

**The Impact of the Deferred Retirement Option Program on the City of Ashtabula
and its firefighters.**

By: Ronald Pristera
Lieutenant
Ashtabula Fire Department
4326 Main Ave
Ashtabula OH, 44004

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CERTIFICATION STATEMENT

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ABSTRACT

In January of 2003, Ohio instituted a deferred retirement option program (DROP) for firefighters. The program provides economic incentives to retain firefighters who have reached retirement age, meet the qualifications and participate. The specific benefit is dependant upon the individual participants calculated pension amount, but firefighters who participate for the minimum required three years can build the fund to \$100,000 or more. Should the retired firefighter stay for the maximum allowed eight years, the fund can total \$250,000 or more.

The DROP program has already impacted the Ashtabula Fire Department and will continue to have an impact for as long as it exists.

This research address four questions,

1. How does the total cost of DROP participants, compare to the total cost of non-DROP participants?
2. What are the costs associated with hiring and promoting firefighters?
3. Can firefighter age be used to accurately predict sick or injury time use?
4. Will the DROP program increase the cost of employing firefighters for the city of Ashtabula?

A significant portion of this research is theoretical. Only two years of data exist concerning DROP in Ashtabula, this is complicated the by continuing nature of the program and lack of control over who can participate. To account for the variables, three separate projections were completed. Models were constructed to calculate what the fire department budget, sick time and injury rates would have been with varying levels of DROP participation.

After the costs were projected the total cost of each option was calculated. Analysis revealed the direct cost of the firefighters who are participating in the DROP program is higher than non-Drop participants. Because of the number of variables indirect costs could not be predicted with any degree of accuracy.

Health related paid time off was extrapolated from the department daily log and fire reports, and then tabulated into several graphs. When the patterns of sick/injury time were considered, a clear pattern became evident. Two age groups of firefighters accounted for the vast majority of the health related paid time off taken. The 31-35 group and the 51-55/ 56 plus group. The ratio between the two groups is not consistent. The younger group consists of an expanding number of members that increased from twenty-six to thirty percent of the total members of the department. However, this group never accounted for more than twenty percent of the health related paid time off. The other group initially only included department members who were age fifty-one to fifty-five. The first department member exceeded age fifty-five in 2003. When we combined these two age groups, they eventually grew to represent thirty percent of the total department members, who accounted for over half of the health, related paid time off.

DROP was determined to be a cost burden to the City of Ashtabula. Direct cost exploration makes this clear. What could not be accurately calculated were the intangible expenses and human consequences of DROP. There were too many interdependent variables.

Since the fire department administration and city officials have no control over who enters the DROP program, they should anticipate that all eligible fire department staff will participate and plan for the increased expenses that are a result of DROP. The city should also consider implementing a maximum hiring age in an effort to employ the youngest possible

firefighters. Finally, department members, department administration and city officials must continue the existing wellness program in an effort to improve the general health and welfare of the fire department members.

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INTRODUCTION

Statement of the Problem

This study investigated the impact of the Deferred Retirement Option Program (DROP) in the Ashtabula Fire Department (AFD).

In January of 2003 Ohio instituted a DROP for firefighters. What is DROP? Deferred Retirement was developed in several pension systems to address very different, but complicated problems, retention of experienced staff, an insufficient pool of qualified candidates to fill senior positions, and an aging workforce. Because of the structure of the fire pension system in Ohio, fire departments tend to hire in predictable cycles that generally follow 25-year cycles. This hire/retire cycle, coupled with the expansion of paid fire departments, and has created pressure to replace the growing number of fire fighters who are approaching retirement age.

The program provides economic incentives to retain firefighters who have reached retirement age, and meet the qualifications and participate. All of the eligible members (eight of the twenty-six members) of the Ashtabula Fire Department have elected to participate in DROP, and it remains to be determined what the long-term impact of DROP will be. Regardless, DROP has already impacted the retirement cycle in the AFD and will continue to affect the promotion, and hiring cycle.

Purpose of the Study

DROP is a reality, it has and will continue to have an impact on the city, the fire department and the fire department members. This study attempts to predict those effects in both human and economic terms so the principals can better prepare to cope with them.

