

*Reference: PIAS/??/??/MH*

# Reconstruction Report

**Road Traffic Accident  
Approximately 1130hrs  
Tuesday 10<sup>th</sup> November 1998.  
A 446 Freetown, Countyshire**

*Investigation by Michael HANDY*

Between:-

Person A

And

Person B

Report of:

Michael HANDY

Personal Injury Accident Services

Specialist Field:

Traffic Accident Analysis & Reconstruction.

On instructions of:

Any Company Insurance

Subject matter:

Report regarding a road traffic accident approximately 1130hrs Tuesday 10<sup>th</sup> November 1998. A446 Freetown, Countyshire

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Introduction

I am Michael HANDY a consultant with Personal Injury Accident Services. My specialist field is the interpretation of data gathered from road traffic accident scenes, the accident vehicles, the parties' involved and other witnesses to traffic accidents.

I am the holder of the City and Guilds of London Institute in Road Accident Investigation and Reconstruction techniques. I am an approved Instructor and Examiner on behalf of the City and Guilds of London Institute in the same subject.

I served for 30 years as a police officer and was involved in Accident Investigation and Reconstruction for 26 years. For the last 9 years of my service, I was in charge of the Avon & Somerset Constabulary Accident Investigation Unit, responsible for the investigation of all fatal and potentially fatal road traffic accidents within the two Counties. I was the Senior Accident Investigator for the force as complies with the Association of Chief Police Officer's Protocol in respect of this subject.

I have presented expert evidence at all levels of both Criminal and Civil law Courts.

I have used this expertise in compiling this report.

My instructions are to examine the statements of all the witnesses and reports relating to the accident. Conduct a thorough investigation and an independent reconstruction, if appropriate on a mathematical model. I am to identify issues, which arise within my field of expertise and offer opinions on those issues, giving reasons for each one expressed.

I have no actual or potential conflict of interest in this matter.

I am not connected to either party or witness in any way, which influences any opinion.

I understand that my duty is to the Court and I have complied with that duty.

I confirm that insofar as the facts stated in my report are within my own knowledge, I have made clear which they are and I believe them to be true. The opinions I have expressed represent my true and complete professional opinion

Signed.

Dated.

## 2.00 Background

### 2.01 The relevant parties:

Person A (Claimant)

And

Person B (Defendant)

### 2.02 The assumed facts:

Any assumed facts with this incident have been obtained from the documents referred to in Appendix 2 of this report and my visit to the scene.

At about 1130 hours on Tuesday 10<sup>th</sup> November 1998 Person B was driving a Renault van Index No ????? ??? along the A446 from the direction of Freetown towards Smithsville. Countyshire.

At the same time, Person A was riding a Kawasaki 750cc motorcycle along the same road from the opposite direction.

Person B intended turning right into the yard of an abattoir adjacent to the A446 and as he did so, the motorcycle collided with the rear nearside of his vehicle.

As a result of the accident, extensive damage was caused to both vehicles.

Person A received injuries, which required hospital treatment.

**3.00 Locus Description**

3.01 The overall views of the road layout at the locus can be seen in the photographs and plan contained in Appendix 3 of this report. There is an additional enlarged section of the plan showing the post impact position of the Renault van and pre-impact skid marks left by the motorcycle.

3.02 The scene of this accident is on the A446 between Smithville and Freetown, Countyshire approximately 1.5 miles the Freetown side of Smithville outside Countyshire Abattoir.

3.03 The A446 is a major road carrying large volumes of traffic of all classifications.

3.04 Describing the road from the perspective a driver travelling from the Smithville direction, the road leaves the built up area, enters a rural aspect, and becomes subject to the national speed limit.

3.05 Approximately 0.4 mile before the scene the road is of single carriageway construction with one lane in each direction, opposing traffic being separated by a central white hazard line.

3.06 The road continues relatively straight and begins to descend gradually approximately 500 metres prior to the scene.

3.07 There is a junction to the left towards the village of Tweentown situated approximately 140 metres from the scene.

3.08 From this point onwards the road begins to ascend the gradient gradually increasing and enters a sweeping right hand bend, which continues to and beyond the scene.

