

**Summary of Survey Analysis:
Evaluation of CR-3 and CR-100
(Revision 1-1-2010)**

Prepared for

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Survey of Texas Law Enforcement: TxDOT 2010 CR-3 Crash Report Form

The Texas Transportation Institute (TTI), at the request of the Texas Department of Transportation (TxDOT), designed a survey to obtain feedback from Texas police chiefs and sheriffs regarding their departments' user experience with the 2010 version of the Texas Peace Officer's Crash Report Form or CR-3. The initial series of 12 survey questions were generated and provided to TTI from the Texas Department of Transportation (TxDOT). These survey questions were expanded upon and an additional 8 questions were generated by TTI. The survey questions were forwarded to TxDOT and approved for distribution to law enforcement agencies around the State to obtain feedback and opinion from in-field user groups.

Respondents

The TxDOT approved survey was posted on the Survey Monkey website, and 1,697 e-mails were sent out to law enforcement agencies asking their officers to participate. Survey responses were collected from July 22, 2010 through the early morning of August 1, 2010.

A total of 223 responses were received to the survey. These responses did not represent 223 separate law enforcement agencies, as multiple responses were received from several jurisdictions. The largest percentage of respondents were from law enforcement agencies in communities of less than 50,000 people (see Figure 1) but larger urban areas were also represented. Figure 1 summarizes the percentage of responses to the survey provided by law enforcement officers State wide.

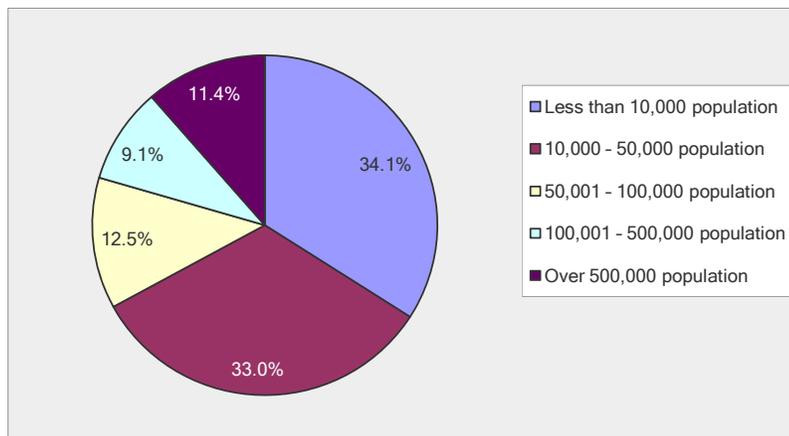


Figure 1. Jurisdiction sizes (community population) of departments responding to survey.

Form Completion Methods and Software

The CR-3 form is made available by TxDOT in two different formats: a fillable PDF and an Excel spreadsheet. The PDF CR-3 form may be completed on a computer and then printed out, or may be printed out as an empty form and completed by hand. Regardless of the format used, all CR-3 forms are submitted as hard copies to TxDOT Crash Records for entry into the Crash Records Information System (CRIS). The figures below represent responses from law enforcement officer users regarding how they or their agency reports crash information to TxDOT. The respondents reported use of these reporting methods as follows:

- Excel version: 17.5 %
- PDF (completed electronically):28.9%
- PDF (completed by hand):14.7%
- Both Excel and PDF used:19.0%
- Not sure/didn't know: 19.9%

Many of the law enforcement agencies in the State contract with third-party vendors who provide computer software for city or county agencies. Approximately 28 percent of the respondents reported that their departments also use third-party vendor software to electronically generate the CR-3 form. The reported third-party software vendors include:

- Tyler Incode/Tyler Public Safety/Tyler Technologies
- Polaris (Data-Nexus)
- Intergraph ILeads
- Open Software Solutions Inc. (OSSI Sunguard)
- Cardinal Tracking
- CRIMES
- Badge
- Cop-sync
- HTE Report Manager
- Sleuth Software
- Southern Software
- In-house software developed by the responding department

It is important to recognize that many of the law enforcement agencies around the State have invested a significant amount of capital into the software programs that they use to collect crash information for the CR-3 report. Continual change to the CR-3 form not only adds to the level of frustration experienced by users but also carries with it a significant cost by having to modify the infrastructure in place that is used to capture and report the crash data.

Usability of the 2010 CR-3

The survey results showed that 56.8 percent of the respondents rated the CR-3 form as either difficult or very difficult to use. By way of comparison, 35 percent indicated that the form presented only some challenges while 7.7 percent found the form easy or extremely easy to use. Figure 2 summarizes law enforcement opinions concerning the ease of use of the 2010 CR-3 form.

