



CALIFORNIA ASSOCIATION OF ACCIDENT RECONSTRUCTION SPECIALISTS

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Schedule of ACTAR Accreditation Examinations

Date	Location
Jan. 17, 2007	Bend, Oregon
Jan. 21, 2007	Augusta, Maine
Jan. 31, 2007	Hershey, Pennsylvania
Mar. 17, 2007	Cincinnati, Ohio
Apr. 22, 2007	Jacksonville, Florida
May 19, 2007	St. Paul, Minnesota
Oct. 23, 2007	Binghamton, New York

There's no better way to demonstrate your qualifications as a reconstruction professional than by earning your ACTAR accreditation. The following is a list showing upcoming test dates and locations, so you too can earn your accreditation. Deadlines for registration are approximately 3 weeks prior to the test dates. You may contact Al Baxter, ACTAR Administrator by phone at (800) 809-3818 or at www.actar.org.

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Traffic Signal Accident Reconstruction

A book review by Joseph E. Badger

There are any number of accident reconstruction books out there and most cover a wide gamut of situations and are full of equations and messy physics stuff. A few texts, however, target specific types of collisions – such as the wonderful *Trailer Underride: Conspicuity, Human Factors, and Rear Bumpers*.

But now there's a book that targets specific accident locations. I call it Traffic Signal Intersection Accident Reconstruction or TSIAR.

The actual mouthful of a title is *Accident Reconstruction at Traffic Signal Intersections: A Manual for Law Enforcement Personnel, Accident Reconstruction Professionals, Traffic Engineers, and Forensic Engineers* by Daren E. Marceau, P.E.

The author is a former Raleigh, N.C police officer who is now traffic signals project manager at Kimley-Horn and Associates in Raleigh. That company, according to Fortune magazine is one of its 100 Best Companies to Work For in 2005 and 2006. Says so right at their website: <http://www.kimley-horn.com/kha/>

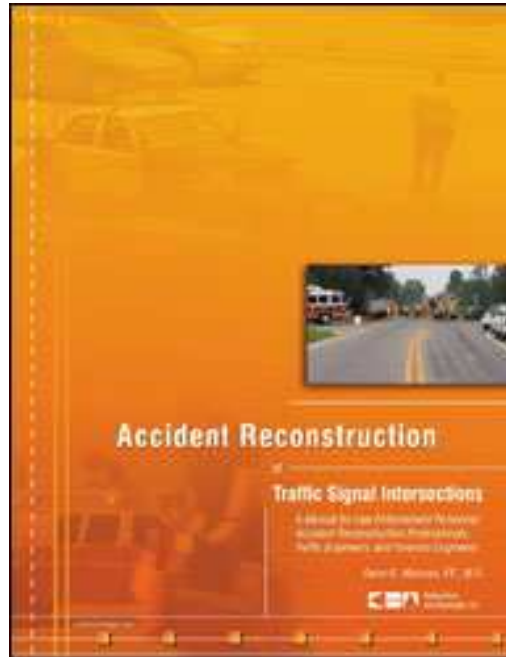
In his Introduction, Marceau tells the reader: “This text is **not** intended to be an exhaustive book on the precise details that go into traffic engineering. It **is** intended to serve as a manual for reconstructing traffic accidents that occur at intersections controlled by traffic signals.”

Marceau adds, “This is the first edition of this text. The reconstruction methods and traffic engineering explanations presented here are reliable and time-proven. As any experienced investigator knows, however, more than one way to solve any given case usually exists.”

You may purchase the book without the CD.

Let's go over that again...

For \$39.99 you can purchase a CD-ROM version. For \$10 more you can get a printed version of the book. I like having the printed text because I can keep it on a shelf and refer to it without having to crank up the computer.



That said, there are advantages to the CD. For instance, where the book's photographs are black and white, the CD pictures are in color. Any and all text, as well as the photos and diagrams, may be copied to the clipboard and pasted in a report or other document. There are, however, a few places – at least in the Glossary – where you cannot copy an entire paragraph.