3.09 To the left-hand side, there is a further minor road to the village of Tweentown, sited directly to the Freetown side of this junction there is a gated entrance to Countyshire Abattoir.

3.10 The boundary between the road and the entrance to the abattoir yard is defined by a change of surface from asphalt to concrete and a row of flint blocks.

3.11 Approximately 45 metres prior to the second Tweentown junction the centre white lines split to form two rows filled with white hatch markings forming a ghost island for a right turn protection lane for vehicles entering the abattoir.

3.12 The double row of white lines continues beyond the entrance, as the road begins to straighten towards a brow forming the Freetown end of the right turn protection lane.

3.13 From the Freetown bound lane, there is a view of the entrance to the abattoir for a distance of 180 metres.

3.14 The width of the road is restricted to the nearside by the extension of the give way markings to the minor road, which extend across the mouth of the entrance to the abattoir.

3.15 Approaching from the opposite direction drivers approach along a straight level section of road which begins to descend from a brow approximately 85 metres prior to the abattoir entrance. At this point, there is a junction to the left towards Uptown.

3.16 From the brow onwards the road descends continuously and enters a long sweeping left-hand bend. Forward view of the A446 being limited by hedgerows to the nearside.

3.17 Approximately 50 metres prior to the Uptown junction the double row of hatch filled white lines forming the Ghost Island commence by splitting of the centre white line.

3.18 The right turn protection lane is 1.5 metres wide and therefore of insufficient width to fully accommodate a vehicle.

3.19 There are no lane markings indicating the use of the lane.

3.20 From a position in the right turn protection lane, for drivers wishing to enter the abattoir there is a restriction in view of the A446 towards Smithsville caused by the apex of the hedgerow to the nearside.

3.21 The maximum view of the road ahead being approximately 120 metres.

3.22 There are no junctions between the Countyshire Fencing premises and the first junction toward Tweentown described above.

#### 4.00 Witness Evidence

The evidence seen is contained within the statements and documents referred to in Appendix 2 of this report.

There are no independent witnesses to the impact itself, those witnesses who have provided evidence arriving at the scene shortly after the vehicles came to rest.

**4.01 Person A** was the rider of the motorcycle involved. He was interviewed by the police on 29<sup>th</sup> December 1998 at his home address.

His explanation was, *“ I'd just finished work at midday and was on my way home - as I normally do - sensibly. The road was clear in front and behind. I can remember the van coming across in front of me but which way he was travelling I can't remember. I tried to go towards the centre of the road.”*

He was asked where he was when the van started to turn and he replied, *“ About half way between the two Tweentown junctions.”*

He later completed a self written questionnaire statement when he stated that at the time of the accident it was clear and dry, there was no other traffic.

He states that his speed prior to the accident was approximately 50mph.

All he remembers of the incident was seeing the back of the van coming across in front of him.

**4.02 Person B** was the driver of the Renault van involved. He was spoken to at the scene by a police officer and when asked what happened replied, *“ I came down from that direction, (Indicated Freetown), moved over to the centre of the road, started to turn, got onto the concrete and he hit me.”*

He was later interviewed contemporaneously when he expanded very slightly on his evidence.

He stated that before he turned he saw oncoming motor car about 200 yards away leaving him enough time get across the road.

He stated that he had not seen the motorcycle before turning.

**4.03 Witness 1** is an independent witness overtaken by the motorcycle just before the accident. She has provided two statements the first a police witness questionnaire.

**Statement 1** - States she was driving from Smithsville towards Freetown it was a fine, bright day the roads were dry and traffic very light.



She was overtaken by the motorcycle near the Countyshire Fences houses. She was travelling at approximately 45mph and estimates the speed of the motorcycle as being in excess of 50mph.

As she approached the scene she saw the van stationary in the entrance to the abattoir, clear of the main road. The motorcyclist was lying injured in the centre of her lane adjacent to the entrance.

