Examining Methods to Improve Fire Reports at the Delhi Township Fire

Department Through Quality Assurance Reviews

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CERTIFICATION STATEMENT

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Abstract

The problem that this study investigated was if the Delhi Township Fire Department (DTFD) had an adequate quality assurance review process on all of the fire reports generated. If DTFD did not have an adequate review process, then what methods or changes are needed to improve the review process. The purpose of this study was to identify the current methods the Delhi Township Fire Department is using for fire report Quality Assurance (QA) review and determine if these methods are effective and if they are not, then examine what other methods are available that could improve the outcome of fire report accuracy.

A descriptive research methodology was used to answer the following questions: What are the current quality assurance methods for fire report reviews used by the Delhi Township fire Department? Are the current methods used by the Delhi Township Fire Department effective? What type of fire report review process are other fire departments using to make sure their fire reports are accurate and complete? What training programs do other fire departments have to help them insure accurate and complete fire reports? What are the most common data elements of fire reports that are incorrect or incomplete? A literature review, interviews, and data studies identified key issues involved with the current fire report Quality Assurance.

The results of these processes found that DTFD needs to improve its fire report writing, reviewing and training. Recommendations were made to develop a report writing policy, and use this policy to develop a comprehensive training program on report writing and Quality Assurance. Increase the number of fire report reviewers. Provide feedback to the report writers so they understand what errors they have made so they do not repeat them.

Table of Contents

Tables

Appendices

INTRODUCTION

Nearly all of the part-time and career firefighters in the State of Ohio are either Emergency Medical Technicians or Paramedics. One of the first lessons taught in medic school is that if a procedure or an observation is not documented on the run report, that procedure or observation did not happen. This idea forces the medic to accurately document the medical call that they were on, because the run report will be used immediately by the emergency room for continued patient care and any errors or omissions could have grave consequences for the patient's outcome. There is a general feeling that fire reports do not need to be completed to the same standards as medical reports, many times fire reports are done hours and sometimes days after the detail, and information can be forgotten or entered incorrectly.

The problem that this study investigated was if the Delhi Township Fire Department (DTFD) has an adequate quality assurance review process on all of the fire reports generated, and if it does not, then what methods or changes are needed to improve it.

There are several reasons to have accurate fire reports: accuracy, completeness, liability, and revenue. Complete and accurate reports are necessary because the fire report is a legal document generated by a governmental agency. The fire report is the document that tells the story of the emergency detail, it gives you the: who, what, when, where, and sometimes why. The fire report is a tool that the department and other agencies use to make critical decisions about daily operations and future changes. If the data collected is incomplete, non-existent, or incorrect: bad decisions could be made about fire department operations, product recalls could be missed and the community could be left with increased fire danger. We live in a very litigious society, one need only watch TV during the day time to see all of the commercials for lawyers who promise free money for your misfortunes or perceived misfortunes. Without thorough and

accurate documentation, fire departments are opening themselves up for increased liability. The downturn in the economy has affected nearly everyone in the United States; governments have not been immune from this problem. The slump in economic growth has meant a decrease in revenue from taxes and fees, this money is what fire departments use to operate their departments. Many departments have looked to alternative revenue streams. One revenue stream that DTFD has started to use is the ability to bill insurance companies for auto accidents. To bill an insurance company for an auto accident the fire report has to be accurate and specific on how the actions of the fire department relate to the accident that the insurance company's client was involved in. If the fire report does not clearly document the relationship then the claim will be rejected and the department will lose out on its compensation.

The purpose of this study was to identify the current methods the Delhi Township Fire Department is using for fire report Quality Assurance (QA) review and determine if these methods are effective and if they are not, then examine what other methods are available that could improve the outcome of fire report accuracy. Increased accuracy will give the department a complete picture of its emergency details, and allow it to make more informed decisions about the fire department operations. This increased accuracy will increase the amount of auto accident details that are billable and to decrease the liability from incomplete and inaccurate fire reports. A descriptive research methodology using data collection, interviews, and surveys were used to answer the following questions:

1. What are the current quality assurance methods for fire report reviews used by the Delhi Township fire Department?

2. Are the current methods used by the Delhi Township Fire Department effective?

3.   What type of fire report review process are other fire departments using to make sure their fire reports are accurate and complete?

4.   What training programs do other fire departments have to help them insure accurate and complete fire reports?

5.   What are the most common data elements of fire reports that are incorrect or incomplete?

BACKGROUND AND SIGNIFICANCE

Delhi Township was established in 1789, located west of Cincinnati, Ohio, Delhi Township is 10 square miles in size, and has approximately 30,000 residents. The Township was a rural farming community known for its numerous greenhouses until after World War II. After the war the suburban building boom began and Delhi Township followed. In 2011 Delhi Township is now a bedroom community with mostly all residential housing. Some of this residential housing includes large multi-story retirement and nursing homes and the Sisters of Charity which is a large 50 acre, 20 building campus that serves as the world headquarters for this catholic order and their retirement home. The College of Mt St Joseph which was started by the Sisters of Charity is also located in Delhi Township; it has approximately 4000 undergraduate and graduate students.(Delhi Township 2011)

The Delhi Township Fire Department (DTFD) was established in 1935 and just celebrated its diamond jubilee anniversary in 2010. The fire department has grown with the rise of the population of the township. Today the DTFD has 22 career firefighters and approximately 50 part-time firefighters. DTFD staffs 3 firehouses, 2 engines, 1 quint and 3 advance life support ambulances. In 2010 DTFD responded to 2432 EMS calls, 658 fire calls for a total of 3090 calls.

Each one of the 3 stations has a company officer assigned to be the officer in charge of that station and fire detail, when the company officer is not working then a fill-in acting officer takes their place, DTFD has 3 shifts for a total of 18 personnel who could be in a company officer role. The company officer is the person who is responsible at an emergency detail for gathering information that is critical and pertinent to completing the fire report when the crews returns to the station.

When the company officer at DTFD returns to the firehouse from a detail they use a computer program called FIREHOUSE software to document the fire report. This fire report includes many data elements, some of the most common are: time, date, location, nature of the detail, units responding, personnel responding, tasks performed, people involved, in charge officer and a narrative. Depending on the nature of the detail, additional information could be required; there are additional forms that open up on the computer depending on some of the answers that are input into the data fields. If the call was for a house fire, there would be several pages that would open up that would require the user to provide information on the house, size of the fire, location inside the house of the fire, damage caused, what ignited the fire, what burned and many other specific data points to that particular type of detail. All of this information that is asked for by the FIREHOUSE software comes from the National Fire Incident Reporting System (NFIRS). NFIRS was created in 1974 by the US Fire Administration (USFA) as a way to track data from fires and other emergency details that fire departments, rescue squads and other emergency organizations respond to (NFA 2011) "The database constitutes the world's largest national annual collection of incident information." According to the USFA:"

- The NFIRS represents the world's largest, national, annual database of fire incident information.
- State participation in NFIRS is voluntary.

- 50 states and the District of Columbia report NFIRS data.
- 37 fire departments with a population protected of over 500,000 participate in the NFIRS.
- Nationally, about 23,000 fire departments report in the NFIRS each year.
- Participating departments report an average of 19,000,000 incidents and 1,000,000 fires each year.
- The NFIRS database comprises 75 percent of all reported fires that occur annually."

Once a fire report is completed in FIREHOUSE software by the company officer at DTFD, the report is reviewed by the Assistant Chief at the end of the month, it is scanned very briefly to make sure that the there are no gross errors. Once this is completed the fire reports are sent electronically to the Ohio State Fire Marshal's Office. The Ohio Fire Marshal is the collection point for NFIRS data for all Ohio fire and rescue departments. When the Ohio Fire Marshal's office receives the data from the departments, it is reviewed by a computer program for gross coding errors and time and date errors. This review is very basic and does not go into a lot of the report details. If errors are found, the report is sent back to the department to be fixed. The Ohio Fire Marshal's office then sends this information to the US Fire Administration. (OH Fire Marshal 2011)

Once all of this information is at the USFA it is placed into annual data bases that will be used by thousands of organizations and individuals, groups and people who will use this information include: local government, state government, US Fire Administration, US consumer Product Safety Commission, National Highway Traffic Safety Administration, The Center for Fire Research, National Institute of Science and Technology, private industries, National Association of Home Appliance Product Manufacturers, media, insurance companies, attorneys, International Association of Fire Chiefs, International Association of Fire Fighters, National Fire Protection Association and many other interested parties. Most commonly this information is used by local jurisdictions to track the amount and types of emergency detail that they respond

to. They use the data they collect and this can help the department plan where they need to build a new fire station to reduce response times, plan when they need to increase crew sizes, see if there is a trend that may indicate there is an arson problem and to justify why they need additional personnel, equipment or money to their governing political body.

