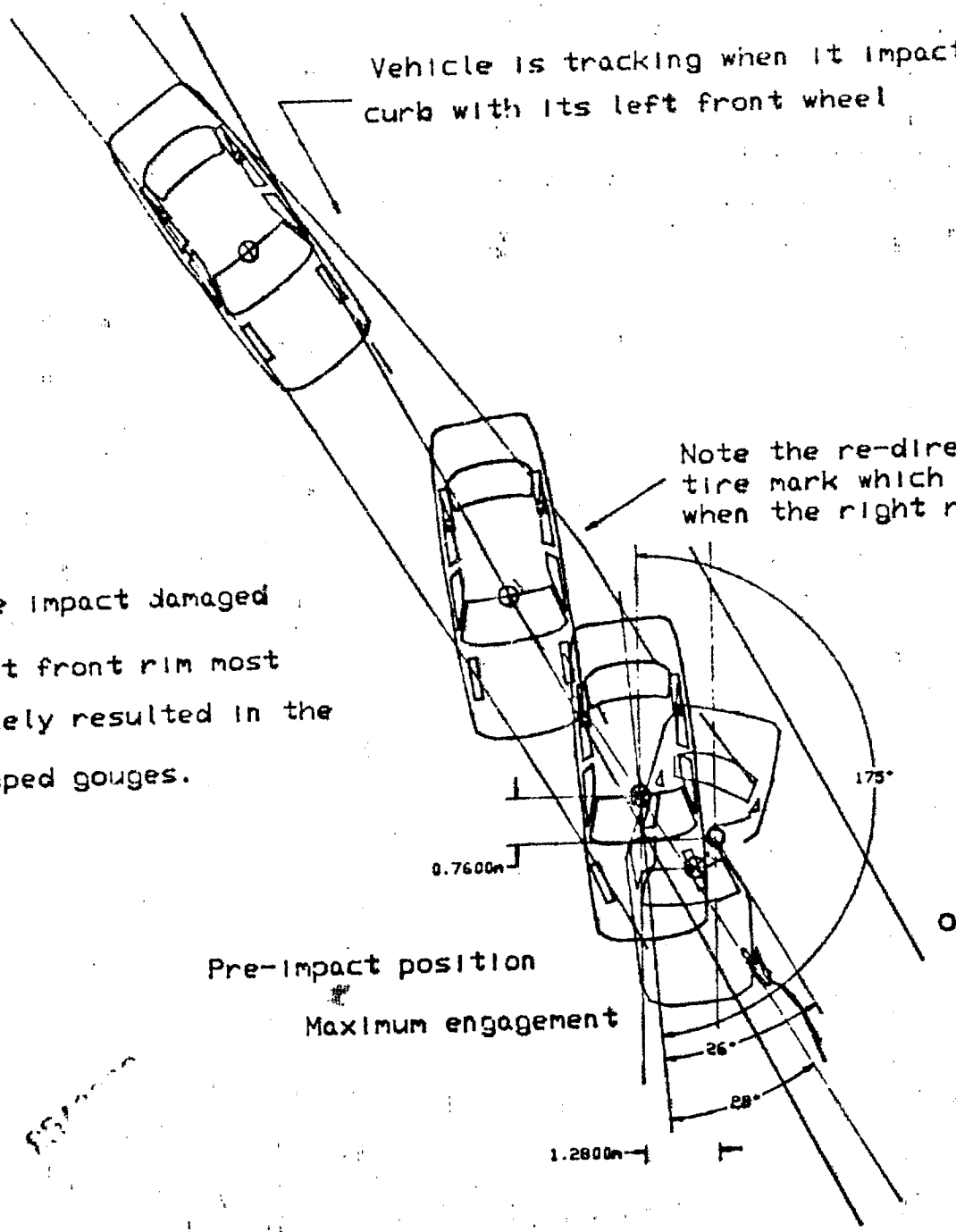
FRONT AXLE AFTER WEIGHT SHIFT
1070 + 300 = 1370 kg