The motorcycle was lying between the rider and the van. The rear nearside wheel of the van was detached and had come to rest near the motorcyclist feet.

Neither vehicle was moved prior to police arrival.

She recalls a conversation with Person B when he said “ The road was clear and then there was a bang.”.

**Statement 2** - She again describes travelling along the Smithville to Freetown road traffic was flowing freely.

She was travelling at between 50 and 60mph behind a van when she became aware of a motorcycle approaching from the rear, she knew that the rider was intending to overtake her. It was the sound of the motor cycle that first drew her attention to it.

As expected the motorcycle overtook the car to her rear and her vehicle in one manoeuvre.

The rider then overtook a van travelling ahead of her, which was then indicating to turn left into the first turning towards Tweentown.

As the van made the turn into the junction, the motorcycle had disappeared from view around a bend further along the road.

She cannot estimate the speed of the motorcycle as it overtook, other than to state that her speed was somewhere between 50 and 60 mph and the machine overtook her very easily. She formed the opinion that the rider was speeding.

As she continued forward and rounded the bend, she became aware of seeing the motorcycle on the road in the middle of the lane. She then became aware of seeing the motorcyclist and the wheel of the Renault van.

**4.04 Witness 2** - has completed a police questionnaire statement, which is of very limited detail.

He has been further interviewed concerning these proceedings and provides the following evidence.

He describes the road layout and states that he was driving his vehicle along the A446 from the direction of Smithsville towards Freetown following at least one other vehicle.

It appears that the vehicle ahead of him was being driven by Witness 1, the previous witness.

As he passed the premises of Countyshire Fencing to his right he estimates his speed as about 55-60mph. The vehicle ahead of him was pulling away slightly.

He was suddenly aware of a motorcycle, which was in the process of overtaking him. He had not been aware of the machine prior to this.

He particularly remembers the noise of the motorcycle, which was very loud similar to the sound heard when the baffles of the exhaust have gone.

The motorcycle moved passed him at a smart pace but he cannot put a speed on it.

Having overtaken his vehicle the motorcycle moved back towards the nearside and then out again to overtake the vehicle ahead. The progress around both cars was a smooth movement but not continuous the machine certainly moving back to the nearside before making the second overtake.

Having overtaken both vehicles the motorcycle increased the gap between them and then disappeared around the right-hand bend near the scene.

Witness 2 continued along the A446 at the same speed and as he entered the right hand bend he saw the motorcycle lying in the Freetown bound lane outside the abattoir.

He also noted that there was a van stationary just in the entrance to the abattoir.

He stopped and gave his details to the police. He did not have any conversation with either driver involved.

**4.05 Witness 3** - is referred to in the police accident record but there appears to be no previous evidence obtained from him.

He has been interviewed concerning these proceedings.

He describes the road layout and the fact that he has known the area for all of his life.

He states that at the time of the accident he was walking across the abattoir yard towards the entrance at the A446.

He saw the Renault van involved approaching from his left and slowing as it approached the entrance to the premises.

The vehicle was positioned for a right turn into the yard. He estimates that as the van came to a halt he was about 20 metres from it.

The van continued to slow and eventually came to a halt for a short period. It then moved forward in an arc towards the entrance.

The movement was normal for the turn neither slow nor hard acceleration being applied.

As it did so he was positioned to the offside of the vehicle and he lost view of the A446 towards Smithsville.

The van continued around the arc and was almost into the premises, the witness estimates about  $\frac{3}{4}$  of the vehicle being into the yard when he heard a loud bang come from the vehicle.

At first he thought that a pallet or similar had fallen over inside the van.

The van came to a halt very quickly and he went to the nearside of the vehicle when he saw the rider and the motorcycle lying in the Freetown bound lane of the A446.

He also noted that the rear nearside wheel of the van was detached and lying in the road.