Currently the DTFD only has the Assistant Chief of Administration reviews the fire reports for any gross coding errors and incomplete narratives, if any errors are found, the Assistant Chief fixes the codes, and submits the information to the Fire Marshals Office. The author of the run report is not notified of the mistake that they made, unless it is severely wrong or the author has shown a pattern of entering the wrong data in the same location several times. The weakness in this system is the Assistant Chief must remember from month to month who made mistakes and then notify them of their mistakes, there is no opportunity to learn from your mistakes.

The DTFD currently has a Quality Assurance program for Emergency Medical Service (EMS) details. The EMS QA program is mandated by the Academy of Medicine of Cincinnati, this is a group of doctors who authored the Southwest Ohio medical protocols that EMTs and Paramedics must follow are written by. The Southwest Ohio protocols specifically state the exact types of EMS details that must be checked for Quality Assurance, these include: cardiac arrests, death of a patient, Do Not Resuscitate, repeat runs within 24 hours, complaints, non-transport runs and at least 10% of the total EMS details. (Academy of Medicine of Cincinnati 2011) The EMS QA program at DTFD works by having a QA reviewer on each shift, the reviewer is not allowed to review the EMS details for the shift that they work on, this reduces any conflict and helps keep the review unbiased. The reviewer looks at the EMS report for 2 basic things: are all of the data field filled out and filled out correctly and did the crew follow the Southwest Ohio

protocol when treating the patient according to what they documented. The QA reviewer then makes notes on a QA work sheet with the discrepancies and sends this work sheet along with a copy of the original run report to the author, many times the QA reviewer will also put down instances where the EMS crew did a good job. This allows the author of the report to see where they varied from the protocol, failed to document clearly or completely and sometimes where they excelled in their EMS skills.

Liability is a big concern with fire departments today, poor or no documentation of a fire detail can lead to disastrous results if a fire detail is used in court. Many times if there is a court case either civil or criminal, it can be months if not years before a firefighter is called to testify in court about the fire detail. The best way to remember what happened at the fire scene is to document as early and completely as possible. The longer a person waits to write events down the report the more they forget and the events can change in their mind. Incomplete or incorrect reports can be worse that no report at all. If a firefighter is called to testify in court and their report is poorly done an attorney can use this to discredit the firefighter and the fire department. Liability can also be a concern when incomplete documentation is done when there is possibly a product liability case, if a household appliance or a vehicle is potentially causing fires or injuries and this is left out of the fire report agencies such as the: US consumer Product Safety Commission and National Highway Traffic Safety Administration, may not get the information they need to start a recall notice or issue an advisory or warning to the public about unsafe products.

Delhi Township fire department participated in a smoke detector and carbon monoxide detector give-a-way that was sponsored by the Cincinnati Chapter of the American Red Cross. The data that was used for this program came directly from NIFRS information, and the fact that

there is a data field about smoke detectors and their use and operation help get this program started. When it was found that there was a segment of the community, particularly low income and elderly that go without this basic fire protection, the Red Cross provided fire departments smoke detectors, carbon monoxide alarms and batteries that they could give to their residents.

Revenue is a concern for every fire department is the country, the economic downturn and slow growth in the economy has put a strain on most fire departments budgets. Normal streams of income are not producing like they have in the past. Foreclosures affect fire departments that rely on property taxes. When a house is in foreclosure the taxes are not normally paid and the fire department does not get their income from this source. Departments that rely on income taxes have been suffering because people have lost their jobs and the people who are able to find new work are not making the same salary as they had in previous years. In Ohio there is a strong movement to eliminate the estate tax; this is a tax where when a person dies any income from their estate above $338,333 is allowed to be taxed by the state. A portion of this taxes comes back to the local government where the taxes was collected for Delhi Township this is approximately $1 million. Currently the elimination is tied up in legislation but it is slated to go into effect in 2013.(Fallon 2011) This is a source of revenue that will drastically affect Delhi Township.

In 2009 DTFD started a program to bill the automobile insurance companies for auto accidents that their clients were involved in. This billing program has the potential to bring in between $25,000 and $50,000 each year. DTFD uses a 3rd party billing service that sends the bills to the insurance companies. Before the bill is sent the billing company reviews the fire report for completeness and accuracy to see if the accident is eligible to be billed. Time is a factor in this billing, many people have insurance that have caps and limits on how much will be

paid out for all damages, this includes: damage to vehicles, injuries, pain and suffering, tow trucks, and now payments to fire departments for services. The quicker the bill is submitted the better chance it has of getting paid, if there is a delay in getting the fire report submitted due to sloppy report writing there is a good chance that the department will loose out on its share of the insurance money. In 2010 DTFD had 73 billable auto accidents, 25 of these were rejected and or delayed because the reports were incomplete or coded wrong. This has meant the loss or reduction of insurance money because of the delay in processing the paper work.

Another revenue stream that is a resource with correct incident reporting is the annual EMS grant, Training grant and Equipment grant from the State of Ohio. (State of Ohio ODPS 2011) There is grant money available to fire departments for fire equipment, EMS equipment and training money. The EMS grant money comes from the fines levied on people who do not wear their seatbelts. In 2010 there was over $4 million in fine money available to Ohio fire and EMS departments. All of these grants have different requirements to be eligible to receive them but, they all have one requirement in common: The fire department must use a NFIRS based reporting system to send data to the state each month, failure to do so will disqualify the department from the grant for a year. Unfortunately, DTFD learned this lesson the hard way in 2005, a computer downloading error was not sending the NFIRS reports to the State Fire Marshals office in time and resulted in the department losing nearly $9000 in grant money for the year.

The potential impact this study could have on the Delhi Township Fire Department is a reduction of reporting errors, increase of the reliability and usefulness of the data collected. By examining the current QA methods used for fire reports and researching what other departments are doing with their QA on fire reports DTFD can reduce their liability due to sloppy, incorrect

and incompletes reports. It will ensure that revenue streams such as auto accident billing and grant money are not reduced, delayed, or stopped, and improve the report writing abilities of the company officers and acting company officers.

LITERATURE REVIEW

The literature review used in the preparation of this research paper included published Executive Fire Officer Applied Research Projects, and firefighting text books.

In the text book *Fundamentals of Fire Fighter Skills,* National Fire Protection Association. & International Fire Chiefs Association. (2005) reports that the consequences of incomplete and inaccurate reports are," Improper or inadequate documentation can have long term negative consequences. Fire reports are considered public records under the Freedom of Information Act, and may be viewed by an attorney, an insurance company, the news media or the public. If a fatality or loss occurs, incomplete or inaccurate reports may be used to prove that the fire department was negligent. The department, the Fire Chief and others may be held accountable." This excerpt from the very popular text book *Fundamentals of Fire Fighter Skills* is a good representation of all of the leading fire service text books when teaching the subject of fire report writing. The total content of fire report writing training in these texts is less than a page long; most of the page is filled with 2 very large pictures. The texts go on to give a brief one and a half page description of NFIRS and lists important data elements. This is the sum total of training that most new fire recruits get on the subject of fire report writing.

