

Collision Synopsis

It should be noted that the following synopsis is nothing more than an outline or general summary of the facts surrounding the events that occurred. The synopsis should not be considered a factual report of what actually transpired, but rather be employed to gain an overview of what transpired. The only purpose of the synopsis is to assist the reader of this report to have an insight of the kinematics of the collision delineated.

Atmospheric Conditions

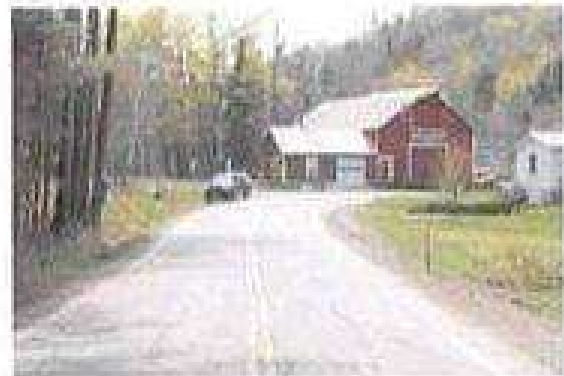
According to National Weather Service for the general day, the atmospheric conditions, which were recorded at Plymouth, New Hampshire being the closest data recording observation point, registered a maximum temperature of 30 ° Fahrenheit with a minimal temperature of 8 °. There was no recorded data on the winds or precipitation.

Lighting

The roadway was without artificial luminaries from streetlights and/or buildings. The sun's position at 1927 Hrs^{1325f}, being the time entered for the collision by authorities, was well below the horizon. The moon's position was negative 14.9 ° to the horizon with the azimuth bearing 73.7 ° from true north. The moon's virtual reality was 86 % in its given position at the time of the collision. Given the position of the moon relative to the terrain, its virtual reality, weather, and the vehicle and/or any other vehicle that may have been involved in this collision, ambient lighting to the scene was not produced by the moon.

Roadway Geometry

Wild Ammonoosuc Rd in the area of the collision is comprised of bituminous asphalt. The surface was dry and clear of any roadway abnormalities that may have been considered a contributing factor. There was no general construction in the area pertaining to the roadway. As specified in the New Hampshire State Police report, the roadway was clear of any and/or all debris excluding that which was produced by the collision. The topography is rolling and the surrounding land use is predominately rural with scattered residential dwellings.



Wild Ammonoosuc Rd travels east to west for clarity of this report and contains two lanes of travel. These lanes are in the order of 11-12 feet in width and separated by a double, solid yellow reflectorized centerline depicting an unauthorized passing zone. Both shoulders are lined with single white reflectorized foglines, which delineate the edge of the travel lanes. The paved shoulders extend for approximately 1 foot from the white foglines to the edge of natural earthen material. The eastbound shoulder consists of a gully adjacent to a tree line which is set back \approx 8 to 10 feet. The gully is \approx 2 feet wide and 2-3 feet below the level plain of the pavement and contains a stream of water.

From the perspective of an eastbound motorist, the geometry of the roadway in the area of the collision and as portrayed in documents reviewed by this analyst, contains a left sharp curve in the area of the 'Weathered Barn' establishment. Thereafter, the first intersection to the east is Bradley Hill Road.

Traffic Regulator(s)

A sign reading "20 MPH" regulates vehicle traffic proceeding easterly on Wild Ammonoosuc Rd. This sign is clean, highly visible to eastbound traffic and is consistent in shape and color with the Manual on Uniform Traffic Control Devices (MUTCD) as advisory notice. Accompanying this sign is one which pictorially indicates a left curve. This sign is also clean, highly visible to eastbound traffic and consistent in shape and color with the MUTCD as an advisory notice. The sign is located ~ 250 feet from the aforementioned left curve. According to the police report, a sign depicting a speed limit of 35 mph regulates vehicle traffic proceeding southerly on Wild Ammonoosuc Rd. This sign is actually situated along the westbound shoulder between the aforementioned curve and Bradley Hill Road. The sign is irrelevant to this collision.



