History of Vehicle Databases in the U.S.

In the early 1980’s the Michigan State Police Forensic Laboratory, in East Lansing, MI was using a program written by Lt. Donald Collins and ran on a Digital Equipment Corporation Corporation Model L-70 Computer. Lt. Collins’ program could search the database of vehicle stance acquired from manufacturers, various publications and automobile dealers. In the late 1980’s Lt. Collins reworked the program to run on an IBM RS/680 (AT) Computer which cut the search time from 23 sec to about seven seconds.

In 1988 Lt. Roger Bolthouse of the Michigan State Police (MSP) entered into a partnership with Sgt. Lawrence Nause of the RCMP. Through open cooperation and information sharing the TracS program was developed. The data supplier Jato Dynamics was contracted to provide yearly updates. In 1993 Jato took over maintaining the TracS database for the MSP laboratories.

In early 2000, Jato Dynamics approached me with the idea of developing a web-based search program. This would provide web access to the vehicle stance data and would be up to date at all times. I provided them with the seventies and early eighties data they did not have. Jato released the TracPrint.com in 2003 and sold subscriptions until 2009 when they discontinued the service.

Interpreting and Measuring Tire Tracks

When we examine a set of tire tracks we try to determine the front and rear tracks. We measure the tire width and the track width. Center to center, inside to outside, outside to inside, inside to outside, outside to inside. When searching the database we use the track width most of the time.

Some tire tracks are more difficult to analyze. These tracks in grass may require several people to measure. We average all the track measurements to obtain the best list of possible suspect vehicles.

Another useful track measurement that can help narrow down the list of vehicles is the wheelbase. If you can locate a section where you can identify where the front and rear tires stopped you can measure the approximate wheelbase.

Project the inside corners of the tires and measure the approximate wheelbase from the inside leading edge rear track to the inside leading edge front track. If you measure from the outside corners of the tires the wheelbase measured will be shorter or longer than the actual wheelbase.

Depending on the surface the impressions are made on, you may not be able to get an accurate wheelbase measurement. If one tire leaves an impression in a softer substrate than the other tire you will need measure to an estimated point in the same plane as the softer tire.

Using the Database

Averaging the center to center, outside to inside, inside to outside, inside to inside plus a tire width, and the outside to outside minus a tire width, the analyst will calculate the track width to search. The more measurements taken the higher confidence the analyst will have in the calculated track width and will help determine how narrow to make the search parameters.

When the center to center measurement of 64 inches +/- 5 inches was searched using the TRACs Vehicle Search Program, one of the vehicles on the list was a 1993 Chevrolet Suburban which was the type of vehicle the suspect owned.

What Vehicle Stance Databases Are Available Now

After Jato cancelled all subscribers to TracPrint.com in October of 2009, forensic analysts began asking me what we can do to maintain the vehicle stance search service we were providing to agencies. I contacted Jato Dynamics and asked if they would be interested in selling me the data again to update our TRACS Program. They said they would not be interested in going back to that arrangement. They would be interested in having someone take over the distribution to agencies wanting access to the web site. They would open up the web site again for around $12,000 a year. Whatever paid that fee and took over the administering access could charge whatever they wanted to recover the $32,000. To date I have not been able to find anyone interested in this arrangement.

I have redistributed TRACS to our analysts. Although it contains vehicles from the 1970’s to 2002 it is still helpful as an investigative tool. I have made contact with several companies that have vehicle stance data available in their accident reconstruction programs. Dan Waal at Chrome.com is interested in selling me the data; however, the cost to update TRACS from 2002 to 2010 would be about $40,000 and $5,000 per year after that. Dan Vonhoff of Expert Witness Services, Inc / ANSYS IT Systems, gave me a link to a free program called Canadian Vehicle Specifications.

The Canadian Vehicle Specification program looks to be a possible replacement for TRACS. I contacted Jean-Louis Commau, P.Eng, Chief, Collision Investigations and Research at Transport Canada, Government of Canada 2789 Sheffield, Ottawa, ON Canada K1B 9V9 Telephone: (613) 993-1661 Fax: (613) 991-5802 jcommau@tc.gc.ca

To be on the Canadian Vehicle Specification List contact:
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Comparison of the Canadian Vehicle Specification Database

Before using the Canadian Vehicle Specification (CVS) database, it will be necessary to make comparisons with the old databases, TRACS and TracPrint.com. Preliminary comparisons for 2000 and 2002 have shown most vehicle stances differ between +/-.1 to .3 inches and a few up to +/- .9 inches. Since TracPrint.com is no longer available I have begun pulling printouts from cases where TracPrint.com was used for the search. One such search covered 2004 to 2009 and similar differences were observed as seen for 2000 and 2002. Analysts in the Michigan State Police Forensic Laboratories have been trained to search +/- .5 inches when using TRACS or TracPrint.com to search fairly accurate stance measurements. Using the CVS program may require a larger search window to avoid missing a possible suspect vehicle. Jean-Louis has beencontracting with an individual to go out to measure new vehicles and supply the data to the Canadian transport. The data from Jato Dynamics is collected from vehicle manufacturers. These differences may be attributed to the methods used to acquire the data. More research needs to be done before adopting the CVS database.

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Acknowledgement:
Migam Toves for his assistance in comparing TRACS and CVS databases.