

Computer Drawing Made Easy And Effective

By Al Lohner

The situation has progressed dramatically since the early 1990s, when the first diagramming software programs for law enforcement professionals were introduced to the marketplace. Back then, it took a fair amount of arm-twisting to convince a police officer or accident reconstructionist to even demo such software. The plastic template, compass, and black ink pen were firmly entrenched in every police department. It's not hard to imagine a police officer of those times saying, "The only way I'll give up my template is when you pry it from my cold, dead fingers."

The vast majority of law enforcement personnel were reluctant to try diagramming software, mainly because of a misconception that the software was too difficult to learn. Compounding the problem, most police agencies didn't have sufficient hardware resources to support the new software. The early adopters of diagramming software were knowledgeable computer users, who recognized that using pen and paper was time-consuming, imprecise, and inefficient.

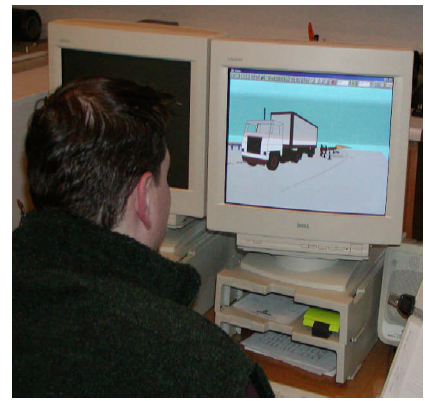
A decade later, diagramming software is eagerly sought out by dozens of departments and thousands of officers. There are various reasons for the rapid proliferation of software users. Programs are getting easier and easier to learn. More and more law enforcement officers are computer savvy. And increasing numbers of success stories are seeing the light of day.

The art of diagramming today.

Bobby Jones, owner of Jones & Associates, in Knoxville, Tennessee, has advanced the merits of diagramming software since the very beginning. Altogether he has created incident diagrams for more than two decades. His firm, which he founded in 1986, specializes in accident reconstruction. He is also an active sworn police officer. "Using diagramming software is the most accurate, most efficient way to make crash scene and crime scene drawings," Jones said. "Doing it the old way no longer makes sense."

Jones' software of choice is The Crash Zone from The CAD Zone. By his count, he's tried more than a dozen other kinds of programs. Unfortunately, he says, "A lot of the stuff out there is still too hard to learn or not practical enough for my needs. "The Crash Zone is designed specifically for the job we do. The symbols library is incredible and no other program compares to its print capabilities. I can create a line, draw a roadway, put dimension on it, add text, and print it.

"Building an eight-leg multilane intersection is as simple as opening the Easy Intersection dialogue box, selecting the eight legs, and clicking on a button called 'Place Intersection.'" The intersection is drawn precisely to scale with appropriate painted roadway lines. Triangulation is as simple as pumping in measurements and clicking on a dot. Any number of