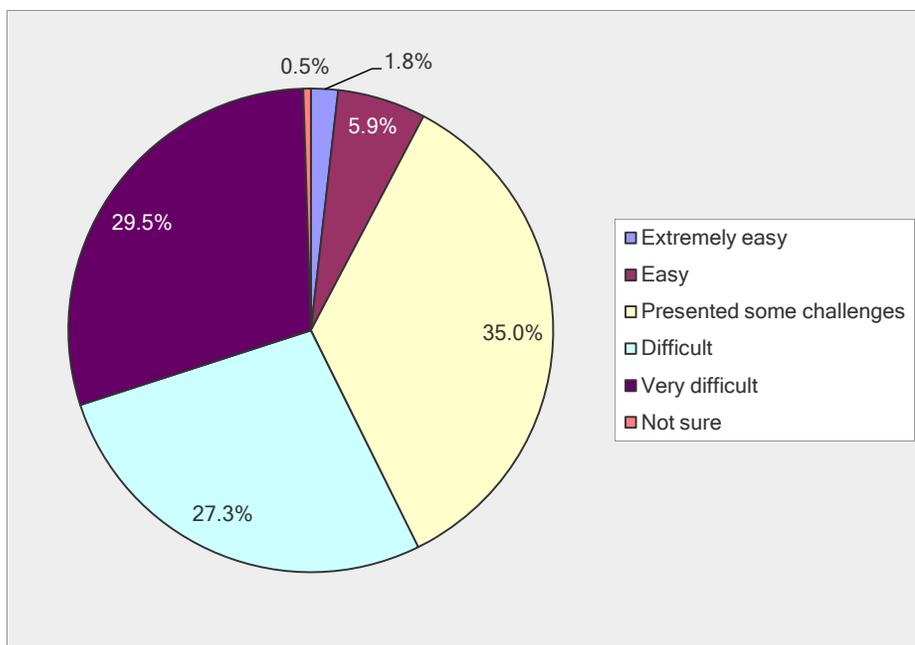


Figure 2. Ease/difficulty of 2010 CR-3 form.

When respondents were asked to compare ease of use of the 2010 CR-3 to the previous version, 72 percent indicated that the 2010 CR-3 is more difficult to use; however, 17 percent found no difference in difficulty, while 9 percent find the 2010 CR-3 easier to use.

Codes

The most common complaint about the 2010 CR-3 is its use of numbered codes for the required fields. Respondents felt that the codes required for many of the form's data collection fields make completing the form unnecessarily complicated and time consuming. The most frequent complaints about the numbered codes were as follows:

- The codes are non-intuitive, resulting in additional time and effort to look up each code in the CR-100 handbook or on the code sheet.
- The codes limit the types of information that can be included in each field, and not all crash situations can be adequately described with the code options available.

- The codes limit the readability of the form by citizens, who must also look up each code on the code sheet to understand what was reported.

Overall Length and Complexity

Due to the amount of information collected on a two-page form, respondents felt that the form was too long and too cluttered. Approximately 45 percent of respondents report that the 2010 CR-3 takes more than 45 minutes to complete.

A related complaint is the large number and small size of the data collection fields, which often contributed to missing data entries, particularly for CR-3's that are completed by hand. Not all responses were negative; a few respondents commented that the new CR-3 form is more streamlined and easier to complete than the previous version.

Field Requirements and Format

Twenty-three (23) comments describe difficulties with the requirements of various fields within the CR-3. Examples mentioned by respondents include the following:

- Because of the way some items are defined in the new form, certain types of crashes and related information cannot be recorded in the way they used to be (e.g., a hit and run crash, construction zone, drug and alcohol test results).
- There is confusion about some of the mandatory and conditional fields.
- The electronic field diagram tools are difficult to use.

Data Collected

Eight (8) respondents believed that much of the detailed information that the form asks for is unnecessary for law enforcement or insurance purposes. Information regarding roadway geometries, intersection descriptions, and roadway conditions are some of the examples given by respondents who feel that they are being asked to spend time providing data that will be used only by traffic engineers. One respondent commented, "Understanding the importance of the detailed roadway description for making our roadways safer, this area is over-emphasized when the roadway condition has nothing to do with the accident. This section should only be used if roadway conditions are a factor."

Continued Changes

Comments from eleven (11) of the respondents indicated a perception that the 2010 CR-3 form is continuing to undergo changes and that officers are expected to re-learn the form every few months as it is changed.