REAR AXLE AFTER WEIGHT SHIFT
920 − 300 = 620 kg

ATTACHMENT B

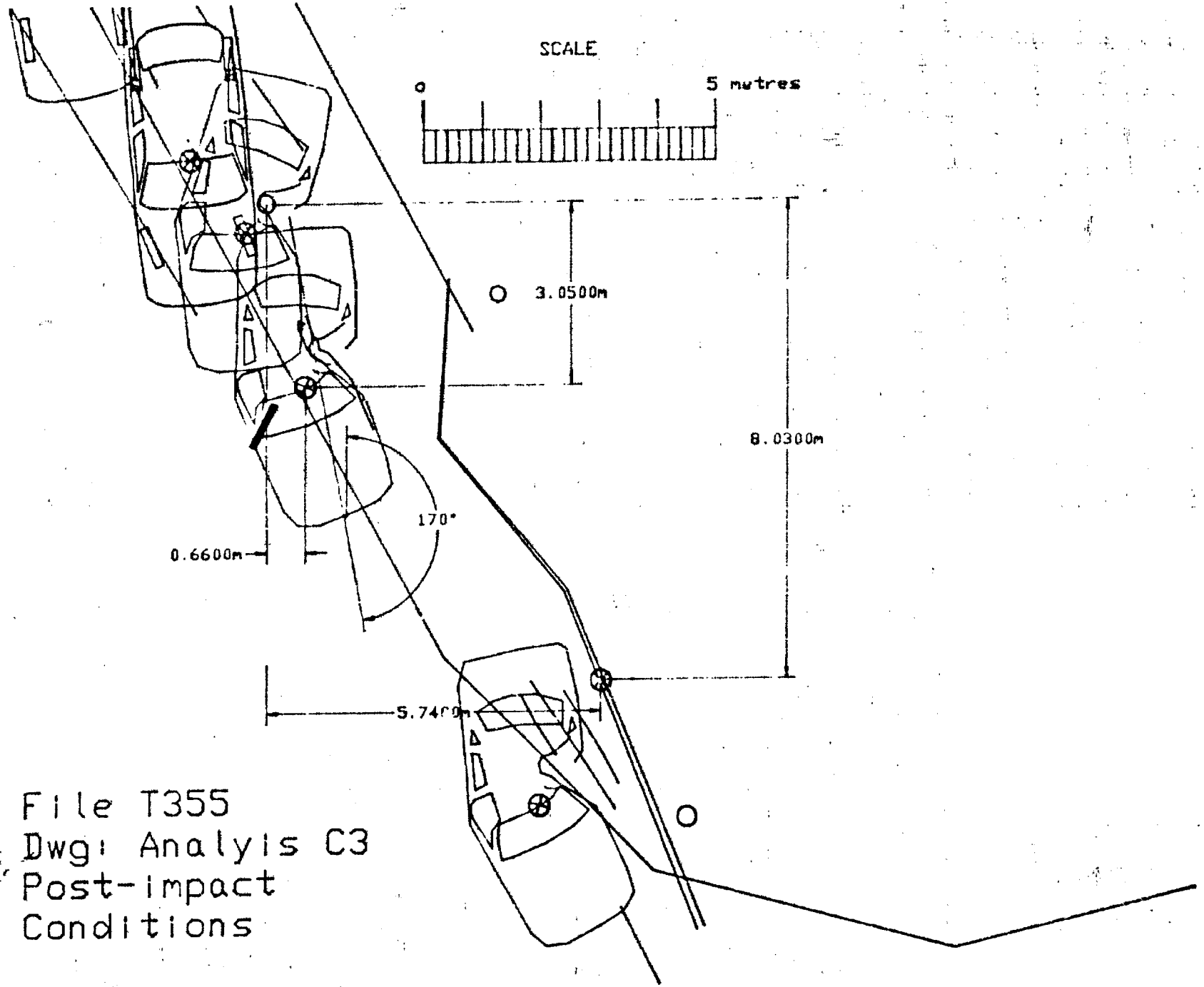
Ryerson Schematics


A
B
C
D
E
F
G
H
I
J
K
14.4000m
5.6400m
49.4700m
69.3600m
79.4500m
85.6200m
89.5100m
92.2000m