A secondary sign identified as a chevron, is located within the curve and just east of where the Saturn was located. This sign illustrates a curve to the left for eastbound traffic. The sign is clean, highly visible and was consistent with the MUTCD as an advisory notice. Other guidance and informational signs other than what are conveyed above are located throughout the area and will not be discussed due to their irrelevancy to the collision.



Vehicle Examination

Mitsubishi Mirage

The 1996 Saturn S-Series bearing Massachusetts registration 115NDG was listed as MV #1 in the primary police report; hereinafter referred to as *MV #1* or the *Saturn*. On May 1, 2010, at approximately 9 am, this analyst arrived at the NHSP 'F-troop barracks located at 549 Route 302 in Twin Mountain, NH. At that location, I met with Atty. Erica Gesing of Gallant & Ervin, LLC, Chelmsford, Massachusetts and NHSP trooper Russell Hubbard. Trooper Hubbard produced the keys to the vehicle on request. However the initial police report indicated the doors were locked.



Hubbard also indicated he did not know a lot about the case and did not offer any information. When asked if the vehicle had been moved from one location in the back field to another based on the evidence we had observed, he indicated he did not know. A decal labeled 'Impounded' was also located in the Saturn which depicted a date of June 21, 2004. This collision occurred in February 2004.



The Saturn apparently had been moved over the years from its location out in the far field as shown in the photograph below to a location adjacent to a storage bin. As shown in the photographs below, there is cross transfer of evidence pertaining to a dirt imprint on the passenger's front tire. The cross transfer would have developed when the Saturn was at rest in the field over an extended period of time before being moved. Simply moving the Saturn, now developed further damage to the front bumper which was evident.



Possibly 2007 photographs based on computer file property



May 1, 2010 during vehicle inspection

On examination of the Saturn in 2010, the general vehicle was in poor condition exclusive of the damage sustained as a result of a collision. It appeared to be in a far better state back in 2007 as shown in photographs. The deterioration would more likely than not be a result of weather over the years and/or moving the vehicle throughout the back field of the NHSP barracks. The Saturn was not in a secured, sheltered environment. The vehicle had passed a yearly safety inspection evident by an inspection sticker affixed to the front windshield, expiring in October 2004 and had

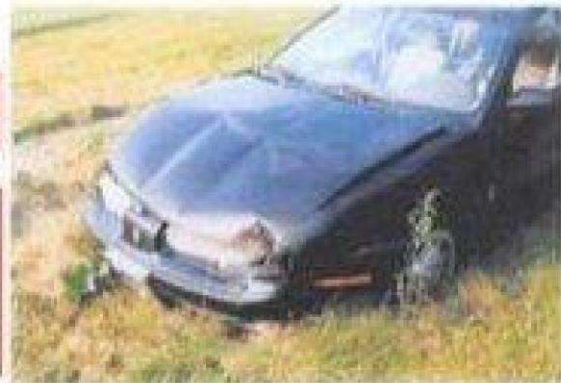


accumulated 152,046 miles as per its odometer. There was no indication of any fixed foreign material or objects within the vehicle that would interfere with the operation and/or the forward or lateral visual observations from the operator.

All four tires were Michelin 'X Radial Plus' P185/65R15 and had sufficient tread to a depth of 6/32nd. All four tires were under inflated with pressure ranging from 2 to 18 pounds. It is more likely than not; Maura Murray did not experience a tire failure at the time of this incident and the lack of pressure as measured by this analyst was due to years of sitting in the back field of the NHSP barracks.

Front Bumper

As depicted in photographs dating back to = 2007, the front bumper is observed still in place as it relates to the damage it had originally obtained. However, during our inspection, the front bumper cover was displaced with the driver's side portion in contact with the ground. The inner 'honeycomb' core was also now exposed. It was apparent that someone or something had disrupted and/or removed the center fasteners of the outer bumper skin; exposing the inner core. It is unknown as to when and or how this action occurred.



2007 Based on computer file property



May 1, 2010 During Vehicle Inspection

*Center bumper cover fasteners removed
Red arrows depict origin*



The driver's side inner core was pushed somewhat inward as compared to the passenger's side. The core also showed little damage with a few of the core vents slightly bent. There was also evidence of some abrasion to their outer façade. The mechanism which caused the bending to the core vents cannot be positively be classified as having solely occurred at the locus, as the Saturn has been moved at least once in the field behind the barracks. It is unknown as to whether the moving of the Saturn has caused additional damage to the inner core.