He later examined the wheel and saw that the centre section attaching the wheel to the axle by the wheel studs had been punched out of the wheel by the impact. The remainder of the wheel with the tyre attached was in the road. The centre section was still held on the rear nearside hub by the studs.

He had no conversation with either of the drivers involved.

**4.06 Witness 4** - A Police Constable with the Countyshire Police who attended the scene and completed the accident record.

He provides details of the drivers and vehicles involved. He describes the damage to the vehicles as follows:-

Renault Van - extensive damage to the rear nearside. The outer nearside wheel of the rear axle had become detached from the axle and inner wheel.

There was general denting from the rear nearside corner over a length of 2.0 metres. There was a rounded dent with coloured paint attached to it 0.7 metres from the rear nearside corner and 1.4 metres above the ground.

Kawasaki Motorcycle. - Extensive frontal damage, the forks were bent, the headlight, speedometer and rev counter were all broken. The petrol tank was dented and the magneto casing on the nearside was broken.

He records interviews with the two drivers.

He measured the range of vision from the right turn position of Person B as being 180 metres. This was conducted using a calibrated Police Pilot system fitted to a patrol car.

He took measurements at the scene recorded in the police accident report, which he produces.

**4.07 Witness 5** - is Police Constable 107 of the Countyshire Police. He carried out timings of vehicles turning right from the A446 towards the entrance to the abattoir, this being the manoeuvre carried out by Person B.

He states that this manoeuvre takes approximately 3 seconds from the time the front wheel cross the centre line to the rear wheels cross the line of concrete at the entrance.

He forms the opinion that for the motorcycle to have been out of sight at the moment that the van started to cross the road, the motorcyclist would had to have been travelling at a velocity of at least 134mph.

This is based on a range of vision of 180 metres as measured by Witness 4.

## Section 5

### 5.00 Reconstruction

5.01 There are no independent witnesses to the impact between the motorcycle and the van. What evidence there is, deals solely with the movement of the two vehicles prior to impact.

5.02 Witness 5 conducted tests of similar vehicles turning right from the A446 into the abattoir yard. His results indicate a time of about 3 seconds for that manoeuvre to take place.

5.03 The time for the movement of the van is an essential component of any reconstruction. That time establishes both the probable position of the motorcycle as Person B starts to move and therefore the availability of any effective evasive action by Person A.

5.04 Witness 5 does not indicate how the tests were conducted other than stating that the end point of the timed movement was as the rear wheels of

the vehicles crossed the line of concrete at the entrance to the yard.

5.05 What is particularly important is whether those tests were conducted with vehicles moving away from rest.

5.06 It is clear that at the time those tests were carried out that the police had not interviewed Witness 3 and therefore had no information as to how Person B's vehicle had carried out the turn.

5.07 The interview of Person B did not seek to ascertain any information from him to establish his actions leading up to the impact.

5.08 The impact point between the vehicles was the rear nearside of the Renault van and the front of the motorcycle.

5.09 The motorcycle skidded prior to impact and the Police sketch shows that there was a sudden deviation of the skid mark at point "J" in Witness 4's sketch. The positions of the skid mark, gouge and the rest position of the Renault van have been superimposed on the scale plan and are shown at Appendix 3 of this report.

5.10 The skid mark being 0.2 metres from the nearside edge of the Freetown bound lane shows the position of the motorcycle as it approached. The deviation occurred after 8.1 metres of skidding.

5.11 As a vehicle cannot be steered whilst skidding it follows that the sudden deviation (Point J) positions both the front of the motorcycle and the rear nearside corner of the Renault at impact.

5.12 The movement of the van leading up to impact is fixed by the road layout itself. The width of the Freetown bound lane of the A446 is 3.1 metres, the impact occurring 2.9 metres into the Freetown bound lane.

5.13 The van is recorded by the police as being 6.2 metres long.

5.14 It therefore follows, that the minimum distance moved by the rear nearside of the Renault from rest to impact was along an arc of minimum radius of 2.9 metres plus the length of the vehicle itself.