The issue of data collection and the gaps and deficiencies in collecting this information is not unique to the Delhi Township Fire Department; in May of 2011 a summit was convened to discuss these problems. The proceedings of this Summit were published as the *National Fire*

Service Data Summit. It was found thru their research that," there were many missing key data items. Missing data was found in all data elements and some departments had as much as 60% of their data missing. Additionally, there were unusable/implausible data from12 of the 40 departments, such as property values of zero, crew sizes of one on engines, trucks, quints, within department deployment configurations, and implausibly low event numbers. Finally there were inconsistent data interpretations, including the coding of time and structures." (Santos, 2011) The summit identified four key gaps that needed to be overcome in order to have a successful national fire data collection system. Burden is the amount of effort it takes to complete the data entry. The Summit found that firefighters sometimes choose the easiest path when doing data entry. Most firefighters did not become firefighters because they want to perform clerical duties. Firefighters want to be in the field helping people. Usefulness is what becomes of the data once it is collected, many firefighters and company officers do not directly see the information that they are collecting, so they do not think about how this data will be used at a later time, so they sometimes do not collect the data or they do not collect enough. Motivation is the commitment of the data collectors, many times people are just apathetic to the job and do not understand why they are getting this information or they do not care about it. Accuracy means that the data elements are measurable and reproducible. With accuracy there needs to be a standardization of terms and data, follow-up, and elimination of individual interpretation. In his research Kreuger found that given the exact same information about a cooking fire to input in a standard NIFRS fire report, even experienced report writers varied widely in their interpretation of the codes and errors. (Kreuger,2010)

In his research on report writing: *Fire Service Technical Report Writing: A Lost Art* McLaughlin "has identified that fire fighter recruit academies focus on the development of operational skills with little to no training in administrative areas: while police officers spend roughly one-third of the time in their academies learning how to write reports that can withstand intense legal scrutiny."(McLaughlin 2007) McLaughlin's research reinforces the idea that the fire service does not put a high level of importance into fire reports. He gives the example of police officers who are regularly called into a court room to testify about the reports they have written and the importance good report writing is given during early stages of their career. Even when firefighters have completed their basic training and are working on a fire department, fire report writing is still a low priority. (McLaughlin 2007)" The issues with report writing are not limited to the Merced Fire Department. In fact the fire service is known for having poor report writing skill as compared to law enforcement professionals. The significance of the problem is systematic: it has been the author's experience that in order to become a certified Fire Officer in California, an individual must successfully complete ten week long courses on subjects that include Incident Command System, strategy and tactics, personnel management, fire service instructor, fire prevention and fire investigation. None of these classes teach the students how to properly document an incident or write a report narrative, nor are any classes offered." Fire departments across the nation become frustrated because the NFIRS reports and related narratives continue to be poorly written even after advanced training in leadership. According to Stefanic the State of Florida's Fire Officer class uses 6 text books but," At no point does the program give direction on incident documentation, or more specific NIFRS". Stefancic, Josh. (2011)

Fire Officer: Principal and Practice is one of the leading national text books on Fire Officer 1 training. Fire officers are the people who traditionally generate the most fire reports at a fire department. It would be reasonable to believe that because basic firefighters do not generate many fire reports and have little training, then fire officers would have a lot more training because they are the ones generating the majority of the reports. This is not true. *Fire Officer: Principal and Practice* has very little on fire report writing. The book has a half of a page of text and a figure of a sample incident report. In California, McLaughlin found the inadequacies of their training program, the same is true for this text book that is used nationally.

If a basic firefighter and fire officer text book does not adequately address fire reports, it could be possible that this subject is addressed in a Chief Officers training book. *Chief Officer* published by the International Fire Service Training Association did have the most information about fire reports, than the other texts. This text still did not cover generating a fire report. *Chief Officer* goes in to great detail on filing systems of the data generated from fire reports. *Chief Officer* gives many ideas for information application, or how to use the data once it has been generated. There is also a section on statistical analysis and how to perform it correctly.

After conducting her research into improving fire reporting, Steputat has determined," The single largest benefits LFD can anticipate from these changes is that our data and information will finally be useful to us. The Fire Chief will be able to produce an annual report; fire prevention will be able to determine what specific risks we have in our community and focus on those; above all we will know that the information we are providing to the public, council or the state is reliable and accurate."(Steputat 2009).

The research paper: *Multi-phase study of firefighter safety and the deployment of resources* was an ongoing study to research data that is collected from fire departments and put

meaning and usable statistics behind it. According to the paper "Presently community and fire service leaders have a qualitative understanding of the effect of certain resource allocation decisions. For example, as decision to double the number of firehouses, apparatus and firefighter would likely result in a decrease in community fire losses, while cutting the number of firehouses, apparatus and firefighters would likely yield an increase in the community fire losses. However decision makers lack a sound basis for quantifying the total economic benefit of more fire resources or the number of firefighter and non-firefighter lives saved or injuries prevented". (Moore-Merrell 2008) This is the beginning research that will allow fire departments to take their data and translate it into actual usable information, they will be able to go to their government leaders and provide them with solid evidence on why a change needs to be made or the status quo maintained.

A follow-up report and research paper to *Multi-phase study of firefighter safety and the deployment of resources* is *Report on Residential Fireground Field Experiments.* The study conducted live fire evolutions and 22 separate fire ground tasks to determine how long it took different size crews to accomplish theses tasks. Some of the results of their studies they found were " The four person crews operating on a low-hazard structure fire completed all the tasks on the fireground seven minutes faster-nearly 30%-than the 3 person crews….There was a 10% difference in the "water on fire" time between the 2 and 3 person crews. There was an additional 6% difference in the "water on fire" time between 3 and 4 person crews. The 3 person crews started and completed a primary search and rescue 25% faster than the 2 person crews. The 4 and 5 person crews started and completed a primary search 6% faster than the 3 person crews and 30% faster than the 2 person crew." (Moore-Merrell 2008) This research can be used not only to increase crew sizes but, when coupled with the data from the fire department incident reports it

will help make decisions on staffing and resource allocation: Should the department staff a 4 person engine crew or should they move a person from the engine to the ladder to make a 5 person truck crew? In her research on NFIRS reports Quick found that police departments have used the Universal Crime Report system that was set up by the FBI in the 1930's with more success than fire departments have used the NFIRS system. Quick notes that the FBI treats this data like it was a product and uses this information for immediately shaping policy and in aiding in the deterrence of future crime.(Quick,2009)

All of the sources in the literature review all indicated the same thing; the data being entered into fire reports must be correct, if it is not correct then the end users of this data will have flawed results. Most of the literature points to a lack of training at the basic firefighting level and at the company officer level on fire report generation.

PROCEDURES

Literature review was done to look to see if there was information that existed that could help solve the questions about quality assurance in fire reporting. The National Fire Academy was queried thru their Learning Resource Center portal on their website. This site has a specific search engine that will allow the user to search research papers from participants in the Executive Fire Officer program. Using this search engine and a combination of the words "fire report", "NIFRS," and "quality assurance" several reference paper were found. No single paper found during this search yielded a paper that exactly matched this research papers topic and questions. If the search was for "fire reports", some of the paper covered the narrative portion of the fire report and not the other statistical elements. Using "quality assurance" as one of the key works brought back a lot of information about EMS reports and none of strictly fire reports. Several text books were examined to determine the base line training and the importance that

report writing was given in basic firefighting training, and fire officer 1 classes. The National
Fire Academy and the Ohio State Fire Marshal's office both have publications on report writing
that describes what fire data should be collected, and how it should be reported. The National
Fire Service Data Summit was held to deal with fire report data, this Summit dealt with a wide
range of topics including: problems with collecting fire data, what elements should be gathered,
how to use the data, how should technology be used in data collection and many other broad
national questions relating to fire data. After the Summit, a website was created and Proceedings
were published with some of their findings, recommendations and further research that they
intend to conduct.

   Data Collection was obtained from fire reports from DTFD. As noted earlier, fire reports
at DTFD are reviewed briefly by the Assistant Chief of Administration before they are sent to the
Ohio Fire Marshal's office. If old fire reports were reviewed for accuracy and completeness, it is
very possible that the Assistant Chief has found the errors and has corrected them before sending
them off to the Fire Marshal. Just reviewing archived reports would not give an accurate picture
of errors being committed in report writing. It was necessary to approach the Assistant Fire Chief
and have him allow the author access to these reports before they were corrected and sent away.
At the beginning of each month the author would go thru the previous months fire reports and
check nine specific data elements and gather four other statistical elements. The following data
elements were gathered:

1. Incident Type: This is the actual situation that was found when the fire
   department arrived at the scene of the call; this is not necessarily what they
   were dispatched for. To determine if this is correct, the narrative was read and
   compared to the incident type code given.