Displaced Driver's Side Core



Damaged Core Fins

If the displacement of the core and the damage to the fins was the result of the initial impact in 2004, the intruding object would now need to extend down across the front bumper. However the façade of the intruding object could not have a perfectly vertical façade if it relates to the Saturn's approach. The core is still not pushed back to the extent of the hood damage to justify a perfectly vertical façade, nor does the hood dent have a perfectly vertical appearance, but rather an acute angled indent.



Lamp Examination

One recall from NHTSA pertains to the Saturn S-Series. This recall accompanies this report and is not a contributing factor to this case. This recall pertains to exterior lighting.

If any of the exterior lamp filaments were incandescent (illuminating) at the time of the collision, the filament(s) would have elongated and uncoiled as a result of being ductile. Inertia of the filament(s) during a collision causes this to occur resulting in what is described as 'hot shock'. As depicted in the photographs which illustrate the damage to the Saturn, the majority of the dynamic collapse is in the area of the corner marker light and headlight assembly. An examination of the headlight bulbs revealed the high beams were on at the time of this impact. The filament showed classic evident of elongation while the low beam maintained its original coil. This is of important as it relates to the illuminated visual field ahead of the operator at the time of any or all impacts.



*Low Beam, Driver's Side (off)
Undamaged filament*

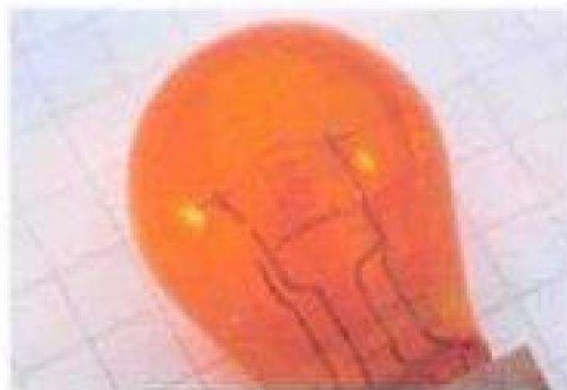


*High Beam, Driver's Side (on) Incandescent
Elongated filament*

The front amber corner bulbs contained both marker and turn signal filaments and were not of the same make. The marker filament showed signs of elongation under low magnification. This elongation is consistent with the filament being incandescent at the time of the collision. Both turn signal filament maintained their original coiled appearance; rendering their status as being inconclusive.



*Driver's Side Amber lamp
Elongated marker filament*



*Passenger's Side Amber Lamp
Elongated marker filament*

Windshield Examination

A small circular (stellar) pattern impact to the windshield was located \approx 8 inches above the crest of the steering wheel. The interior portion of the pattern did not have any coarse feeling when touched by the palm of a hand. The exterior portion of the windshield did have cutting edges along each fracture.

There was also a small indentation to the stellar pattern on the inside; rendering the fracture as having occurred from the interior by an unknown object. The placement of the stellar impact is slightly lateral of the driver's seated position and towards the driver's side "A" pillar post. The stellar impact is also vertically located \approx 5 to 6 inches down from the top section of the windshield and within the tinted area as assigned by the ASI level.



There are at least four if not more possibilities as to how this fracture occurred. First, during airbag deployment when the bag inflates and makes contact with the windshield, however, the airbag fabric had been removed and any attempt to rule out this possibility has been compromised. Further discussion regarding the airbag status will be forthcoming.

Secondly by means of the operator striking their head on the windshield during an impact. There was no evidence of any hair fibers and/or root within the break. The fracture to the glass was clean with no foreign material and appeared too small as compared to a typical head strike.

The third possibility would be the driver's side visor making contact while in an extracted downward position and being forced into the windshield by either the operator's forward movement or the

deployment of the airbag and/or a combination of both. However, this was ruled out as the visor's extreme edge did not reach the central area of break and evidence within the vehicle supports the visor as being folded against the roof. Further discussion on this issue is also forthcoming.