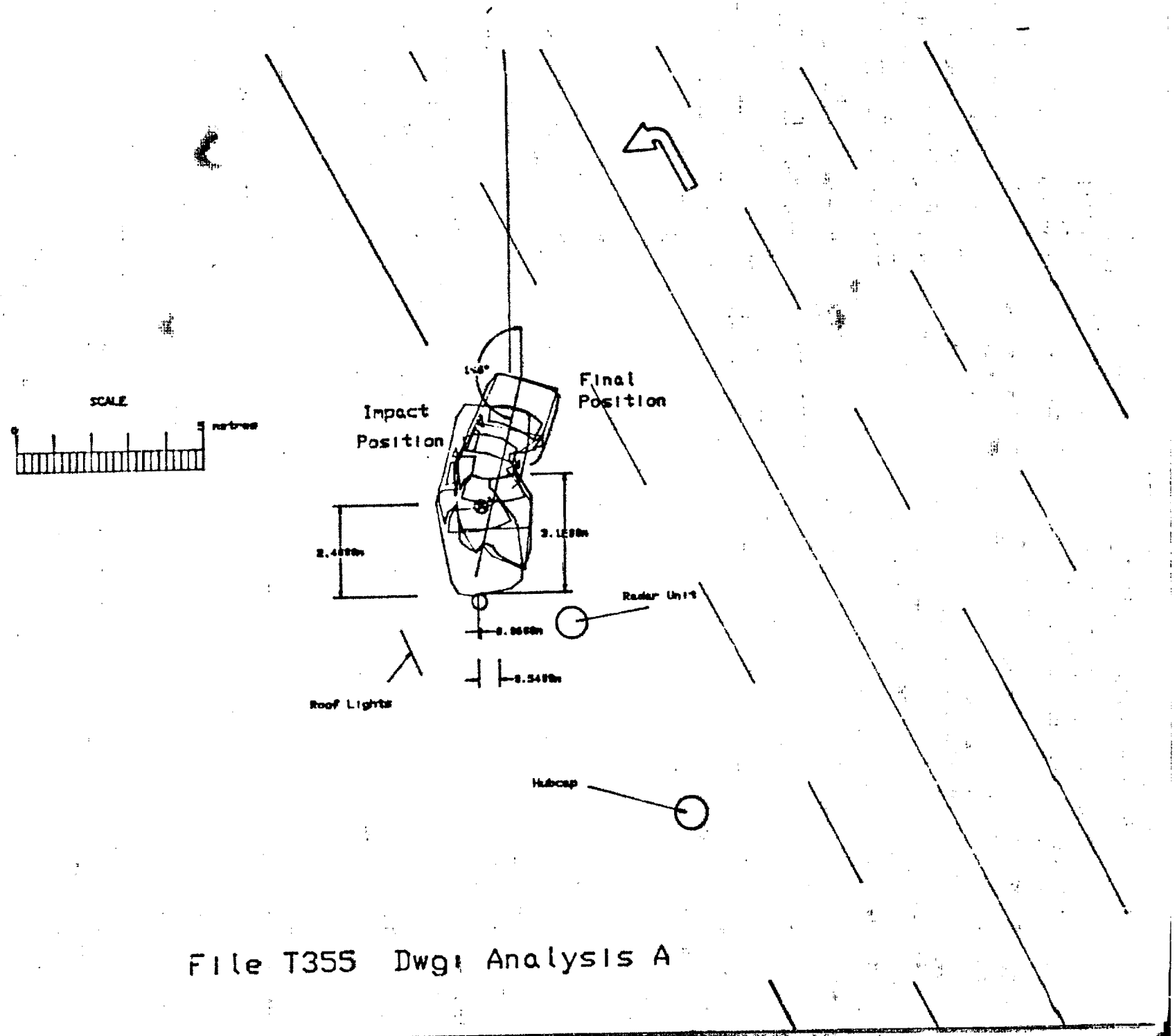


File T355
Dwg: Analysis C2

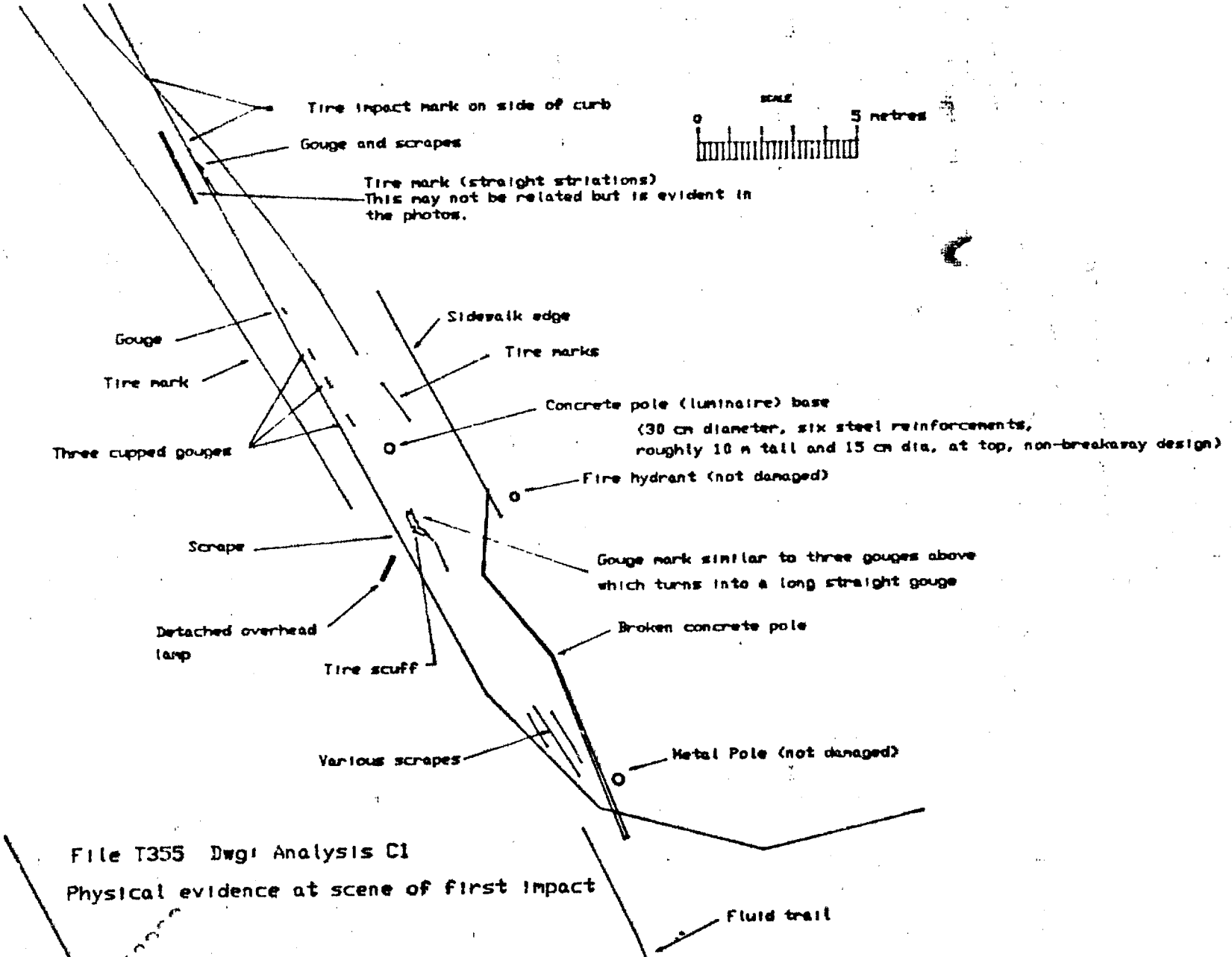
Pre-Impact Conditions

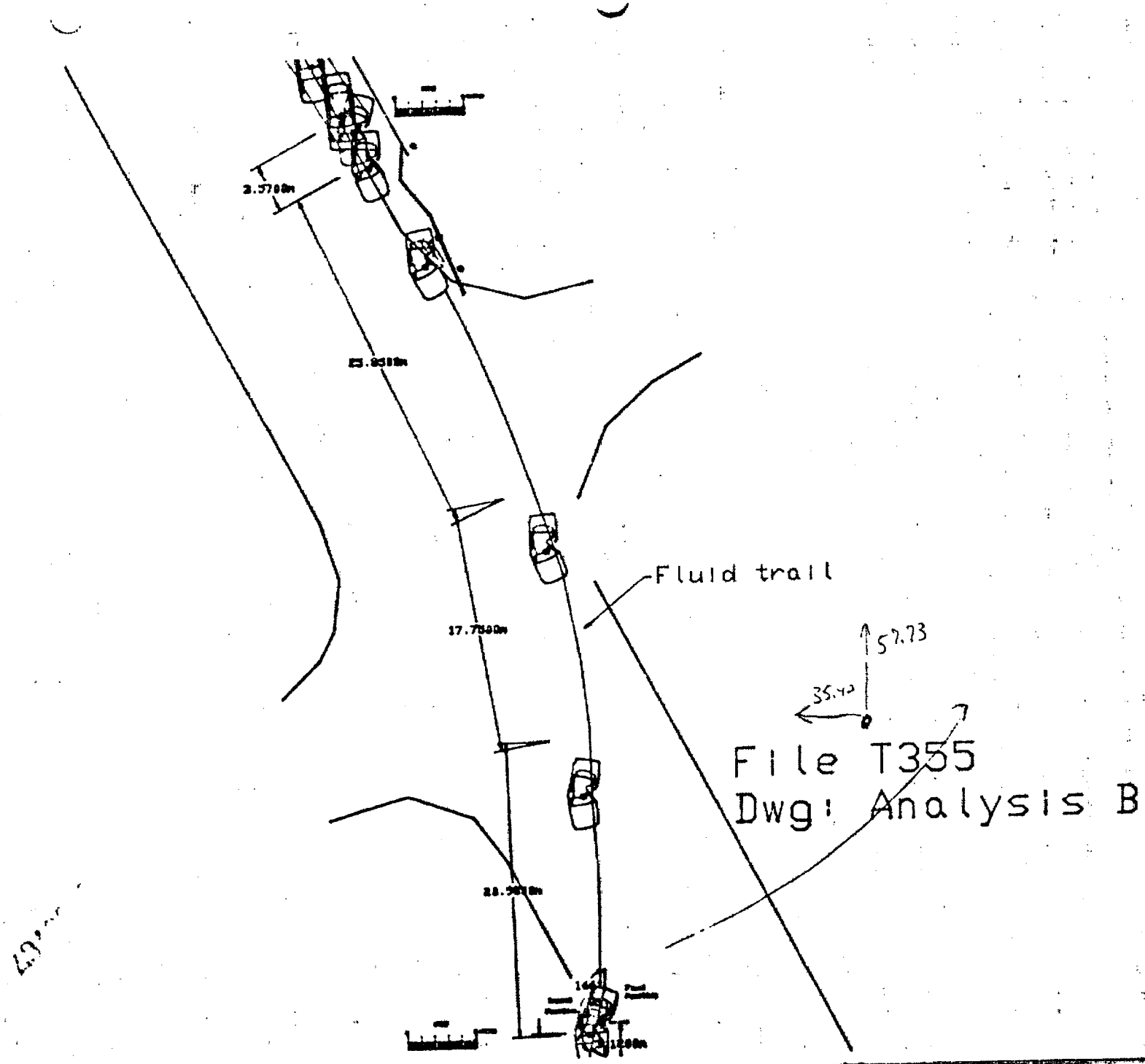


File T355
Dwg: Analyis C3
Post-impact
Conditions



File T355 Dwg: Analysis A


Tire impact mark on side of curb
Gouge and scrapes
Tire mark (straight striations)
This may not be related but is evident in the photos.
SCALE
0
5 metres
Gouge
Tire mark
Three cupped gouges
Sidewalk edge
Tire marks
Concrete pole (luminaire) base
(30 cm diameter, six steel reinforcements, roughly 10 m tall and 15 cm dia. at top, non-breakaway design)
Fire hydrant (not damaged)
Scrape
Gouge mark similar to three gouges above which turns into a long straight gouge
Detached overhead lamp
Broken concrete pole
Tire scuff
Various scrapes
Metal Pole (not damaged)
Fluid trail
File T355 Dwg: Analysis C1
Physical evidence at scene of first impact