2. Actions Taken: This is what the action fire department performed on the scene. The correct Action Taken was determined by reading the narrative and incident type.

3. All Boxes Filled In: The report was reviewed for completeness, meaning were all fields or boxes filled in. The software program that DTFD will highlight many of the common data points that are left blank and some of these omissions will not allow the used to save and close the program without the information. There are other fields or boxes that can be left blank and the computer will not alert the user to this error. The report was reviewed and if a blank was found it was examined to determine if it should be left blank or a code or other information should have been placed in the field.

4. Units and Personnel Incorrect: There are times when a unit (fire department-vehicle) is listed but no personnel are listed as responding with that vehicle. There can be other times when only one unit is listed as responding, but if you compare it to the dispatch and incident type there should be multiple units responding. If units were missing, incomplete, or no personnel were listed, it was deemed an error.

5. Persons Involved Not Listed or Incomplete: Persons Involved is a civilian person who has some connection with the incident, they can be: home owner, renter, victim, witness, landlord, building owner, building manager or any other person connected to the incident who is not a fire service member. Most details need a Persons Involved, there are details where contact with someone is not made or the unit is cancelled before they arrive on the scene. If the run

required a Persons Involved and it was left blank then it was listed as an error. At a minimum a name, address, and phone number were are required to be listed for Persons Involved or it was considered an error.

6. Additional Report Modules Not Complete or Incorrect: Depending on the incident type or injuries that occurred, additional information above and beyond the standard report is necessary. Some situation that required Additional Report Modules are: structure fires, entrapments, fire fatalities (both civilian and fire service), and arson fires. By reviewing the incident type and reading the narrative, it can be determined in an additional module is needed. If the additional module was necessary and it was not filled out or filled out incorrectly or incomplete then it was listed as an error.

7. Incident Narrative Not Clear or Illegible: If the reader of the report could not understand what the fire department was called for and what action they performed from the narrative, it was listed as an error. If the narrative was poorly written, with lots of misspelled words and grammatical errors it was listed as an error. This data field is a very subjective area, only narratives that were grossly intelligible or illegible were considered as errors.

8. Auto Accident Narrative Not Correct: Auto accident narratives have to have specific actions of the fire department documented to be able to be sent out to insurance companies for reimbursement. A specific guideline was sent out to the DTFD on auto accident narratives, if this was not followed then it was considered an error.

9. Dollar Loss and/or Property Value Not Listed or Incomplete: If a detail indicated in the narrative that there was damage or a loss of some kind, then the loss and value should be listed. If the value or the loss was not listed or incomplete then it was considered an error.

For the data elements: Incident Type, Action Taken, and All Boxes Filled In, a list was made for each data element of the specific error. The code or the information that was entered incorrectly or omitted was listed, and then the correct code or information that should be in that data field was listed in a separate table.

From these nine data elements 4 statistical elements were generated:

1. Total Errors: The total number of errors in a given month.

2. Fire Detail Total: Total number of fire detail in a month, excluding auto accidents.

3. Auto Accident Detail Totals: Total number of auto accidents in a month.

4. Total Details: The sum of the Fire Detail Total and the Auto Accident Total is the Total Details in a month.

There are several limitations of the data collections from the fire reports from DTFD. The unique individual fire report number was not collected. The Total Errors statistical element should not be interpreted as being the total number of fire reports with errors. An individual fire report may have several errors with it, this would not be counted as one error, and it would be counted as many errors that occurred in the report in the specific data elements. The individual report writers were not tracked on when they made an error and what the error was.

A survey of other local fire departments assisted in finding out what the other departments are doing different and the same as Delhi Township. What kinds of training on fire

reports are they using and do they feel that it is adequate? The survey was e-mailed to over a hundred fire departments in South West Ohio area using a data base provided from the local county fire Chiefs' associations. In South West Ohio many of the departments are career or a combination of career and part-time firefighters, the survey pool was limited to this area so similar type and sized departments would respond to the surveys. The survey was not sent out side of the State of Ohio because other states may have a different way of generating fire reports and processing them to the USFA. The survey was produced and managed through Survey Monkey. A total of 22 fire departments responded to the survey.

Interviews were conducted to find the information that specifically dealt with DTFD or could not be adequately obtained through mass surveys.

The Assistant Chief of Administration of DTFD was interviewed because he has the working knowledge of the DTFD fire reporting issues. He is responsible for fire reports, reviewing fire reports and sending them to the State Fire Marshal on a monthly basis. He is able to give an opinion about the effectiveness of fire report Quality Assurance and give any recommendations about improvement that should be made to fire report Quality Assurance.

The Ohio State Fire Marshal's Office is the collection point for all reporting agencies in the state of Ohio for fire reports. The Marshal's Office reviews the reports for errors, sends them back to the departments and then sends the correct reports onto the USFA. An interview with the Ohio State Fire Marshal's Office was completed because they see errors from the entire state and can offer suggestions for improvement.

RESULTS

Seven months of fire report error data was collected by the author. Interviews were conducted with the Assistant Chief of Administration at DTFD and the Fire Prevention Bureau at the Ohio State Fire Marshal's Office.

Question *1 What are the current quality assurance methods for fire report reviews used by Delhi Township?*

Currently the DTFD only has the Assistant Chief of Administration reviews the fire reports for any gross coding errors and incomplete narratives, if any errors are found, the Assistant Chief fixes the codes, and submits the information to the Fire Marshal's Office. The author of the run report is not notified of the mistake that they made, unless it is severely wrong or the author has shown a pattern of entering the wrong data in the same location several times.

Question 2 *Are the current methods used by Delhi Township effective?*

Assistant Chief Doug Campbell was interviewed about the effectiveness of DTFDs current methods. He feels that the system where there is a single person who is responsible for checking the reports for accuracy and completeness works fine. He does feel that after he fixes the fire reports that there is very little feedback given to the author. He finds that the same people are making the same mistakes over and over. (D Campbell, personal communication April 16, 2012)

Table 1 illustrates that without feedback the department is averaging 40 errors a month. In Table 1 there are 9 auto accident narratives that were incorrect. Incorrect and delayed auto accident billing can result in non-payment. If the average auto accident recovery is $400, these 9 incorrect auto accidents have the potential to cost the department $3600 in lost revenue.

Table 1

Fire Report Errors, Total Count

FIRE REPORT ERRORS	June, 2011	July, 2011	August, 2011	September, 2011	October, 2011	November, 2011	December, 2011
Incident type	19	2	4	17	13	7	13
Actions Taken	7	9	6	10	17	6	13
All info boxes filled	2	5	10	6	6	14	9
Units and personnel incorrect or incomplete	2	0	1	0	0	0	0
Persons involved not listed or incomplete	10	4	9	8	6	5	7
Additional Report modules not completed or incorrect	1	1	3	3	0	2	0
Incident narrative not clear, illegible	1	0	2	0	0	0	1
Dollar loss/ property value not listed	2	1	4	2	2	0	4
Auto Accident Narrative Not Correct	1	1	2	0	2	1	2
Total Errors	**45**	**23**	**41**	**46**	**46**	**35**	**49**
Fire Details	90	61	67	55	53	60	67
Auto Accident Details	3	3	10	8	8	7	7
Total Details	**93**	**64**	**77**	**63**	**61**	**67**	**74**

Question 3 *What type of fire report review process are other fire departments using to make sure*
their fire reports are accurate and complete?

According to the survey 40% of the responding fire departments have a single person
who checks all of the fire reports in the department.(Appendix H) This is the same method that is
used at DTFD. The next popular response was to have the supervisor of the report generator
review the fire report. Over half of the respondent's fire report reviewers use their own judgment
and discretion when reviewing fire reports.(Appendix H) DTFD does not have any guidelines or
SOPs for reviewing fire reports and it is up to the Assistant Chief of Administration to determine
what is accurate and complete. . (D Campbell, personal communication April 16, 2012) Around
47% of the responding departments have some kind of written policy or guidelines, this can be
either SOPs or a template or a matrix. . (Appendix H)

Question 4 *What training programs do other fire departments have to help them insure accurate*
and complete fire reports?

