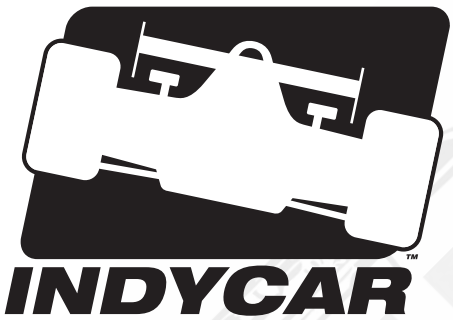


2011 Las Vegas Accident Investigation

December 15, 2011

Introduction

The IZOD IndyCar Series (hereinafter, "IndyCar Series") held its final race of the 2011 season on October 16, 2011 at the Las Vegas Motor Speedway. On lap 11 of the 200 lap event, an accident occurred that tragically resulted in the death of driver Dan Wheldon. INDYCAR has undertaken an investigation that includes the compiling of all available data to better understand the dynamics of the accident, the performance of the race cars in the accident, and the causes of Dan's non-survivable injuries. This report is to document and summarize the facts ascertained in this analysis of the data and information obtained and to make some observations as to ongoing racing issues. As past, current and future experience is cumulative, these observations will be a part of a continuous process to improve racing so that it is both competitive and as safe as possible. INDYCAR is grateful for the extensive cooperation of each of the drivers and teams that participated in the event, the Las Vegas Motor Speedway, emergency personnel, and the Clark County Office of the Coroner/Medical Examiner.

Historical Background - INDYCAR[1]

Founded in 1994, Indy Racing League, LLC d/b/a INDYCAR ("INDYCAR") is based in Indianapolis, Indiana, is a member club of the Automobile Competition Committee of the United States Federation International de l 'Automobile ("ACCUS-FIA"), and serves as the sanctioning body for IndyCar Series, Firestone Indy Lights (hereinafter, "Indy Lights"), The Star Mazda Championship presented by Goodyear, and the Cooper Tires Presents the USF2000 National Championship powered by Mazda. On February 22, 2008, the IndyCar Series and Champ Car World Series unified under the IndyCar Series banner.

Historical Background - Las Vegas Motor Speedway

As originally built in 1996, the Las Vegas Motor Speedway was a 1 ½ mile oval with banking of 12 degrees and traditional configurations. Between 1996 and 2000, INDYCAR hosted one race each year[2] at Las Vegas Motor Speedway by and through its premier racing series[3]. The Champ Car World Series also conducted events at Las Vegas Motor Speedway.

In 1998, Las Vegas Motor Speedway began hosting various stock car racing events sanctioned by NASCAR. That same year, Las Vegas Motor Speedway was purchased by Speedway Motorsports, Inc. ("SMI"), and in 2006 SMI began an extensive reconstruction of Las Vegas Motor Speedway. This redesign included constructing a new media center and garage area, reconfiguring the pit lane and its entry location, narrowing the track width, repaving all track surfaces, and modifying the track banking from 12 degrees to progressive banking with the front straight 9 degrees, back straight 9 degrees, and each turn 20 degrees. In 2010, INDYCAR

[1] A more detailed INDYCAR history appears in the 2011 INDYCAR Media Guide.
[2] September 26, 1999; April 22, 2000. In 1996-97 and 1998, the event was the season-finale.
[3] During this time, INDYCAR's premier series was named for series title sponsors and known as Indy Racing Northern Lights Series and Pep Boys Indy Racing League, respectively.

and SMI began negotiations into the possible return of INDYCAR races to Las Vegas Motor Speedway. INDYCAR and SMI reached an agreement whereby the IndyCar Series and Indy Lights would compete at Las Vegas Motor Speedway. On February 22, 2011, INDYCAR and Las Vegas Motor Speedway announced that a race would be held on October 16, 2011.

Inspections and On-Track Testing

As customary protocol in preparation for a new racing event, INDYCAR conducts a series of on-site inspections and an on-track test to confirm the compatibility of INDYCAR race cars to a race track. The inspections and test include a review of various facility infrastructure areas such as track surface, fencing, barriers, pit lane, garages, medical center, technical inspection, fuel servicing, timing/scoring lines, media, and race control.

With regard to Las Vegas Motor Speedway, various track inspections occurred over the course of several months. The initial inspection occurred the first week of November, 2010 and was conducted by INDYCAR Officials Brian Barnhart, President of Competition and Operations Division, and Kevin Blanch, Technical Director, in the presence of Las Vegas Motor Speedway representatives.

The compatibility and performance testing occurred on November 15, 2010. The test included 2 race car/driver combinations selected by INDYCAR and Firestone. One race car was driven by Ryan Briscoe of Team Penske, and the second race car was driven by Scott Dixon of Target Chip Ganassi Racing. Over the course of the 2-day test, the 2 race cars completed a total of 400 laps, and the top lap speed was 214.456 mph.[4] This test was followed by private testing at Las Vegas Motor Speedway as individual teams prepared for the race.

Early in the week of the race and on each day of the event, INDYCAR conducted race-ready inspections. During the event and more specifically, the race weekend, IndyCar Series race cars completed a total of 2910 laps in practice and qualifications by the end of the day on Friday, October 14, 2011. Through all of these laps, the race cars were monitored by 3-time Indianapolis 500 Mile Race winner and INDYCAR Driver Coach Johnny Rutherford, INDYCAR official observers, and the INDYCAR race control/operations team. In all such cases, the race cars performed as anticipated with no unusual mechanical aspects or performance problems.[5]

[4] Scott Dixon completed 239 laps and posted a best speed of 214.456 mph. Ryan Briscoe completed 161 laps and posted a best speed of 214.201 mph.

[5] The only incident was IndyCar Series driver James Jakes' involvement in a single race car crash during a practice session on Thursday, October 13, 2011.

Entries

The 2011 IndyCar Series race at Las Vegas Motor Speedway included 34 entries. As was the case at all other 2011 IndyCar Series events, all entries participated with the same fundamental Dallara chassis[6], Honda engines[7], and Firestone tires[8].

Driver Qualifications

The 2011 IndyCar Series event at Las Vegas Motor Speedway included a total of 34 drivers. Every driver in the starting field was properly approved by INDYCAR, licensed by ACCUS-FIA, and in good standing. Pursuant to Rule 4.2(B)(2), licensing requirements include but are not limited to the following:

> ***Eligibility***
>
> *"An applicant must have sufficient competitive driving ability and experience"*
>
> *"INDYCAR's determination as to ability will take into account all such factors as INDYCAR deems relevant. The criteria taken into account by INDYCAR are listed below. The criteria are subject to change at any time….*
>
> *INDYCAR may require the applicant to provide:*
>
> > *A current resume containing a complete history of the applicant's competition to date and demonstrating the applicant's ability to properly handle the Car;*
> >
> > *A letter of recommendation from the race director of the series in which the driver last completed; and*
> >
> > *Such other information as INDYCAR may request.*
>
> ***Medical Information –*** *The applicant must provide the medical information required by INDYCAR and must successfully complete any INDYCAR-prescribed physical and psychological examinations, which may include without limitation eye, neurological and substance abuse screening and/or testing*[9]*."*

Resumes of drivers entering the Las Vegas Motor Speedway IndyCar Series event are attached as Exhibit A. All drivers had prior experience in the IndyCar Series and/or other racing series. Of particular note, no driver was participating in his/her first IndyCar Series race event at

[6] The current Dallara chassis configuration was introduced in 2003.

[7] The Honda engine configuration was originally introduced in 2003 as one of 3 engine manufacturers along with Toyota and Chevy; Honda became the sole supplier in 2006 when the other 2 manufacturers ceased participating in the IndyCar Series.

[8] Currently, the Firestone Firehawk branded racing tires are used in both series.

[9] All of the drivers are subject to annual and random substance abuse testing.

Las Vegas Motor Speedway. In addition, 5 drivers had previously won the Indianapolis 500 Mile Race at least one time.[10]

Team Qualifications

The 34 race car/driver combinations participating in the IndyCar Series event at Las Vegas Motor Speedway were entered by 17 teams. Because the Las Vegas Motor Speedway race was the final event of the racing season and with a new chassis/engine equipment formula being introduced in 2012, existing teams were participating with additional race cars in the event.

Every team in the starting field was properly approved by INDYCAR, licensed by ACCUS-FIA, and in good standing. Each of the teams had participated in a previous 2011 IndyCar Series event.[11] In fact, every team had participated in the Indianapolis 500 Mile Race in which Dan was the winning driver.

Starting Field

The maximum size of the starting field for a race event is determined by numerous factors as INDYCAR determines appropriate.[12] This includes without limitation event promoter requirements[13] and venue specific characteristics. Of the venue specific characteristics, a primary consideration has been pit lane space because of a minimum pit box dimension required to accommodate the turning radius of the race cars. With IndyCar Series race cars being 15 feet long, 34 race cars permitted an acceptable pit box dimension of 38 feet per race car at Las Vegas Motor Speedway.[14] Another consideration is the racing surface itself. With Las Vegas Motor Speedway being a 1 ½ mile oval, 34 race cars permitted 233 feet per race car.[15] Please see further discussion regarding size of starting field, below.

[10] The Indianapolis 500 Mile Race winning drivers included Helio Castroneves, Scott Dixon, Dario Franchitti, Buddy Rice and Dan Wheldon.

[11] Additional entries included one entry for Bryan Herta Autosport, the 2011 Indianapolis 500 Mile Race winning team, and 2 entries for Sarah Fisher Racing, the winning team from the Kentucky Speedway race that immediately preceded the Las Vegas Motor Speedway race.

[12] There are no race car density guidelines in oval racing. The only guideline/standard known to exist are FIA and Sports Car Club of America standards for road courses and while each would permit 34 race cars on a track the length of the Las Vegas Motor Speedway, these guidelines are inapplicable.

[13] At "fly away" races such as Brazil and Japan, travel logistics limits the number of entries to a maximum of 26.

[14] INDYCAR's minimum acceptable pit box length dimension at any race is 35 feet.

[15] If evenly spaced on the track, 218 feet would separate each race car. While not a standard for open-wheel racing, it is noted that NASCAR Camping World Truck Series race held on October 15, 2011 at Las Vegas Motor Speedway featured 34 vehicles. Likewise, the NASCAR Sprint Cup racing series race held on March 6, 2011 had a starting field of 43 vehicles at Las Vegas Motor Speedway.

Promotion

INDYCAR offered Dan Wheldon, as defending winner of the 2011 Indianapolis 500 Mile Race, the opportunity to participate in the Go Daddy INDYCAR Challenge at Las Vegas Motor Speedway (hereinafter, "INDYCAR Challenge"). The INDYCAR Challenge provided Dan with an opportunity to earn $2.5 million for himself and $2.5 million for a fan selected through a sweepstakes if Dan was the official winner of the IndyCar Series race at Las Vegas Motor Speedway on October 16, 2011. The official promotional rules for the INDYCAR Challenge are attached (Exhibit B).

Event Schedule

The October 16th race weekend at Las Vegas Motor Speedway also included race events for INDYCAR's Indy Lights[16] series and the NASCAR Camping World Truck Series. (See Exhibit C).

The official INDYCAR event schedule is attached. While it included the traditional 3 days of on-track activity for a new venue, no on-track activity was scheduled on Saturday to permit entrants the opportunity to participate in promotional activities related to the event and accommodate support series activities at the track.

[16] The Indy Lights race occurred earlier in the day on Sunday, October 16, 2011.

Overview of Investigation

INDYCAR reviewed the accident as a whole with a particular emphasis on the #77 racecar. INDYCAR determined the following 15 race car/driver combinations were involved to some degree in the accident:

#4 JR Hildebrand	#30 Pippa Mann
#8 Paul Tracy	#44 Buddy Rice
#12 Will Power	#57 Tomas Scheckter
#14 Vitor Meira	#59 EJ Viso
#15 Jay Howard	#77 Dan Wheldon
#17 Wade Cunningham	#83 Charlie Kimball
#19 Alex Lloyd	#06 James Hinchcliffe
#22 Townsend Bell	

As part of INDYCAR's established post-accident inspection process, INDYCAR immediately impounded the #77 race car and #30 race car[17]. After INDYCAR completed its review of the #30 race car, INDYCAR released the race car to the team, Rahal Letterman Racing, LLC. The #77 race car remained impounded and under the control, custody and possession of Las Vegas Motor Speedway security personnel until approximately 6 p.m. when Derek M. Dubasik, Coroner Investigator, confirmed the Clark County Office of the Coroner/Medical Examiner no longer required access to #77 race car. At that time, INDYCAR loaded the #77 race car onto one of the INDYCAR trailers and transported it to Indianapolis, Indiana where it is currently stored in a secure setting. The following #77 personal safety equipment was transported with Dan from the track to the coroner's office: helmet, HANS device, and drivers uniform. On Monday, October 17th, the Clark County Coroner released the equipment to INDYCAR[18]. It was

[17] Both race cars were secured by Las Vegas Motor Speedway personnel in a Las Vegas Motor Speedway building.

[18] The equipment was released to INDYCAR's Director of Security, Charles Burns. Mr. Burns was in possession of this equipment until it was secured at the INDYCAR offices in Indianapolis, Indiana.

immediately transported to Indianapolis, Indiana where it is currently stored in a secure setting.

With the assistance of legal counsel, a third party investigation review was initiated by the retention of nationally respected experts, Michael Pepe and Stuart Nightenhelser[19] of Wolf Technical Services. They have provided independent assurance that the investigation protocol, the evidence examined and reviewed, and the conclusions reached are consistent and appropriate to standard scientific and engineering investigation methods. Mr. Pepe's and Mr. Nightenhelser's resumes are attached as Exhibit D.

Investigation Protocol

The accident investigation was undertaken using standard scientific and engineering protocols. The typical steps are provided in Exhibit E. Specifically, the protocol is to initially define the problem or question, collect data, analyze the data and thereafter develop and evaluate the initial findings and opinions. This typically involves an iterative process requiring additional data collection and data analysis as the opinions and the initial problem are refined. This process proceeds until the data has been thoroughly reviewed. The protocol also recognizes that changes in the findings may occur as new data becomes available. In this instance, the question was to understand the events and circumstances surrounding the Las Vegas accident of October 16th.

