Dayton Fire Department Code Enforcement:
Improving Effectiveness and Reducing Liability by Reinstituting Company Level Inspections

Political & Legal Foundations of Fire Protection
University of Cincinnati
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FST-3085
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A research project submitted to the University of Cincinnati Fire Science Program
Certification Statement

I hereby certify that this paper constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions, or writings of another.

Signature:
Abstract

The Dayton Fire Department, like many other departments has struggled in recent history to maintain an operational Company Inspection Program. The problem is that the number of personnel assigned to the fire prevention bureau is inadequate to complete every life safety inspection and the lack of an operational Company Inspection Program contributes to this issue. The purpose of this applied research paper is to focus on past practices of the Dayton Fire Department, best practices in company inspection programs, and list several recommendations to improve the fire prevention activities for the Dayton Fire Department. It is the authors hope that by understanding where the fire prevention program has been, where other departments are currently, and having a vision for the future, we can begin to offer the exceptional service the citizens deserve. Implementation of the recommended actions will increase the effectiveness of fire prevention activities, reduce the liability from not completing inspections, and allow the Dayton Fire Department Fire Prevention Bureau to successfully move into the future.
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**Introduction**

Dayton, Ohio located in Montgomery County is the sixth largest city in the State of Ohio, with a population of 141,527 covering 55.65 square miles. The city is home to many notable individuals including Nancy Cartwright (the voice of Bart Simpson), actor Martin Sheen, Charles Kettering (inventor of the automobile self-starter), John H. Patterson (founder of National Cash Register), and The Wright Brothers (inventors of the airplane) just to name a few. Dayton is also home to the University of Dayton, Sinclair Community College, the Dayton Dragons Semi-Pro baseball team (which has broken the all-time sports record for consecutive sell outs for all American professional sports teams, currently at 983 games), and Wright-Patterson Air Force Base.

The Dayton Fire Department consists of 319 personnel working out of twelve stations and one fire training center. The twelve stations are separated into two districts, east and west, which are each supervised by a District Chief. Occasionally as staffing allows a third central District Chief is also staffed. EMS services are provided with Advanced Life Support Medics stationed in nine of the stations (the actual number of Medics in service is based on the staffing for that day). The Medics are supervised by a Lieutenant/Paramedic who operates as the Incident Support Unit (ISU).

The Fire Prevention Bureau falls under the direction of the Assistant Chief of Strategic Programs & Safety. Oversight and general direction for all fire prevention activities within the Dayton Fire Department is the responsibility of the Fire Marshal, a position that has been vacant for several years. Reporting to the Fire Marshal are two Fire Prevention Specialist-II’s. One of the FPS-II positions is responsible for oversight of code enforcement activities, plan review, and public education. The other FPS-II is responsible for oversight of fire investigation duties.
Reporting to the FPS-II in code enforcement are 5 Fire Prevention Specialist-I positions, one of which is funded from the city water department and is only responsible for activities in the City of Dayton Well Field Protection District. Reporting to the FPS-II in fire investigation are two Fire Prevention Specialist-I positions. A current organizational chart for the Dayton Fire Department is attached as Appendix A.

**Problem Definition**

The focus of this applied research project will be on the code enforcement activities of the Dayton Fire Department and the re-implementation of a Company Inspection program. Benjamin Franklin, known as the Father of the American Fire Service is well known for the quote, “An ounce of prevention is worth a pound of cure.” (USHistory.org) This quote should still be the motto of the modern fire service. A well-known report released in 1974, America Burning noted the importance of fire prevention activities as well,

> There needs to be more emphasis on fire prevention. Fire departments, many of which confine their roles to putting out fires and rescuing its victims, need to expend more effort to educate children on fire safety, to educate adults through residential inspections, to enforce fire prevention codes, and to see that fire safety is designed into buildings. (The National Commission on Fire Prevention and Control, p.X)

A review of records from the Dayton Fire Department Data Management Information System (MIS) was performed to get a baseline for current code enforcement activities. The table on the following page outlines the total number of building location records identified and their breakdown by use group classification. Keep in mind the listed use groups are generalized; the specific use group classification is included in the reviewed data.
Further evaluation of the data received was completed to identify the effectiveness of department staff in completing inspections on a regular basis. The table below shows the year the last inspection was completed for the number of occupancies listed.