Research Questions

The following questions will be answered by this evaluative research:

1. How do the employment costs of DROP participants, compare to the employment costs of non-DROP participants?
2. What are the costs associated with hiring and promoting firefighters?
3. Can firefighter age be used to accurately predict sick or injury time use?
4. Will the DROP program increase the cost of employing firefighters in the city of Ashtabula?

BACKGROUND AND SIGNIFICANCE

In 2003, the Ohio Police and Fire Pension and Disability Fund (OPFPD) implemented DROP. This plan provides economic incentives for firefighters to enroll in the plan, while they continue to work:

...money equal to the benefit that would have been paid if the member had retired is set aside at OPFPD where it earns five percent interest, tax deferred. Upon retirement, the employee can withdraw the accumulated cash and interest as a lump sum or in periodic payments in addition to receiving monthly OPFPD retirement payments. (OPFPD, 2004, pg.1).

The financial benefits of this program are significant. The specific benefit is dependant upon the individual participants calculated pension amount, but firefighters who participate for the minimum required three years can build the fund to \$100,000 or more. Should the retired firefighter stay for the maximum allowed eight years, the fund can total \$250,000 or more.

In light of the recent "perfect storm" - an increase of a 400% in health insurance for retirees and a 30% drop in the stock market this economic incentive is more than most firefighters can resist. Of equal significance is that the firefighter remains covered by the fringe benefits of the employer during the DROP period. Considering the recent increases in health insurance premiums for retirees there is even more of a financial incentive not to retire.

This program may have unexpected complications. Firefighting is a dangerous, physically demanding activity that consistently ranks among the most hazardous occupations in the United States. (Clark, & Zak, 1999; Peterson, 2005).

Ashtabula Ohio is a small charter city located in Northeastern Ohio. Located in a rural agricultural/industrial area, the city of Ashtabula occupies 7.8 square miles and has 21,000 residents. The economic transition from an industrial based economy to a service based one has presented significant challenges for Ashtabula, consistent with those experienced by other Northeastern United States cities.

Protected by a career fire department that can trace its ancestors to the 1840's, the city is very old and faces harsh socio-economic realities. The tax base is declining and the citizens are aging. Since the safety services of the city are funded via an income tax (retired residents are exempt), and the number of taxpayers is declining, the fire department budget is very restricted. Any change that negatively affects the departments operating costs will have significant results.

In addition to the limited financial resources, AFD is minimally staffed, a shortfall that cannot be easily rectified. Ashtabula County is a rural area protected primarily by volunteer or paid on call fire departments. These departments have a difficult time assembling enough firefighters to respond to alarms. When they do respond, their response time is prolonged (Boston Globe, 2005, pg 1.)

The 26-member department consists of the chief, an inspection captain, and three platoons of eight firefighters. The minimum daily staffing consists of six members who staff an engine and ladder company. Any member of the department may become directly involved in firefighting operations.

The median age of the department at the onset of the DROP program was 38 years and has already climbed to 40. The first members of the DROP program will have completed the

required three years participation by late 2006 at which time the median age of the department is expected to be 43-44 years.

As previously stated, Ashtabula faces severe budget constraints, the 2004 operating budget is less than the 2001 budget (City of Ashtabula, 2001, pg ?). The fire department is funded via a general revenue fund created by the collection of a city income tax. The fire department competes with the Police department and portions of the public works department for revenue. Income tax receipts have been falling, resulting in a tenuous financial situation (City of Ashtabula , 2004, pg ?). Any increase in operating costs has a significant effect on the department.

LITERATURE REVIEW

Since this paper is exploring the effects of a Deferred Retirement Program on a small city, the literature search focused on existing DROP programs, firefighter retirement, and injury patterns in firefighters. A search of the National Fire Academy (NFA) card catalog revealed five direct literature references on the effects of a DROP plan. Three of these articles were retrieved on-line; two articles were only available from the author. Several attempts were made to obtain these manuscripts. One article explored DROP in another Ohio fire department. Regrettably, the author had retired and could not be reached via his department. The author of the final article was contacted, agreed to send the paper, but did not.

The retrieved articles do not discuss the direct effects of DROP on sponsoring agencies, but explore reasons to implement the program. The other focus of the literature is a discussion of eliminating DROP programs to cut costs, perhaps a telling indication of the experiences of other agencies.