The CD version of the book includes the entire text and graphics in PDF form, plus you get version 7.0 of Adobe Acrobat to download if you don't already have it. On the off chance you would like to print

the entire book yourself, there are separate PDF files of the front cover and inside cover.

Also, even though the book has an index, there always seems to be something you want to find that isn't listed in the Index or Table of Contents.

Speaking of the Glossary, if you happen to look under “Protected/permitted,” you will see a reference to a “permitted green ball.” *Green ball*, however, is not defined in the Glossary. So it's handy to be able to search the text to see the term explained on page 26.

Or you may come across this statement: “Without this understanding of the difference between permitted and protected left turns, some crashes occur when drivers think they can turn left in front

of oncoming traffic during the display of a circular green signal indication.” You may ask, “What’s a *circular green signal* indication?” Again, that handy search feature is, uh, handy.

Among the text’s 187 pages are seven case studies or as Marceau calls them, “Accident Scenarios.” I don’t know if they are actual cases or made-up situations to illustrate particular points.

Chapter topics include Traffic Engineering Basics; Traffic Signals, Controllers, Phasing, and Design; Traffic Signal Timing; Vehicle and Pedestrian Detection; Signal Preemption; Detailed Case Studies; and of course, Accident Reconstruction at Traffic Signals.

Section 3.14 is about “Pedestrian Signals.” You know, I always thought those little “Pedestrian Buttons” on traffic signal poles were probably not hooked up to anything, but that they were just put there to appease pedestrians into believing that one day the light would change. But the device buttons really are programmed to convey an actuation to the controller for pedestrian and wheelchair subjects to eventually get a green light.

There are some illustrations that may be confusing, such as the ones called “Two-Phase Signal with Multiple Preemption Directions” and “NEMA Controller with Concurrent Phase Combinations.”

If you’re working a signalized intersection collision and you obtain a similar diagram from the highway department, you may just want to have the prosecutor or civil attorney subpoena someone at the highway department who can interpret the diagram for the jury. Some such graphs may be more difficult to describe than explaining where the 30 comes from in “30df.”

You can find out more about *Accident Reconstruction at Traffic Signal Intersections: A Manual for Law Enforcement Personnel, Accident Reconstruction Professionals, Traffic Engineers, and Forensic Engineers* or place an order by contacting Kinetic Energy Press, 4676 Commercial Street SE #177, Salem, Oregon 97302. Phone (503) 540-3244 – FAX (503) 540-3479. Online at <http://www.kineticenergypress.com/>.

Note that the prices mentioned above will increase on January 1, 2007. 

2006 Conference Review

By Kent E. Boots, CA²RS Vice-Chair

Our 8th annual conference was held at the Embassy Suites - Tahoe Resorts in South Lake Tahoe. The Embassy Suites was a wonderful place to hold a conference. The atmosphere was perfectly suited for a relaxing few days.

I opened the conference on Thursday morning with an overview of what crash reconstruction is, discussing the fact that it blends applied physics, physical evidence, and determining the factors & events that make up a crash. I talked about our goals as reconstructionists and provided the history behind the Haddon Matrix as well as where we gather the information to address the nine cells. I introduced my case study and discussed the steps that a first

responder takes in reconstructing a crash. Rudy then introduced his case studies.

The morning session ended with Steve Haverkamp doing a presentation on Crash Data Retrieval Systems. He defined what an event data recorder is as well as what its function in a vehicle is. He identified the components of the Vetronix CDR System. He provided an overview of the legal issues, HR 5609, and the NHTSA EDR Rule. He talked about the vehicle coverage and the type of data that we can expect to obtain. He closed by talking about using EDR data in reconstruction and case studies.