<table>
<thead>
<tr>
<th>Property Type</th>
<th>Number of Occupancies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Assembly</td>
<td>762</td>
</tr>
<tr>
<td>Educational</td>
<td>131</td>
</tr>
<tr>
<td>Institutional</td>
<td>174</td>
</tr>
<tr>
<td>Residential</td>
<td>612</td>
</tr>
<tr>
<td>Business</td>
<td>1,696</td>
</tr>
<tr>
<td>Industrial</td>
<td>82</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>370</td>
</tr>
<tr>
<td>Storage</td>
<td>440</td>
</tr>
<tr>
<td>Special</td>
<td>1,900</td>
</tr>
<tr>
<td>Archived Records</td>
<td>148</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>6,315</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Last Inspection Completed Year</th>
<th>Number of Occupancies</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>1,148</td>
</tr>
<tr>
<td>2012</td>
<td>491</td>
</tr>
<tr>
<td>2011</td>
<td>316</td>
</tr>
<tr>
<td>2010</td>
<td>242</td>
</tr>
<tr>
<td>2009</td>
<td>524</td>
</tr>
<tr>
<td>2008</td>
<td>690</td>
</tr>
<tr>
<td>2007</td>
<td>586</td>
</tr>
<tr>
<td>2006</td>
<td>840</td>
</tr>
<tr>
<td>2005</td>
<td>631</td>
</tr>
<tr>
<td>2004</td>
<td>97</td>
</tr>
<tr>
<td>2003</td>
<td>115</td>
</tr>
<tr>
<td>Over 10 Years</td>
<td>1,929</td>
</tr>
</tbody>
</table>
Studies have shown a direct correlation between jurisdictions that complete fire inspections of every commercial property and reduction in fire loss. While this correlation is clear, most jurisdictions do not have an adequate number of staff assigned to the fire prevention bureau to complete this task. Suppression personnel trained to perform basic safety inspections can be used to complete this task. (Lund, p.11)

As you can see from the previous table, the Dayton Fire Department is currently neither effective nor efficient at completing fire safety inspections of commercial occupancies. The problem is that the number of personnel assigned to the fire prevention bureau is inadequate to complete every life safety inspection and the lack of an operational Company Inspection Program contributes to this issue. The remainder of this paper will focus on past practices of the Dayton Fire Department, best practices in company inspection programs, and a list of recommendations to improve the fire prevention activities for the Dayton Fire Department.

**Background and Significance**

**Past Practices**

Albert Einstein, commonly referred to as the most influential physicist of the 20th century once said, “We can’t solve problems by using the same kind of thinking we used when we created them.” This thought should be kept in mind throughout any activity to improve current practices. Currently the Dayton Fire Department general order relating to the company inspection program is G.O. 40- Fire Inspection and was issued December 11, 1995. At that time the department operated 14 engine companies and 6 truck companies, much different than the DFD of today. If you look in the index of general orders, this particular order has been listed to be reissued since at least 2005, presumably showing the need for revision since that time. I was
able to locate a draft revision of G.O. 40- Fire Inspection from 2011 which was never instituted. Both of these documents are included as Appendix B and C. Many frustrations have been noted with the structure of this process in the past and include issues such as how the inspections were issued, the amount of inspections issued to each apparatus, and documentation/reporting requirements. It is my hope that the revision of this process can address these issues and prevent them moving forward.

**Best Practices**

“Remember! Initial attack starts with prevention.” (Coleman, p.25) This should be the motto adopted by every fire prevention bureau. In order to identify best practices for company inspection programs a review of several National Fire Academy Executive Fire Officer research projects, email interaction with Assistant Chief O’Toole of the Cleveland Fire Department, and a phone conversation with Captain Atwood of the Columbus Fire Department was performed.