Fluid trail
57.73
35.42
File T355
Dwg: Analysis B

TRANSPORTATION SCIENCES CENTER
ACCIDENT RESEARCH GROUP

Division of Calspan Corporation
Buffalo, NY 14225

CALSPAN EVALUATION OF FORD CROWN VICTORIA POLICE VEHICLE POWER STEERING ANOMALY

VEHICLE: 1992 FORD CROWN VICTORIA
LOCATION: PARAMUS, NJ
DATE: NOVEMBER 27, 1993
DRIVER: VINCENT M. BROCK

Contract No. DTNH22-94-D-07058

Prepared for:

U.S. Department of Transportation
National Highway Traffic Safety Administration
Office of Defects Investigation
Washington, D.C. 20590

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The crash investigation process is an inexact science which requires that physical evidence such as skid marks, vehicular damage measurements, and occupant contact points are coupled with the investigator's expert knowledge and experience of vehicle dynamics and occupant kinematics in order to determine the pre-crash, crash, and post-crash movements of involved vehicles and occupants.

Because each crash is a unique sequence of events, generalized conclusions cannot be made concerning the crashworthiness performance of the involved vehicle(s) or their safety systems.

CALSPAN EVALUATION OF FORD CROWN VICTORIA POLICE VEHICLE POWER STEERING ANOMALY

VEHICLE: 1992 FORD CROWN VICTORIA
LOCATION: PARAMUS, NJ
DATE: NOVEMBER 27, 1993
DRIVER: VINCENT M. BROCK

SUMMARY

This report focuses on the probable causal factors that resulted in the driver's loss of control and subsequent crash of a 1992 Ford Crown Victoria marked police vehicle. The crash occurred on a service road to a divided state route on Monday, November 27, 1993, at approximately 1930 hours. The driver was responding to an emergency police call when he initiated a lane change maneuver that resulted in the loss of control. The vehicle yawed in a clockwise direction across two travel lanes and impacted a utility pole at the junction of a driveway to a shopping mall. The vehicle sustained extensive left side damage in the area of the driver's compartment. The driver was wearing the manual 3-point lap and shoulder belt system, however, due to the impact location and the severity of the crash, he expired following arrival to a local hospital.

Data for this report was obtained from a thorough investigation by the Bergen County Prosecutor's Office, witness statements, the Paramus Police Department accident report, an engineering analysis of the crash and tests with an exemplar vehicle by the American Standards Testing Bureau, Inc., and numerous vehicle and scene photographs from the Prosecutor's Office.

Crash Data

This crash occurred at the junction of a two lane service road and a driveway for a shopping mall. The 1992 Ford Crown Victoria was initially traveling in an easterly direction on a divided state route as the driver was responding to an emergency police call with the overhead lights and siren activated. He exited the state route onto a two lane service road that provided the transition from an expressway onto the state route and access to the shopping mall. The eastbound lanes of the state route consisted of two travel lanes with a wide paved right (south) shoulder and a narrow left (inboard) shoulder. A concrete median barrier separated the eastbound and westbound travel lanes.

The service road was separated from the state route by a curbed median. A painted gore area preceded the median at the exit from the state route onto the service road. The service road was straight and level in the vicinity of the crash site. The asphalt road surface was dry with a measured coefficient of friction of 0.78. A one-lane Parkway exit ramp merged onto the service road approximately 345' west of the struck utility pole. There was no acceleration lane on the service road as traffic from the exit ramp was controlled by a yield sign. Although the crash occurred during evening hours, the service road was lighted by overhead luminaires.

Vehicle Data

The involved vehicle was a 1992 Ford Crown Victoria marked police unit. The Bergen County Prosecutor's Office Report identified the Crown Victoria with vehicle identification number (VIN) 2FACP72W3NX217317. The vehicle was equipped with a 4.6 liter V-8 engine, an electronic 4-speed automatic overdrive transmission, speed sensitive, variable assist power steering, four-wheel police level power-assisted disc brakes, Goodyear Eagle GT Plus tires, and the 55H police equipment group. The vehicle was also equipped with a supplemental driver's side air bag, however, due to the lateral impact force, the system did not deploy. At the time of the crash, the Crown Victoria had an odometer reading of 22,162 miles.

The Crown Victoria sustained severe left side damage from the impact sequence with the struck utility pole. The direct contact damage began at the trailing edge of the left front door and continued and continued rearward across the B-pillar to the mid point of the left rear door. The pole damage extended vertically from the sill to the roof. Maximum crush was estimated to be in excess of 24" located aft of the left B-pillar. In addition, the Crown Victoria sustained damage to the left front and left rear wheels and probable airouts of the tires from impact with concrete curbs which bordered the struck pole.