Positive Comments

Six (6) of the respondents made positive comments about the 2010 CR-3, praising the drop-down menus and single key-stroke features (likely referring to the Excel spreadsheet or third-party software).

Returned Forms

Sixty-three (63) percent of respondents have seen an increase in the number of crash report forms being returned to them since the introduction of the 2010 CR-3 in January, with the majority of reporting that 50 percent or more of their submitted CR-3 reports are returned due to errors.

The most frequent reasons given for form returns include the following:

- Incorrect codes (the most common reason)
- Mandatory or conditional fields being left blank
- Errors in roadway/location information
- Incorrect occupant numbering
- Incorrect vehicle information/numbering, e.g. "SUV" vs. "SV"
- Incorrect vehicle damage rating
- Missing officer information or agency information(e.g., name, initial or acronym for agencies)

Thirty seven (37) percent of the respondents indicated that the return rate of submitted CR-3 crash reports decreased or stayed the same, or that they were unsure whether the return rate has increased or decreased. While it is clear that the majority of law enforcement agencies are seeing an increase in the number of returned crash reports in need of correction, others are experiencing no change or a decrease in the return rate.

CR-100 Instructions

Twenty four (24) percent of the respondents reported that either their agency had not received the CR-100 or that they did not know if their agency had received it (which may indicate that they do not know where to access it). Twenty nine (29) percent reported that they were unsure if the CR-100 was being used by their officers, and another 10 percent reported that the CR-100 was not being used.

The most frequent comments about the CR-100 manual were as follows:

- The CR-100 manual is too long, making it difficult to use in the field.
- The length of the manual is considered by many respondents as an indicator that the form is poorly designed.
- The manual's instructions are not always clear. Not enough information is provided about certain fields on the form, and some crash situations are not covered.
- The manual's index is poor.
- As with the CR-3 form, a perception held by some respondents is that the manual is being updated/changed frequently, and that departments are expected to keep re-learning the procedures each time a change occurs. A variation on this complaint is that even when the CR-100 instructions are being followed, forms are still being returned because of errors, with the

implication that the CR-100 must be inaccurate. However, respondents did not give specific examples of these instructions/errors.

There were some positive comments about the CR-100 with several respondents reporting that the CR-100 answers most questions and provides useful information for completing the CR-3 form.

CR-100 Training

Sixty (60) percent of respondents reported that their agency had sent a representative to the TxDOT and DPS-sponsored Training Workshop held in November 2009; 12 percent had attended the two-hour training course offered by the Texas Municipal Police Association, and 75 percent of respondents stated that training had been provided within their departments. However, training does not seem to have affected participants' perception of or success with using the CR-3.

One possible reason for the frustration and high error rate with the 2010 CR-3, even after training, is how infrequently many officers actually use the form in the field. Of the officers responding, approximately half reported that their agency submits 10 or fewer crash reports per week. In these small agencies, it is likely that each officer may complete a crash report only once or twice per month, and must essentially "re-learn" the form each time. While the CR-100 manual contains useful information, because of its length, it is impractical for use in the field. A condensed quick reference guide, addressing the most frequent crash situations and reporting questions, should help to bridge the gap between initial training and in-field completion of the CR-3.

Recommendations

1. Expand opportunities for training. Consider altering the format of the training curriculum to include more hands-on work in the classroom. For example, trainees could be presented with descriptions of crash scenarios for which they would complete a report using the new CR-3, code sheet, and instructions. Scenarios should include the most common crash types and the most common reporting errors.
2. Make training available through means other than traditional classroom environment. Alternative methods of training delivery such as webinars or videoconferencing should be considered. These methods allow for large groups of learners to be contacted while reducing training costs incurred for travel, lodging and meals.
3. Make sure that a consistent message is being delivered to law enforcement concerning issues about the CR-3 and CR-100. Develop a list of Frequently Asked Questions (FAQs) with answers for (a) possible inclusion in a future CR-100 revision and (b) for reference by TxDOT staff who receive questions from police departments.
4. Develop a condensed reference guide that is a supplement to (not a replacement for) the CR-100. This guide should address the most common/frequent crash situations that officers are likely to encounter, and provide reminders and examples for correctly completing the CR-3.
5. A follow-up survey should be conducted in 9 to 10 months to re-evaluate the acceptance of and experience with the CR-3 and CR-100. This will allow additional time for officers to become acclimated to the new form and to take advantage of opportunities for additional training.

6. Any future changes to the CR-3 reporting system (electronic or paper) should be user-tested beginning in the early stages of development. This will help to minimize law enforcement frustration, complaints and errors, and will maximize the accuracy of crash reporting data.