The Pittsburgh Bureau of Fire sees their company inspection program as an acquaintance type program that one; allows fire companies in the field to become familiar with the occupancies in their respective response areas, while two; also being able to identify blatant violations of the fire code and advise property owners or representatives how to abate these violations. With a fire department presence the goal was to gently urge property owners into compliance. When compliance could not be met by field personnel in a timely fashion, traditional fire bureau, fire inspectors would provide more punitive measures to gain adherence to fire code usually by way of written citation. (Walz, p. 4) It was also noted that building and property owners will take the lead from the fire department, if the fire department is diligent about inspection, the property owners will also have to be diligent. If the fire bureau does not
value the CIP, neither will the property owners, and the safety and code compliance of the building will deteriorate. (Walz, p.11)

Jim Crawford cautions in an article for FireRescue Magazine that many departments around the nation depend on firefighters to perform a majority or all of the inspections and some of those buildings due to their complexity require trained professionals. Asking firefighters to conduct inspections of complex buildings with minimal fire code training might not be the best utilization of fire department resources. Company inspection assignments should be carefully planned for minimal risk occupancies so as not to overload suppression and emergency medical service resources. (Lund p. 12)

The Cleveland, Ohio Fire Department notes in General Order 7-05 “Fire Prevention is the duty and responsibility of each member of the Division of Fire and is equally important as suppression efforts.” (City of Cleveland, P.1) The focus of the company inspection program will be those facilities categorized as ordinary type inspections. Ordinary inspections could include stores, repair shops, apartment buildings, businesses, mercantile and churches. If during the course of inspection a suppression crew notes an inspection best handled by fire prevention personnel, there is a mechanism in place for referral back to the bureau.

Discussion with Captain Atwood of the Columbus Fire Department identified several areas where our departments are similar in regards to fire prevention activities. He noted lack of efficiency due to inspections being completed with paper forms and use of an antiquated data management system as major obstacles for the department. Inspections within the department fit into two basic classifications including company inspections and fire prevention inspections. Company inspections are more basic easily completed inspections. Each apparatus on each shift receives approximately 50 company inspections to be completed per year. Fire prevention
inspections include daycares, schools, acceptance testing of new fire protection systems, and any other inspection of a more complex nature. Fire suppression crews are also responsible for “Christmas” inspections where crews go out during the holiday shopping season to quickly verify that stores are not storing excessive combustibles, blocking exits, and overcrowding. In addition fire suppression crews witness at least the initial fire drill in all of the city schools. These last two items seem to be a very worthwhile activity.

Of particular interest in my discussion with Captain Atwood were the deficiencies with data management in the department. He noted all inspections are completed using duplicate paper forms. The information is then entered into a data management computer program that is very outdated and limits the ability for the department to use the data that is entered. He jokingly stated, “The last time it went down the city had to buy parts from eBay, because no one sells them anymore.” This is very similar to the MIS system the Dayton Fire Department currently uses. He went on to explain that the fire department is currently evaluating software vendors for purchase of new data management software. He also noted that the Columbus Department of Building Services uses a software program provided by Accella and that many other city departments have “bought into” this platform for their records management. This has allowed multiple users to share the costs of the system. He noted that the fire prevention bureau is currently evaluating joining this system as a user, which would have multiple benefits including mobile data entry, integration with the building services data (departments can share relevant records with each other), and would be far cheaper than buying a standalone system. Captain Atwood noted that this company already has a component that would allow mobile inspection activities with the use of a tablet device. It is interesting to note that the City of Dayton Department of Building Services is currently evaluating software providers for their data
management and one of the two companies providing bids is Accella. This process has expanded to include many other city departments who are evaluating whether this system will be beneficial to them. Unfortunately as I understand it, the fire department has only asked for minimal services with this system and has asked for it to integrate with the current outdated system. It is unfortunate that more interest was not shown in the mobile inspection capabilities of this potential new product.

**Recommendations**

After review of the information discussed it is my recommendation that the following items are addressed to increase the effectiveness of code enforcement activities in the Dayton Fire Department.

1. **Fill the vacant Fire Marshal position**
   a. As noted in the City of Dayton Position Description the purpose of the Fire Marshal is to design and administer a city-wide fire safety and accident prevention program utilizing various inspections, plans examinations, investigations, arson abatement and educational programs intended to prevent fires and accidents, and to minimize damages when a fire does occur. Without someone orchestrating the variety of functions listed, it is easy to see how we have gone adrift.