Driver Data

The driver of the Crown Victoria was identified as a 39 year old male. His driving experience and familiarity with the Ford Crown Victoria was unknown. He sustained multiple injuries from the crash and expired upon arrival at a local hospital.

Collision Sequence

The police officer was responding to an emergency police call at a shopping mall and was traveling in an easterly direction on a state route with the overhead lights and siren activated. The officer exited the state route to the right onto a two lane service road that provided access to the shopping mall. Witnesses stated that the police vehicle crossed the painted gore area of the junction and traversed the left travel lane of the service road into the right lane. A non-contact vehicle entered the service road from the Parkway off-ramp and was traveling in the right travel lane ahead of the police vehicle. The police vehicle approached the rear of this vehicle in the right lane and initiated a lane change maneuver to the left to pass this slower moving vehicle. The officer was attempting to enter the shopping mall driveway that was located approximately 345' east of the Parkway off-ramp.

As the police vehicle passed the slower moving vehicle, the driver lost control and the Crown Victoria initiated a clockwise (CW) yaw in the left travel lane. The vehicle traveled across the right travel lane in an increasing CW yaw and departed the right curbline in a near broadside orientation. (Investigators documented 194' of CW yaw marks and computed an initial speed of 65 mph for the vehicle at the initiation of the yaw.) The left side tires and wheels impacted and mounted the

concrete curb as the vehicle subsequently impacted a wooden utility pole with the left B-pillar area of the vehicle. The impact fractured the pole approximately 2' above ground level and displaced the base of the pole in the earth.

The Crown Victoria came to rest adjacent to the struck pole that was located at the mouth of the shopping mall driveway. The driver of the vehicle was restrained by the manual belt system, however, he expired due to his injuries following his arrival to a local hospital.

Police Reconstruction

The Paramus Police Department conducted an investigation into the pre-crash and crash events. They noted on their report that the police officer was responding to a gun shot wound victim at a fast food restaurant at the shopping mall. Several officers arrived at the scene prior to the officer that was subsequently involved in the crash. Upon arrival, these officers noted that the area appeared normal and that employees of the restaurant were not aware of anything unusual. The officers issued a slow-down order for other police units that were responding to the scene and requested that these units check the parking area. Moments later, Police Headquarters received calls regarding a police vehicle crash on the service road in front of a tire store. All units at the mall responded to the crash location.

As officers arrived at the crash scene, they reportedly observed a police vehicle against a utility pole with its driver entrapped within the vehicle. Eyewitnesses reported that the officer lost control of his vehicle while attempting to change lanes in front of the tire store complex and collided with the utility pole. The officer was extricated from his vehicle and was flown by helicopter to a local hospital where he expired. The Bergen County Prosecutor's [redacted] Accident Investigation Unit responded to the scene and took charge of the investigation.

Calspan's Review of the Bergen County Prosecutor's Office Report

The Bergen County Prosecutor's Office (BCPO) investigated the crash and conducted an extensive interview and fact finding campaign in an attempt to identify vehicle deficiencies that could have contributed to the crash. Interviews with various police fleet representatives identified numerous complaints regarding the brakes on the Crown Victoria police vehicles and several steering complaints. Several crashes occurred involving these vehicles, however, none appeared to be directly related to the power steering system.

The BCPO was also involved in the test procedures that were conducted by the America Standards Testing Bureau, Inc. (ASTB). An investigator with the BCPO, drove an exemplar vehicle through a test course five times. He noted that on each run, he experienced a brief loss of power steering assist as he removed his foot from the accelerator. This investigator did not report the effects that the power steering loss had on the vehicle, or his ability to maintain control of the vehicle. The BCPO report noted the test runs that were conducted by the ASTB through the reconstructed course of the crash vehicle's path of travel (Brock course). Both test drivers involved

in these tests reported a temporary loss of power steering assist for all six test runs that were conducted. There was no reported braking deficiencies in the vehicles. Again, the BCPO report failed to note the effects of the power steering loss through the course.

The BCPO conducted a thorough and accurate reconstruction of the available physical evidence and of the crash events. The tire marks clearly indicate that the vehicle initiated a CW yaw after the driver of the Crown Victoria had overtaken the other vehicle and initiated a rapid and an aggressive right (CW) steering input as he attempted to move into the right travel lane and proceed into the shopping mall driveway. The documented evidence yielded a velocity for the vehicle of approximately 65 mph at the onset of the yaw. The Crown Victoria deposited approximately 194' of CW yaw tire marks on the asphalt road surface as it traversed the right travel lane on a rotational trajectory toward the struck utility pole. The investigator computed an approximate impact speed of 32 mph.