The fourth and again not considered to be the last, would be if an object within the vehicle was projected into this area. A liquid stain along the interior roof and directly forward of the operator may be affiliated with the stellar break to the windshield if the operator were holding some sort of liquid container and/or it went airborne from an unknown origin within the occupant compartment. This would explain the breakage to the windshield and the aspersion of liquid to the roof. Further discussion is forthcoming.

The interior mirror was missing with the supporting bracket still in place and did not show any sign of damage. In order to take the mirror off the windshield, it needs to be elevated towards the roofline and off the support. To attach the mirror, it needs to be slipped down onto the support and within a grooved channel. The mirror is then secured to the bracket by tightening an allen screw or nut fastener. If the allen screw were loose, the mirror could possibly be dislodged during contact with the operator as they are propelled towards the windshield during a frontal impact. This does not rule out the possibility that the mirror had been removed by police personnel for analysis and/or was initially missing prior to the incident.



Liquid Aspersion

Considering the unknown whereabouts of Maura Murray being the operator of the Saturn at the time and based on this analyst's training and experience, there are often attempts to alter, destroy, remove, clean or cover-up evidence of a crime, but that traces, as well as gross physical evidence, may be left in the form of blood, saliva, fluids, secretions, hairs, fibers, fingerprints, palm prints, footprints, shoeprints, clothing transfer impressions as well as paint chips, glass and plastic fragments. Many of these items being minute and/or microscopic in nature, thus requiring the use of additional specialized examination.

With this said, the interior roof line was stained with a reddish appearance which was in an area forward and above the driver's position. According to the police report, they classified this as a red liquid and reference a box of Franzia Wine within the vehicle. The box of wine would have appeared similar to the exemplar one shown to the right. As aforementioned, the visor was believed to have been in a position folded against the roof. As shown in the photographs below, the area behind the visor when in a lowered position is clean of any liquid aspersion.





The aspersion then appears to have been projected or sprayed across the roof line towards the passenger's side. The spattered did not have the classic signs of an elongated nature to the naked eye as associated with blood and did not contain the classic tail. However, this does not rule out the possibility that the aspersion was not of a biological nature without a proper analysis.



Another area containing the same type of stain was located on the driver's door panel. This area was heavily saturated and had a downward type spray. What was interesting about this area was it mainly was positioned on the aft section of the door panel with almost a vertical boarder going down the right side just aft of the interior handle. There was also no liquid aspersion on the driver's seat.



As it relates to the driver's door panel, a blackish print pattern was located on the arm rest. The print was all of the door handle cup and wrapped slightly along the right edge. It is unknown at this point what if anything had developed this mark. Both the interior door handle and window crank had a whitish appearance; similar to the chemicals used to dust the vehicle for forensic prints. The foreign chemical could also have been deposited by the airbag during deployment. Given the extended period of time this vehicle has been sitting in the environment, it could not be positively identified.



On the 'A' pillar post and adjacent to the stellar break to the windshield, a brown or blackish type smear is evident which almost has the same visual color as the print on the driver's door interior arm rest. To the naked eye, it gives the basic impression of possibly a left hand print versus a right with three extended digits pointing towards the roofline. However, again, a specialized technical examination of this mark would need to be conducted by other persons.



Seatbelts

The seatbelts were of an active restraint system. The driver's belt did not show any signs of stress concentration marks, webbing elongation, deposits of foreign matter, and/or belt stiffening which would indicate the belt was worn at the time of impact. The SDM download also indicated the driver was 'unbelted' at the time of the collision. There was no reddish liquid aspersion consistent with what was located on the interior panels. The belt was warped in one location; consistent with hanging from the 'D' ring on the 'B' pillar post above the operator's head. This would be common for belts that were in the unsecured position over a period of time.



Airbag Module(s)

The driver steering wheel mounted and passenger instrument panel mounted air bag systems are designed to respond to a frontal impact measured as a crash pulse in the $-X$ axis (longitudinal design axis), as defined by SAE J211 and SAE J670e. Frontal barrier crashes generate pulses substantially in the $-X$ axis, and these air bag systems sensors are generally designed so that they respond to crash pulses with sufficient magnitudes included within ± 30 degrees of the $-X$ axis. All air bag systems are also designed to operate when they detect a high enough vehicle velocity change over a short enough time period to cause a deceleration pulse ($-X$ axis acceleration), which exceeds thresholds known from test crashes to have undesirable occupant injury potential.