5.15 That minimum movement of the vehicle to impact would therefore be 10.86 metres.

5.16 In order for a vehicle to travel, 10.86 metres in the time recorded by Witness 5 of 3 seconds would require the timed vehicles to be moving at a constant 8.1 mph.

5.17 Had the tested vehicles been timed from rest it would require an acceleration of 2.5 m/s/s in order for them to have cleared the road in 3 seconds.

5.18 I have conducted numerous tests of vehicles accelerating from rest and have found that such an acceleration rate over a short distance is unachievable unless very harsh acceleration is applied.

5.19 This is particularly true of vehicles turning, as they move from rest, when lower acceleration has to be applied in order to maintain control of the vehicle.

5.20 In my opinion, based on the tests I have conducted a rate of acceleration of between 1.0 and 1.25m/s/s would be expected. Rates towards the lower end of the range are more likely when conducting such a tight right turn as seen in the circumstances of this accident and the type of vehicle involved.

5.21 The evidence available is that Person B came to a halt before commencing his turn. Given the probable acceleration rate, of 1.0 m/s/s the time for the Renault van to move to impact would be in the region of 4.7 seconds.

5.22 It follows that as Person B began to move from the centre of the road to make the right turn that the motorcycle was also 4.7 seconds from impact.

5.23 The position of the motorcycle at this time would depend on its speed of approach towards the impact.

5.24 There is insufficient information contained with the papers to establish with certainty the speed of the motorcycle.

5.25 What is known is that as Person A passed the premises of Countyshire Fencing he overtook two vehicles being driven by Witness 2 and Witness 1.

5.26 Having overtaken the vehicles the motorcycle pulled away from the witnesses and disappeared from sight around the right hand bend just before the impact.

5.27 By the time, the witnesses had reached the bend the accident had occurred.

5.28 Witness 2 estimates his speed as being 55-60mph. Witness 1 estimates her speed as between 50 and 60 mph.

5.29 The premises of Countyshire Fencing is 0.4 mile (644 metres) prior to the scene.

5.30 The first view of the Freetown bound lane of the A446 outside the abattoir has been measured by the police as being 180 metres.

5.31 It follows that having being overtaken by Person A that the witnesses had travelled a maximum distance of 464 metres when the impact occurred.

5.32 At speeds of between 50 - 60 mph that distance would be covered in a time of between 17.3 and 20.7 seconds.

5.33 Person A had travelled 644 metres in a maximum of that time, this assuming, that the impact had occurred the instant the witnesses gained a view of it. Any delay between the impact and the witnesses gaining a view of the aftermath merely reducing the time taken by Person A.

5.34 Even with that assumption, which is highly improbable, the minimum speed for the motorcycle as it approached the scene would have been 69 - 84mph.

5.35 It is therefore probable that the speed of Person A's motorcycle as it approached the scene was in excess of 70mph.

5.36 At 70mph, the motorcycle would have been a minimum of 147 metres from impact when Person B commenced his right turn.

5.37 If the speed of the motorcycle was as low as 60mph the machine would still be 126 metres from impact at this time.

5.38 The tests carried out by Witness 4 indicate that there is a minimum view of the entrance to the abattoir from a distance of 180 metres when approaching from the Smithsville direction.

5.39 It would be unsafe to assume as Witness 5 has, that this was the view available to Person B as he commenced his right turn.

5.40 The reason for this is the methods apparently used by the police to measure that available view.

5.41 In his statement, Witness 4 states that he measured that view using a Police Pilot fitted to his patrol car. This equipment is very accurate on distance measurement being used in normal operation to record distance and time when checking speeding motorists.

5.42 The equipment can also be used to measure distance as appears to have been the case. Witness 4 does not describe how he conducted those tests. However, I anticipate that he drove the patrol car along the A446 from the Smithsville direction and commenced his measurements when he obtained a view of the entrance to the abattoir.

5.43 I accept that distance as being 180 metres a similar view is shown in the photographs taken by Witness 6 (Photograph 11).