The reconstruction of the physical evidence and vehicle dynamics appears to be correct from reviewing the available photographs of the vehicle and scene. The investigator computed speed for the Crown Victoria at the initiation of the yaw was correct and reasonable for the distance traveled and the resultant damage to the vehicle from the pole impact. The estimated impact speed of 32 mph appears to be a reasonable estimate for the crash. (A CRASHPC barrier equivalent reconstruction using an estimated crush profile yielded a velocity change of 28 mph.) This did not account for the energy that was required to fracture the pole, displace the base of the pole, and the minimal post-crash rotation of the vehicle to final rest.

There was additional discussion of the required deceleration that was necessary for the vehicle to negotiate the driveway ramp for the shopping center. The investigator computed a critical curve speed of 39 mph for the radius of curvature for the driveway. At this speed, a vehicle would safely enter and negotiate the driveway to the shopping mall. Based on the available coefficient of friction of the road surface and estimated levels of braking, the investigator determined that the driver could have decelerated the Crown Victoria sufficiently over the 226' to safely negotiate the right curve of the driveway ramp. This required speed loss due to braking would have required approximately 135' to safely reduce the Crown Victoria's velocity from 65 to 39 mph. In fact, the driver should have been able to stop the Crown Victoria within 200' through threshold braking which utilizes the available coefficient of friction (0.78).

The investigator concludes the reconstruction section of his report with an analysis of the steering input by the driver of the vehicle. It suggests that the driver initiated a very quick and extreme steering input at the inception of the yaw.

The BCPO investigator completed his report with a discussion entitled "Conclusion and Opinion". In this section he provided a brief overview of the pre-crash events based on physical evidence and witness testimony. This includes steering and braking action by the driver of the Crown Victoria prior to, and following the loss of control. In addition, he identifies several possible scenarios for the driver's loss of control and CW yaw of the vehicle. These include steering and

braking maneuvers in combination with the anomalies that are known to the Crown Victoria police vehicles which involve these systems. The investigator did not specifically identify a causal factor or rule any out, including driver error.

Calspan's Review of the ASTB Report

The report supplied by the American Standards Testing Bureau Inc. (ASTB), identified several interesting issues and also raised questions regarding the test course and driving procedures. On Page 4 of their report, the first paragraph identifies a reconstruction of the sequence of events that preceded and initiated the CW yaw which lead to the fatal crash. It notes that the driver initiated a lane change maneuver to the left followed by a right steering maneuver back to the right lane. At this point the vehicle began t slide to the left and rotate in a CW direction toward the accident pole.

The CW yaw was apparently attributed to the right (CW) steering maneuver which was probably the second steering input by the driver for this passing maneuver. Initially, as he approached the back of the other vehicle, the driver would have steered left and almost immediately as he gained the left lane, steered right and maintained a continuous right maneuver as the rear of the Crown Victoria passed the front of the other vehicle, at which point witnesses claimed to have observed brake lights. As the Crown Victoria responded to the right steering input, the center of gravity (CG) was redirected to the right, although the vehicle was in a slight CW yaw as evidenced by the yaw marks in the left travel lane. At this point, the front suspension was probably compressed and the right rear suspension extended as the vehicle reached its maximum handling limitation. The subsequent brake application exceeded the vehicle's limit of tire traction, thus causing the CW yaw to increase rapidly beyond the limits of recovery.

The ASTB conducted a series of tests using an exemplar 1992 Crown Victoria police vehicle and a test vehicle in which the master cylinder and power steering pump from the Brock vehicle were installed. This test vehicle was a 1992 Crown Victoria police vehicle that was identified by vehicle identification number 2FACP72WXNX217316. ASTB established two courses with traffic cones in a parking lot to drive the vehicles through to test the steering and braking systems. The first course consisted of a series of turns, including two U-turns, all of which were reportedly driven at high speeds. The second course was a reconstruction of the path of travel of the Brock vehicle.

The ASTB report did not specify the layout of the above courses or identify the longitudinal and lateral placement of the cones. The reconstructed path of travel was apparently an estimate of the Crown Victoria's travel path en route to the location of the critical right steering input (initiation of CW yaw) since there was no physical evidence to accurately identify the location and the extent of the maneuvers that were initiated by the driver to overtake the other vehicle.

Initially, ASTB conducted a series of rapid steering maneuvers (Item 1. on Page 5 of their report) with both vehicles. They noted that the power steering function diminished during these maneuvers, resulting in difficulty in controlling the vehicle. This test was conducted at an initial speed of 30 mph with release of the throttle and no braking. The report noted that the test was

repeated ten times, with identical results with both vehicles.

There are two areas of question for the above test. The first involves the extent of steering wheel rotation for the rapid maneuvers. At what degree of wheel rotation did the anomaly occur? Secondly, the report stated that the vehicles were difficult to control once the anomaly occurred. This control problem was not specified. Did the driver experience understeer or oversteer in the vehicle, or was the Crown Victoria difficult to steer due to the binding of the steering wheel?

Item 2. of their report (Page 5) noted that a series of ten passes through the training course resulted in the anomaly in the power steering, but to a lesser degree. The report did not identify the extent of the anomaly and the effects it had on the driver and or vehicle. These issues include the number of cones displaced, turns not completed, elapsed time to complete the course, and overall completion of the course.