Most responding fire departments use some kind of on-the-job training combined with
experience. . (Appendix H) This is similar to how DTFD conducts fire report training according
to Assistant Chief Campbell. DTFD trains probationary firefighters in the technical procedures
of placing the fire report into Fire House Software but does not explain what the correct codes
are, or go in depth into the various data fields. Like nearly 60% of the department that responded,
(Appendix H) training on fire reports at DTFD is learned from putting them in to the computer
and doing enough of them to gain experience. (D Campbell, personal communication April 16,
2012)

Question 5 *What are the most common data elements of fire reports that are incorrect or incomplete?*

According to Steve Beers an Office Assistant-Fire Prevention Bureau at the Ohio State Fire Marshal's Office, he indicated that Incident Types and Alarm Control Times are the most common data elements that are incorrect or incomplete. (S Beers, personal communication May 1, 2012)

Reviewing the data from 7 months of DTFD fire report reviews, the most common data element that was incorrect was: Incident Type. There were 75 errors in the section alone, Series 700 in the NFIRS code is the alarm section, there were 25 alarm related calls that were coded incorrectly. Action Errors are a close second; there were 68 of these codes that were incorrect.

DISCUSSION

Lack of training is one of the problems that was identified early on in the literature review. Even when firefighters have completed their basic training and are working on a fire department, fire report writing is still a low priority. (McLaughlin 2007) The surveys show that over 90% of the departments that responded train their firefighters in-house with either on-the job training, department developed training, or a combination of both. (Appendix H) DTFD is no different than any of the other departments in the survey. It has been over four years since any type of training has been presented to the department. (D Campbell, personal communication April 16, 2012) . In four years a lot can change: retirements, promotions and changes in the NIFRS code.

 Without up to date training, many of the errors will continue.

When a report reviewer finds an error in a fire report, 54% of the departments surveyed fix the error and then send the reports to the state. (Appendix H) Only 34% of the departments surveyed send the error back to the original report writer to have them fix it. (Appendix H) By not sending it back to the original report writer, they have no feedback on their performance and most likely have the feeling that their reports are adequate and they have not made any errors in their report writing. Assistant Chief Campbell agrees with these findings ," It is kind of like doing a performance appraisal and not giving any feedback. You think that everything is fine but it isn't". (D Campbell, personal communication April 16, 2012) During the data collection of DTFD fire reports the author noticed that the same report writers names kept coming up when an error was found. Looking at it further, those same people were making the same type of mistakes over and over. These same report writers were making the same mistakes over and over because of a lack of training and not being told when they made an error on fire reports.

After interviewing Steve Beers an Office Assistant-Fire Prevention Bureau at the Ohio State Fire Marshal's Office and examining the data in Table 1 there is an agreement between the two sources. Incident Types are one of the biggest data elements that are coded incorrectly. At DTFD there were 75 errors in the Incident Types section alone, Series 700 in the NFIRS code is the alarm section, there were 25 alarm related calls that were coded incorrectly. The most popular incorrect code for an alarm type incident was," False Alarms, Other". Each section of the incident type codes has an "other" category, this "other" category is a catch-all for incidents that are unusual and do not fit into one of the standard categories. The "other" category is only supposed to be used rarely, most of the time there is a code for the incident. Lack of training in fire report writing could be the main reason why the report writers are using the "other" category, it could also be laziness and not wanting to search for the proper code among the list or

it is the first code listed in the section and it is the easiest to click the mouse on. There were 2 fire

reports that listed the incident type as 733 Smoke Detector Activation; both of these reports were

actual fires. After reading the narrative, the correct code should have been: 113 Cooking Fire.

Both of these fires were dispatched as "Smoke Detector Activation" and when the fire crews

arrived it was a cooking fire. The report writers assumed that the dispatch message was the

incident type, but because they did not code the detail correctly other important data was not

collected. When the report writer codes the incident as a cooking fire, the computer program then

opens up additional data modules and prompts the user to fill them out and sometimes will not

let the writer close the report without filling out this information. In the case of the cooking fire

incidents some of the additional information that would be requested are: did the alarm alert the

occupants, type of equipment (stove, hot plate, oven), injuries and property damage/dollar loss.

Because this information is not on the report all the data other groups pull from the State of Ohio

and the USFA will be flawed. A recall on a faulty stove could be missed by the Consumer

Product Safety Commission. The department will have incorrect dollar loss figures for their

yearend report because this data is missing. These finding of inaccurate and missing data

elements in DTFDs reports and the opinion of Steve Beers is mirrored by the literature review.

The *National Fire Service Data Summit* found some department had as much as 60% missing or

incorrect. (Santos, 2011) The report writer and the department can find themselves in a difficult

position if they are called before a court of law and have a sloppy, inaccurate and incomplete

report. When there are inaccuracies it could be shown that the report writer is trying to hide

something or is incompetent at their job. This is probably not true but defense attorneys will try

to twist inaccuracies in their favor and fill in the blanks they way they see fit. In popular culture

most TV court room dramas start and end in an hour. In reality it takes months if not years for a

case to make it into court. In between the emergency detail and the court case, a firefighter can make thousands of emergency details generating many memories that blend together. If the fire report was not completed accurately and complete, when the time comes to go to court, the report writer cannot remember every small detail of the emergency run. The only way to remember and not forget or mix in other emergency detail memories is to have a complete and accurate report that was produced as soon as possible after the emergency detail.

RECOMMENDATIONS

The results highlighted in the research project have led the author to conclude that there are several recommendations that the Delhi Township Fire Department could institute to make improvements to their report writing and report evaluations.

1. A Standard Operating Procedure (SOP) should be developed to address how a fire report should be written. This SOP should include: who should write the fire report, when they write the fire report including a time frame they need to write it in and after what specific incidents they need to write a fire report. Most importantly the SOP needs to address what needs to be included in the fire report. The development of a matrix/template that includes all of the data points needed for specific fire details would be helpful in covering a majority of the different kinds of fire reports that could be generated. This matrix/template could then be used by the report writer as an example of what needs to be included in the report and by the report reviewer for Quality Assurance purposes.

2. Training should be conducted on fire report writing, NFIRS, and narrative writing. It would be beneficial to have to have this training after the new fire report writing SOP

is written. The training should include some kind of practical exercise where the student must choose the correct codes and write a narrative based on a given scenario. Report writing and NFIRS is not the most exciting fire service training, but it should be done annually to cover any changes in NFIRS, SOPs and additions and promotions of new firefighters and officers.

3. There should be more than one person reviewing fire reports. DTFDs current rank structure would easily allow for each shift Captain to review their shifts fire reports. The main advantage to this system would be that it would allow for a quicker and more direct route for feedback to the report writer when they make an error. By having the Captains review these reports it would also take some of the work load off of the Assistant Chief of Administration.

4. Once a fire report has been reviewed and an error has been found, the report writer needs to know about the mistake. They do not necessarily have to fix the error if it is minor but they need to be aware of the problem and what the correct solution was. Report writer will keep making the same mistakes over again if they are not made aware of the problem.

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Appendix A – Introduction Letter for Survey

Greetings:

I am conducting a short survey concerning Fire Incident Reports and Quality Assurance. This survey is for an Applied Research Project that I am conducting as part of my Ohio Fire Executive program. Please take less than 5 minutes and follow the link below and complete the survey. If you are not responsible for Fire Reports or have do not have complete knowledge of this operation, please forward this e-mail on to a member of your department who can assist me. If you have any questions, comments or suggestions please contact me.

Thank You for assisting me in my survey, I would like to have them all completed by February 30th, 2012.