Utilizing a Bosch CDR System, data was collected from the air bag module located within the Saturn. The Sensing and Diagnostic Module can store the Deployment Events 5 seconds leading up to deployment. These events consist of the pre-crash speed and velocity change (Delta V) accompanied by other parameters. To access the SDM, the center console was unbolted and the unit was removed. There was no evidence which supports investigators from another agency had accessed the module directly, however this does not imply that investigators accessed the SDM through the serial port under the dash and collected the numerical data. Given the dead status of the Saturn's battery at the time of our investigation and as a result of other matters, we choose to access the module directly. After completing the download, the module was left within the interior of the Saturn.

To associate the data collected from the SDM with the case involving the disappearance of Maura Murray, the ignition cycle was evaluated. According to the data, the airbags deployed after 20,328

cycles of the ignition key. At the time this analyst downloaded the data, the ignition cycled was 20,335; a difference of 7 cycles. These 7 cycles could have occurred during the removal of the Saturn or any attempt to restart the vehicle after airbag deployment. If the difference in cycles was far greater (100+), the data recovered would more likely than not be associated with an impact long before the incident that occurred on Wild Ammonoosuc Rd where the vehicle was located.

The Air bag Module contains both an inflator unit and the lightweight fabric air bag itself. The driver's side air bag module is located in the steering wheel hub, and the passenger's air bag module is located in the dash above the glove box. On close examination of the airbag system, both the driver's side and passenger's side bags had deployed based on physical evidence and were associated with the case at hand based on the ignition cycle as aforementioned. The actuator's did show classic signs of burn, corrosion and/or heat transfer during the release of gas(s) to deploy the bags.



Driver's Side airbag actuator



Passenger's Side airbag actuator

The fabric airbags themselves were cut at the base and removed from the vehicle as shown in the photographs above by unknown persons. This may have been for the reason of examination by laboratory personnel. In doing so, evidence of any contact with one or both airbags by either the operator and/or any person seated in the passenger's seat can be analyzed by authorities. These airbags did deploy within a period of time relative to the situation at hand.

The Saturn's Sensing & Diagnostic Module recorded two events associated with this case. The first event recorded was a 'Non-deployment' event which basically wakes up the unit but was not significant enough to command an airbag deployment. This type of event would be consistent with hitting a pothole or mailbox post, or in this case, entering into the ravine that flows along the eastbound shoulder. The data recorded indicated a change in forward velocity of 0.22 mph in a period of 6.25 milliseconds (6/100th of a second).

System Status At Non-Deployment

SIR Warning Lamp Status	OFF
Driver's Belt Switch Circuit Status	UNBUCKLED
Ignition Cycles At Non-Deployment	20328
Ignition Cycles At Investigation	20335
Algorithm Enable to Maximum SDM Recorded Velocity Change (ms)	6.25
Maximum SDM Recorded Velocity Change (MPH)	-0.22
A Deployment was Commanded Prior to this Event	No

The second event recorded was a 'Deployment' which commands an airbag deployment due to a significant event. The problem with this event, was something occurred to the electrical system of the Saturn at the time of the impact which resulted in missing data.

System Status At Deployment

SIR Warning Lamp Status	OFF
Driver's Belt Switch Circuit Status	UNBUCKLED
Ignition Cycles At Deployment	20328
Ignition Cycles At Investigation	20335
Time From Algorithm Enable To Deployment Command (msec)	0
Time Between Non-Deployment And Deployment Events (sec)	.02

However, it did record the time between 'Non-deployment' and 'Deployment'. This was recorded as 0.02 seconds. If the operator were traveling the speed limit of 20 mph (29.34 ft/sec) as suggested by the speed limit, the two commands would have occurred \approx 6 inches apart relative to the ground. In other words, a 'Non-deployment' event occurred when the Saturn was involved in a small impact, and then immediately struck a second object approximately 6 inches away and within $2/10^{\text{th}}$ of a second. If traveling 30 mph (44.01 ft/sec), the two commands would have occurred \approx 11 inches apart. (velocity x 0.02 seconds).