The next test conducted by ASTB involved two passes through the reconstructed path of travel of the Brock vehicle with the exemplar vehicle. The report noted that the exemplar vehicle "spun out" (rotated clockwise) at the end of the course which represented the right turn into the shopping mall driveway. The speeds for this test were 40 and 46 mph.

The steering inputs for this course were not identified, however, if the course involved a lane change maneuver to the left followed by a return to the right, then it would have required four steering inputs. These would include a left followed by a right to gain position into the left lane, followed by a right and left to move back to the right lane. The report did not identify the course or the maneuver which contributed to the rotation. In addition, there was no indication if the vehicle's brakes were applied during the maneuvers through the course. It was unknown whether the scenario of a left steering input followed immediately by a single continuous right steering input was considered by ASTB.

The test vehicle was used for two passes through the Brock course at the same speed that were identified above. The report noted that the results were the same in which the test vehicle spun out at the end of the course. Again, steering and braking inputs were unknown.

These test runs through the reconstructed path of travel of the Brock vehicle were conducted at speeds of 40 and 46 mph, approximately 20 mph less than the actual (reconstructed) speed of the Brock Crown Victoria. Again, since the maneuvers that contributed to the CW rotation of the test vehicles were not specified, the rotation probably occurred from oversteer. In addition, the report failed to note if the anomaly occurred during these tests through the Brock course. If the anomaly did occur, it would have resulted in an incomplete steering input.

Item 5. of the report (Page 5) notes that two additional runs were attempted through the Brock course at the same speeds using the test vehicle. In these runs, they noted a partial loss of the power steering function, however, the report did not state if this loss in power steering contributed to the CW rotation.

In summation, the ASTB report noted that the power steering anomaly does exist in the Ford Crown Victoria police fleet, however, the report did not identify the anomaly as the root cause for the loss of control and subsequent CW rotation in the Brock crash.

Calspan Reconstruction

The driver of the Ford Crown Victoria was driving the vehicle in an extremely aggressive manner, which may have been unreasonable, even for a police officer responding to an emergency call. The driver's level of experience in this Crown Victoria for this type of driving was unknown. Witness testimony and the physical evidence concur that the driver rapidly approached the rear of a vehicle which inadvertently entered the service road in front of the emergency vehicle, initiated a steering input to the left to overtake the vehicle, and almost immediately initiated a second steering input to the right with the intent to redirect his vehicle back into the right travel lane in preparation for his intended maneuver into the shopping mall driveway. Under normal driving conditions, an additional left steering maneuver would have been required to maintain the vehicle on a path parallel to the right travel lane. The CW yaw probably occurred as a result of the driver's rapid and aggressive right steering maneuver and the yaw increased rapidly beyond control limits as the driver applied the brakes.

It was unknown if the driver of the Crown Victoria accelerated his vehicle as he initiated the lane change maneuver to the left, or maintained a constant speed as he attempted to pass the slower moving vehicle. A witness did observe the brakes lights illuminate on the Crown Victoria during the passing maneuver.

The physical evidence clearly indicates that the vehicle yawed in a CW direction as the driver applied the right steering input which followed his initial left steering maneuver into the left lane to overtake the slower moving vehicle that was traveling in the right lane of the service road. The vehicles subsequent path of travel across the right lane into the utility pole suggests that the vehicle's center of gravity was redirected in a southeasterly direction. This could not have resulted during the initial left steering input as the driver maneuvered into the left lane. Loss of control at this point would have resulted in the vehicle crossing the left lane and into the median between the service road and the state route.

The driver applied a right steering input during the passing maneuver, and at the reconstructed speed of 65 mph, he probably experienced momentary understeer, followed by a slight amount of oversteer as the vehicle responded to the steering input. At this point, and as per witness testimony, the driver braked in an attempt to decelerate the vehicle. With the vehicle in this unstable attitude, even a moderate braking force would result in the vehicle yawing rapidly beyond control limits in a CW direction. Once the vehicle was pushed beyond its control limits, countersteering inputs to the left would not direct the vehicle out of the yaw. At this point, there was virtually nothing the driver could do to regain control of the vehicle since it had yawed beyond the point of controllability. Countersteering and or braking would have been ineffective.

If the driver experienced the steering anomaly during the right steering input, and the anomaly prevented him from turning the wheel further, the end result would have been the same. The vehicle had already responded to the right steering input sufficiently to redirect the vehicle to the right. The Crown Victoria was in a CW yaw and the brake application aggravated the unstable condition resulting in a loss of control. An attempt to steer to the left to counter the CW yaw would have been ineffective. If the steering anomaly occurred and prevented the driver from initiating corrective action to the left, the results would remain the same since the vehicle was beyond the limits of recovery.

Although the steering anomaly does occur in these Crown Victoria police vehicles, the physical evidence, vehicle velocity, and witness testimony for this crash supports the theory that the loss of control and the extreme CW yaw resulted from an inappropriate application of the vehicle's brakes while the vehicle was driven at or near its handling limits in an oversteer condition, while the driver was executing a rapid and aggressive right steering maneuver.