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NEW FORMS

Sintra Engineering has just published assignment sheets for **Low Speed Collisions** and **Accident Reconstructions**.

These forms are available on our web site or you can request them by calling (780) 420-1551.

The image shows two Sintra Engineering forms. The first is titled 'Accident Reconstruction - Preliminary Data Sheet' and contains various fields for accident details. The second is titled 'Matrix of Damage Impact Assessment Request' and includes a grid for assessing damage to different parts of a vehicle.

OFFICE NEWS



Sintra's Online *MAKEOVER*

www.sintraeng.com

Good news, we've recently re-launched our website! We have a brand new look with improved navigation. It also has better accessibility and usability, which will feature faster loading times and a more legible layout.

Our site continues to be content-rich with details of the areas of forensic engineering that we specialize in and an abundance of information about the services and investigations we provide. Of particular interest may be the **Reference** link, which serves as a growing online library of articles written by Sintra Engineers. These articles are an informative review of the growing trends in forensic engineering that Sintra Engineering is at the forefront of.

Another great source of information, Sintra's published newsletters, are available as downloadable back-issues (on our website).



The new website reflects the quality, excellence and professionalism that we at Sintra Engineering bring to every investigation.

We invite you to browse our new site. It's a great way to get to know us better and to understand our areas of expertise. Let us know what you think!



INVESTIGATION



Digital Photography



Digital photography has rapidly advanced over the years, so much so that film photography is in danger of going the way of the horse and buggy. There are good and bad things about digital photographs and their implications must be carefully considered.

When it comes to litigation matters, the issues surrounding digital photography (while significant) are relatively straightforward. Will the photographs be accepted in court? Is it more economical to use digital cameras or film cameras? What kind of technology should be used? What are the advantages/disadvantages of digital photography? The answers, believe it or not, might surprise you.

At Sintra Engineering, film photography is used for the majority of our investigations. However, we do have digital cameras, and even have cameras on some of our cell phones. The reasons we continue to use film photography for investigations is entirely pragmatic: film photography allows us to take photographs at higher resolutions than even the best digital cameras, film camera technology is very well established (stable), we already have the camera equipment, and the negatives provide a robust long term storage medium.

Will digital photographs be accepted by the courts? If we look to past history for any indication, the answer is probably yes. At the beginning of

the last century, the admissibility of a new technology (photographs) was an issue. The concern at the time was whether the images would prejudice the judicial system. Eventually black and white photography was accepted within the court system. A similar hurdle was faced with the advent of colour photographs. Again they were eventually accepted. If the pattern holds true for digital photography, it will also be accepted. In general, the courts will accept technology if it is sufficiently established to have gained general acceptance in the field to which it belongs. With the proliferation of digital photography and as it continues to replace film technology, digital photographs have been and will continue to be accepted in the courtroom.

What about the other issues surrounding digital photographs? Surprisingly, digital photographs are not cheaper provided you actually print out the photographs. The

PROFILE OF IAN GRIERSON



Ian Grierson is a Professional Engineer at Sintra Engineering who works in the property division of the Edmonton office. Ian is particularly interested in the field of fire investigation and is currently pursuing his Masters degree in Fire Protection Engineering through a distance learning program offered by the Worcester Polytechnic Institute.

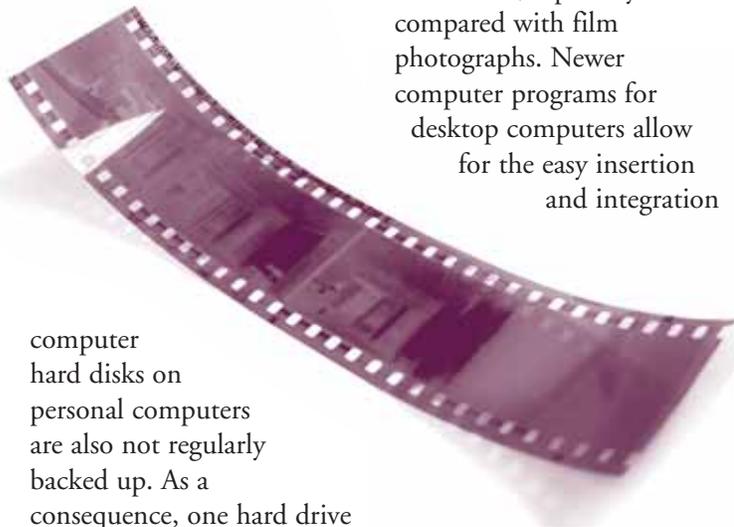
A native of Montreal, Ian graduated from McMaster University (Hamilton, Ontario) in 1999 with a degree in Mechanical Engineering & Management. After working in the construction industry, Ian found his niche in the field of Forensic Engineering and hasn't looked back since.

Ian is a dedicated family man who enjoys spending his free time with his wife and 2 year old daughter.

primary advantage is that you can be selective of which photographs you choose to print. When you print digital photographs, the costs are very similar to those of film photography, which include paper and inkjet cartridges. It is not uncommon for digital images to go imprinted. This can lead to storage issues. In general,

those 1 megapixel cameras from five years ago).