Survey Link click here: http://www.surveymonkey.com/s/57CGXX2

Sincerely yours,

Jon Helmes
Captain
Delhi Township Fire Department
697 Neeb Rd
Cincinnati, Ohio 45233
513-922-2011
jhelmes@delhi.oh.us

Appendix B

Fire Incident Reports and Quality Assurance Survey

1. What review process does your department use for quality assurance on fire reports?

    A .Supervisors of the person entering the report review the report

    b. One person on the department reviews all of the fire reports

    c. A computer program reviews the reports

    d. Other: Please List

    e. None

2. What type of training have report reviewers received to be able to conduct quality assurance on fire reports?

    a. On the Job Training or Experience

    b. Department developed training program

    c. State Fire Academy

    d. National Fire Academy program

    e. Computer program or hardware vendors training

    f. Intra-departmental Information Technologies department training

    g. Other: Please list

    h. None

3. If your department has an official quality assurance program, what guidelines do they use to review fire reports?

    a. Department Sops

b. Template or matrix outlining what needs to be include on each report

c. It is up to the individual reviewer's discretion

d. Other: Please list

4. Other than using the US Fire Administration hand book of NFIRs does your department have any SOP/s or guidelines for entering fire reports?

a. Yes: Please List

b. No

5. Who generally enters or writes most fire reports?

a. Fire Fighters

b. Company Officers

c. Division/Battalion Chiefs

d. Fire Chief

e. Civilian/Clerical workers

f. Other: Please list

6. What type of training is standard for report generators to have attended to enter fire reports?

a. On the Job Training or Experience

b. Department developed training program

c. State Fire Academy

d. National Fire Academy program

e. Computer program or hardware vendors training

f. Intra-departmental Information Technologies department training

g. Other: Please list

7. Is the fire report reviewed by the immediate supervisor of the person entering the report?

a. Yes

b. No

8. If a problem is found with a fire report who corrects the error?

a. The reviewer corrects the problem if it is minor.

b. The reviewer fixes all problems

c. It is sent back to the person who entered the report

d. Other: Please list

9. What system/ computer program do you use to generate fire reports?

a. Firehouse Software

b. Zoll

c. NIFRS 5.0 or Data Entry Browser Interface from the NFA

d. We use paper reports

e. Other: Please list

10. How do you use information generated for fire reports? (Check as many that apply)

a. We just send the information to send to the state.

b. Run time averages (response times, on scene times, ect.)

c. Pay roll

d. Firefighter Injury reports

e. Year end reports

f. Fire station location reports

g. Reports for political bodies

h. Other: Please list

11. What is the population size your department is responsible for?

a. 0-5,000

b. 5,001-15,000

c. 15,001-30,000

d. 30,001-100,000

e. 100,001-200,000

f. 200,000+

12. What is your departments run annual run volume for fire details? Not EMS details.

a. 0-100

b. 101-200

c. 201-500

d. 501-1,000

e. 1,001-3,000

f. 3,001-10,000

g. 10,000+

13. How many members are on your fire department?

a. 1-20

b. 21-30

c. 31-50

d. 51-75

e. 76-100

g. 101-150

h. 151-200

i. 201-500

j. 501-1000

k. 1000+

Appendix C

Interview Notes with DTFD Assistant Chief Doug Campbell

Doug Campbell
Assistant Chief of Fire Administration
Delhi Township Fire Department
697 Neeb Road
Cincinnati, Ohio 45233
(513)922-2011
Dcampbell@delhi.oh.us
Interview date April 16th, 2012

1. **Who generates fire reports at DTFD?**
   Company Officers generate most of the reports, this is either a Lieutenant or it is the Captain if it is a large incident. Acting Officers will also put run report in when they are filling in for a Lieutenant. Part-time firefighter rarely put fire runs into Fire House.

2. **Is there an SOP regarding fire report entry at DTFD?**
   No, we do not have one.

3. **What type of training have the report generators received to enter fire reports?**
   In 2008 I had a training session with each shift on the common NIFRS code errors. I did not have a lesson plan; it was just what I had found from years of reviewing reports. The training last about an hour, when I was done I gave out a cheat sheet with common mistakes. Those sheets were hanging around the computers, but I have not seen them in years. In the training I did not cover how to write a narrative. As far as I know, nobody on the department has taken an official NIFRS class from the outside. We do have in-house training on Fire House software, generally this is done in orientation or one on one with a mentor when they are completing their probationary check sheet. The Fire House training is mainly on EMS reports and technical log in areas. They are not instructed in the codes or what fields need to be filled out.

4. **Who reviews the fire reports at DTFD?**
   I review all of the reports. I normally review them at the end of the month before I do the data-link to the state.

5. **What type of quality assurance training have those reviewers received to be qualified to review fire reports?**

Zero, just the experience of reviewing fire reports for years.

6. **If a fire report has errors or is deficient, who fixes the report?**
   Nine times out of ten, I fix the report, there are times when I can't figure out what's going on with the report and then I send it back to the person who made it.

7. **Do you feel that the current method of reviewing fire reports at DTFD is effective?**
   Yes and No. Because we do not have a large amount of fire runs, I can easily check them all before I send them off to the state. It is not effective in the sense that there is no feedback to the author of the report. It is kind of like doing a performance appraisal and not giving any feedback. You think that everything is fine but it isn't.

8. **How can the current system of reviewing fire reports at DTFD be changed to make it more effective?**
   Not sure.

9. **What does the department use the data generated from the fire reports for?**
   For our external customers we send all this information to the state and then they sent it to the National Fire Academy, other than those two agencies, insurance companies are the biggest users of this information. We have actually used a lot of the information we get from Fire House for many projects. Before we make a change in operations we look at the numbers and see if the data will indicate and support the change. Recently we used the numbers to change the district boundaries in the 36s, because they were making too many runs and the 33 were available to take some of the burden off of them if we changed the boundary lines a little. We have used it to look at staffing distribution and we have shifted people around because we had the statistics to show we needed to move them. We make monthly reports of our activities and we have made year end reports in the past.

Appendix D

Interview Notes with Ohio State Fire Marshal's Office

Steve Beers

Office Assistant-Fire Prevention Bureau

Ohio State Fire Marshal's Office

8895 East Main Street

Reynoldsburg, Ohio 43068

(614)-752-8200

Steve.beers@com.state.oh.us

Interview date by phone May 1st, 2012

1. **Why are fire reports sent to the Ohio State Fire Marshal's Office (OFMO) for review?**
   We compile the reports at the state level and then they are sent to FEMA. Grants.

2. **How does the OFMO review fire reports for errors and completeness?**
   The computer does it, we cannot see the report. You can get an upload error or it will throw the incident back with a general error code, but not specific. The FEMA computer reviews it in more detail and once a month a more specific Fed-error will come back.

3. **What are the most common data errors found by the OFMO?**
   Incident types, Alarm control times.

4. **What could be done to reduce the number of errors made in fire report generation?**
   A better computer program that is user friendly. A program that has more prompts and fail safes built into it. The program should not let the user close the report without filling in a mandatory box.

5. **How many fire departments participate in this program?**
   Approximately 1208.

6. **How many fire reports are sent to the OFMO annually?**
   Hundreds of thousands.

Appendix E

Incident Type Errors

Wrong		Correct	
160	Special Outside Fire	140	Natural Vegetation Fire
440	Electrical Problems/equipment other	600	Good Intent Call, Other
441	Heat from short circuit, defective/worn	814	Lightning Strike, no fire
444	Power Lines Down	611	Dispatched and cancelled en rout
500	Service call other	733	Smoke Detector Activation, due to Malfunction
550	Public Service Assistance	445	Arcing Electrical Equipment
550	Public Service Assistance	814	Lightning Strike, no fire
600	Good Intent Call, Other	553	Public Service
732	Extinguishing System Activation due to malfunction	745	Alarm System Activation, no fire Unintentional
733	Smoke Detector Activation due to malfunction	5711	Automatic Mutual Response to GTFD
743	Detector activation, No Fire Unintentional	733	Smoke Detector Activation
743	Detector activation, No Fire Unintentional	733	Smoke Detector Activation, due to malfunction
812	Flood Assessment	600	Good Intent Call, Other
812	Flood Assessment	600	Good Intent Call, Other
812	Flood Assessment	622	No Incident Found at location
812	Flood Assessment	520	Water Problem, other
812	Flood Assessment	520	Water Problem, other
812	Flood Assessment	622	No Incident Found at location
812	Flood Assessment	520	Water Problem, other
812	Flood Assessment	622	No Incident Found at location
812	Flood Assessment	520	Water Problem, other

JULY

Wrong		Correct	
631A	Outdoor Fire Pit	561	Unauthorized Burning
740	Unintentional Transmission of alarm, Other	745	Alarm System Activation, no fire Unintentional

AUGUST

Wrong		Correct	
300	Rescue, EMS Incident Other	321	EMS call, excluding vehicle accident with injuries
440	Electrical Problems/equipment other	444	Power Lines Down