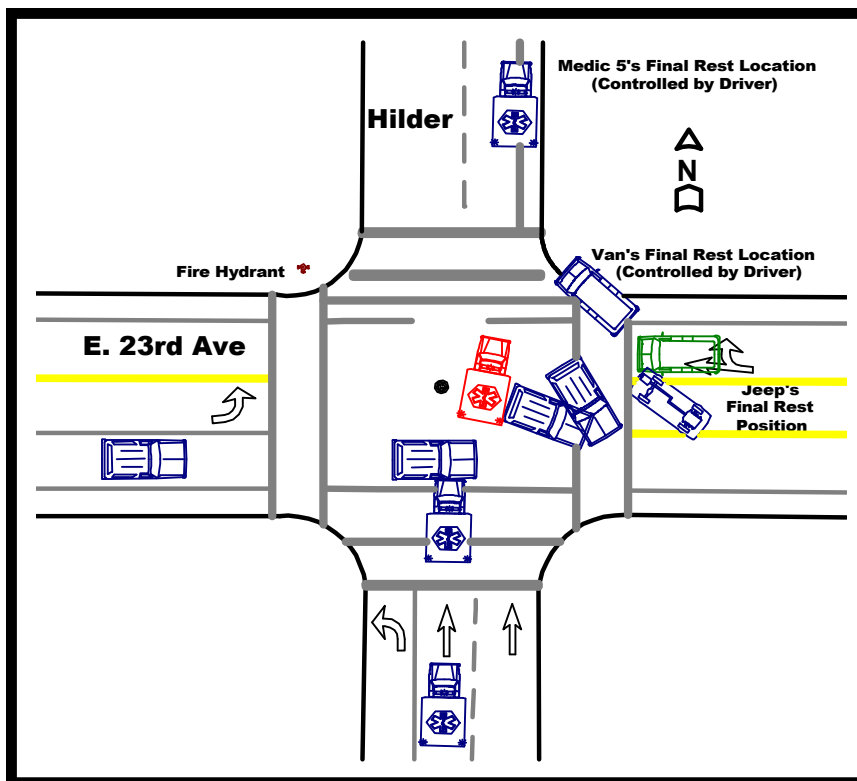


reference points can be used. "In the past," Jones said, "you'd use a drawing compass, create points and lines, then strike those lines wherever they cross. The end result looked messy." Another software feature called Easy Lines allows users to pick up data from previous diagrams and save considerable time creating new drawings.

Practical for many applications.

While making crash-scene diagrams represents the lion's share of Jones' work, he is frequently called upon to create crime-scene diagrams, too. And the results of his efforts often lead to dramatic wins for the prosecution. He related the story of a high-profile homicide case, in which the suspect pleaded self-defense. "It was a he-said, she-said situation," Jones recalled. "The suspect claimed he was in a particular corner of the house."

Jones created a diagram, which recreated the trajectory of the gunfire inside the house, and it showed that the suspect could not have been where he claimed. Based on this clear-cut evidence, the suspect's attorney realized that the case was hopeless and he changed his client's plea to guilty. The suspect is now serving a prison sentence. Diagramming



software proves its mettle in critical, real-time situations, too. “On special response team calls, we’ll hook up a portable printer to a laptop,” Jones said. “Then we’ll get someone on the scene who’s familiar with the software and do some fast scanning with our LTI equipment (a laser measuring device from Laser Technology Inc.) From there, we can create a quick rough sketch and provide our officers with vital information—distance to subject, location of windows and doors, and so on.” There’s no need to do any kind of converting. Information is obtained by the laser, stored into a data collector, then imported into the software program.

Officers also use diagramming software to reconfigure personal office space, as well as living space at home. The department actually encourages this type of use, because it makes officers

even more proficient in using the program. “I recently remodeled my kitchen using this diagramming software,” Jones said. “And I know of several other officers who’ve done home remodeling projects with the software.”

The future is clear.

Once you’ve learned how to use diagramming software, there’s no point in going back to pen, paper, and template, Jones said. He recalls the days when it took hours to create a large diagram. “If you made an error, you’d have to tape blank paper over the mistake and draw on it,” Jones said. “With diagramming software, you can easily add information or delete any inaccuracy.”

Jones also enjoys the fact that he can print a diagram to letter size, go to a quick-print shop, and convert that diagram to any size and get multiple copies in seconds.

With all of these positive reasons for converting to diagramming software, some within the police ranks remain unmoved. “Old habits die hard,” Jones said. “Some veteran officers are not willing to change over to computer tools.” He equated this reluctant behavior to that of seasoned writers who still crank out novels on manual typewriters. “Every officer has his or her level of comfort when it comes to equipment,” Jones concedes. “But for me, there’s no way I’d ever go back to manual diagramming.”

Real-life C.S.I. prefers CAD Zone software.

Daniel Holstein, a senior crime scene analyst with the Las Vegas Metro Police Department, began using The Crime Zone about six years ago. “In a criminal investigation time is of the essence,” Holstein said. “The faster you can create a crime-scene drawing, the faster you can get detectives working on the case. You’ve got to have drawings that are accurate, while showing complex information clearly.”

As anyone in law enforcement knows, people often make mistakes, but evidence never lies. To that end, The Crime Zone software keeps everyone honest. Holstein says the diagramming software made all the difference in solving a puzzling Las Vegas homicide case.