The Federation of Public Employees (FPE) is collaboration between several unions that represent government employees. The FPE commissioned a study to identify ways to recruit and retain government employees. In it they conclude; "Over the next 15 years government employees face a crisis in recruiting and retaining quality employees. Two-fifths of state and local government employees will be eligible to retire...." (Federation of Public Employees, n.d., p. 3) In the appendix to the FPE report the additional challenge of a shrinking workforce are addressed. "The WWII generation and the baby boomers combine to make 60% of Iowa's state workforce more than 40 years old." The same appendix continues to state that one-third of the City of Minneapolis's workforce will be eligible to retire within five years. (Federation of Public

Employees, p. 18). These numbers are consistent with the current situation at AFD. Currently eight of the twenty-six members (31%) are past their retirement date and are enrolled in DROP.

In an effort to retain these experienced workers and create a smoother transition to the next generation, some public retirement systems have turned to DROP. Two of the articles located at the NFA library speak directly to DROP as a mechanism to avert near catastrophic turnover of key leaders. The California Department of Forestry (CDF) is a very large organization responsible for wildfire control in California. Approximately 75% of the CDF command level officers were eligible for retirement over a five-year period. (Lombardo, 2000). In the survey, large numbers of the existing command officers felt that retirements would significantly affect the CDF's ability to function. It also found that there were not enough qualified candidates in the CDF system to fill the projected openings.

Another paper explores a poorly planned transition to DROP in the Montgomery County Fire and Rescue Service (MCFRS). DROP was instituted during the final phases of a collective bargaining process to avert arbitration. In reviewing possible effects of the program, it was determined that an expected loss of 30 officers in the MCFRS will lead to 78 promotions (Henry, 2000). It goes on to also determine that given the stated interest of those candidates who would be eligible to test for promotion and the typical failure rate on the promotional exams, there will not be sufficient staff to fill the openings (Henry, 2000).

The impact of DROP on MCFRS was thought to be indeterminate. The firefighters were receiving a valuable benefit, but the benefit to the department was mixed. DROP addressed the projected shortfall of candidates for promotion, but prevented the department administration

from “seeing a change in the ranks.” There was also an expected financial burden of over \$350,000 in increased terminal benefits (sick and comp time payouts), (Henry, 2000, p.28).

Concern about an orderly transition to the next generation of firefighters is justified by the experience in the Alton Fire Department. In an effort to cut costs by replacing senior firefighters with newer, less expensive replacements, the City of Alton, Illinois negotiated a preferential early retirement program. The program created a significant bonus for longevity after the firefighter attained twenty years’ service or fifty years of age. This bonus was only open for the window of two pay cycles (effectively one month) immediately following the firefighter reaching the qualifying thresholds. Because retirement benefits in the Illinois pension plan are paid at 50% of the base salary and all incentives (including longevity) are included in the base salary, the early retirement incentive would result in a 7.5% increase in pension benefits. (Spaulding, 2000).

This opportunity to increase their retirement by 14% was apparently more than the firefighters could resist, virtually every eligible fire fighter elected to participate and 20% of the department will retired in a one-month period (Spaulding, 2000). Even more devastating, this 20% includes the entire command structure of the department and all of the training staff. (Spaulding, 2000).

Another issue that DROP may affect is the cost of the expected turnover. Labor statistics vary greatly on how to predict the exact cost of employee turnover. Projections cite costs ranging from \$2100 per employee up to 1.5 times the employee salary (Federation of Public Employees, n.d.). For their 2004 budget process, the State of Texas used one-half of the employee salary to budget for turnover costs (Texas Human Resource Website, 2005).

Not surprisingly, firefighters generally favor DROP programs. The firefighter's union requested a DROP program during negotiations in the MCFRS merger. Both Lombardo and Henry conclude that DROP is beneficial to both fire departments and firefighters. A pension board trustee in Philadelphia, where the city backed DROP program is being reviewed for elimination states "...The unions will not give up this benefit without a fight" (Cypriano, 2003, pg 1).