After lunch, Anna Ristau did a presentation on roadway design and sightline issues. She started by giving the history on AASHTO and the “Green Book” as well as talking about AASHTO sight distances and design criteria. She gave us definitions

and examples of horizontal and vertical curves as well as common causes of sight limitations. She showed us examples of sightline issues; depicting them in courtroom presentations and also defined the differences between animations and simulations.

The last afternoon session was presented by Dean Linnens who gave us some guidelines on vehicle inspections. He discussed our responsibilities at the scene and why we conduct vehicle inspections, giving us the steps to follow to ensure preservation and adequate documentation of physical evidence. He provided us with a list of technical resources. Probably one of the most important things is a systematic and methodical vehicle examination. Dean also provided us with a template that can be used during vehicle inspections.

Rudy started Friday morning by giving us a review on momentum. He gave us his "twelve step" process to momentum solutions from getting the vehicle weights to calculating the impact speeds. Rudy then finished up his case studies. Next I finished presenting my case study, going through the steps that I took to calculate my pre-impact speeds and my time-position analysis. I discussed reconstruction report formats and presented examples. I talked about preparation for court and/or deposition testimony and gave some excerpts from my deposition on the case.

Dr. Sean Shimada finished up the day with his presentation on relating injuries/occupants to the vehicles. He gave some suggestions for creating templates to analyze and evaluate injuries. Biomechanical Analysis & Evaluation is

accomplished by calculating forces on specific body parts and comparing this to known tolerance values/levels. Sean closed with some interesting case studies, where instead of looking at the injuries that the occupants sustained, he looked at the likely injuries that they would have sustained had they been properly restrained.

Saturday morning started with Chris Kauderer's presentation on Microsoft Excel. He demonstrated the various spreadsheets that were included on the conference CD. Next up was Mike Greenfield doing a demonstration on animations. Toni Wolfe finished up the conference with her presentation on interviewing techniques. Her presentation started by showing us a video segment of a crash sequence from a movie and then tested our memory as "witnesses" by asking us questions about the video. Probably one of the most unique interviewing techniques that we learned is "reverse timeline"; using this technique it is very difficult to lie and keep your story "straight".

I hope that those who were able to attend the 2006 Conference enjoyed themselves as much as I did. For those who weren't able to attend, we still have some conference notebooks available. If you are interested, please contact me via e-mail at kent@rudydegger.com. This year we provided all attendees with a conference CD that contained the PowerPoint presentations in a secure format as well as PDF versions of the handouts. We hope to have the conference CDs available for sale via the ARC Network. We'll keep you posted on that endeavor.




Quarterly Training

By: Kent Boots

I wanted to familiarize everyone with how our quarterly trainings work. As part of your paid membership you are allowed to attend all of the quarterly trainings for free. We have three quarterly training sessions a year both for Northern and Southern California, for a total of six training sessions. The Northern California training sessions are the first month of each quarter; January, April, and July. The Southern California training sessions are the second month of each quarter; February, May, and August.

We do our best to offer the same training for both the northern and southern training sessions. We typically have the training sessions on the 2nd or 3rd Wednesday of the month, and sometimes on other weekdays to accommodate the speaker. The training sessions typically run from 0800-1700 hours.

The board presents training topics based upon the needs of the membership and the availability of qualified speakers on the topics. Once we have confirmed the topics and arranged the speakers for the coming year, we will confirm and post the dates on the events portion of the CAARS web site.

At the Fall Conference in South Lake Tahoe we included a space on the evaluations for the attendees to list potential quarterly training topics for 2007. Here are some of the potential training topics for 2007: Auto-pedestrian collisions, Court testimony, Crash Data Retrieval systems, Crush/energy, Determining drag factors & skid testing, Forensic mapping, Low speed crashes & occupant kinematics, Seatbelt inspection & technology, Tire mark & evidence identification, Vehicle inspection & terminology. 