Witnesses reported seeing a gunman at the northeast corner of an apartment building. Based on this information, officers detained a suspect for questioning. The suspect vehemently denied being involved. “I went out to the scene, plotted everything, then returned to

the office and created a diagram with The Crime Zone,” Holstein said. “When I did the diagram, I pinpointed two holes in the outside apartment wall, which showed a line of trajectory that led to the southwest corner from the apartment.

“I immediately alerted detectives to that fact, and they returned to the scene and found witnesses who were standing on that corner. Before the trail could go cold, officers uncovered a different suspect, and the initial suspect was released.” The suspect was subsequently charged and convicted of the crime. “Without The Crime Zone, it’s very likely that the real suspect would have

slipped away,” Holstein said.

He’s the real-life Gil Grissom.

Gil Grissom, one of the main characters of the popular “C.S.I.” television series, is based on Holstein. “C.S.I.” deals with fictional crimes committed in Las Vegas and the investigators who solve those crimes.

The show accurately depicts many of the technical aspects of the job. The crime analysis kits and tools are vital to successful crime-fighting, and they are all realistically presented in the stories. The tools and the investigators work behind the scenes and aren’t well known to the public at large.

In the TV series, homicide detectives assume a lesser role to the crime scene investigators. In actuality, detectives and crime scene analysts work closely together, but they are charged with different areas of responsibility. Holstein explained that once in a great while he’ll sit in on a suspect interview, but that’s really the detective’s job. “They interrogate the suspects, and we interrogate the evidence,” he said.

The LVMPD staffs 36 crime scene analysts, plus seven supervisors. All 43 analysts are required to know The Crime Zone software and all of them must meet yearly proficiency standards. Holstein also teaches a class on fingerprint