The Saturn would also need to be moving at the time the two commands were recorded. If the Saturn were stopped and an unknown vehicle and or object of significant force struck the Saturn, only one command would have been recorded. To have both commands occur nearly simultaneously as they did, the Saturn would need to be moving in a forward projection under its own propulsion. The electrical system would also need to be activated for the SDM unit to record.

As it relates to what could have caused these two events to occur nearly simultaneously with a 'Non-deployment' occurring first; the edge of the roadway where Maura's Saturn was located contains a small ravine adjacent to a tree line. If the Saturn entered this ravine, it may have resulted in a 'waking up' of the SDM unit and recording a 'Non-deployment' event. The vehicle would then need to move \approx 1 foot to the tree line to result in the 'Deployment' event be commanded with airbag after having struck the tree line. If the front wheel assembly went into the ravine and/or struck the far side wall of the ravine adjacent to the tree line, the overhanging front end of the Saturn would now be closer to the base of either a tree or fixed object to result in a deployment command.



However, the damage is not consistent with striking a tree which has a perfectly vertical façade from the ground up. The damage is more consistent with a less acute angle of interaction between the two. If the front of the Saturn were down in the ravine, this would now change the horizontal pitch of the vehicle from a horizontal plain consistent with the pavement and place the front end of the vehicle more at an angle to the vertical façade of a tree. Or, if the angle of the tree were more of an acute angle as



shown in the photograph above with the blue ribbon, the angle to which these two engage could now be explained. This would allow the finite damage to the core fins to occur. However, the physical damage to the vehicle's hood and its configuration still are at question.

The damage associated with the collision is also on the driver's side. The Saturn would need to commence some sort of clockwise rotation before going off the roadway to have the driver's front corner leading the way to impact. This is consistent with the police diagram shown below where tell-tail signs of vehicle rotation are evident from the 'tire impressions' drawing.

In reference to the compass rose depicted in the diagram to the right¹, this vehicle is pictorially shown as facing in a southerly direction while situated along the northbound shoulder of the roadway; north of the aforementioned curve. The diagram depicts the vehicle as being on the edge of the roadway, but could it have also been slightly into the gully? There were no photographs taken of the scene and or any trees that may have been struck.



Vehicle Damage

There were ≈ three areas of contact to the front of the Saturn. The first one which contained more significant damage than the other two was a frontal impact to the driver's front corner. It should be noted; at the time of our investigation, the Saturn had been moved throughout the back field of the barracks. The front bumper was now hanging off the vehicle and not in the same condition as depicted in photographs taken in the year 2007. It is unknown what type of damage was associated with the vehicle back in 2004. However, the actually structural damage to the hood was consistent and unchanged.



Photograph from 2007



Photograph from 2010

¹ New Hampshire Accident Report form.



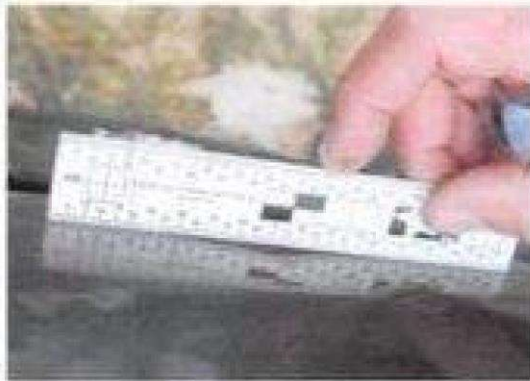
On close examination of the hood damage, the width was ≈ 7 inches with a maximum depth of ≈ 9 inches. The overall height was ≈ 4 inches and angled at ≈ 45 degrees off perpendicular. There was no fracture of the paint or foreign material embedded. The overall damage was not smooth but rather uneven and did not contain the classic geometrical shape of a tree's outer façade.