Briefed Minutes

CAARS General Membership Meeting on November 17, 2006

- Call to Order at 8:30 am
 - Present:
 - Voting Members – Kent E. Boots, Karen Haverkamp, Chris Kauderer, Joel Salinas
 - Non-Voting Members – Rudy Degger, Kevin Cassidy
 - Taking notes/minutes – Recorded & compiled by Kent E. Boots
 - Absent:
 - Voting Members – Gordon Gray, Jim Holder, Tami Tavarez
- Old Business
 - Discussion about the history of the organization and how the quarterly trainings, cruise, and conference are organized
 - Discussion about the future of the organization
 - Board of Directors Elections - conducted by written ballot of those members present
 - Ballots collected & counted by Joel Salinas
 - Membership report by Kevin Cassidy
 - Discussion about benefits of membership: membership card, members only area of web site, attend quarterly trainings for free, annual conference, discounts
 - Number of members
 - Prior to end of fiscal year '06 – just over 300 members
 - Currently 257 members, with 85 non-renewals

- Anticipate being over 300 members before end of fiscal year '07
 - Discussion about applications and membership data bases
- Election Results by Joel Salinas
 - Paul Arnold – 39 Dave Willat – 39 Paul Wade - 24
 - Votes for Kent E. Boots were not counted since he ran unopposed
- Discussion about the 2006 training wrap up
- Discussion about future training ideas based upon conference evaluations
- Discussion about past Cruise trainings
- Treasurer's report by Karen Haverkamp
 - Membership dues income: \$11,687
 - Quarterly training guests income: \$200
 - Training costs
 - 2006 Conference
 - Income: approx. \$25,000
 - Approx. cost: \$25,000
- ACTAR report by Rudy Degger
- New Business
 - Open forum – no discussion
 - Recognition of outgoing board members
 - Gordon Gray, Karen Haverkamp, Jim Holder
 - Plaque presentation to Karen Haverkamp
 - Vendor raffle by Joel Salinas
 - Sarbjit Dhesi – selected CrashZone/CrimeZone as his prize
- Meeting adjourned at 9:20 am

Briefed Meeting Minutes

CAARS Board Meeting on November 17, 2006

- Call to Order at 5:30 pm
 - Present:
 - Voting Members – Kent E. Boots, Karen Haverkamp, Chris Kauderer, Joel Salinas
 - Newly elected board members – Dave Willat, Paul Arnold
 - Non-Voting Members – Kevin Cassidy
 - Taking notes/minutes – Recorded & compiled by Kent E. Boots
 - Absent:
 - Voting Members – Gordon Gray, Jim Holder, Tami Tavarez
 - Non-Voting Members – Rudy Degger
- Old Business
- Presentation by Scott Baker – The ARC Network
 - Presentation and discussion about Collision magazine
 - Twice yearly magazine containing:
 - CDR conference materials or ARC-CSI conference materials
 - Peer reviewed technical articles
 - Articles of interest
 - Premier industry partner with NAPARS
 - NAPARS membership dues (\$115.00) includes a free subscription

- CAARS could be an industry partner
 - Discussion about what benefits CAARS would have
 - Discussion about the pricing options
 - Discussion about payment options to the ARC network
- Discussion with Scott Baker about how the ARC Network accommodates speakers and vendors at conferences.
 - Discussion about speakers travel reimbursement and compensation
 - Discussion about speakers who are also vendors
 - Discussion about vendors who are also conference attendees
- Scott leaves the meeting room and the meeting continues
- New Business
 - Discussion with newly elected board members regarding how day to day operations of the organization are conducted
 - Planning for 1st board meeting of 2007
 - Discussion about meeting agenda items for future meetings
 - Discussion about meeting minutes
 - Discussion about new newsletter editor and administrative assistant
 - Discussion about potential vacant positions as of January 1st
 - Kent presented information provided by Victor Craig regarding discounted rates for the AI Quarterly and Journal
 - Discussion about conference CDs & DVDs being designed, created, and sold by the ARC Network
 - Discussion about conference & training certificates
 - Discussion about ACTAR CEUs & sign-in sheets
 - Motion to adjourn the meeting at 6:45 pm
 - Motion carries unanimously 4-0

Blurbs from the Board



Gordon Gray
Chair



Kent Boots
Vice Chair



Karen Haverkamp
Director



Jim Holder
Director



Chris Kauderer
Director



Joel Salinas
Director



Tami Tavarez
Director



Rudy Degger
ACTAR Rep.