2. **Reinstitute the Company Inspection Program**
   a. As discussed, the motto should be “Remember! Initial attack starts with prevention.” Having suppression crews perform simple code enforcement activities reduces the burden on the fire prevention bureau, allowing the inspectors to focus on more complex inspections. It also serves as a great
opportunity for suppression crews to familiarize themselves with their response districts and educate the public about fire safety. Review of current fire inspection occupancy records indicates approximately 4,200 occupancies that would be appropriate for company level inspections. Distributed equally among all apparatus and all shifts this would amount to approximately 116 inspections each. It should be noted that 1,900 of these inspections or roughly half are vacant properties and vacant lots that will take a minimal amount of time for inspection in general. The remaining 2,122 inspections will be completed by fire prevention staff. This will also allow for more time for fire prevention staff to participate in public education duties.

3. **Reset inspection database and so that all inspections can be reissued**
   a. As noted in the problem definition, there are 5,654 occupancies that have not been inspected in at least four years. Many of these inspection forms are lost or have been discarded. By “resetting” the inspection record database, we can start from scratch and move forward with all inspections being issued from this point. Also with implementation of recommendation #2, it should be possible for ALL inspections to be completed annually.

4. **Distribute list of required inspections to each company officer and fire prevention staff at the beginning of the year.**
   a. This method will allow crews to schedule their inspections as they have time. The emphasis should be on completion of assigned inspections by the end of November so that preparations can be made for the following year. Companies should be responsible for completing initial inspections and at least one re-
inspection. After that time if compliance is not achieved, the inspection should be referred to fire prevention staff for further action.

5. **Revise inspection forms to simplified check sheets that crews complete and discontinue use of current printed forms.**

   a. Frustration in how inspection forms are completed and accountability of issued forms has been a problem in the past. By issuing a list of inspections to each company officer and fire prevention staff, they can simply choose the inspections they want to do at any particular time and put the appropriate information on the sheet. When forms are returned to Fire Prevention, the data can then be entered into MIS.

6. **Consider use of new city software system for mobile inspection activities.**

   a. As noted previously, the City of Dayton is currently looking at purchasing a software system for the Department of Building Services. The City of Columbus Fire Department is evaluating going onto this same system, already being used by their other city departments, for fire department inspection activities. The use of this type of technology could increase effectiveness further and allow the fire prevention bureau to move into the 21st century, while at the same time sharing the cost of the base system.

7. **Continually reevaluate the process to identify improvements.**

   a. As noted, the current version of General Order #40 Fire Inspection was issued in 1995, nearly 20 years ago. To remain effective and provide the best service possible for the citizens of the City of Dayton we must constantly evaluate where we are and where we want to be as an organization.
Conclusion

While much of the information presented could be taken in a negative light, the intent of the author is to improve fire prevention activities for the Dayton Fire Department. By understanding where the fire prevention program has been, where other departments are currently, and having a vision for the future, we can begin to offer the exceptional service the citizens deserve. Implementation of the recommended actions will increase the effectiveness of fire prevention activities, reduce the liability from not completing inspections, and allow the Dayton Fire Department Fire Prevention Bureau to successfully move into the future.
Works Cited

Atwood. Personal interview. 25 November 2013.


Appendix A

DFD – 2013 ORGANIZATIONAL CHART (12/1/13)

DIRECTOR AND CHIEF
Jeffrey L. Payne (Interim)

Executive Secretary
Margaret Pitsinger

Medical Advisors
William R. Marriott, M.D.
James E. Brown, M.D.
Jason R. Pickett, M.D.

EMERGENCY SERVICES

Assistant Chief
Paul M. Sheehan

8 District Chiefs
Barry Badwin
Rennes Bowers
Cheryl Clark
James Rose
Scott Rowlett
Vincent Wiley
Joseph Meyer
Timothy Rose
Peter Wholsey
18 Captains
39 Lieutenants
167 Firefighters
22 Paramedics
21 EMT’s
6 EMT-Recruits

Support Sys Adminstrator
(Vacant)

Tech. Support
1 Lieutenant-Info Systems – Tad Becker

Support Services & Resource Mgmt

Assistant Chief
Joseph W. Meyer (Acting)

Admin. Services
1 Admin Supv - Frank Ghand
1 Budget Tech – Jason Finke
1 Admin Typist C – Allen
1 Admin Typist II - Warren