5.44 It appears that Witness 6 attended the scene in October 2000 when vegetation in the area would have been more reflective of the conditions at the time of the accident than at the time of my visit.

5.45 His photograph 10 shows a drivers view from the right turn position prior to moving across the Freetown bound lane of A446.

5.46 It is clear that the hedgerow to the nearside of the carriageway provides the limiting point for any view of a driver waiting to turn right towards the abattoir.

5.47 It is difficult to be precise on how much of the road can be seen to be clear. It is obvious, that from this position, a driver is unable to see along the A446 as far as the first junction to Tweentown.

5.48 That junction is recorded on the scale plan and shown in the photographs. The distance from the right turn position of Person B being 120 metres. This distance is therefore the maximum view of the road available to Person B.

5.49 Witness 1 describes a van ahead of her turning left from the A446 after she was overtaken by the motorcycle when she was near the Countyshire Fencing premises. As the van, turned off the motorcycle overtook that vehicle. The only turning from the A446 between the Countyshire Fencing premises and the scene are the junctions to Tweentown previously described. It would therefore follow that Person A overtook the van at the first of the Tweentown junctions.

5.50 That overtake manoeuvre would position the motorcycle further toward the offside of the road further restricting any early view Person B would have of it.

5.51 It therefore follows that as Person B commenced his turn that Person A's motorcycle would have been beyond his range of vision.

5.52 It is known that Person A's motorcycle was a minimum of 126 metres from impact at 60mph and 147 metres at 70mph.

5.53 A rider paying reasonable attention to his riding can be expected to react in a time of between 1.0 and 1.5 seconds.

*{Hole & Langham - Factors Affecting Drivers Reaction Times - 1997}*

5.54 The road is described as being dry at the time of the accident. From my experience I would expect such a road surface to afford a friction level of at least 0.7g, particularly as the road ascends towards the impact location thus affording higher effective friction levels.

5.55 A rider would therefore be expected to be able to react and stop to any unexpected incident ahead of him in a maximum distance of between 79 - 92 metres at 60mph and 102 - 118 metres at 70mph. Both ranges varying with



reaction time only.

5.56 It follows, that had Person A reacted in a normal manner when he was first able to see the Renault van turning across his path, he should have been able to bring his vehicle to rest well before the impact point.

5.57 It also follows that the cause of the impact was the failure of Person A to properly react to the danger ahead of him in a reasonable time, his reaction not occurring until it was too late to stop.

5.58 It is apparent that Person A did not fully react to the van turning across his path until a late stage. The impact was substantial to have caused the damage seen to the rear nearside wheel of the Renault van. In my opinion, it is not possible to put a figure on that impact speed. Whatever the speed of the motorcycle at impact it is probable that more speed was lost prior to its wheels locking.

5.59 It should be noted that in practice there would be no requirement for Person A to stop in order to avoid the accident. The van was moving across his path and out of the danger area, therefore an earlier reaction and reduction of speed would have allowed the van to clear his path without the need to stop.

## **Section 6**

### **6.00 Conclusions**

6.01 Person B was travelling along the A446 towards Smithsville and when at the premises of Countyshire Abattoir he positioned his vehicle to the centre of the road and stopped before turning right towards the abattoir yard.

6.02 Person A was riding his motorcycle in the opposite direction.

6.03 As Person B made the right turn, a collision occurred at the rear nearside of his van. The impact point is recorded by the police as being 0.2 metres from the nearside of the Freetown bound lane.

6.04 Person A had overtaken two witnesses near the premises of Countyshire Fencing approximately 0.4mile (644 metres) prior to the impact point.

6.05 Person A overtook a further vehicle near the first junction towards Tweentown that manoeuvre would position his vehicle further towards the offside of the road.

6.06 Based on the time required for the witnesses to travel from the overtake location of their vehicles, would require an average speed for Person A's

vehicle in excess of 70 mph to cover the same distance.

6.07 The timings for vehicles turning right from the A446 into the abattoir yard quoted by Witness 5 do not appear to have been taken for vehicles moving from a stationary position.