The main advantages of digital photographs are that you can see if the image captured is what you wanted and you can be selective of which photographs you choose to print. In addition, copying and e-mailing digital images is simple and convenient, especially when compared with film photographs. Newer computer programs for desktop computers allow for the easy insertion and integration



computer hard disks on personal computers are also not regularly backed up. As a consequence, one hard drive crash or a nasty virus could mean that all the photographs are gone. Finally, if you spend \$1000 on a film camera today, you will have a pretty good film camera for the next five to ten years. If you spend a similar amount on a digital camera, you will get a pretty good camera today, but it will be ancient technology in five years time due to the rapid development of technology (just look at

of digital photographs into documents. Despite these advantages, film photography still provides benefits from quality, longevity, and long term storage. For incidents involving potential litigation that may span over a period of several years, the durability of the storage medium can be a critical factor.

ACCIDENT INVESTIGATION



Chain Collisions: Who Durnnit?

A chain collision involves three or more vehicles in successive collisions, separated by short intervals. The vehicles could all be moving immediately before the incident or any number of them could be stopped.

There are often many questions asked following a multiple vehicle chain collision: How fast were the vehicles going? Were the vehicles hit hard enough to allow for occupant injuries? How many collisions were there? Who hit who first and which vehicle caused the chain collision?

To answer any of these questions, the more information the better. It is best to examine all of the vehicles and, if possible, to download information from the air bag modules. The occupants' statements and any witness statements also assist in the analysis. The more information provided, the more precise the results.

The delta V and closing speeds can be calculated for each of the vehicles, determining the severity of the impacts. It is also possible to determine how many times the vehicles were hit and even the sequence of events. While the sequence of events can be a difficult thing to assess, it is often critical in evaluating responsibility for the injuries.



ACCIDENT INVESTIGATION



Vehicle-Pedestrian Collisions

Often, pedestrians sustain serious or fatal injuries when involved in collisions with vehicles. In the aftermath of these collisions, insurance adjusters and lawyers are faced with very important questions that require knowledge of the incident causation including any contributory factors or human errors. In order for a driver or a pedestrian to avoid a collision, they must first perceive the situation as a hazard, decide on an appropriate response, and act upon their decision. Anything that interferes with this process can be a contributing factor to the collision. Unfortunately, any error made by either a vehicle driver or a pedestrian can lead to an extremely hazardous or fatal situation.

The most common error made by pedestrians is over-estimating the distance at which they can be detected by drivers. In other words, due to the relatively large difference in size between the vehicle and the pedestrian, it is more difficult for a driver to view a pedestrian than it is for a pedestrian to see an approaching vehicle. Conversely, the task of driving can be very complex at times. Safely maneuvering a 2500 pound

vehicle through high paced traffic areas with high pedestrian activity requires the driver's full attention. As soon as the driver's attention is pre-occupied, whether it be a cell phone conversation or even giving attention to other vehicle occupants, the possibility for a dangerous situation arises.

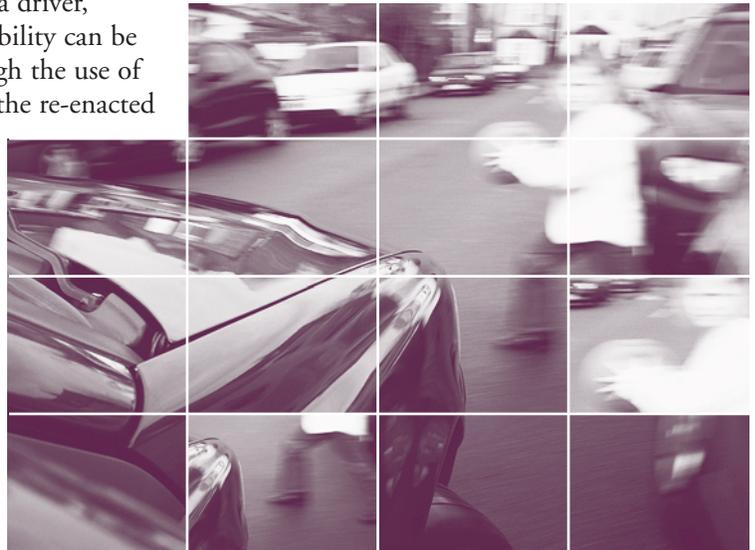
Visibility conditions at the time of the collision may also prevent the driver and pedestrian from perceiving each other. Whether it be the pedestrian blending into a dark environment, or the sun glaring into the eyes of a driver, questions of visibility can be addressed through the use of photographs of the re-enacted scene taken when conditions match those present at the time of the incident.

From an engineering perspective, a thorough review of all the

DID YOU KNOW?

When it comes to vehicle-pedestrian collisions: younger pedestrians are more likely struck when beginning to cross a roadway, and older pedestrians are more likely to be struck at the end of their crossing

physical evidence is key to completing an accurate reconstruction of vehicle-pedestrian collisions. Examinations of the involved vehicle and collision site, recorded police information, witness statements, and medical documentation all provide evidence that contributes to the complete reconstruction of the collision.



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