Materials and Data Reviewed

INDYCAR has analyzed data, video, still photographs, and the physical evidence to better understand the dynamics of the accident and to document what occurred, including the performance of the chassis and the race track during the crash. Members of the investigation team have also had interviews with driver participants and team members and participated in meetings with drivers, team representatives, and team owners.

INDYCAR utilized all available data[20], including data from the accident data recorders[21] carried on-board each race car involved in the crash, on-board data acquisition system[22] from the teams themselves, timing and scoring data from the

[19] Mr. Pepe and Mr. Nightenhelser have prior experience with INDYCAR open-wheel racing vehicles from their involvement in the determination of the cause of the Tony Renna accident during a private test at Indianapolis Motor Speedway on October 22, 2003.

[20] As noted later, some on-board data acquisition system information was not available.

[21] The accident data recorder is required by Rule 14.5(D) and records the acceleration forces of the car and drivers ear pieces.

[22] The on-board data acquisition system records all chassis related data and limited engine functions.

INDYCAR timing system, reports filed by track safety personnel, technical personnel, race control personnel, and medical personnel, and information provided by the Chief Medical Officer of the Las Vegas Motor Speedway and the Clark County Coroner. The impounded car #77 has been thoroughly examined. There has also been a thorough examination of the helmet worn by Dan Wheldon.

Race Conditions and Track Preparation

Race day was a clear, sunny and mild day for race conditions, and the weather was not a factor in the racing incident. The track was well prepared and the SAFER Barrier was in a proper and approved configuration for an IndyCar Series race.

Qualifications and Starting Positions

Qualifications took place on Friday, October 14, 2011. The competitors started the race on October 16, 2011 in their respective qualifying positions with the exception of 4 race cars that were moved to the rear of the field. The #59 (E.J. Viso) was not permitted to make a qualification attempt as part of a penalty issued earlier in the event weekend. The #18 (James Jakes) did not make a qualification attempt due to an accident in practice and the need to switch to a backup race car for the race. The #44 (Buddy Rice) had his qualification attempt disallowed because of an infraction of running below the white line at the bottom of the track. As a result, each of these 3 race cars was moved to the rear of the starting field in accordance with IndyCar Series rules. The #77 (Dan Wheldon) qualified in 28th position, but was moved to the 34th starting position as part of the INDYCAR Challenge.

Race Start

The race began at its scheduled time and proceeded as anticipated through the first 10 laps. As discussed in more detail below, the first 10 laps were characterized by pack racing. At the conclusion of the 10th lap, all 34 race cars remained on the lead lap and the physical distance between the leader and the 34th place race car covered approximately 1/5 of the track and was an interval of 4.2 seconds.

Impact Between #06 (Hinchcliffe) and #17 (Cunningham)

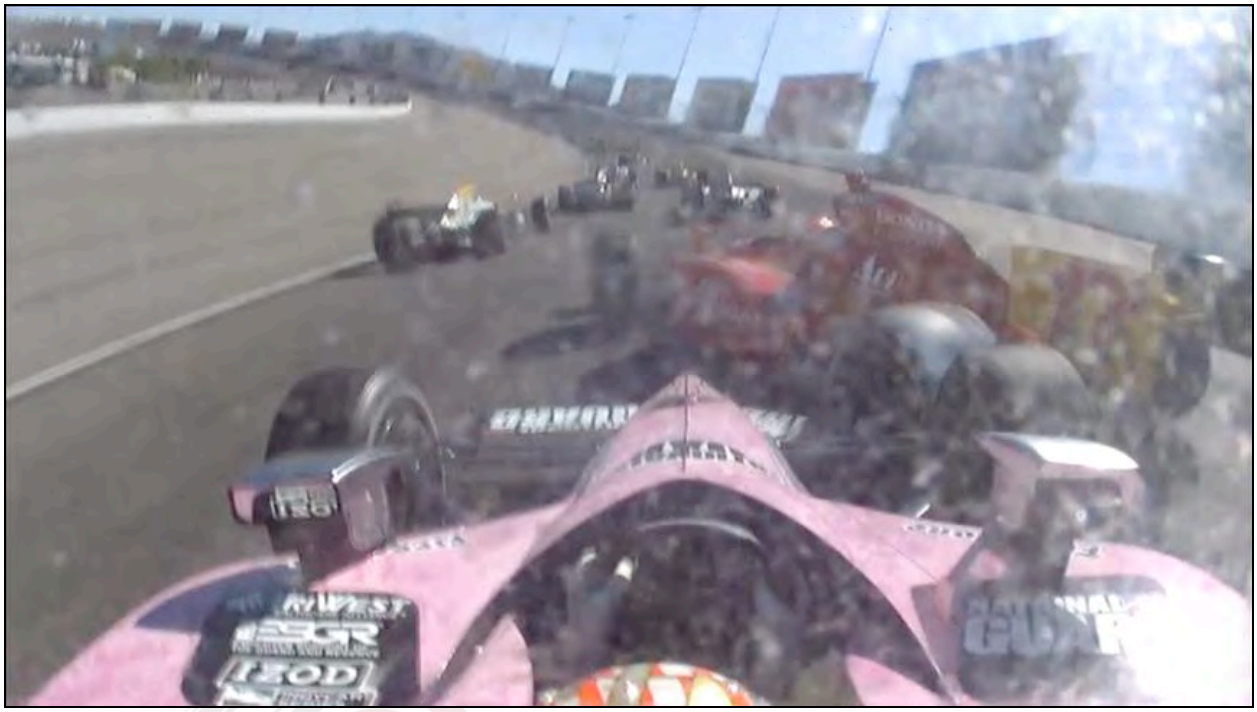
A multi-car accident involving 15 identifiable race cars occurred in turns 1 and 2 of Las Vegas Motor Speedway on lap 11 of the scheduled 200 lap event. The accident began as the result of contact between the #06 (James Hinchcliffe) and the #17 (Wade Cunningham) as they entered the first turn. The #17 spun toward the infield while running in 12th position. This initial contact was an occurrence common to racing as was each subsequent contact.

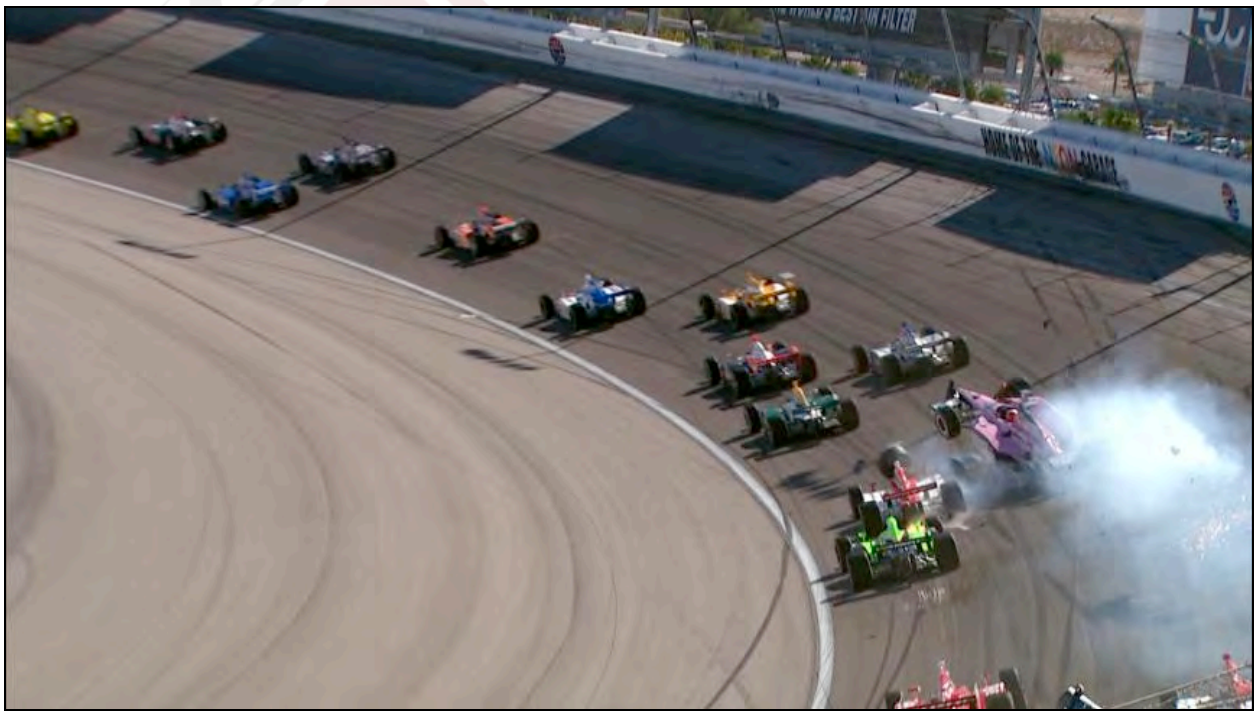
Impact Among #4 (Hildebrand), #17 (Cunningham) and #15 (Howard)

The right front of the #4 (J. R. Hildebrand) made contact with the left rear of the #17, triggering the multi race car crash. The #4 climbed the left rear of the #17 and became airborne for a brief period of time. The #15 (Jay Howard) made contact with the #17 and then the #15 slid up the track and hit the outside wall with the right side of his race car. The #17 made contact with the #22 (Townsend Bell). The #22 spun and hit the wall with his left side. The #4 came back down almost on top of the #17 and both of them hit the outside wall almost as one with their right sides.

The #4 was traveling at 215 mph in the traffic prior to the accident. Approximately 1.6 seconds before making contact with the #17, the #4 reduced throttle from 100% to 15%. The brakes were applied by the driver of #4 approximately 0.4 of a second before impact with the #17. The speed of the #4 was reduced from 215 mph to

201 mph at the time of the impact. The only available information is from the on-board data acquisition system for the #4 as the accident data recorder did not function properly during the accident due to damage sustained in the accident. The #4 was airborne for about 125 feet, with all 4 tires off the track. The attitude of the race car was level with the track, with the front slightly higher than the back end of the race car. The driver of race car #4 was transported to the hospital and kept overnight for observation while suffering from a bruised sternum. He was released the next day.





Impact Among #14 (Meira), #59 (Viso), #83 (Kimball) and #77 (Wheldon)

The #77 (Dan Wheldon) had achieved a maximum speed of 224 mph on the front straightaway and had achieved the 24th position in the race. As the chain reaction of the crash increased, and more race cars became involved, the #77 stayed low on the race track consistent with an attempt to avoid the race cars crashing up against the outside retaining wall. Several race cars were in a cluster directly in front of the #77, including the #9 (Scott Dixon), the #10 (Dario Franchitti), the #14 (Vitor Meira), the #59 (E J Viso) and the #83 (Charlie Kimball). As the #14 began to spin toward the infield, the #14 made contact with the #59 and the #83. This gathering of race cars is directly in front of the #77 and effectively blocked the path of the #77, which was about 2 race car lengths behind. Approximately 3.8 seconds before impact, the driver of the #77 reduced throttle to about 55%. Approximately one second later, the throttle was reduced even further, down to less than 10% and the throttle remained in this position until contact. The driver of the #77 applied the brakes for approximately 2.4 seconds prior to contact, and had decelerated to a speed of 165 mph as the right front of the #77 made contact with the left rear of the #83. The impact with the #77 and the #83 registered 24G longitudinal and -23G vertical on the accident data recorder of the #77. The #77 became airborne with a nose upward vertical orientation, and began to roll to the right. The right rear of the #77 made contact with the racing surface and the chassis then traveled rearward first, in an upright position toward the SAFER Barrier in turn 2. The #77 traveled in a nose up, semi-airborne state for approximately 325 feet.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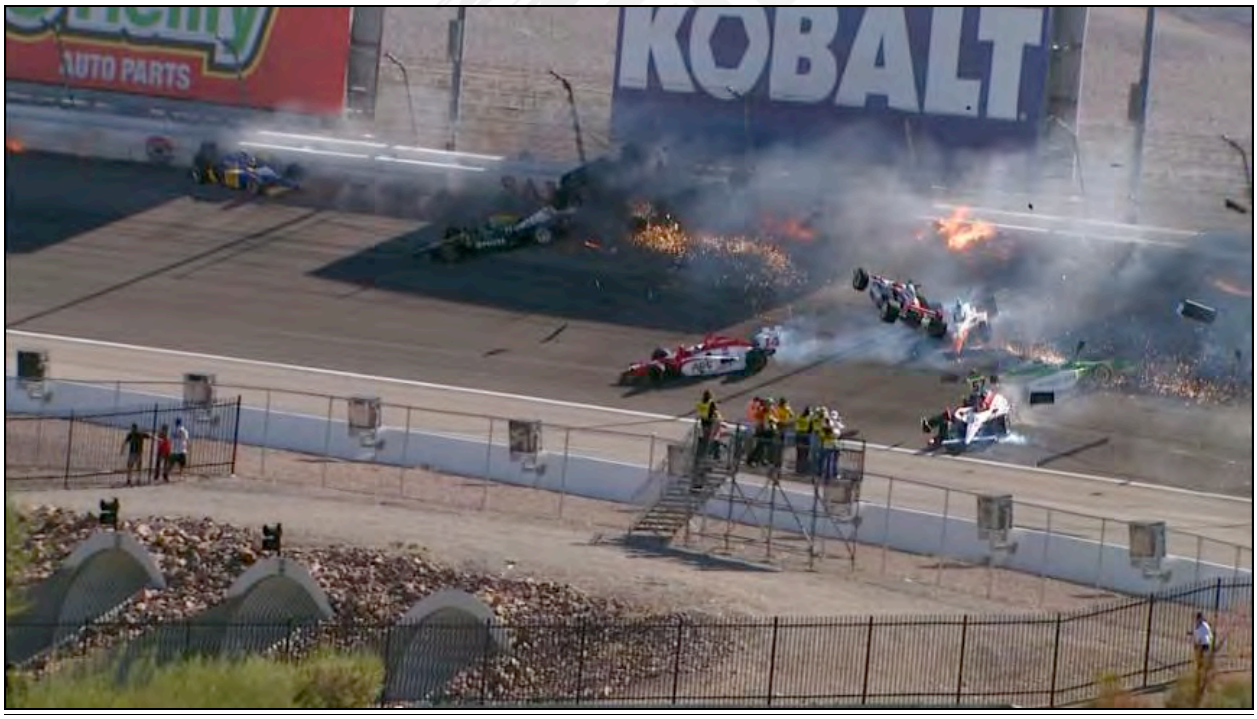
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Impact Between #77 and Fence Post

The chassis of the #77 was then in a position with the rear of the race car on top of the SAFER Barrier and the nose lower than the rear of the race car, and slanted across the left rear of the #59. The chassis of the #77 then rotated so it was traveling parallel to the fencing along the top of the permanent wall behind the SAFER Barrier. The chassis of the #77 was oriented with the body of the race car parallel to the fence with the nose pointing in race direction, in an inverted posture so the cockpit was open toward the fencing. The chassis of the #77 impacted a post along the right side of the tub, created a deep defect in the tub that extended from the pedal bulkhead along the upper border of the tub through the cockpit. This resulted in angular deformation of the roll hoop that was sheared off the tub from right to left. As the race car passed by, the pole intruded into the cockpit and made contact with the driver's helmeted head. This was evidenced by damage to the right side of the helmet at the lower interface surface of the helmet and visor. The impact damaged the structure of the face portion, or chin bar, of the helmet and dislodged the visor from its anchor point on the right temple. It resulted in fracturing of the helmet on the face portion as well as damage to the attachment points of the visor on the right side. This impact produced non-survivable blunt force trauma injuries to Dan's head. Dan's injury was limited to this head injury.