There may be a significant public perception problem with DROP. Will the taxpayers tolerate civil servants who are receiving over \$100,000 per year in compensation? In the era of shrinking budgets and unfunded mandates from the State and Federal governments, the answer, at least in Alabama seems to be no. A position statement drafted for the Alabama Policy Institute states: "How many people in Alabama do you think have that kind of deal where they work? How long do you think a business would survive if it had to give every employee that kind of bonus?" (Palmer, n.d.,) Budget constraints in Alabama have state officials considering an overhaul, or elimination of the states' DROP program (Rawls, 2003).

Looking past the economic components of DROP towards the human effect, what effect does delayed retirement have on firefighters? In general, the literature contained conflicting information regarding the relationship between age and occupational injury rates; however, there was a closer correlation in the fire department specific literature than the general injury related literature. The conflict regarding the relationship between age and injury is reflected in several journal articles (Liao, Arvey, Butler, 2001).

The complexity of the age/experience/injury relationship is well documented by Cellier et al. Their research revealed declining, then increasing, relationship between age and both injury

frequency and seriousness. The injury frequency/severity rate declined steadily until the late forties and then suddenly spiked upward. This "U" shaped curve was consistent across three levels of worker experience (beginning, intermediate and experienced). (Cellier, Eyrolle, Bertrand, 1995).

This "U" shaped age injury correlation was isolated again in a study of the injury patterns in the Polish Fire Service. When broken out by age groups, the number of injuries were initially high, tapered off and finally began to increase in the higher age groups (Szubert & Sobala, 2002). This study also was able to draw a connection between firefighter age and length of injury/disability.

But the frequency of injures was not found to be clearly age-dependant, however, the duration of work disability because of injuries increased with increasing age. Based on the regression model, showing an association between post-injury absence and the victim's age, it was estimated that a ten-year increase in age contributed to a 20% increase in the duration of work disability. This relation was statistically significant ($p < 0.05$). (Szubert and Sobala, 2002 p. 51).

Patterns of Fireground Injuries, a National Fire Protection Association Report (NFPA) states that firefighters under 40 years of age (who make up 55% of all firefighters) accounted for 64% of injures. Perhaps even more interesting is that the percentage of injuries per age group decreases as age increases (Figure 1).

A study of risk factors contributing to firefighter injures found that physical condition may be the best predictor of fireground injuries. The study does clearly state that there is a correlation between age and injury longevity.