Facilities Management
1 Stores Clerk II
1 Building Maintenance Tech
1 Machinist

Garage Services (6/7000)
1 Gar. Supv - Kevin Shoup
6 Heavy Equipment Mechanics
1 Auto Parts Clerk II
1 Part-time Office Worker

Total - Budget: 300 Filled: 282

SUPPORT SERVICES & RESOURCES MGMT

STRATEGIC PROGRAMS AND SAFETY

Assistant Chief
Michael D. Caudill

Training Center
Training
1 DC – Mike Stewart
1 CAPT – Freed
1 LT – Mis
Recruitment
1 LT – Susong

Domestic
Preparedness
1 SPM – Gerstner

Emergency Planning & Mgmt for the City
1 CAPT - Wright

Community Services
Fire Marshal (Vacant)

Investigation
1 FPSII – Vicki Carr
2 FPSII – Niswonger, Scowden
3 FPSI
1 Admin Typist II

Plan Review & Bldg Construction
2 FPSI
GENERAL ORDER NO. 40
December 11, 1995

SUBJECT: FIRE INSPECTION

The maintenance of the company inspection program shall be in accordance with the following guidelines:

1. All engines and truck companies will be assigned an inspection district. This is necessary in order to distribute the inspection workload as equitably as possible.
2. There will be no assigned inspection day. Each platoon will conduct its own re-inspections. Inspections may be conducted Monday through Saturday between 0830 hours and 2230 hours. Certain occupancies will require evening or Saturday inspection.

Company Officers should coordinate with their District Chief the specific time they will be on inspection.

INSPECTION DISTRICTS:

Inspection districts are now assigned by census tract. Therefore, they will not reflect running districts. A current list of company assignments by census tract is attached to this Order. It will be revised from time to time in order to equalize the workload.

Company Officers are to note the census tract numbers assigned to their apparatus. Any assigned inspections which appear to be out of their area should be brought to the attention of the Fire Prevention Bureau in writing.

Bureau personnel are available to companies for assistance upon request. All bureau personnel have inspections assigned to them so they may be unavailable to you if you request assistance on short notice. They will arrange to assist you at the earliest time they become available.

Bureau personnel are responsible for inspecting hospitals, bulk oil storage, hotels, county, state and federal properties. Company personnel should not conduct inspections in these occupancies.
GENERAL ORDER NO. 40.1
December 11, 1995

The program is monitored through monthly reports from Data Processing concerning number of inspections assigned, completed, inspections out over 90 days, number of violations found and corrected, etc. This report is further broken down by platoon and company giving a reliable evaluation of the effort expended by each crew.

The company inspection program is designed to contribute to the reduction of loss of life and property in the city. Each individual effort helps to meet departmental objectives concerning inspections. Individual interest and input is encouraged and appreciated.

BY ORDER OF

Raymond J. Hughes
Director and Chief
Department of Fire

RJH:mp
**GENERAL ORDER NO. 40.2**  
December 11, 1995

**COMPANY INSPECTION DISTRICTS BY CENSUS TRACT**

<table>
<thead>
<tr>
<th>Engine</th>
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<th>Truck</th>
<th>Tract</th>
</tr>
</thead>
<tbody>
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<td>2</td>
<td>44-45-47</td>
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<td>38-40</td>
</tr>
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<td>4</td>
<td>1-2-38</td>
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<td>8</td>
<td>46-63</td>
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<td>9</td>
<td>5-6-17</td>
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<td>10</td>
<td>26-27-28-32-33-34</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Haz/Mat</td>
<td>11</td>
<td>35-36-39-41-42</td>
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<tr>
<td>12</td>
<td>64-807-All 900's</td>
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<tr>
<td>13</td>
<td>29-31-37</td>
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<td>17</td>
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<td>18</td>
<td>57-58-59-60-61-62</td>
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</tr>
<tr>
<td>21</td>
<td>9-66-801 thru 805</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix C

GENERAL ORDER NO 40
September 08, 2011

SUBJECT: FIRE INSPECTION

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GENERAL ORDER NO. 40.1
September 8, 2011

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The company inspection program is designed to contribute to the reduction of loss of life and property in the city. Each individual effort helps to meet departmental objectives concerning inspections. Individual interest and input is encouraged and appreciated.

BY ORDER OF

Herbert C. Redden
Director and Chief
Department of Fire