Head Forces to Wheldon Resulting from Impacts

Dan appeared to suffer 2 distinct head forces during the accident. The first significant force for Dan's head took place approximately 1.7 seconds after the impact with the #83 race car. There is no video that correlated to Dan's head actually hitting anything in the first force. This force to the chassis of -30Gs lateral, 47Gs longitudinal, and -25Gs vertical is likely the result of the reaction of the right rear of the #77 experiencing contact with the racing surface and #59. This is typical in other accidents where no other race cars or debris are present. In this first force, the head experienced forces of approximately 50Gs rearward, 100Gs lateral, as well as 100Gs vertical. Using this information, a Head Injury Criteria (HIC) number was calculated and was well below 1000. A HIC number below 1000 indicated it is a level low enough that normally does not produce any injury.

The second head force was a physical impact, and took place 0.4 seconds after the first force, and 2.1 seconds after #77 made contact with #83. There was good video correlation to the steering bulkhead, helmet, and roll bar hitting the pole supporting the catch fence on this time line. This correlation was achieved by setting a datum on the video at the point where the #77 and the #83 race cars made contact. Then, having used the time in the crash box data, each of the impacts were identified on the video. Prior to the driver's earplug sensors becoming unplugged in the second impact, his head experienced longitudinal forces of approximately -250Gs which indicated a frontal impact, and -200Gs vertical which indicated a hit from the bottom, and 100Gs lateral to the right. The negative longitudinal spikes indicated frontal hits to the head. The polarities of the longitudinal and vertical forces indicated a frontal hit from the bottom toward the top. The earplug sensors appeared to come unplugged during the second head hit. This has been seen in other accidents when the driver moved far enough that the mating connector located at the rear of the tub reached the limit of its length.

#77 Chassis Inspection

The inspection of the chassis of the #77 found an intrusion of the right front pull rod of the suspension impaled through the top of the tub down toward the floor and between the legs of the driver. This suspension was cut away by the track safety team performing the extrication of the driver of the #77. The suspension did not make contact with the driver, or penetrate his uniform. This requires further investigation as in the 9 years of this chassis being used in race competition, this is the first known instance of an intrusion of this type. The side intrusion panels performed as designed. The point of contact with the pole supporting the catch fence created significant damage to the tub, beginning at the pedal bulkhead. There was a deep void, extended along the upper border on the right side of the tub toward the steering bulkhead, and continued into the cockpit area. This void also damaged the steering column and shaft, temporarily binding the lower extremities of the driver. The roll bar and the entire top of the tub at the fuel cell compartment were sheared off. All of the detachable structures were stripped away, including all 4 wheel and suspension components. The head surround horseshoe padding was broken into 3 large sections with signs of significant impact from the helmet. The driver's restraints and seat belts were intact and functioning properly. While there was significant damage, the safety cell or tub generally performed as designed and gave the driver an opportunity to survive this accident. Inspection did not reveal the existence of pull back brakes (as further discussed below) or any set up abnormalities. There was no evidence of vehicle mechanical or structural issues contributing to this accident.

Impact Among #57 (Scheckter), #8 (Tracy), #30 (Mann), and #19 (Lloyd)

The #57 (Tomas Scheckter) was high on the track and started to come down to avoid the race cars in the wall. The #8 (Paul Tracy) made contact with his right front into the left rear of the #57 and caused the #57 to spin toward the infield. The #30 (Pippa Mann) was following the #19 (Alex Lloyd) and tried to avoid hitting the #19 from the rear by going to the high side. The left front wing of #30 made contact with the right rear of the #19 as #30 attempted to pass on the right. The right front of #30 then made contact with the left rear and left side of the #8 which caused the #30 to become airborne. As the #30 went airborne, it rotated and rolled to the left. After it traveled approximately 190 feet in the air, the race car was now upside down. The #30 traveled another 50 feet and began to go nose down and toward the outside wall, still upside down. The #30 landed back on the track still upside down and hit the outside wall with the left side of the race car, with the nose pointed in race direction. The #30 remained upside down as it slides down the track and came to a rest on the backstretch.

The #30 had achieved a speed of 224 mph on the front straight and reduced throttle from 100% to approximately 20% approximately 2 seconds before making contact with the #8. The brakes were applied approximately 0.8 of a second before impact and the speed was reduced from 224 mph to 196 mph at the point of impact. The driver of race car #30, Pippa Mann, was transported to the hospital and kept overnight.

She suffered burns to the “pinky” finger on her right hand that has since required surgery. She was released the next day.

Impact Between #12 (Power) and #19 (Lloyd)

The #12 (Will Power) made contact with the nose of his race car into the left rear tire of the #19 (Alex Lloyd) which caused the #12 to become airborne. The #12 went vertical with a nose up attitude for a brief period of time before the race car became horizontal and parallel to the track surface. As the #12 was airborne, it began to turn nose toward the outside wall and began to roll with the right side going down first. The right rear tire/wheel touched the track first, approximately 315 feet after becoming airborne. The race car was on its right side, with the nose toward the outside wall at this point. The #12 continued to spin to the right, faced opposite of race direction. The #12 touched down briefly on the track for about 80 feet before it became slightly airborne again. It then made contact with the left side into the outside wall, and into the #4. The #12 continued to slide down the track until it stopped down the backstretch.

The #12 had achieved a speed of 224 mph on the front straight. Approximately 4.5 seconds before impact, the throttle was reduced from 100% to 5%. The throttle went back up briefly to about 55% for about one second before it was reduced to less than 10% again. The brakes were applied approximately 1.6 seconds before impact with the #19, and the speed was reduced from 224 mph to 162 mph at impact.

During the accident, the #12 experienced forces of -112Gs vertical when the chassis landed back on the track surface. Based upon these numbers, this was most likely the point when Power suffered his injury. Power was found to have a compression fracture in his back. He was fitted with a brace and has since been cleared to resume driving.

Summary of the Impact Sequence

The above analysis of the sequence of dynamic events revealed no extraordinary car-interactions or interactions that were specific to this incident that have not been encountered in other races. The impact with the fence that resulted in Dan's non-survivable injuries involved circumstances of location, direction, and orientation that were the chance result of the previous interactions.

Track Safety/Medical Response

The response to the accident by INDYCAR's Holmatro Safety Team (hereinafter, "Safety Team") and the Las Vegas fire crew was rapid and decisive. All drivers were out of their race cars in a rapid and controlled manner, and assisted as needed. All of the fires were extinguished rapidly and without incident. It was noted that the fires were primarily oil related and did not involve the fuel load of the race cars. Such a result is consistent with proper functioning of the car fuel safety systems. The drivers that required extrication were removed from their race cars in a timely fashion. Extrication of the driver of the #77 was temporarily impeded by entrapment of the lower extremities. This situation was dealt with without interruption of life support measures. The Safety Team was on the scene with the #77 within 35 seconds of the initial impact in the multi race car crash, and the driver was extricated from the race car within 4 minutes on a long backboard and placed in the ambulance. The driver was transported by the ambulance from the race track to the infield care center and by air medical helicopter from the infield care center to the local hospital. Despite cardiopulmonary resuscitation ("CPR") efforts being performed on the helicopter, the driver was pronounced dead at the local hospital.

Damage to Track and Racing Equipment

The SAFER Barrier and fencing system sustained minor damage during the accident. All of the safety systems, including the on-board track condition radio and yellow light system, the track caution lights[23], as well as the SAFER Barrier and fence system, appear to have functioned as designed during the accident. Repairs were made during the red flag condition and the track surface, walls, and fencing were in a condition ready to resume the race after an approximate one hour delay. The decision to end racing occurred approximately 45 minutes later.

As a result of the accident, at least 13 race cars were either beyond repair or would not have been repairable in time for a restart of the race.

Suitability of IndyCar Series Race Cars to High-Banked Ovals

INDYCAR assembled a technical committee to focus on the aerodynamic and mechanical considerations related to 1 ½ mile high-banked ovals.[24] The first meeting occurred at 12:00 p.m. on November 18, 2011 at the Indianapolis Motor Speedway Pagoda. The chairman of the committee is Will Phillips, INDYCAR Vice President, Technology. The attendees are IndyCar Series team engineers. In an effort to be as inclusive as possible and take advantage of the collective knowledge in the paddock, the committee members will serve on a rotational basis.[25] In addition, representatives from chassis automobile manufacturer Dallara were invited to attend.[26]

INDYCAR has determined that it would not be appropriate to frame its analysis of the suitability of IndyCar Series race cars to high-banked ovals by looking at all tracks of this classification as a general category. In other words, each high-banked oval has unique characteristics, and each should be considered individually. INDYCAR and CART/Champ Car have successfully conducted numerous races over numerous years on courses that meet the definition of high-banked ovals.[27]

[23] INDYCAR uses multiple systems to notify competitors of decisions regarding track conditions: track lights, race control frequency, track condition radio, and flags. Competitors shall react to the first notification they receive. The first indicator is a competitor's own visual identification of an accident.

[24] For purposes of this discussion, a high-bank oval is defined as a track with banking greater than 16 degrees.

[25] The participants in the first meeting were Craig Hampson, Bill Pappas, Allen McDonald, Julian Robertson, Tom Brown, Ron Ruzewski, Nick Snyder, and Alex Timmermans.

[26] At the initial meeting, Andrea Toso served as the representative on behalf of Dallara.

[27] INDYCAR has had extensive favorable experience at the Texas Motor Speedway whose banking is 24 degrees (greater than at Las Vegas Motor Speedway). Likewise,

Due in part to the geometry of the track[28], each track has its own unique routes around the circuit that optimize speed and handling capabilities. These routes are considered "racing grooves" and create restrictions on where a driver can place the race car on the track to remain competitive. Most tracks have limited numbers of racing grooves. For example, it is not unusual for ovals to have only one or 2 racing grooves, including the Indianapolis Motor Speedway. Racing grooves not only restrict drivers' naturally aggressive racing behavior but make the location of other competitors' cars on the race track predictable.

The geometry of the track also requires adjustments to the race car to achieve effective and safer competition. This is commonly referred to as the "race car set up[29]" and is typically different at each race track. INDYCAR dictates the parameters for the race car set up at each event. Within those parameters, teams attempt to achieve set ups that give their drivers more or expanded racing groove options.

Examination of the video of the October 16th event demonstrates normal "pack racing[30]" that is common of high-banked ovals. However, what was also witnessed was nearly unlimited movement on the track surface under race conditions. This capability of relative free movement on the track without the restraints of natural racing grooves must be attributed to track geometry beyond banking. Whatever the reason, the combination of track geometry factors allowed for relatively unrestricted movement within the racing pack not previously experienced. This movement not only allowed for increased probability for car to car contact but made it more difficult for drivers to predict the movement of other drivers. As a result, the opportunity for this incident was increased. While this incident could have occurred at any track at any time, the dynamic of the current car and the overall track geometry at Las Vegas Motor Speedway under race conditions appears to have been causal to this incident.

In 2012, the IndyCar Series introduces a new car design, and INDYCAR has concluded that prior to racing at Las Vegas Motor Speedway, further testing is appropriate to evaluate the dynamic between the new race car and the specific geometry of this track.

Michigan International Speedway is a high-banked oval with 18 degree banking in which open-wheel race cars have successfully competed since the late 1960s.

[28] These aspects of track geometry would include the combination of the length and width of the track; width, length and radius of the turns; length and configuration of the transition between the straightaways and turns; progression of banking; track surface texture.

[29] Bulletin 2011-03 was issued on February 23, 2011 and detailed the technical specification for race cars at Las Vegas Motor Speedway.

[30] Pack racing is a phenomenon seen in all forms of auto racing in which cars cannot achieve significant separation from each other on the race track. The result of the lack of separation is that the cars move around the race track in a "pack" during portions of a race, most typically at the beginning of a race and after re-starts.

Determination of Starting Field Size for Specific Tracks

As previously noted above, starting field size is determined based upon a number of factors such as length and width of the race track, travel considerations, pit space capability, and tradition (such as the 33 car field at Indianapolis). Based upon these factors, it was decided that Las Vegas Motor Speedway could accommodate a 34 car starting field. The actual occurrence of the October 16th incident by itself does not change this conclusion. This incident and the consequences could have occurred with any size starting field at any track. However, the previously discussed experience with freedom of movement during the race does create questions of whether an INDYCAR starting field of any size is appropriate in the future. This will be a topic for further review and investigation based upon the 2012 car dynamics.