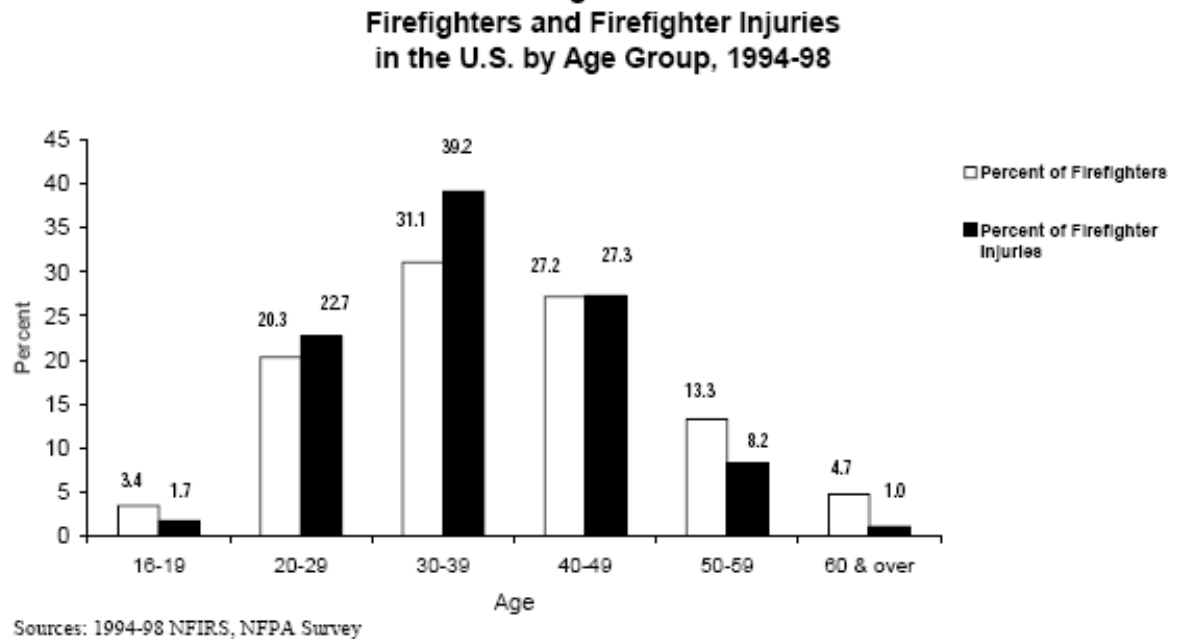


Figure 1. Firefighter injuries excerpted from the 2003 report

In response to a congressional mandate to explore the abolition of mandatory retirement ages the city of Chicago commissioned to explore the relationship between aging and fitness for duty. Using randomly selected subjects from a large municipal fire department, a series of fitness tests were completed. The authors noted a significant decrease in aerobic capacity as age increased with a plateau near age 40. (Saupe, K. P. 1192) The authors conclude

Although fitness standards have been advocated as an alternative to mandatory retirement ages, the data presented here demonstrate that using a published recommendations as standards for aerobic fitness for firefighters would have an adverse impact on a large segment of the existing workforce....lowering standards to avoid adverse impact is legitimate only if public safety is not compromised...any shift away from mandatory retirement ages should be

accompanied ...by developing and implementing medical and fitness standards... (Saupe, K. P. 1194)

Finally, and perhaps most illustrative, is the clear relationship between firefighter line of duty death (LODD) and age. The follow chart is excerpted from the 2003 Firefighter Fatality Report

Table 1.

Fire Fighter Fatalities by age

Age Range	Nontrauma Total	Trauma Total
<21	0	6
21 – 25	0	11
26 – 30	0	6
31 – 35	1	3
36 – 40	3	7
41 – 45	4	7
46 – 50	12	8
51 – 60	20	10
>60	11	2

Note. Excerpted from the 2003 FEMA report

Review of the Ohio Fire Incident Reporting System (OFIRS) firefighter casualty statistics seems to rebut the age/injury correlation; however the casualty statistics are not adjusted for the

total number of firefighters in each age sub-group. It is possible that the spike in the 31-40 age group is simply due to the size of the group. (Figure 2)

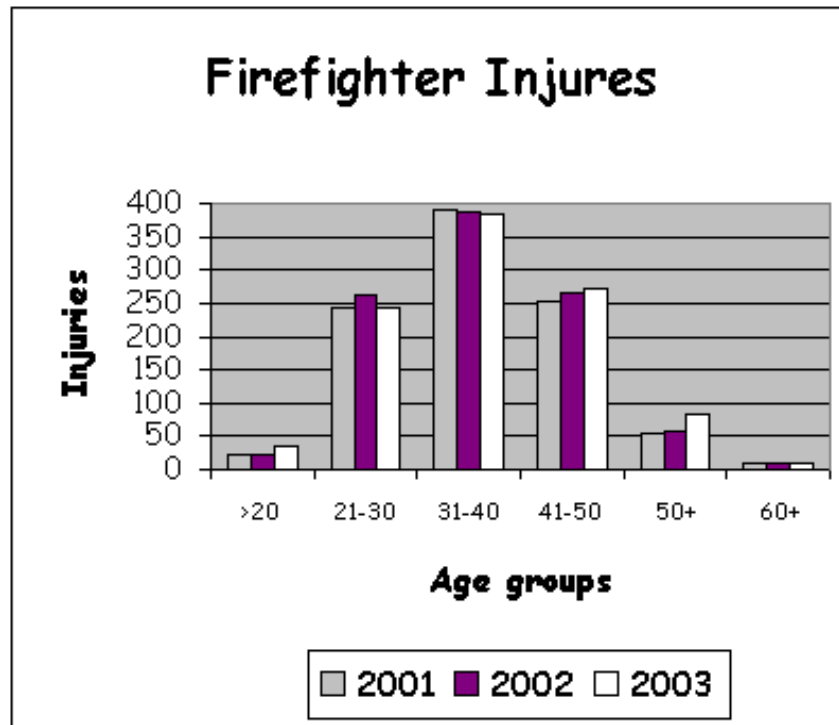


Figure 2. Firefighter Injuries-collated from the Ohio Fire Incident Reporting System

A surprising amount of literature is available on deferred retirement, the body of which speaks to DROP being an effective tool to provide an orderly transition to the next generation of fire-service leaders. In fact, DROP is necessary in some systems to maintain operations. Regrettably, no literature could be located on the effects of DROP. Though the Alton Illinois plan was not a deferred retirement per se, the Alton experience can shed light on what can happen to a fire department when there is a mass exodus of the promoted staff.