The entire hood was however pushed back ≈ 2 inches and buckled in the middle due to impact. This 2 inch movement also resulted in the radiator upper support being bent and the headlight assembly displaced backwards. However, the aforementioned bumper and inner core were not pushed back to the same extent. If they were pushed back to have a perfectly vertical inline damage with the hood, the front bumper and core would need to be displaced $\approx 7-9$ inches. This was not the case. As aforementioned, it appears the intrusion by the unknown object and its interaction with the Saturn was at an angle less acute than 90 degrees.

The principal direction of force of the frontal impact was \approx negative 5 to 10 degrees off the vehicle's fixed coordinate system being the physical property imparted to the vehicle during the impulse as a result of being involved in a collision. As aforementioned, the majority of the dynamic collapse occurred in the area of the driver's front headlamp assembly with a slight shifting of the front overhang to the passenger's side.

The other two impacts were minute in size and as compared to the damage noted above. These secondary dents did not contain any fractures of the paint and/or contain any foreign material. One was located to the passenger's side while the second one was located in the middle of the hood. The depth of both indents was so miniscule, measurement was difficult if not impossible to measure.



On the rear bumper several superficial marks were observed. These marks were whitish in color with horizontal striations on the driver's side rear corner. It is unknown as to whether these marks are related to this case or were the result of an early incident.



Exhaust System

It was relayed to us that there was mention of a rag or cloth as having been located within the tailpipe of the Saturn's exhaust at the time of the police investigation. During our examination of the vehicle, we found the muffler and tailpipe had been bent backwards or rather now facing towards the front of the vehicle and encased in earthen material. It is more likely than not, this new damage of bending the pipe and muffler was associated with moving the vehicle throughout the back field of the barracks. The tailpipe was extremely corroded and dropped off the muffler with little or no force when we attempted to move it out from under the vehicle. Wet earthen material was packed within the pipe. The earthen material may now contain any leftover evidence of rag and/or cloth which was mentioned as having been placed in the pipe just prior to the collision. It was clear from the condition of the vehicle at the time of the inspection, no care was taken to preserve any type of evidence associated with a rag or cloth within the pipe and/or the condition of the tailpipe itself. Any evidence throughout the entire vehicle was now also compromised due to the condition of the Saturn and nature in which it was secured.



Muffler to tailpipe connection



Tailpipe with earthen material



Automotive Part

Within the vehicle, two automotive parts were observed. One was a broken part which had a round connecting port with a medal retaining ring. The part also contained a 'Chrysler' logo embossed on a flat portion. We could not locate any type of reference or part number.



The second part was undamaged and appeared to be a type of coin holder with lid. Part number 21041748 was embossed on the back with other data. There was no automotive manufacturing symbol.



Vehicle Fluids

On an examination of the engine compartment, we found the oil level, transmission and brake reservoir contained adequate lubrication. The trunk of the vehicle had several full quarts of SAE 10 W20 motor oil in a case which originally contained approximately 12 bottles. A bottle of windshield fluid was also evident. The battery was dead but still connected and the fuel gauge indicated a full tank.



Swiftwater Way Station

Approximately 9/10th of a mile to the west of the collision, a small convenience store/gas station is located along the westbound shoulder. As aforementioned, the fuel gauge showed that the tank was full. If Maura were traveling south/east on Rte 112 (Wild Ammonoosuc Road) prior to the curve in the roadway, she would have passed the 'Swiftwater Way Station'. If Maura pulled into this location to fuel, she would need to go into the building to pay; as the pumps were of an older style and did not accept any type of credit/debit payment.



We attempted to speak with a female cashier who was reluctant to offer her name and indicated she was working at the time and did not remember Maura entering the store. She did however indicate that another woman was outside the store and at the front corner. It appeared to her that the unknown woman was hesitant about going into the building, only because of a red pickup truck with a wooden bed was traveling very slowly past the parking lot. Could this unknown woman at the corner of the building been Maura Murray? The truck had made several passes before leaving the area. Shortly thereafter, rescue and police vehicles passed the gas station while in route to where Maura's Saturn was located.

During our examination of the scene, a red pickup truck (Chevrolet, Ford type model) with a wooden bed passed our location and took a right onto Bradley Hill Road; adjacent to the home of Butch Atwood (4 Wild Ammonoosuc Road). The vehicle displayed New Hampshire registration: 476773. There were two Caucasian males in the vehicle.