Effect of Promotion

While the INDYCAR Challenge rules required Dan's car to start at the rear of the race field, almost every IndyCar Series event has one or more participants who either qualified higher or who were capable of qualifying higher that start at the rear of the racing field due to qualification difficulties, penalties, or the commonly made decision of their team to make material changes to their race car after qualifications. No conduct by Dan Wheldon's driving of car #77 during the course of the race including lap 11 was found to have contributed to the cause of the racing incident or its consequences. Furthermore, no conduct by any drivers on lap 11 was found to be inconsistent with expected driving during the race. The initial contact was consistent with racing and the chain of events that followed was the result of chance interactions. The promotion was not causal to the incident.

Preferred Fencing Configuration for Tracks Hosting INDYCAR Events

The Las Vegas Motor Speedway fencing is typical of many race tracks and consists of 4 - 4.5 inch diameter poles mounted and secured to the backside of the wall and properly anchored. The fence is then created by cables attached to the trackside of the poles and fence fabric to the outside. The fencing is approximately 14 feet high.

The fencing (including post, cables and fabric) at the Las Vegas Motor Speedway was found to have performed to all expectation in retaining a race car from leaving the track.[31] The only change that would be preferred is for the fence fabric to be on the track side of the post rather its current configuration. While there is no evidence that placement of the fabric would have changed the consequences of this accident, there are accident scenarios that can be envisioned in which the fabric placement might have some significance. For that reason, the preferred fabric placement at any track hosting an INDYCAR event is on the trackside of the fence post.

[31] The primary purpose of the fence is to protect spectators.

While there has been a continuous focus on attempting to prevent race cars from making contact with track spectator fencing, it has continued and will continue to occur in every type of racing. INDYCAR recognizes that the positioning of a race car into the fencing is a matter of chance, and the position of the race car's entry into the fence is very material to the consequence of driver injury. The number of possible race car entry positions is infinite. In the case of this accident, the contact between car #77 and the fence allowed for the exact alignment of fence post entry into the driver cockpit. This accident and its consequences is another reminder of the risk associated with racing regardless of efforts to make it safer.

Preferred Manufacturer, Make and Model of Helmets for INDYCAR Drivers

There are currently multiple helmet choices for INDYCAR drivers involving 2 designs and multiple manufacturers. There is no current evidence that one type is preferred and should currently be mandated over another. Even given the known nature of the head injury to Dan, the choice of helmet was specifically found not to change the consequences as to this injury.

Equipment/Car Performance in the Accident

The race car being driven at the Las Vegas Motor Speedway has evolved into a race vehicle with an unmatched safety record in open wheel racing. The experience of this race car in serious accidents and with its drivers being able to avoid serious injury made Dan's death even more shocking. While the new race car design is expected to continue the safety and performance evolution, there was nothing found in the performance of any of the race cars participating that was a factor in causing this racing incident.

The only mechanical issue raised as to the race cars was by some drivers who had the belief that pull back brakes[32] may have been utilized on some race cars. While there is no evidence that lack of braking caused the accident or contributed to Dan's unsurvivable injury, the belief that pull back brakes were being used was investigated.

Pull back brakes are prohibited by the IndyCar Series rules and involve altering the position of the brake pads in a way that reduces pad contact to reduce friction on the wheel but at the cost of making the braking slightly less effective. While placement and nature of the alteration make enforcement of the rule against pull back brakes very difficult, the technical committee wants to look for better ways to enforce the existing rule or otherwise discourage their use. It is noted that pull back brakes tend to be a qualifying issue and not one that would be expected to exist in the race itself. However, with the report of driver concern as to the use of pull back brakes, specific attention was given to this issue.

[32] "Pull back brakes" is the common term for use of a device designed to push or pull back caliper pistons. Pull back brakes are prohibited by Rule 14.10(A)(2).

On-board data acquisition system information was used to investigate the issue. With the cooperation of the teams, INDYCAR collected the on-board data acquisition system of 12 of the 15 race cars involved. This on-board data acquisition system would be expected to show reduced braking capacity if pull back brakes existed. The on-board data acquisition system of the #77 race car showed that the front brakes performed as expected but showed minimal braking response by the rear brakes at the time of the accident. While it would be unusual to use pull back brakes in the rear but not the front, it is not possible to fully eliminate the possibility of front pull back brakes as well. The braking actions of the driver could have overcome the effect of front pull back brakes and masked the result in the on-board data acquisition system. However the effective speed reduction shown by #77 indicates that the braking was effective and is inconsistent with the use of pull back brakes or the more serious condition of brake failure. While this on-board data acquisition finding could be an indication of sensor failure, the sensors on the #77 appears to be fully functional during the warm up laps and the first 10 laps of racing. This suggests that the sensors were functional. Finally, the braking system of #77 was inspected in its damaged condition and did not show any evidence of pull back brakes. The on-board data acquisition finding on car number #77 brakes had no obvious cause. The team manager of #77 was consulted, and he has given assurances that pull back brakes were not utilized. He explained that the team had experienced similar on-board data acquisition findings on occasions prior to October 16th but as their driver was obtaining the braking level requested this was attributed by the team to their use of small caliper brakes.

Although INDYCAR has not established a basis for the on-board data acquisition finding, evidence as to braking response of the #77 reveals a reduction in speed consistent with other competitors; therefore, the braking system was not a causal factor in the accident.

Overall Conclusions

The accident was significant due to the number of race cars damaged, but more importantly due to the non-survivable injuries to Dan Wheldon. While several factors coincided to produce a “perfect storm,” none of them can be singled out as the sole cause of the accident. For this reason, it is impossible to determine with certainty that the result would have been any different if one or more of the factors did not exist.

INDYCAR is committed to safety. This report is an interim step to INDYCAR's on-going efforts to improve motorsports safety. INDYCAR will continue its efforts to reduce the risks of racing to all.

The 2012 racing season ushers in an era of a new IndyCar Series race car and the opportunity for unprecedented safety advancements. Dan Wheldon was instrumental in the testing and development of this new car and the safety innovations that it represents.

The thoughts, prayers and deepest condolences of INDYCAR and the open wheel racing community go out to Dan’s family.

Exhibit A

Driver Resumes

EXHIBIT B

INDYCAR CHALLENGE RULES

THE GO DADDY INDYCAR CHALLENGE

OFFICIAL RULES

NO PURCHASE IS NECESSARY TO ENTER OR WIN.
A PURCHASE WILL NOT IMPROVE YOUR CHANCES OF WINNING.

1. TWO WAYS TO ENTER:

   A. ONLINE: Beginning 12:00:01 AM (ET) on 9/14/11, visit www.IndyCarWorldChampionships.com and follow the on-screen instructions to complete the entry form and submit an entry into the Sweepstakes. Entries must be received by 11:59:59 PM (ET) on 10/6/11. A person can only use one email address to enter.

   B. VIA VERIZON WIRELESS ANDROID MOBILE APPLICATION: Beginning 12:00:01 AM (ET) on 9/14/11, if you have a Verizon Wireless Android smartphone, you can enter by downloading the IndyCar (IZOD IndyCar Series) mobile application ("app") from the Verizon Wireless Android Market. After you download and launch the app, you will be required to provide your first and last name, street address, zip code and date of birth (mm/yyyy) to enter the sweepstakes. Entries must be received by 11:59:59 PM (ET) on 10/6/11. A person can only use one Verizon Wireless Android smartphone to enter.

   Limit one entry per person throughout the duration of the promotion, regardless of method of entry. If more than one entry is received per person throughout the duration of the promotion, only the first entry received will be considered valid.

2. ELIGIBILITY: This promotion is open only to legal residents of the 48 United States (excluding Florida and New York) and the District of Columbia, who are of legal age of majority in their state of residence as of the last day of the month prior to the date of entry. Employees of INDYCAR, Verizon Wireless, Go Daddy.com, Inc., Vibes Media, LLC, D.L. Blair, Inc., ("Sweepstakes Entities"), their affiliates, subsidiaries, advertising, promotion and internet agencies and their immediate family members and/or those living in the same household of each are not eligible. All federal, state and local laws and regulations apply. Void in FL, NY and where prohibited by law.

3. RANDOM DRAWING: A random drawing will be conducted on or about 10/7/11 from among all eligible entries received, by D.L. Blair, Inc., an independent judging organization. Odds of winning will depend upon the number of eligible entries received. The potential Grand Prize winner will be contacted by telephone using the telephone number(s) associated with the selected entry. The administrator will make 3 attempts to contact the potential winner within an 8-hour time period on 10/7/11. No messages will be left. If the administrator is unable to reach the potential winner within this time period, he/she may be disqualified (without further notice) and an

alternate potential winner will be selected. Due to timing constraints, if a potential winner cannot be notified/verified in time to travel to Las Vegas on the dates specified below in Rule #4, winner will be awarded a trip to a Sponsor-specified INDYCAR race in 2012, in lieu of the trip to Las Vegas. The winner, however, will still be eligible for the Bonus Prize (described below in Rule #4).

4. AVAILABLE PRIZES & APPROXIMATE RETAIL VALUES:

   (1) Grand Prize – A 7-day/6-night trip for 2 to Las Vegas, NV, departing 10/12/11 and returning 10/18/11, to attend the IZOD IndyCar Series World Championship Race scheduled to take place on 10/16/11. Prize includes round-trip coach air transportation from major airport nearest winner's home, 6 nights' hotel accommodations (one room/double occupancy), VIP passes for winner and guest to various INDYCAR events while in Las Vegas. (Maximum ARV of trip: $8,850). Winner will also receive a Motorola DROID Bionic XT875 smartphone, a 32 GB Samsung 4GLTE Galaxy Tablet 10.1 and a $150 Verizon Wireless gift card (terms and conditions on gift card apply) (Total ARV of smartphone, tablet and gift card: $1,480). If the winner lives within a 300-mile radius of Las Vegas, NV, winner will receive a $250 travel stipend in lieu of air transportation. Winner and guest(s) are solely responsible for all other expenses not specifically set forth herein, including but not limited to meals, additional transportation, upgraded room accommodations, souvenirs and other incidentals and items of a personal nature. Sweepstakes Entities are not responsible for lost, mutilated or stolen travel documents or event passes/tickets. The actual retail value of the prize will depend on winner's point of departure/return and dates of travel. Winner and guest must travel on same itinerary. Sweepstakes Entities are not responsible for postponement or cancellation of the race or issues arising from race venue operation or management. In the event the race is cancelled and is not rescheduled, Sweepstakes Entities will have no obligation to award compensation in lieu thereof, the Bonus Prize will not be awarded, but the remainder of the trip will be awarded.

   BONUS PRIZE: If INDYCAR driver, Dan Wheldon, is declared the winner of the IZOD IndyCar Series World Championship Race scheduled to take place on 10/16/11, the Grand Prize winner will win $2,500,000 awarded in the form of a 40-year annuity, with 40 annual payments of approximately $62,500 (a lump sum payment option of $1,300,000 in lieu of the annuity, may be made available at Sponsor's sole discretion). If Dan Wheldon is not declared the winner of the IZOD IndyCar Series World Championship Race scheduled to take place on 10/16/11 for any reason (including if Dan Wheldon does not participate in the race), the Bonus Prize will not be awarded. In the event the race is postponed and rescheduled for a later date, and Dan Wheldon competes and is declared the winner in the rescheduled race, the winner will still be eligible for the Bonus Prize, as long as the rescheduled race occurs before 11/1/11. In the event Dan Wheldon does not compete in the race, or the race is cancelled or is rescheduled to take place after 11/1/11, Sweepstakes Entities will have no obligation to award compensation in lieu thereof and the Bonus Prize will not be awarded. Bonus Prize winner may be required to execute additional documents in order for Bonus Prize to be awarded.

5. GENERAL RULES: Prizes consist of only the items specifically listed as part of the prize. The potential Grand Prize winner will be required to complete and return an Affidavit of Eligibility, Release of Liability, Prize Acceptance Form and, if legally

permissible, a Publicity Release within 3 days of attempted delivery of same. Noncompliance within this time period or return of any prize/prize notification as undeliverable will result in disqualification without further notice and an alternate winner will may be selected. Traveling companion (and parent/legal guardian if traveling companion is a minor in his/her state of residence) must also complete and return a Release of Liability within 3 days of winner's attempted notification. If a minor is selected as a traveling companion, winner must be his/her parent/legal guardian. All travelers must possess required travel documents (e.g., valid photo ID) prior to departure. All travelers must agree to depart and return on dates specified by the Sponsor; dates of departure and return are subject to change. Travel is subject to availability and certain blackout dates may apply. No substitution or transfer of prize by winner permitted. Sponsor reserves the right to substitute prize of equal or greater value. All taxes and fees, if applicable, are the sole responsibility of winner. In no event will more than the stated number of prizes be awarded. If an entrant submits more than the stated number of entries permitted, and/or if the Sponsor suspects that an entrant attempted to obtain additional entries by using multiple email addresses, registrations, identities or any other method, all entries submitted by the entrant may be declared null and void. By accepting prize, winner agrees to hold Sweepstakes Entities, their respective affiliates, directors, officers, employees, promotion agencies and assigns, harmless against any and all claims and liability arising out of use of prize. Winner assumes all liability for any injury or damage caused, or claimed to be caused, by participation in this promotion or use or redemption of any prize. Acceptance of prize constitutes permission for Sweepstakes Entities and its agencies to use winner's name and/or likeness for purposes of advertising and trade without further compensation, including a winners list, unless prohibited by law. Entrants agree to release, discharge and hold harmless Sweepstakes Entities, their respective affiliates their respective affiliates, directors, officers, employees, promotion agencies and assigns from and against any and all liability and damages. By participating in this promotion, entrants agree to be bound by the Official Rules and the judges' decisions which are final. In the event there is a discrepancy or inconsistency between disclosures or other statements contained in any sweepstakes materials and the terms and conditions of the Official Rules, the Official Rules shall prevail, govern and control. All material submitted becomes the sole property of Sweepstakes Entities and will not be returned. Sweepstakes Entities not responsible for any typographical or other error in the printing of the offer, administration of the sweepstakes or in the announcement of the prizes.

6. WINNER: To receive the name of the winner, send an email to winners.list.request@dlblairsweeps.com with WINNERS 7158 as the subject line. Requests must be received by 10/6/11. Winners list will be sent after winner has been verified.