There is some evidence in the literature to support the premise that older firefighters experience injuries that are more frequent and longer lasting than younger ones.

PROCEDURES

Local economic data was gathered from several sources. The firefighter's collective bargaining agreement was used to establish wage, longevity and paid time off information. Interviews with the chief of department and City Auditor were used to determine how the city calculates statutory benefits, and pension costs.

The Fire Departments' computer database (Firehouse Software version 5.5, Visionary Systems Ltd, Des Moines, Iowa) is the source of call volume information, injuries, and other fire department operational information.

Sick and injury time data was extracted from the department daily logs, the logs are considered public information, so releases were not required or obtained from department members. Causality data was drawn from fire reports by the department's technical advisor.

To predict the possible economic effects of DROP, three models were been constructed to predict what the fire department expenses were at differing levels of participation in DROP.

Option one assumes that all members of AFD who were eligible at the beginning of DROP chose to ignore the program and retire. Option two assumes that one-half of the members of AFD opt for DROP enrollment and the other half do not. The final Option-three assumes full participation in DROP by all eligible members (this is the reality of the situation). For the sake of simplicity, these three models project the salary and wage costs in 2003- 2006. The projections do not address the eight-year participation level; however, they should be sufficient to predict the cost and trends.

The following assumptions were used when constructing all three models

- All models assume twenty-six firefighters. Both city charter and the collective bargaining

agreement establish promoted positions. DROP will not affect the number of promoted positions, only the tenure of the firefighters who hold them.

- The cost of medical insurance is presumed to be constant, regardless of which of the three available medical plans the firefighter is enrolled in.
- The collective bargaining agreement contains numerous training incentives. The model assumes that all firefighters are being compensated at the Firefighter III, EMT-B, and Hazmat Technician level.
- A scheduled salary increase occurred in May 2005. Because this increase was a "pension pick-up", it is calculated in the pension line item of the 2005 data.

These assumptions were then used to calculate the annual cost of a firefighter in each of the tenure ranges. These tenure ranges were selected because they are consistent with the service time on which vacation time is awarded. Firefighter service time was calculated by creating a table with each department member's year of hire and their service tenure on the first day of each year's projection.

After the number of each firefighter in the tenure ranges was determined, Microsoft Excel was used to create a spreadsheet that determined the number of firefighters in each age tenure range and multiplied it by the corresponding annual cost. This was done for each of the three projected years. The spreadsheet also incorporated the appropriate number of new hires and promotions. The grand total of this spreadsheet then resulted in a total three-year cost for each option. The results are summarized in Table 5.

Firefighter time off was extrapolated from the department daily log. When an assigned firefighter is not on duty the reason for the absence is documented in the logbook. A tally of sick, injury and causality time was created and correlated to firefighter age at the time of the absence. Data collection was stopped in November of 2004. The results are detailed in Figures 3, 4 and 5.

As a point of reference, sick, injury and casualty data is provided for 2002. Of note is the fact that the department is aging; in addition, the age correlation was skewed by several instances of prolonged injury time off. In fact, all of the injury time in 2002 was caused by one injury. All of the 2003 injury time was caused by three injuries. In effect, all of the injury time used during this study could be attributed to four events, effectively skewing the injury/age correlation. The sick time correlation is skewed as well. Approximately one-third of the sick time used in 2004 was attributed to one individual.

Definition of Terms

Causality time Casualties are incidents resulting in injury or illness that occur on the fireground. The primary difference between a casualty and an injury is where & when it happened.

EMT-B Emergency Medical Technician-Basic, a level of certification recognized by the Ohio Department of Public Safety. EMT-B's are certified to provide medical treatment in emergency situations.