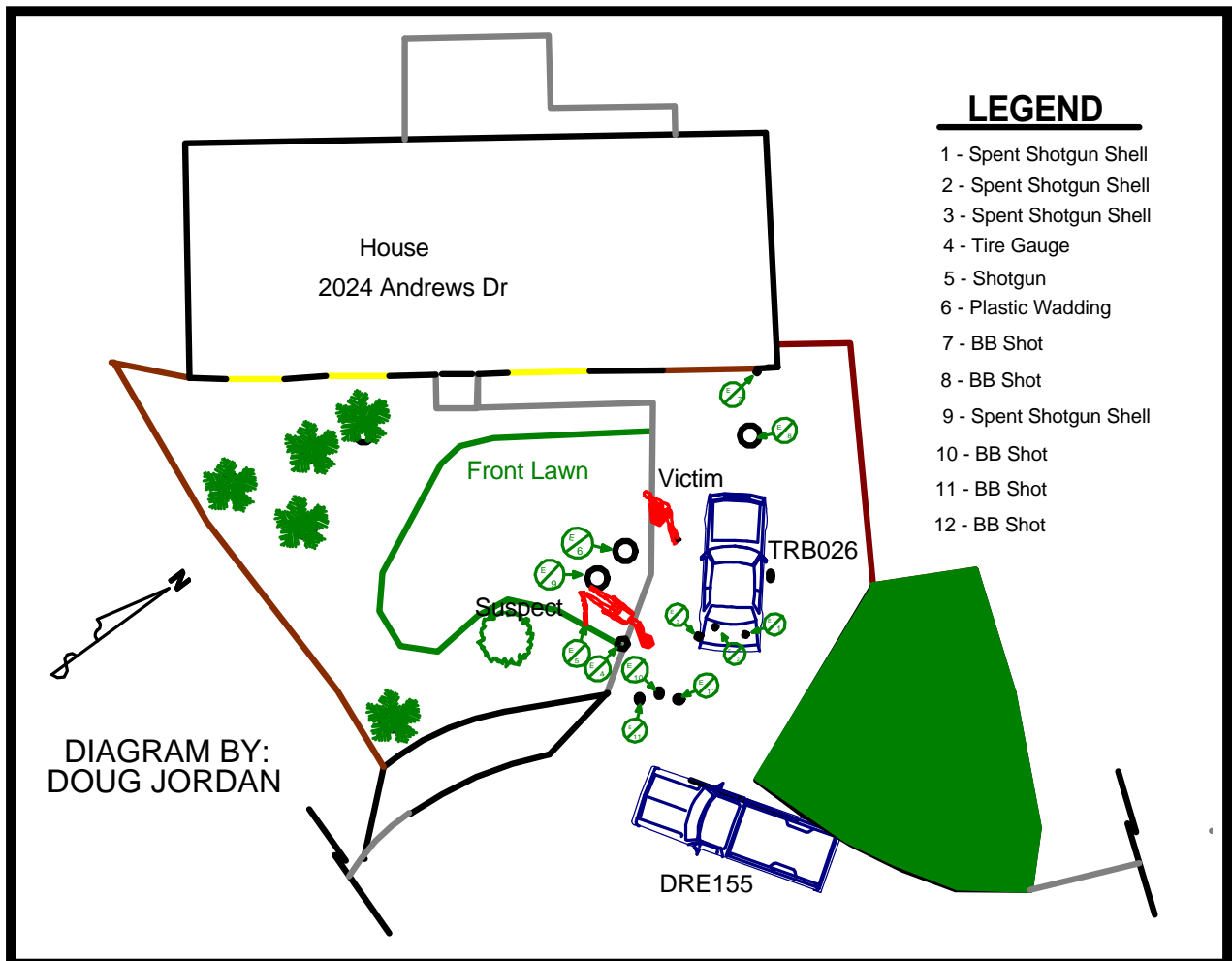


Figure 1 - The Murder/Suicide Diagram drawn by Doug Jordan of the Eugene PD

classification and identification and he says that the software is a valuable teaching aid.

“It’s important for schools to use practical, easy-to-use software in their classrooms,” Holstein said. “Law enforcement agencies greatly benefit when new recruits are already familiar with high-technology tools.” Holstein serves as a consultant to “C.S.I.” writers regarding crime situations that he might come across in the line of duty. That professional knowledge greatly contributes to the realism of the show and is a huge factor in its popularity.

A vote of confidence for both CAD Zone programs.

You don’t need to be a CAD expert to benefit from crime scene and crash reconstruction software. That’s the word from Doug Jordan, a detective in the financial crimes unit of the Eugene (Oregon) Police Department. Jordan says that diagraming software saves time, ensures accuracy, and improves efficiency. Currently, eight EPD officers use diagraming software.

Jordan had been using a DOS-based drawing program, but when the department migrated to a Windows platform, he discovered The Crash Zone, a companion program to The Crime Zone. Jordan said his department needs to draw fairly complex scenes quickly. “We are always under a big time crunch,” he said. Furthermore, he reports that the officers on his department don’t have time to learn complex, hard-to-learn programs. He said that The Crash Zone is easy for officers to use, even on an irregular basis. “You can step away from the software

for a while, then pick up where you left off. CAD Zone software has proven its worth time and again,” Jordan said.

The Crime Zone was key in enabling Jordan to solve a murder-suicide case in Lane County, Oregon. The diagram (see Fig. 1) conclusively proved what happened: A husband came upon his wife and her boyfriend, shot the boyfriend as he tried to flee, then killed himself.

On another occasion, an off-duty police officer was involved in an automobile crash with a civilian. The woman who hit the officer’s car initially stated that she was in the wrong. But once she learned that she’d collided with an off-duty cop, she changed her story and threatened to sue the city. “By creating a diagram with The Crash Zone,” Jordan said, “we were able to dismantle her story piece by piece, and the law suit never materialized.”

Some final considerations.

Of course, no matter how powerful or flexible a software program may be, technical support is a key consideration. Jordan says this is one area in which The CAD Zone excels. “They’re there for you,” he said. “And they care. If you’re not absolutely 100% satisfied, they’ll do whatever it takes to make you happy.”

The computer era continues to usher in amazing new tools that lead to exciting breakthroughs for law enforcement officers. While computer diagraming is not new, many departments have only recently adopted this type of software. The reasons for this vary, but suffice it to say that

there’s no way that hand-drawn diagrams can stack up to computer drawings—in time, efficiency, accuracy, and professionalism.