SPONSOR: INDYCAR, 4565 W. 16th Street, Indianapolis, IN 46222

NOTICE TO ENTRANTS: ANY ATTEMPT BY AN INDIVIDUAL TO DELIBERATELY DAMAGE ANY WEB SITE OR UNDERMINE THE LEGITIMATE OPERATION OF THIS PROMOTION IS A VIOLATION OF CRIMINAL AND CIVIL LAWS, AND SHOULD SUCH AN ATTEMPT BE MADE, SPONSOR RESERVES THE RIGHT TO SEEK DAMAGES FROM ANY SUCH INDIVIDUAL TO THE FULLEST EXTENT PERMITTED BY LAW. Sweepstakes Entities not responsible for incomplete, lost, late, damaged, illegible or

misdirected phone/email/mail or for any technical problems, faulty, incorrect or mistranscribed email/data/mobile phone transmissions, incorrect announcements of any kind, technical hardware or software failures of any kind including any injury or damage to any person's wireless device or computer related to or resulting from participating in or experiencing any materials in connection with this promotion. Sweepstakes Entities not responsible for malfunctions or breakdown of any network systems, unavailable service connections, lost, incomplete, fault network connectivity of any kind, failures of any service providers, or any combination thereof, which may limit a person's ability to participate in this promotion. Sweepstakes Entities assumes no responsibility for undeliverable email resulting from any form of active or passive filtering by a user's mobile phone service carrier or internet service provider and/or e-mail client or for insufficient space in user's email account to receive email. Sponsor reserves the right to cancel or modify the promotion if fraud, misconduct or technical failures destroy the integrity of the program; or if a computer virus, bug, or other technical problem corrupts the administration or security of the program as determined by Sponsor/judging agency/administrator, in their sole discretion. In the event of termination, a notice will be posted online and the drawing will be conducted from among all eligible entries received prior to termination. In the event of a dispute regarding the identity of any entrant, the entry will be deemed made by the person whose name appears on the selected entry form. Any damage made to the Web Site by an entrant will be the responsibility of the entrant and/or the authorized e-mail account holder of the e-mail address submitted at the time of entry. Proof of submitting entries will not be deemed to be proof of receipt by Sponsor. Any entries which are suspected of being fraudulent (including those using robotic, automatic, programmed or similar methods of participation) will be disqualified, based on determinations made solely by Sponsor. Sponsor reserves the right to prohibit the participation of an individual if fraud or tampering is suspected or if the individual fails to comply with any requirement of participation as stated herein or with any provision in these Official Rules.

EXHIBIT C

Event Schedule

Las Vegas Motor Speedway
INDYCAR® PARTICIPANT SCHEDULE
Las Vegas, Nevada
Week of Oct. 10 - Oct. 16, 2011
IndyCar® Series / Firestone Indy Lights Series™

TUESDAY Oct. 11	WEDNESDAY Oct. 12	THURSDAY Oct. 13	FRIDAY Oct. 14	SATURDAY Oct. 15	SUNDAY Oct. 16
	9:00-3:00 Credentials	7:00-3:00 Credentials	7:00-4:30 Credentials	9:30-12:00 Credentials	6:00-12:45 Credentials
	8:00 ICS Transporter Load In	7:00 Garage Open	7:00 Garage Open	8:00 Garage Open	6:30 Garage Open
		8:00-12:00 IndyCar Tech	8:00-1:30 Indy Lights Tech		7:00 IndyCar Tech Open
	9:00 Garage Open	8:00-12:00 Indy Lights Tech	8:30 - 9:30 NCWTS Practice	8:00-815 2012 Car Systems Check	7:00 Indy Lights Tech
		Indy Lights Chief Mech. Mtg.	9:00-2:00 IndyCar Tech		7:30 Mass / 8:30 Chapel
		10:00 IZOD IndyCar Drivers Meeting		9:30 - 10:30 NASCAR Pace car Rides	
		10:30 PR Rep Meeting		10:30 Track Services Meeting Pit Road	8:00 - 9:30 2 Seater / Pace Car Rides
		9:45-10:45 Firestone Indy Lights Practice	9:45 - 10:30 Firestone Indy Lights Practice	10:30 NCWTS Drivers Crew Chief Meeting	8:15 Firestone Indy Lights Drivers Mtg.
	12:00-All Cars One Time Through			10:30 - 11:15 2 Seater	9:30 IZOD IndyCar Systems Check
	IZOD IndyCar Tech		10:45 - 12:15 NCWTS Practice	11:15-11:30 2012 Car Demonstration Laps	
	12:00-All Cars One Time Through	11:00 - 12:00 IZOD IndyCar Practice Group 1		12:00 Driver Intros	9:45-10:45 Indy Lights Race
	Indy Lights Tech	12:00 - 1:00 IZOD IndyCar Practice Group 2	12:30 - 1:15 IZOD IndyCar Practice Group 1	12:30 NCWTS Race (146 Laps)	67 Laps
			1:15 - 2:00 IZOD IndyCar Practice Group 2		10:45 - 11:30 2 Seater / Pace Car Rides
				3:30 - 5:00	10:45 IZOD IndyCar Drivers Meeting
		1:15 - 2:45 2 Seater Rides / Pace Car Rides	2:15 - 3:00 Firestone Indy Lights Qualifying	Speedway Children's Charity Rides	
		3:00 - 4:00 Firestone Indy Lights Practice		5:00 - 6:30 2 Seater	11:15-12:00 Concert - Neon Garage
		INDYCAR Parade	3:00 - 4:30 IZOD IndyCar Qualifying		12:00 IZOD IndyCar
		4:00 Transporters Depart for Mandalay Bay			Pre-Race Activities
		5:00 Transporters Arrive Mandalay Bay	4:30 - 5:30 NCWTS Qualifying		
		6:00 Vehicles Staged at Fan Village			12:45 IZOD IndyCar Race
		6:45 Vehicles Lined up for Caravan to Bellagio			200 Laps
		7:00 Vehicles Depart	5:45 - 6:45 2 Seater		Live on ABC
		7:10 Vehicles Arrive			
		7:55 DSYE Command			
		8:00 Parade Laps			
		8:10 Parade Ends			
		Escort Back to Mandalay Bay			
		12:00 IndyCar Tech Closes	2:00 IndyCar Tech Closes		
		12:00 Indy Lights Tech Closes	1:30 Indy Lights Tech Closes		
		Garage Closes	7:00 Garage Closes	7:00 Garage Closes	

Notes:
- IZOD IndyCar - Race # (Blue)
- IndyCar Drivers Mandatory (Red)
- IndyCar Technical (Orange)
- Safety Meetings: Fri / Sat / Sun
- PR Representatives Only (Violet)
- 2-Seater Program (Green)

10/7/2011

Exhibit D

Wolf Technical Services

Resumes

FORENSICS GRAPHICS MILITARY COMMERCIAL
wolftechnical.com

WOLF
9855 Crosspoint Boulevard ▾ Suite 126 ▾ Indianapolis, Indiana 46256-3336 ▾ 800.783.9653 ▾ 317.842.6075 ▾ F: 317.842.6974
specializing in:
FORENSIC AND AEROSPACE ENGINEERING

Stuart B. Nightenhelser

Areas of Specialization:

Analysis of automotive collisions and railroad grade crossing incidents; incidents involving physics and mechanics of motion; photographic and video image analysis and measurement.

Strong emphasis on lighting, lines-of-sight, visibility and human vision. Analytical expertise includes measurement and analysis of lighting levels and object/background brightness as they relate to visibility, visual acuity and visibility under conditions of darkness, fog, glare and low contrast changes: in visibility and line-of-sight during motion.

Credentials:

Employment History

1993 – Present
Wolf Technical Services, Inc., Indianapolis, Indiana

Analysis and reconstruction of incidents involving automobiles, trains, bicycles and pedestrians. Speed determination, analysis of pre-impact motion, collision dynamics, and post-impact motion. Special emphasis on lighting and visibility issues, sight obstruction, and line of sight measurement.

more than 30 years of engineering excellence

Analysis of railroad grade crossing collisions, including interpretation of event recorder (speed tape) output, stopping distance calculations, calculation of federal sight distance guidelines, and measurement of line of sight distances in the sight triangle. Photogrammetry techniques are used to measure, from accident scene photographs, line of sight restrictions in existence at the time of the incident, prior to growth or removal of vegetation.

1983 – 1992
General Dynamics Convair Division, San Diego, California
Senior Engineering Specialist

Development of electro-optical-mechanical imaging systems for laser-guided vehicles, development of computational techniques for image processing, and systems performance evaluation during captive flight testing.

Work with laser radar sensors involved autonomous processing of continuous three-dimensional images to extract scene feature, for comparison with aerial photography and pre-processed data bases. I developed image processing techniques used for variety of image types, and utilized image understanding and Photogrammetry in extracting and precisely measuring scene features. Key to the success of these techniques were: the understanding and correction of distortions in both the laser imagery and aerial photography, the understanding of the nature and appearance fo scene features, and their precise measurement, in both types of images; and comprehension of the human vision and feature recognition process, because human pilots participate in the navigation process, and because a ground-based human operator processes the aerial photograph. Computer modeling and simulation of imaging techniques were also integral parts of this work.

1980 – 1982
Naval Avionics Center, Indianapolis, Indiana
Research Physicist

Laboratory analysis and performance characterization of electro-optical imaging devices used in the DSMAC guidance system, which delivered extreme accuracy in the Navy's TOMAHAWK cruise missile on several occasions in the Iraq conflict.

Work involved testing and analysis of optical sensing devices; analysis of brightness and visual contrast of materials under both sunlight and artificial illumination; analysis of brightness contrast and color contrast of numerous natural and manmade "scene" materials; and comparison of system performance to the human visual system and aerial photography systems used for reconnaissance. Computer modeling and simulation of optical imaging sensors and the human visual system was an integral part of the analysis.

Education:

Bachelor of Science in Physics and Mathematics 1982
Minor in Chemistry
Butler University, Indianapolis, Indiana

Publications:

Numerous classified papers on optical sensing, electronic imaging and image processing.

Professional Memberships:

Illuminating Engineering Society of North America
Optical Society of America
American Institute of Physics
Society of Automotive Engineers
National Association of Railroad Safety Consultants and Investigators

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wolftechnical.com

WOLF
9855 Crosspoint Boulevard ▾ Suite 126 ▾ Indianapolis, Indiana 46256-3336 ▾ 800.783.9653 ▾ 317.842.6075 ▾ F: 317.842.6974
specializing in:
FORENSIC AND AEROSPACE ENGINEERING

Michael D. Pepe, P.E.

Areas of Specialization:

Mechanical and aeronautical engineer specializing in dynamics, mechanical stress analysis and photogrammetric image analysis. Application areas encompass vehicular crash analysis and reconstruction including passenger and commercial vehicles, race car incidents, and product component failures. Extensive experience in developing custom software for scientific analysis including multi-degree of freedom dynamic simulations, vehicular crash analysis software, tri-axial stress calculations and digital terrestrial photogrammetry.

Recent emphasis has been in the development of safety equipment designed to mitigate the effects of crash incidents for aircraft. Research in other areas includes sound source identification and localization for a variety of applications.

Employment History:

1982 to Present – **Wolf Technical Services, Inc., Indianapolis, Indiana**

- Current President and CEO of Wolf Technical Services, Inc.
- Principal Investigator for U.S. Air Force contract for Helicopter Aircrew Restraint (*April 2005*)
- Principal Investigator for U.S. Marine Corps contract for EFV Semi-Active Seat Damping (*February 2007*)
- Principal Investigator for U.S. Air Force contract for Crashworthy Stowable Troop Seating for Helicopters (May 2008)
- Analysis of various incident situations including speed calculations, forces and occupant kinematics of vehicular collisions, multiple vehicle collisions, component failure analysis of various products, image and photogrammetric analysis.

more than 30 years of engineering excellence

- Member of the Executive Committee of the Transportation Active Safety Institute (TASI). TASI is a collaborative Academic/Industry partnership to reduce vehicle crashes and save lives through the development, evaluation and assessment of Active Safety Systems.

1977 to 1982 – **Wolf Technical Services, Inc., Indianapolis, IN**
Part-time consultant

1969 to 1982 – **Naval Avionics Center, Indianapolis, IN**
Project Engineer in Applied Research Department

- Worked with a small team of research personnel to develop a new guidance system for the Tomahawk Cruise Missile. Duties included design and development of an inertial platform for the sensor package, computer simulation and evaluation of guidance system accuracy, and data analysis and computer reduction techniques.
- Work culminated with being made project engineer in charge of flight testing and evaluation of the guidance system, with responsibility for suggesting technical improvements based on analysis of the flight test data. Duties included the review of flight data recorders and in-flight telemetry.
- Areas of specialization included: guidance system design and development; computer simulation of flight dynamics; closed loop servo system design; aircraft avionics navigation and control; optical sensor development; measurement and calibration techniques; pattern recognition techniques.