440	Electrical Problems/equipment other	444	Power Lines Down
700	False alarm, others	745	Alarm System Activation, no fire Unintentional

SEPTEMBER

	Wrong		Correct
82	Citizen Complaint	460	Accident, potential accident
112	Fires in structure other than buildings	5711	Automatic Mutual Response to GTFD
113	Cooking fire contained to container	5711	Automatic Mutual Response to GTFD
151	Outside, rubbish trash fire	140	Natural vegetation fire, Other
322	MVA with Injuries	324	MVA without Injuries
442	Overheated motor	651	Smoke scare, odor of smoke
444	Power Lines Down	600	Good Intent Call, Other
500	Service call , other	733	Smoke Detector Activation
622	No Incident Found at location	652	Steam, vapor, fog thought to be smoke
700	False alarm, others	652	Steam, vapor, fog thought to be smoke
700	False alarm, others	745	Alarm System Activation, no fire Unintentional
733	Smoke Detector Activation due to malfunction	745	Alarm System Activation, no fire Unintentional
733	Smoke Detector Activation due to malfunction	745	Alarm System Activation, no fire Unintentional
736	CO detector activation due to a malfunction	746	CO detector activation: No CO
740	Unintentional transmission of alarm, other	745	Alarm System Activation, no fire Unintentional
743	Detector activation, No Fire Unintentional	733	Smoke Detector Activation, due to malfunction
746	CO detector activation: No CO	736	CO detector activation due to a malfunction

OCTOBER

	Wrong		Correct
300	Rescue, EMS Incident Other	321	EMS call, excluding vehicle accident with injuries
322	MVA with Injuries	611	Dispatched and cancelled en route
322	MVA with Injuries	611	Dispatched and cancelled en route
444	Power Lines Down	600	Good Intent Call, Other
600	Good Intent Call, Other	550	Public Service Assistance
600	Good Intent Call, Other	746	CO detector activation: No CO
651	Smoke scare, odor of smoke	114	Chimney or flue fire, confined to chimney
700	False alarm, others	651	Smoke scare, odor of smoke
700	False alarm, others	321	EMS call, excluding vehicle accident with injuries
700	False alarm, others	5711	Automatic Mutual Response to GTFD
700	False alarm, others	652	Steam, vapor, fog thought to be smoke
730	System Malfunction, Other	735	Alarm system sounded due to malfunction
735	Alarm system sounded due to malfunction	5711	Automatic Mutual Response to GTFD
5711	Automatic Mutual Response to GTFD	611	Dispatched and cancelled en route

NOVEMBER

	Wrong		Correct

322	MVA with Injuries		321	EMS call, excluding vehicle accident with injuries
400	Hazardous condition Other		251	Excessive Heat, no fire
463	Vehicle Accident, General clean up		322	MVA with Injuries
733	Smoke Detector Activation		113	Cooking Fire
733	Smoke Detector Activation due to malfunction		745	Alarm System Activation, no fire Unintentional
733	Smoke Detector Activation		113	Cooking Fire
745	Alarm System Activation, no fire Unintentional		113	Cooking Fire

DECEMBER

Wrong			Correct	
111	Building Fire		5712	Mutual Aid Given to Another Department
251	Excessive Heat, Scorch Burns, No Fire		113	Cooking Fire
321	EMS Call, Excluding MVA with Injuries		611	Dispatched and cancelled en route
331	Lock-In		351	Extrication of People From Buildings
351	Extrication of People From Buildings		611	Dispatched and cancelled en route
440	Electrical Wiring Problem, Other		445	Arching, Shorted Electrical Equipment
444	Power Lines Down		600	Good Intent Call, Other
500	Service Call, Other		531	Smoke or Odor Removal
510	Person in Distress, Other		357	Extrication fro Machinery
622	No Incident Found at location		621	Wrong Location
651	Smoke Scare		113	Cooking Fire
735	Alarm system sounded due to malfunction		740	Unintentional Alarm Activation
745	Alarm System Activation, no fire Unintentional		5711	Automatic Mutual Response to GTFD

Appendix F

Action Taken Errors

JUNE

Wrong		Correct	
30	EMS, Other	32	Provide BLS
30	EMS, Other	32	Provide BLS
30	EMS, Other	32	Provide BLS
30	EMS, Other	32	Provide BLS
730	System Malfunction/Other	735	Alarm system sounding due to a malfunction
730	System Malfunction/Other	735	Alarm system sounding due to a malfunction
745	Alarm System Activation, no fire	5711	Automatic Mutual Response (Green Township)

JULY

Wrong		Correct	
0	Action Taken/Other	93	Cancelled en route
30	EMS, Other	33	Provide ALS
30	EMS, Other	32	Provide BLS
30	EMS, Other	32	Provide BLS
30	EMS, Other	32	Provide BLS
31	Provide First Aid/Check for Injuries	32	Provide BLS
553	Public Service	444	Powerline Down
730	System Malfunction/Other	735	Alarm system sounding due to a malfunction
745	Alarm System Activation, no fire	5711	Automatic Mutual Response (Green Township)

AUGUST

Wrong		Correct	
0	Action Taken/Other	93	Cancelled en route
30	EMS, Other	32	Provide BLS
31	Provide First Aid/Check for Injuries	32	Provide BLS
31	Provide First Aid/Check for Injuries	32	Provide BLS
63	Restore fire alarm system	86	Investigate
73	Provide Manpower	32	Provide BLS
80	Information, investigation, enforcement, Other	86	Investigate

SEPTEMBER

Wrong	Correct

0	Action Taken/Other	93	Cancelled en route
30	EMS, Other	32	Provide BLS
30	EMS, Other	32	Provide BLS
30	EMS, Other	32	Provide BLS
30	EMS, Other	32	Provide BLS
31	Provide First Aid/Check for Injuries	32	Provide BLS
80	Information, investigation, enforcement, Other	86	Investigate
80	Information, investigation, enforcement, Other	86	Investigate
80	Information, investigation, enforcement, Other	86	Investigate
92	Standby	73	Provide Manpower

OCTOBER

	Wrong		Correct
10	Fire Control or Extinguishment Other	85	Enforce Codes
30	EMS, Other	32	Provide BLS
30	EMS, Other	32	Provide BLS
30	EMS, Other	32	Provide BLS
30	EMS, Other	32	Provide BLS
30	EMS, Other	32	Provide BLS
31	Provide First Aid/Check for Injuries	32	Provide BLS
63	Restore fire alarm system	86	Investigate
70	Assistance, Other	72	Assist Animal
80	Information, investigation, enforcement, Other	86	Investigate
80	Information, investigation, enforcement, Other	73	Provide Manpower
80	Information, investigation, enforcement, Other	73	Provide Manpower
86	Investigate	73	Provide Manpower
86	Investigate	32	Provide BLS
86	Investigate	42	Haz Mat Detection, Monitoring, Sampling
86	Investigate	42	Haz Mat Detection, Monitoring, Sampling
92	Standby	93	Cancelled en route

NOVEMBER

	Wrong		Correct
30	EMS, Other	32	Provide BLS
30	EMS, Other	33	Provide ALS
30	EMS, Other	33	Provide ALS
30	EMS, Other	32	Provide BLS
30	EMS, Other	32	Provide BLS
63	Restore fire alarm system	86	Investigate

DECEMBER

	Wrong		Correct

30	EMS, Other	32	Provide BLS
0	Action Taken/Other	73	Provide Manpower
30	EMS, Other	32	Provide BLS
30	EMS, Other	93	Cancelled en route
30	EMS, Other	32	Provide BLS
30	EMS, Other	32	Provide BLS
30	EMS, Other	32	Provide BLS
45	Remove Hazard	43	Haz Mat spill control/confinement
62	Restore Sprinkler System	86	Investigate
73	Provide Manpower	93	Cancelled en route
86	Investigate	42	Haz Mat Detection, Monitoring, Sampling
92	Standby	73	Provide Manpower
92	Standby	73	Provide Manpower

Appendix G

All Boxes Filled In and Correct Errors

JUNE

Data Field	Wrong or Missing	Correct
Type of Alarm	Missing	CO Alarm
Aid Given/Received	3- Mutual Aid Given	4- Automatic Aid Given