Conclusion

My opinions set forth in this report are stated to a reasonable degree of scientific certainty and probability within the field of collision reconstruction. Note: our involvement with this case was to examine the vehicle and report our findings. We were not instructed to collect any type of evidence and/or make a scientific analysis other than what the SDM unit displayed. Nor are we capable of offering and scientific analysis or testing. This analyst reserves the right to supplement his opinions subject to further analysis and/or discovery, and reserves the right to respond to any and all opinions proffered by other experts. This report is based on the limited data from officials received prior to this document's date. On receipt of any new document(s), a supplemental report may be generated. The aforementioned

conclusions are the opinions of this office, which is based on the findings, inferences and conclusions of my review, kinematics analysis and/or study of the collision.

The Saturn was originally traveling east on Wild Ammonoosuc Road and either passed or stopped in at the 'Swiftwater Way Station' to fuel. Thereafter, the Saturn traveled $\approx 9/10^{\text{th}}$ of a mile to the left bend in the roadway near the 'Weathered Barn'. From this point, the Saturn more likely than not, went off the roadway along the eastbound shoulder and entered the ravine before moving further off the shoulder and striking a fixed object at an acute angle off of a vertical axis. The SDM download confirms that two events occurred with a 'Non-deployment' occurring first before the command for a 'Deployment'. Both events occurred within $2/100^{\text{th}}$ of a second and within ≈ 1 foot. The topography of the roadway at the locus also coincides.

It is still unknown as to how the actual dent on the hood occurred. The damage itself does not match that of a tree's outer radial façade pattern. No photographs were produced by police personnel which would depict and/or confirm the Saturn struck the tree line. There are also no photographs which accurately depict the Saturn's point of rest.

It is unknown as to whether Maura Murray or someone else was operating the Saturn at the time of the frontal impact. It is unknown as to how many persons were even in the vehicle. We do know that the Saturn's electrical system has to have been activated with the Saturn moving forward under its own propulsion to produce two recorded events on the download from the SDM (black box). The Saturn cannot be at rest and struck by another vehicle or heavy object. Again, this does not mean that Maura Murray was even operating the vehicle at the time the SDM recorded a 'Non-deployment and 'Deployment' event. It is also not likely that an injury would have occurred to any or all occupants; and if an injury did occur, it would not have been incapacitating.

As aforementioned, this analyst knows that there are often attempts to alter, destroy, remove, clean or cover-up evidence of a crime, but that traces, as well as gross physical evidence, may be left in many forms. Many of these items being minute and or microscopic in nature, thus requiring the use of additional specialized examination.

It is unknown as to what the speed of the Saturn was at the time of the collision due to the loss of communication between the SDM unit (black box) and the vehicle during the second impact. Based on the damage to which the Saturn underwent, it is the opinion of this analyst that the speed was extremely low with little or no possibility of injury. However, the two recorded events did occur within $2/100^{\text{th}}$ of a second. The second and larger of the events occurred after the Saturn had moved just a few feet from the first impact and commanded an airbag deployment. As a result, the Saturn has to have been moving at the time of the events as suggested by the SDM data.

The Saturn was also being operated with high beams activated and the operator was not wearing a seatbelt. During the impact(s), some sort of reddish liquid was sprayed up onto the roof and forward of the operator's position. The liquid also wept down the inner panel on the driver's door. The main area of aspersion on the roof was located in the area of the stellar break to the windshield. The stellar break was the result of an interior force projecting outward. There was no evidence of any biological fluid or hair fiber/root embedded in the break. Could the operator's upper hand struck the windshield with some sort of liquid container causing the break?



Two areas of a blackish/brownish smear were also located on the driver's side 'A' pillar post adjacent to the stellar break and the second smear or print was located on the arm rest of the driver's door. Without additional specialized examination by qualified technicians, its source or any other foreign matter found within or upon the Saturn will be unknown.

For Parkka Collision Consultants, Inc.



Daniel James Parkka
Actar 760 / Collision Reconstructionist