Education:

Master of Science in Aeronautics and Astronautics 1972
Massachusetts Institute of Technology
Thesis: "Several Approximations for Determining Aircraft Attitude Using Body Mounted Instruments"
Thesis Advisor: Prof. W. M. Hollister, Department of Aeronautics and Astronautics

Post Graduate Courses 1970-1971
Indiana-Purdue University in Indianapolis, IN
Coursework included heat transfer, kinematics, stress analysis, and advanced calculus

Bachelor of Science, Mechanical Engineering 1969
Purdue University, W. Lafayette, IN
Minor Field: Mathematics

Training:

Air and Foundation Brake Training – Bendix Spicer Foundation Brake LLC 2010

Vehicle Rollover –TOPTEC Symposium 2002
Sponsored by the Society of Automotive Engineers

Low Speed Collision – TOPTEC International Symposium 1996
Sponsored by Society of Automotive Engineers

Registration:
Registered Professional Engineer in the States of Indiana and Ohio

Affiliations and Honors:
American Academy of Forensic Sciences
Society of Automotive Engineers (SAE)
Member of SAFE Association, national chapter
Group Superior Achievement Award from the Department of Defense
Sustained Superior Achievement Award from Naval Avionics Center
Selection to Navy's post graduate program from nationwide group of candidates
American Society for Photogrammetry & Remote Sensing
Transportation Active Safety Institute (TASI)
Executive Committee

Patents:
Patent pending for helicopter mobile aircrew restraint system

Publications:
Numerous technical publications for the Department of Defense in the field of missile guidance and control

L.E. Kazarian, M.D. Pepe, and J.D. Wolf, "The Application of Computer Graphic Simulations to Cervical Fractures," presented at the 1988 American Academy of Forensic Sciences Meeting, Philadelphia, Pennsylvania, February 18, 1988

L.E. Kazarian, M.D. Pepe, and J.D. Wolf, "Spinal Injury Mechanics," presented at the 1988 American Academy of Forensic Sciences Meeting, Philadelphia, Pennsylvania, February 18, 1988

S. Nightenhelser, M.D. Pepe, J.A. Plaga, and N. Wright, "Next-Generation Helicopter Aircrew Restraint System Design," SAFE Association Annual Symposium, 44th, Reno, NV; October 23-25, 2006

S. Nightenhelser, M.D. Pepe, J.A. Plaga, and N. Wright, "Performance of a Next-Generation Helicopter Aircrew Restraint System Design," SAFE Association Annual Symposium, 45th, Reno, NV; October 29-31, 2007

S. Nightenhelser, M.D. Pepe, J.A. Plaga and N. Wright, "UMARS Performance Testing", SAFE Association Annual Symposium, 46th Reno NV, October 27-29, 2008

M.D. Pepe, "Vehicular Motion Animation on an Apple Computer," presented to SAE at the 1988 International Congress Exposition

M.D. Pepe, E. Grayson, and A. McClary, "Digital Rectification of Reconstruction Photographs," SAE Paper 961049, Society of Automotive Engineers, International Congress & Exposition, Detroit, Michigan, February 1996

M.D. Pepe, G.J. Huett, and E. Grayson, "Cost-Effective Real-Time Computer Simulation," SAE Paper 870871, Proceeding of the SAE/ESD International Computer Graphics Conference, April 1987

M.D. Pepe, J.S. Sobek and G.J. Huett, "Three Dimensional Computerized Photogrammetry and its Application to Accident Reconstruction," SAE Paper 890739, Society of Automotive Engineers

M.D. Pepe, J.S. Sobek and D.A. Zimmerman, "Accuracy of Three-Dimensional Photogrammetry as Established by Controlled Field Tests," SAE Paper 930662, Society of Automotive Engineers, International Congress & Exposition, Detroit, Michigan, February 1993

M.D. Pepe, J.D. Wolf, "New Techniques of Automobile Accident Reconstruction," Trial Diplomacy Journal, Volume 6, Number 1, 1983

J.D. Wolf, J.H. Niermeyer, M.D. Pepe, "Computerized Techniques in Incident Reconstruction," Trial Diplomacy Journal, Vol. 9, No. 3, 1986

M.D. Pepe, S.R. DeVries, K.T. Johnson, T.P. Maher, "State of the Art Tools in Accident Investigation," presented at the 2010 SAFE Symposium in San Diego, CA on November 9, 2010

EXHIBIT E

Investigation Protocol

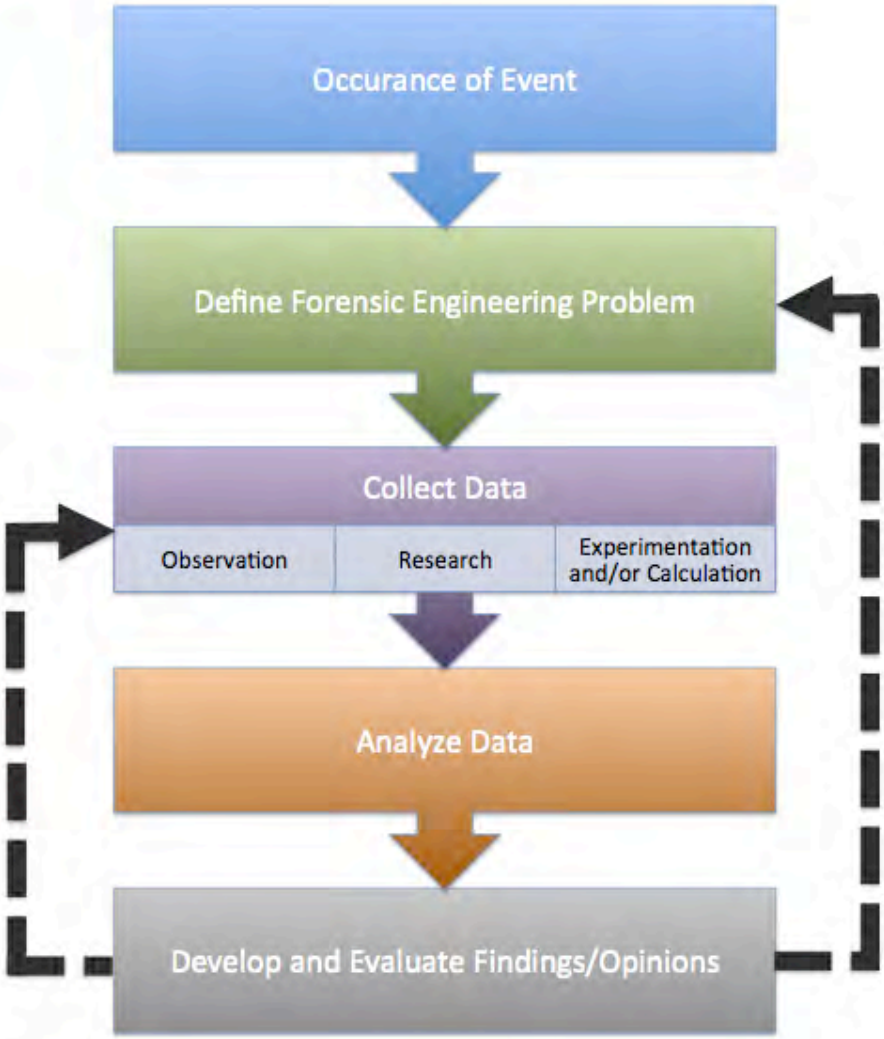
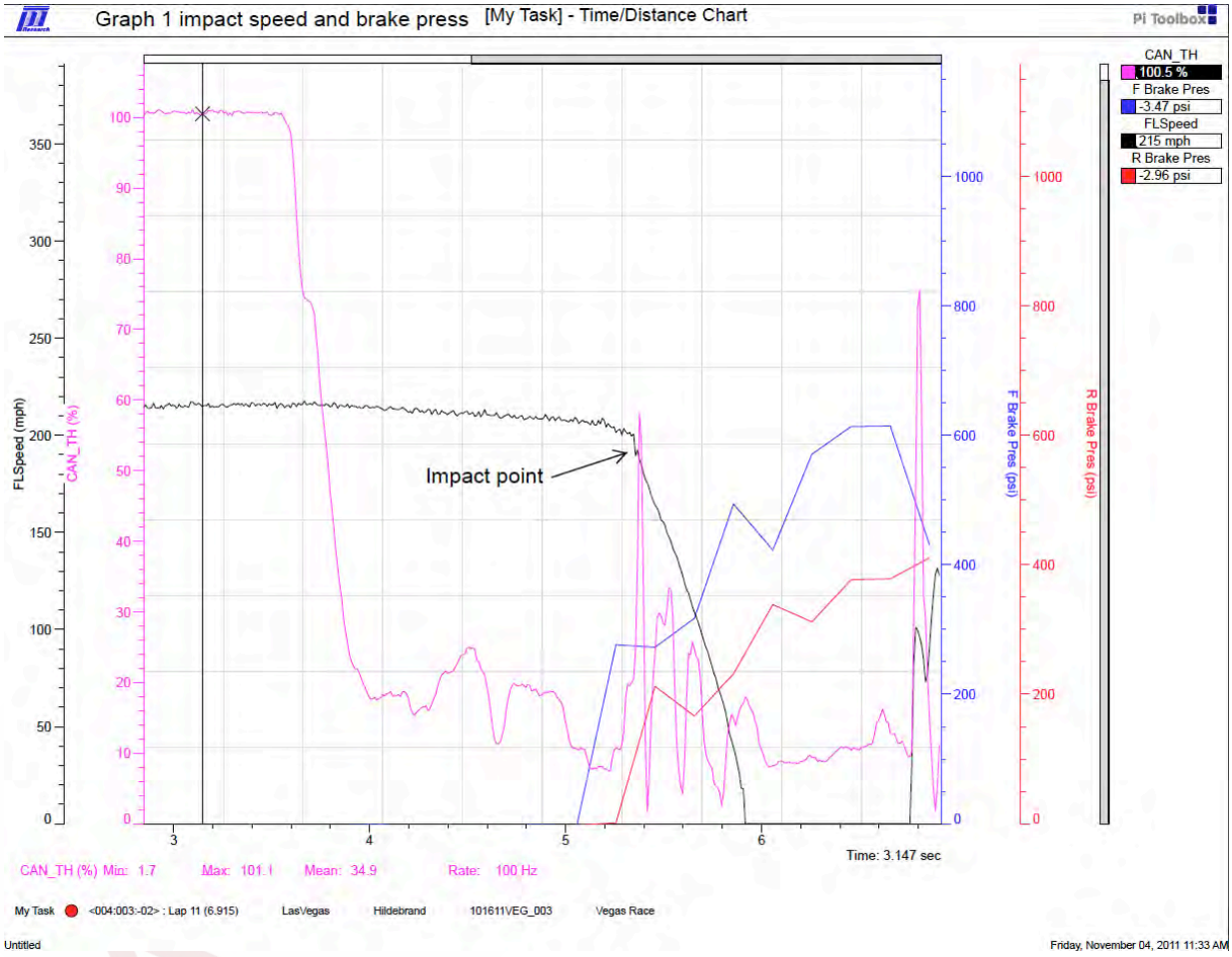