Kevin Cassidy
Membership Chair

Valued CA²RS Members,

The holiday season has always offered me a special opportunity to extend my personal thanks to our members, and my very best wishes for the future.

Everyone at CA²RS would like to wish you a Happy New Year. We consider our members good friends and extend our wishes for good health and good cheer.

It is the members who make running this organization such a pleasure all year long. Our organization is a source of pride to us, and with members like you, we find running it from day to day a rewarding experience.

We tip our glasses to you!

To keep with my tradition, I want to start this month's "Blurb" by thanking those responsible for the last training, the conference. Kent and Karen did a magnificent job making sure this year's conference was a positive learning experience for all in attendance. As the dust is settling, it was a pleasure looking through all of the evaluations those in attendance took the time to complete. With all of the complements and new ideas received, the board will have little problems finding training topics for the future.

It is with a bit of anxiety and a sense nostalgia that I write this as it is the final "Blurbs" I will be writing to you. This December marks the conclusion of my tenure as Chairman of CA²RS. New and escalating commitments at work and

home have brought me to a situation where I feel it is necessary to let someone else take the reigns of the association and guide it into the future. It is hard to believe how much we have developed since I began my service on the board as Vice-Chair and Chair over the past seven years.

There are a few changes on the board as a result of the elections. Kent Boots has been elected as your new Chair and moves up, taking over in January 2007. Congratulations Kent! Welcome to our newly elected Board Member's Paul Arnold and Dave Willat. Lastly, thanks to our departing Board Members, Karen Haverkamp from the Riverside PD, and James Holder from the Garden Grove PD who have served faithfully for the past four years.

2007 brings about CAARS 9th year. The Board of Directors is in the planning stages for future events. To help make things flow smoother, I again encourage you all to become involved in the association. Involvement can range from being a Board member to just hosting a meeting at your agency. It is easy to sit back and simply enjoy the training that is offered. But it can also be very rewarding to take part and help with the process. As for myself, I've made many great professional acquaintances as a result of my involvement and I've made even more friends. I'd like to thank all of you, especially those who I've worked closely with over the years. You've all made my job easier and, candidly, made me look good. (And that's no easy task!)

As always, the Board welcomes any suggestions regarding potential training topics or how to advance the organization.

Thanks again for allowing me the opportunity to serve with you. I hope to see you all at a future training.

Sincerely,

Gordon Gray

CRASH!



If you look closely at this crash sequence, you can see that in frame #2 it appears that the front wheel is locked.

If anyone has an interesting collision reconstruction related photograph that could be published in a future issue of Skid Marks, please forward it to Jim Holder at editor@ca2rs.com or to james@jchcollisionanalysis.com.



Training for 2007

1st Quarter training will be the 8-hour CDR Technician Course. This course will certify the attendee to download data using the Vetronix system, and is the prerequisite for the Data Analyst course. 40 attendees only and preference will be given to CA²RS members.

Northern California Information

Date: Wednesday January 17th, 2007

Location: Vacaville Cultural Center
1020 Ulatis Drive, Vacaville, CA

RSVP to: Joel Salinas via e-mail at joelsalinas@sbcglobal.net or by telephone at (707)649-3407

Southern California Information

Date: Wednesday February 21st, 2007

Location: Orange County Sheriff's Department
Katella Training Facility & Range
1900 W. Katella Avenue. Orange, CA

RSVP to: Paul Wade via e-mail at pwade@ocsd.org or by telephone at (949)425-1861

Keep an eye on the website at www.ca2rs.com for postings on the training scheduled for 2007. 🚗