6.08 A more probable time for the manoeuvre from rest as carried out by Person B would be in the region of 4.7 seconds.

6.09 Assuming a speed of 70mph for Person A motorcycle would place it a minimum of 147 metres from impact when Person B commenced his right turn.

6.10 The limiting point for visibility along the A446 from the right turn position is caused by the hedgerow to the nearside of the road. The maximum available view to Person B would be in the region of 120 metres.

6.11 It therefore follows that as Person B commenced his right turn towards the abattoir that the motorcycle would have been out of his view.

6.12 If Person A had been in the process of overtaking the van described by Witness 1, his position towards the offside of the road would have exacerbated any early view available to Person B.

6.13 A rider paying reasonable attention to his riding should be able to react and stop to any unexpected hazard ahead in a distance of 102-118 metres at 70 mph and 79-92 metres at 60 mph.

6.14 The maximum view of the Freetown bound lane of the A446 available to Person A was measured by the police as being 180 metres. It therefore follows that whatever the speed of the motorcycle he should have been in a position to react and stop well before the impact point.

6.15 It should be noted that in practice there would be no requirement for Person A to stop in order to avoid the accident. The van was moving across his path and out of the danger area, therefore an earlier reaction and reduction of speed would have allowed the van to clear his path without the need to stop.

## Appendix 1

**P I A S** draws upon the wealth of expertise of former police officers. Their experience spans a wide range of skills primarily within the road traffic department. This enables us to provide an extensive range of specialist knowledge.

Detailed below are details of my training, qualifications and experience:-

- ◆ Traffic Accident Analysis and Reconstruction ( Initial Training 1973 )
- ◆ Standard Traffic Accident Investigation Training, City & Guilds Certificate.
- ◆ Advanced Traffic Accident Investigation Training, City & Guilds Certificate.
- ◆ City & Guilds of London Institute Examinations in Road Accident Investigation for Police Officers.
- ◆ E. D. C. R. A. S. H, Programme, Computer Analysis of Impact Damage.
- ◆ Advanced training in damage analysis and assessment of speeds from damage.
- ◆ Authorised examiner on behalf of City & Guilds of London Institute .
- ◆ Authorised instructor on behalf of City & Guilds of London Institute in Accident investigation and reconstruction.
- ◆ Advanced Reconstruction Course I. P. T. M. University of Florida.
- ◆ Reconstruction of Motor Cycle Accidents, University of Florida.
- ◆ Guest lecturer at International Seminar, University of Florida.
- ◆ National Standard Grade 1 Advanced Driving.
- ◆ National Traffic Patrol Officers Law and Practice.
- ◆ Tyre Examination Methods for Police Accident Investigators.
- ◆ Examination and Calibration of Tachographs Recording Equipment.
- ◆ Analysis of Tachograph Charts and Detection of Falsification.( level 4 )
- ◆ Lion Intoximeter Roadside Breath Test Equipment Operation.
- ◆ Lion Intoximeter Breath Sample Analysing Equipment Operation.
- ◆ Vascar and Radar Speed Detection Equipment Operation.
- ◆ The Carriage of Hazardous Loads by Road.
- ◆ Use of Video in Vehicles Operation.
- ◆ Cognitive Interview Techniques.
- ◆ CID Investigation.

## **Appendix 2**

### **Documents referred to:**

Countyshire Constabulary Accident report Reference No ???????

Statement of Person A dated 13<sup>th</sup> January 1999

Statement of Witness 1 dated 18<sup>th</sup> November 1998

Statement of Witness 1 undated

Statement of Witness 2 dated 18<sup>th</sup> November 1998

Statement of Witness 2 undated

Statement of Witness 3 undated

Report of Witness 5 dated 12<sup>th</sup> March 1999

Interview of Person B dated 21<sup>st</sup> January 1999

Statement of Witness 4 dated 5<sup>th</sup> February 1999

Photographs taken by Witness 6, Claims Inspector, dated 31<sup>st</sup> October 1999.