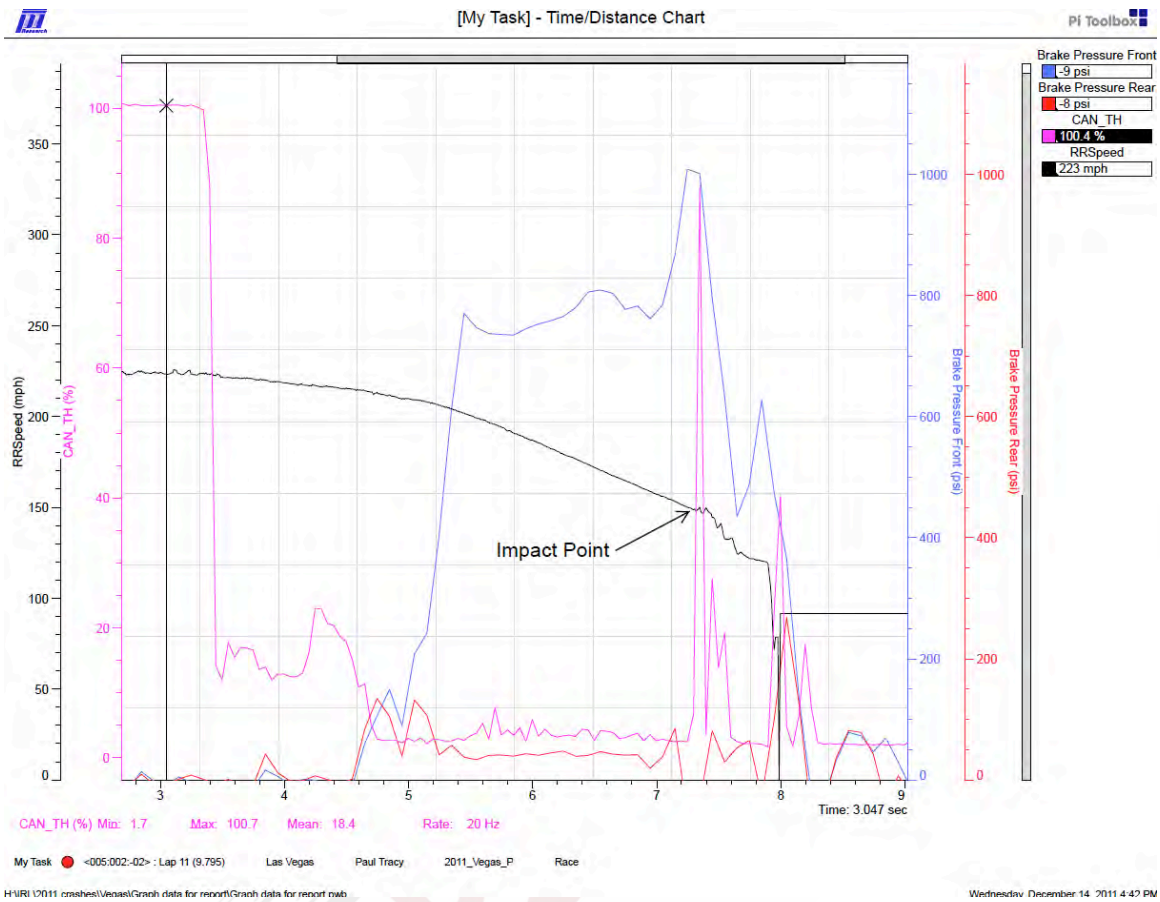
Exhibit F

On-Board Data Acquisition

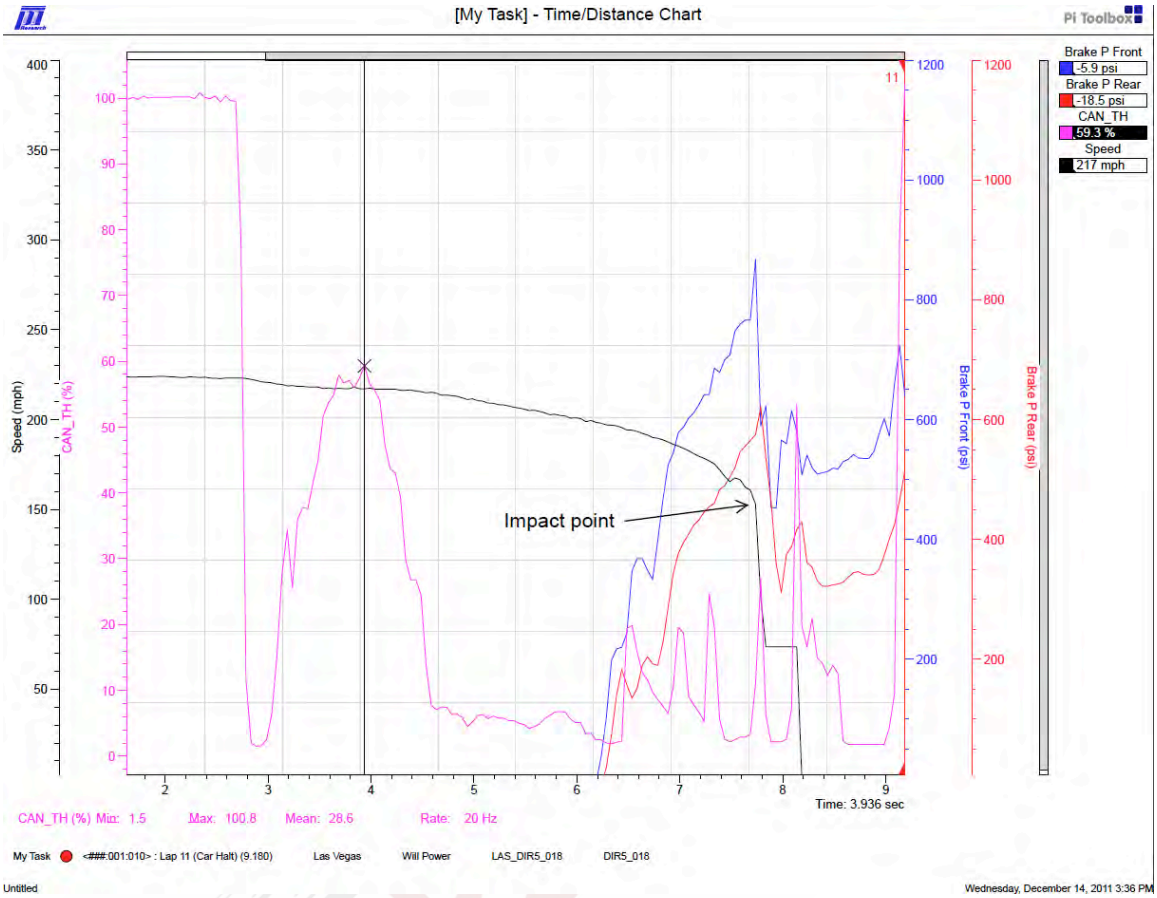
#4 J.R. Hildebrand



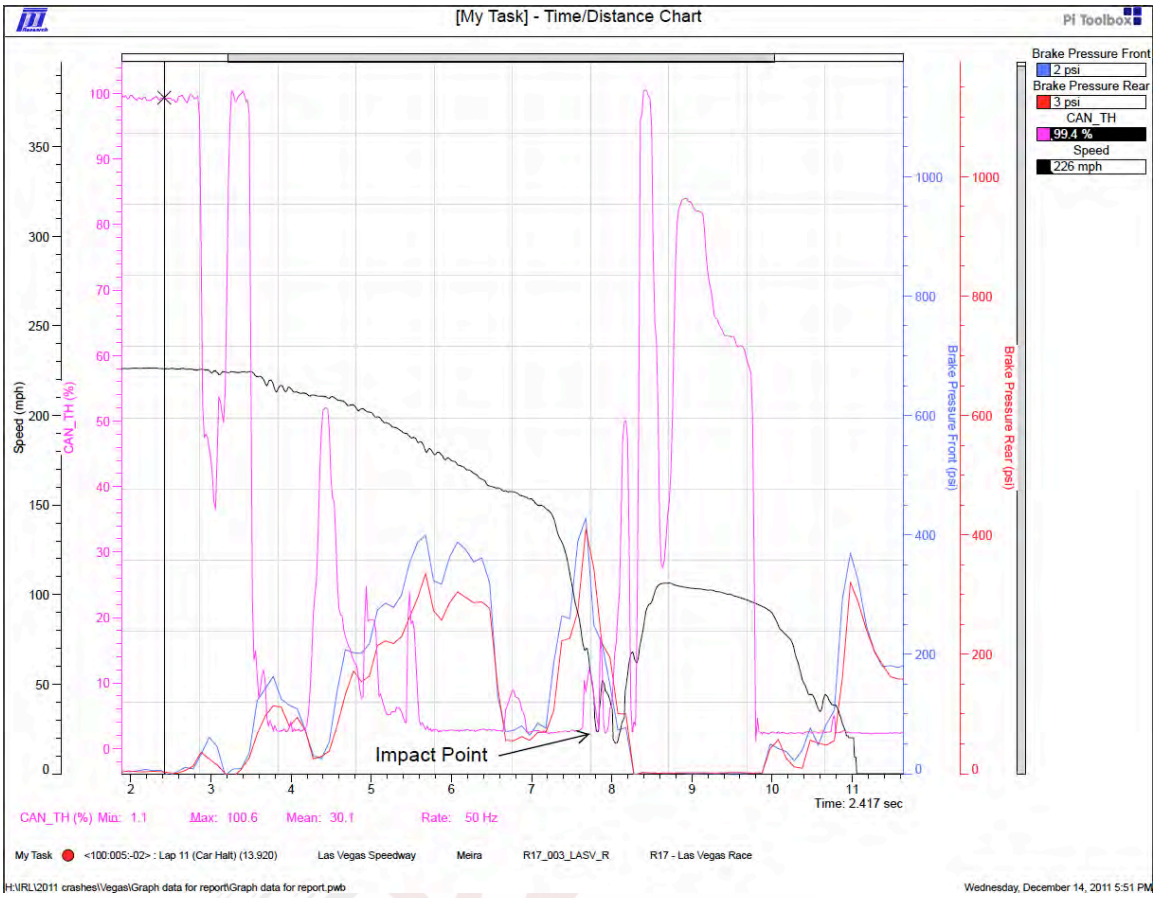
#8 Paul Tracy


[My Task] - Time/Distance Chart
PI Toolbox
Brake Pressure Front
-9 psi
Brake Pressure Rear
-8 psi
CAN_TH
100.4 %
RRSpeed
223 mph
RRSpeed (mph)
CAN_TH (%)
Brake Pressure Front (psi)
Brake Pressure Rear (psi)
Impact Point
Time: 3.047 sec
CAN_TH (%) Min: 1.7 Max: 100.7 Mean: 18.4 Rate: 20 Hz
My Task <005:002:-02> : Lap 11 (9.795) Las Vegas Paul Tracy 2011_Vegas_P Race
H:\IR\2011 crashes\Vegas\Graph data for report\Graph data for report.pwb
Wednesday, December 14, 2011 4:42 PM