JULY

Data Field	Wrong or Missing	Correct
Type of Alarm	Missing	CO Alarm
Detector	Missing	Detector Alerted Occupants
Detector	Missing	Detector Alerted Occupants
Aid Given/Received	3- Mutual Aid Given	4- Automatic Aid Given
District	33 Delhi	107 Green Township

AUGUST

Data Field	Wrong or Missing	Correct
Specific Property Use	962- Residential street	642- Electrical Distribution
Specific Property Use	600 – Industrial, utility defense agriculture	962 Residential street
District	36 Delhi	33 Delhi
Specific Property Use	962- Residential street	642- Electrical Distribution
Specific Property Use	419- 1 or 2 family dwelling	642- Electrical Distribution
Type of Alarm	Missing	CO Alarm
Specific Property Use	962- Residential street	983- pipeline, powerline
Specific Property Use	960- street other	983- pipeline, powerline
Specific Property Use	NNN – None	962 Residential street
Aid Given/Received	N - None	2 – Automatic Aid Received

SEPTEMBER

Data Field	Wrong or Missing	Correct
Specific Property Use	962- Residential street	983- pipeline, powerline
Specific Property Use	962- Residential street	983- pipeline, powerline
Specific Property Use	962- Residential street	642- Electrical Distribution
Aid Given/Received	2 – Automatic Aid Received	4- Automatic Aid Given
Casualties	N-None listed	No-Casualties
Detector	Missing	Detector Did Not Alerted Occupants

OCTOBER

Data Field	Wrong or Missing	Correct
Specific Property Use	960- street other	962- Residential street
Aid Given/Received	3- Mutual Aid Given	4- Automatic Aid Given
Aid Given/Received Details	Q-33	E-54
Specific Property Use	419- 1 or 2 family dwelling	962 Residential street
Aid Given/Received	3- Mutual Aid Given	4- Automatic Aid Given
Specific Property Use	960- street other	962- Residential street

NOVEMEBR

Data Field	Wrong or Missing	Correct
Specific Property Use	960- street other	983- pipeline, powerline
Specific Property Use	960- street other	983- pipeline, powerline
Aid Given/Received	N-None listed	4- Automatic Aid Given
Specific Property Use	931- Open Field or Land	UUU- Undetermined
Aid Given/Received	3- Mutual Aid Given	4- Automatic Aid Given
Aid Given/Received	3- Mutual Aid Given	4- Automatic Aid Given
Detector	Missing	Detector Did Not Alerted Occupants
Specific Property Use	960- street other	962- Residential street
Aid Given/Received	3- Mutual Aid Given	4- Automatic Aid Given
District	70 Miami Township	01 Addyston
Specific Property Use	960- street other	962- Residential street
Aid Given/Received	3- Mutual Aid Given	4- Automatic Aid Given
Detector	Missing	Detector Did Not Alerted Occupants
Type of Alarm	Missing	CO Alarm

DECEMBER

Data Field	Wrong or Missing	Correct
Detector	Missing	Unknown
Casualties	N-None listed	No-Casualties
Specific Property Use	960- street other	962- Residential street
Casualties	N-None listed	No-Casualties
Detector	Missing	Unknown
Detector	Missing	Unknown
Aid Given/Received	3- Mutual Aid Given	4- Automatic Aid Given
Detector	Missing	Unknown
Type of Alarm	Missing	CO Alarm

Appendix H

Survey Results

Question #1

What fire report review process does your department use?		
Answer Options	Response Percent	Response Count
Supervisors of the person entering the report review the report	27.3%	6
One person on the department reviews all of the fire reports	40.9%	9
A computer program reviews the reports	9.1%	2
None	18.2%	4
Other (please specify)	4.5%	1
	answered question	22
	skipped question	0

Question #2

What type of training have report reviewers received to be able to conduct quality assurance on fire reports?		
Answer Options	Response Percent	Response Count
On the Job Training or Experience	57.1%	12
Department developed training program	23.8%	5
State Fire Academy	0.0%	0
National Fire Academy program	4.8%	1
Computer program or hardware vendors training	0.0%	0
Intra-departmental Information Technologies department training	4.8%	1
Other (please specify)	9.5%	2
	answered question	21
	skipped question	1

Question #3

If your department has an official quality assurance program, what guidelines do they use to review fire reports?		
Answer Options	Response Percent	Response Count
Department Standard Operating Guidelines	31.6%	6

Answer Options	Response Percent	Response Count
Template or matrix outlining what needs to be include on each report	15.8%	3
It is up to the individual reviewer's discretion	52.6%	10
Other (please specify)	0.0%	0
answered question		19
skipped question		3

Question #4

Other than using the US Fire Administration hand book on NFIRs does your department have any SOP/s or guidelines for entering fire reports?

Answer Options	Response Percent	Response Count
No	85.7%	18
Yes Please List	14.3%	3
answered question		21
skipped question		1

Question #5

Who generally enters or writes most fire reports?

Answer Options	Response Percent	Response Count
Fire Fighters	9.1%	2
Company Officers	77.3%	17
Division/Battalion Chiefs	0.0%	0
Fire Chief	9.1%	2
Civilian/Clerical workers	0.0%	0
Other (please specify)	4.5%	1
answered question		22
skipped question		0

Question #6

What type of training is standard for report generators to have attended to enter fire reports?

Answer Options	Response Percent	Response Count
On the Job Training or Experience	59.1%	13
Department developed training program	31.8%	7
State Fire Academy	0.0%	0
National Fire Academy program	4.5%	1
Computer program or hardware vendors training	0.0%	0
Intra-departmental Information Technologies	4.5%	1

department training		
Other (please specify)	0.0%	0
	answered question	22
	skipped question	0

Question #7

Is the fire report reviewed by the immediate supervisor of the person entering the report?		
Answer Options	Response Percent	Response Count
No	57.1%	12
Yes	42.9%	9
Other (please specify)		1
	answered question	21
	skipped question	1

Question #8

If a problem is found with a fire report who corrects the error?		
Answer Options	Response Percent	Response Count
The reviewer corrects the problem if it is minor.	36.4%	8
The reviewer fixes all problems	18.2%	4
It is sent back to the person who entered the report	40.9%	9
Other (please specify)	4.5%	1
	answered question	22
	skipped question	0

Question #9

What system/ computer program do you use to generate fire reports?		
Answer Options	Response Percent	Response Count
Firehouse Software	95.5%	21
Zoll	4.5%	1
NIFRS 5.0 or Data Entry Browser Interface from the NFA	0.0%	0
We use paper reports	0.0%	0
Other (please specify)	0.0%	0
	answered question	22
	skipped question	0

Question #10

How do you use information generated for fire reports? (Check as many that apply)		
Answer Options	Response Percent	Response Count
We just send the information to send to the state.	72.7%	16
Run time averages (response times, on scene times, ect.)	86.4%	19
Pay roll	18.2%	4
Firefighter Injury reports	40.9%	9
Year end reports	77.3%	17
Fire station location reports	13.6%	3
Reports for political bodies	68.2%	15
Other (please specify)	9.1%	2
	answered question	22
	skipped question	0

Question #11

What is the population size your department is responsible for?		
Answer Options	Response Percent	Response Count
0-5,000	13.6%	3
5,001-15,000	31.8%	7
15,001-30,000	22.7%	5
30,001-100,000	31.8%	7
100,001-200,000	0.0%	0
200,000+	0.0%	0
	answered question	22

skipped question		0

Question #12

What is your departments run annual run volume for FIRE details? Not EMS details.		
Answer Options	Response Percent	Response Count
0-100	4.5%	1
101-200	9.1%	2
201-500	18.2%	4
501-1,000	31.8%	7
1,001-3,000	36.4%	8
3,001-10,000	0.0%	0
10,000+	0.0%	0
answered question		22
skipped question		0

Question #13

How many members are on your fire department?		
Answer Options	Response Percent	Response Count
1-20	0.0%	0
21-30	4.5%	1
31-50	31.8%	7
51-75	31.8%	7
76-100	27.3%	6
101-150	4.5%	1
151-200	0.0%	0
201-500	0.0%	0
501-1000	0.0%	0
1000+	0.0%	0
answered question		22
skipped question		0