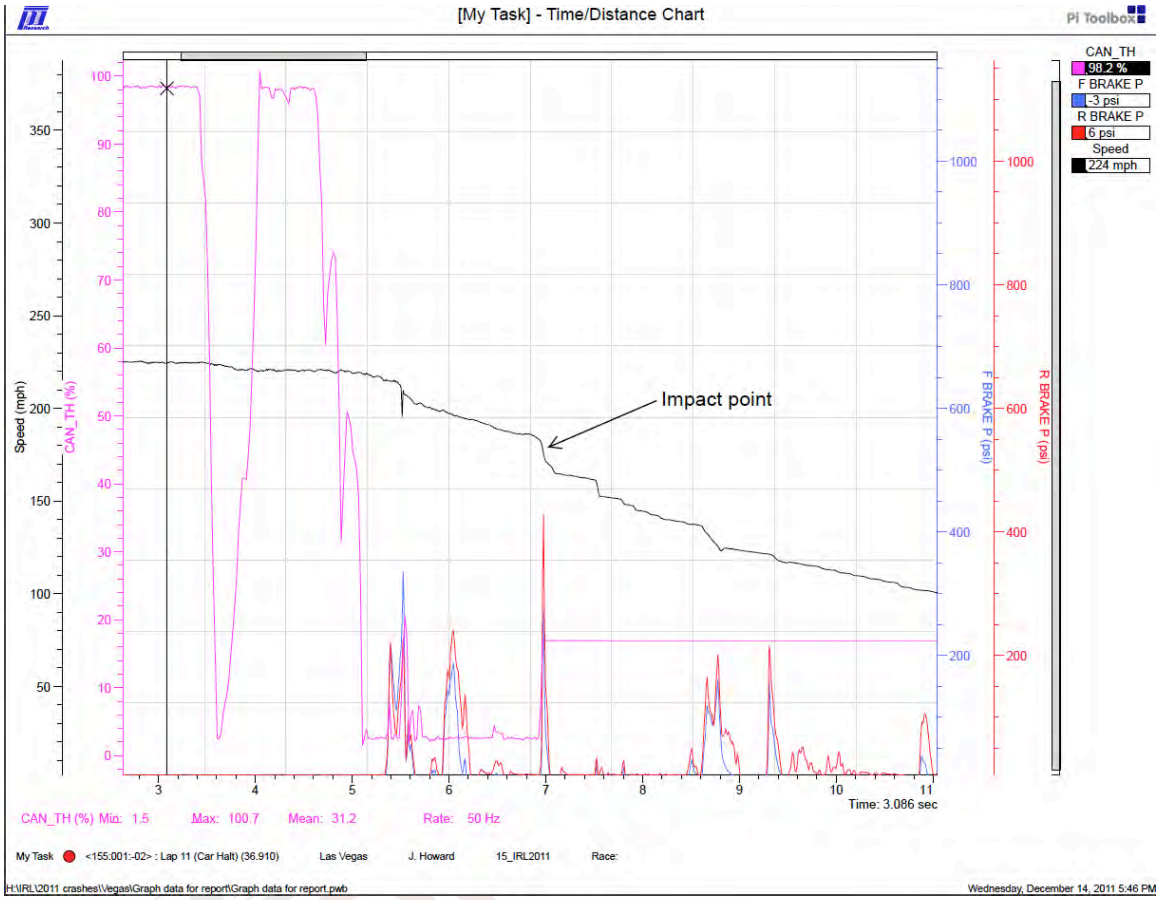
#12 Will Power



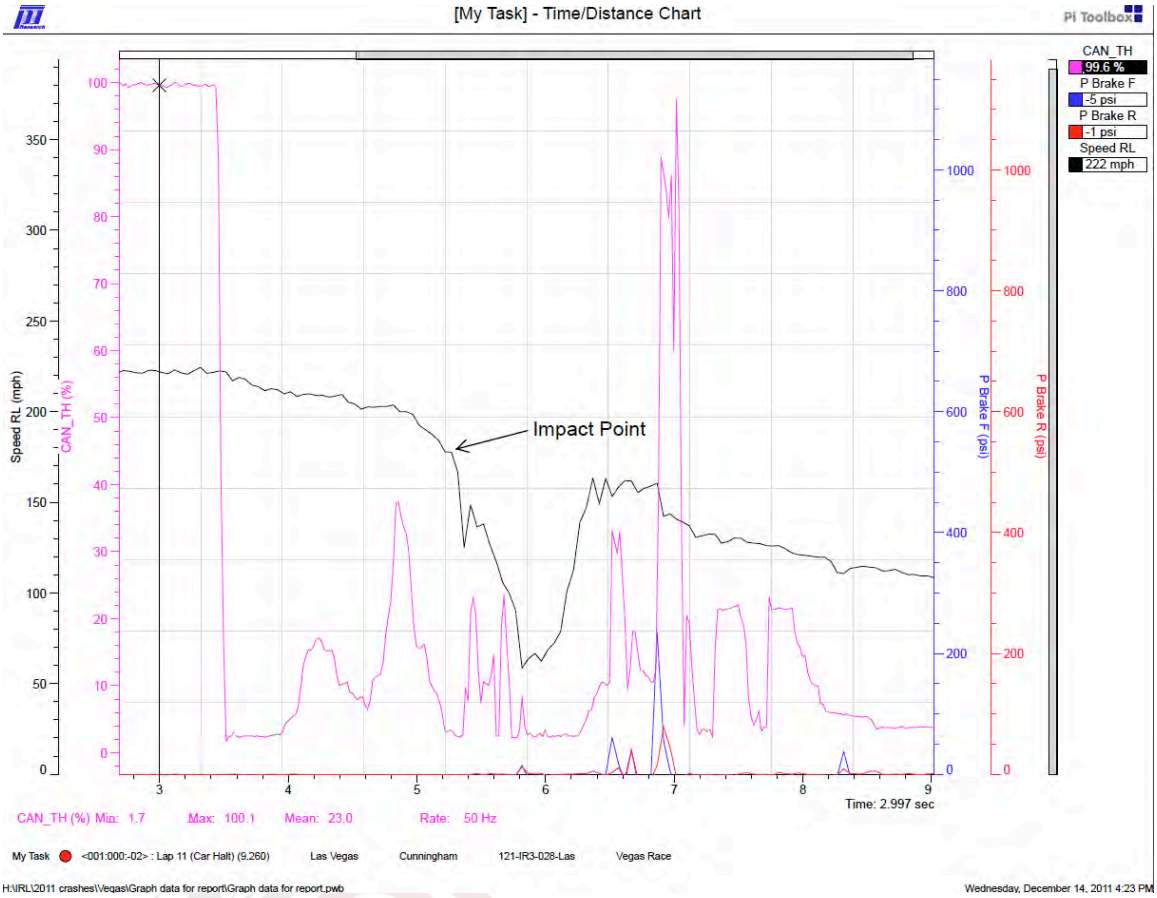
#14 Vitor Meira



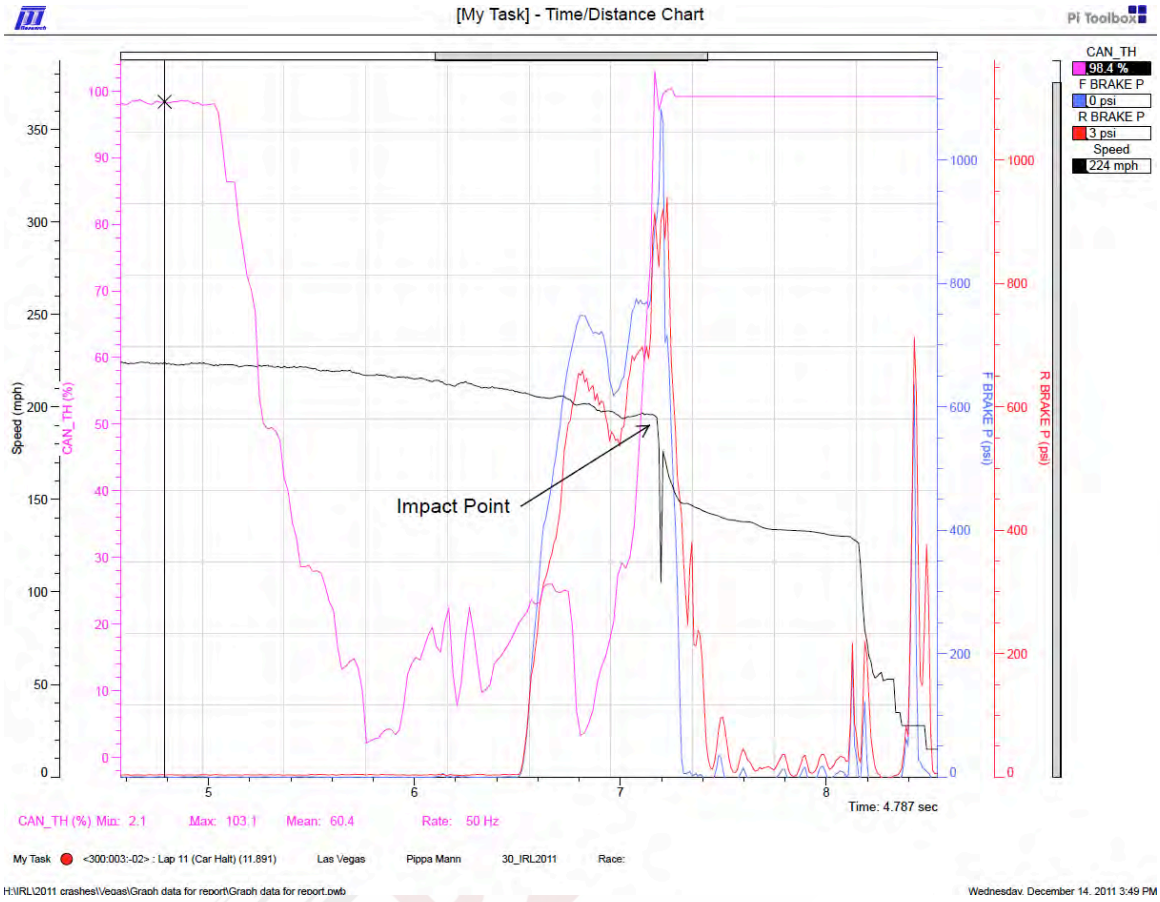
#15 Jay Howard



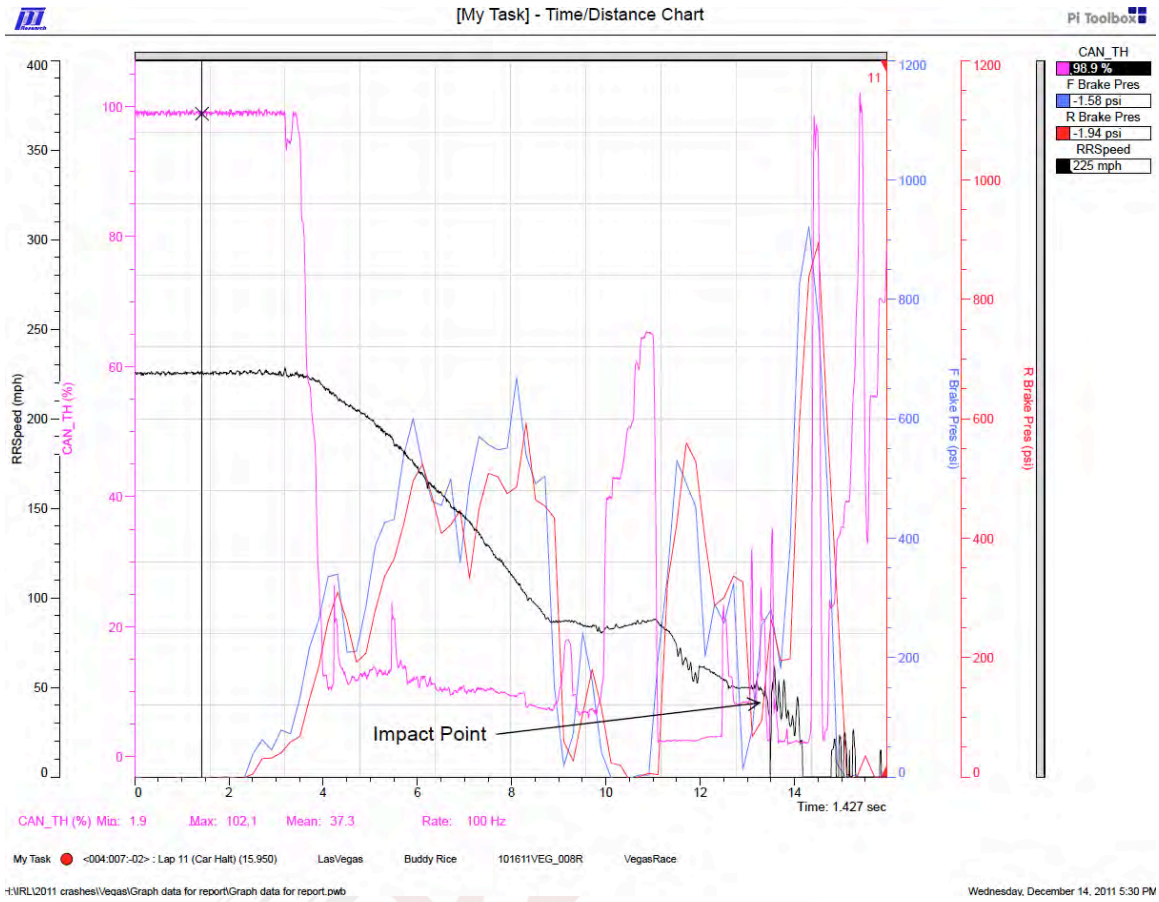
#17 Wade Cunningham



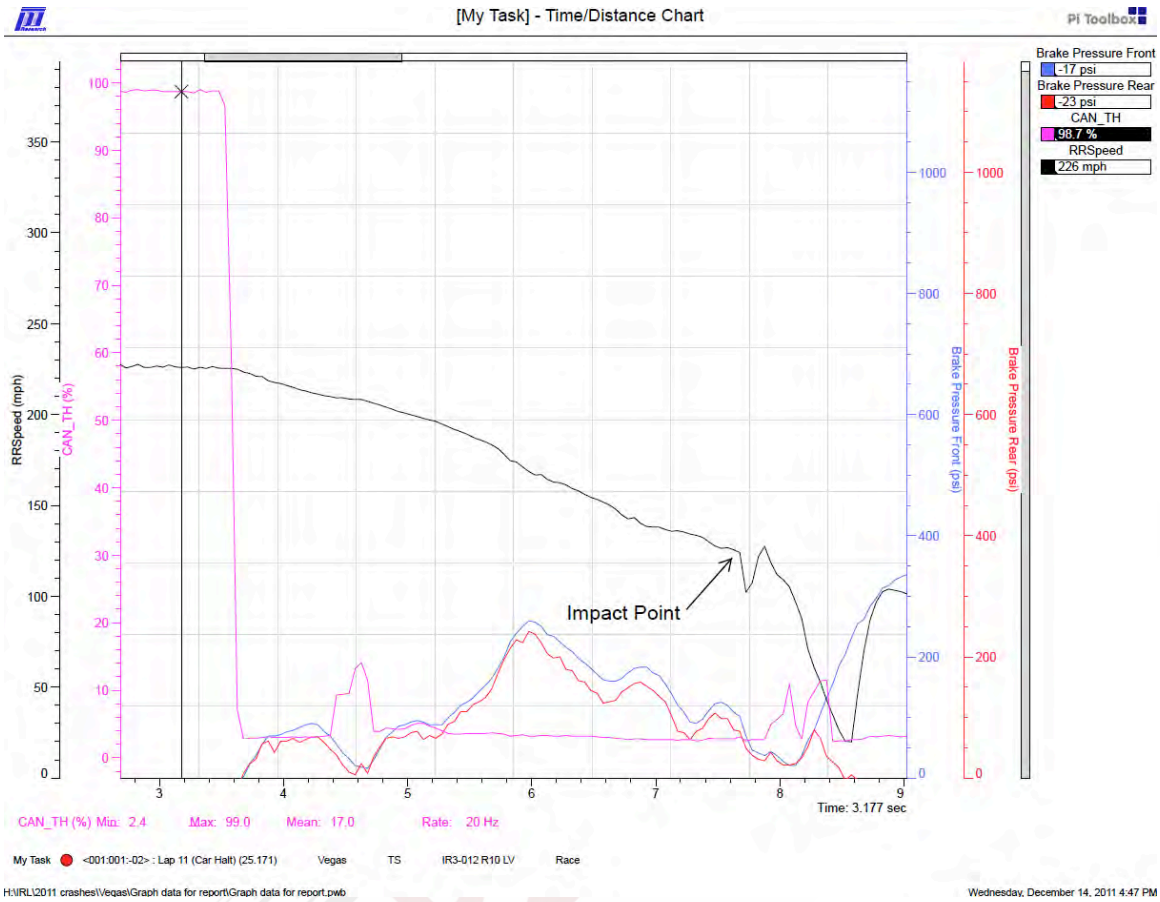
#30 Pippa Mann



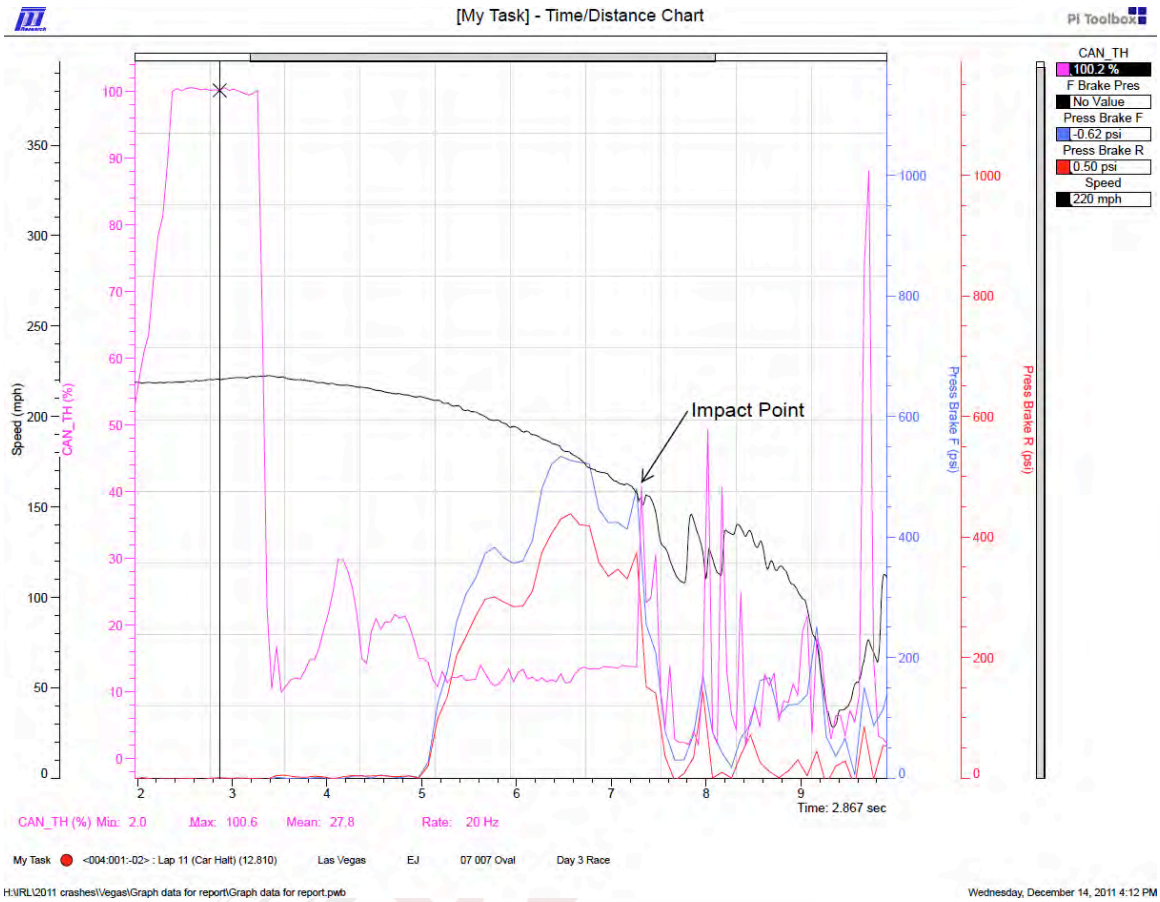
#44 Buddy Rice



#57 Tomas Scheckter



#59 EJ Viso


[My Task] - Time/Distance Chart
PI Toolbox
CAN_TH
100.2 %
F Brake Pres
No Value
Press Brake F
-0.62 psi
Press Brake R
0.50 psi
Speed
220 mph
Speed (mph)
CAN_TH (%)
Press Brake F (psi)
Press Brake R (psi)
Impact Point
Time: 2.867 sec
CAN_TH (%) Min: 2.0 Max: 100.6 Mean: 27.8 Rate: 20 Hz
My Task <004:001:-02> : Lap 11 (Car Halt) (12.810) Las Vegas EJ 07 007 Oval Day 3 Race
H:\IRL\2011 crashes\Vegas\Graph data for report\Graph data for report.pwb
Wednesday, December 14, 2011 4:12 PM

#77 Dan Wheldon

#83 Charlie Kimball