Firefighter III A local (Ashtabula Fire Department) recognition that is obtained by passing a series of internal written exams. Three levels of firefighter are recognized in the collective bargaining agreement. Firefighter III is the highest.

Hazmat Technician A level of training that meets federal regulations for emergency responders to hazardous material releases.

Injury time Paid time off that is directly related to a job related injury or illness.

Longevity A financial incentive paid to firefighters based on service tenure

Pension Pick-up A stipulation of the collective bargaining agreement that requires the City of Ashtabula to pay a negotiated portion of the firefighters requisite contribution to the OPFPD instead of the firefighter.

Sick Time Paid time off that is not directly related to a fire department illness or injury.

Work Comp The State of Ohio program designed to cover work related injuries.

Limitations of this Study

There are significant limitations to this study, the key being the attempt to study an occurring event and the inability to predict what would have happened had DROP not materialized.

Another limitation is the inability to predict what will happen in 2006 when the first DROP participants have satisfied the minimum participation requirements. There is simply no way to predict the turnover and promotional costs, or what the effects of “outside” events had on the firefighters decision to participate in DROP.

The primary limitation of this research is that it is theoretical; another researcher will validate the work conducted here five years from now. While there is sufficient information to create the models and supply a foundation for the economic assumptions used in this paper, there is not enough actual experience to validate the assumptions. Using past experience and the

collective bargaining agreement, cost can be predicted with reliability. Unfortunately, the same reliability cannot be applied to the human predictions. Do the injury rates increase for older firefighters because of age or because of the increased probability associated with longer tenure? Do older firefighters use more sick time because they are older or because they contemplate retirement and the "loss" of a perceived benefit? Other authors have struggled when trying to correlate the relationship between age, tenure, and injury.

Comparative analysis with other departments could help draw an age correlation, but regrettably, sufficient data cannot be obtained to make the comparison. The national firefighter injury reports are not contemporaneous; the most current injury statistics are for 2003. The final issue with the state and national statistics is the lack of correction for group size. Older firefighters may be injured more frequently because there are more of them- again the probability issues.

The "human variables" are equally difficult to analyze. DROP will affect the use of vacation time. The department collective bargaining agreement awards six weeks of vacation to members who have provided twenty-five years of service or more. Six weeks of vacation time translates into eighteen, twenty-four hour shifts off for each DROP participant, except for the fire chief (a forty-hour employee). AFD utilizes three eight-man platoons with a minimum staffing level of six. Paid time off is selected by seniority in groups until all assigned time is used. Because of the staffing minimum two members are permitted to be off each day. Overtime is created if another member is off due to injury or illness.

DROP participants receive the maximum amount of vacation allotted under the collective bargaining agreement. Retiring department members are replaced by probationary firefighters

who receive no vacation during their first year followed by two weeks afterward. This results in a net decrease of eighteen days off in the first year after retirement and twelve days in successive years. This would seem to result in a corresponding decrease in the possibility of overtime due to sickness or injury, however that reduction is very difficult to quantify.

RESULTS

This project had four research questions.

How does the employment cost of DROP participants, compare to the employment cost of non-DROP participants?

Drop participants are more expensive than non-DROP members. The size of the variance is proportional to the tenure of the non-Drop member. See Table 2.

Table 2

The total cost of a firefighter (expressed in dollars).

Tenure in years	<1	1-5	6-10	11-17	18-24	≥25
Salary	40,349	43,266	43,266	43,266	43,266	43,266
Longevity	0	0	250	500	1,000	1,500
Benefits ^a	585	627	631	635	642	649
Work Comp ^b	1,892	1,892	1,892	1,892	1,892	1,892
OP&F pension ^c	9,684	10,384	10,444	10,504	10,624	10,744
Pension Pickup ^d	1,614	1,731	1,741	1,751	1,771	1,791
Uniforms ^e	0	810	810	810	810	810
Hiring Expense ^f	3874	0	0	0	0	0
TOTAL	57,998	58,710	59,033	59,357	60,004	60,652

^a Includes all required payroll taxes.

^b Ashtabula sets work comp rates by dividing total annual expenses by the number of employees.

^c The city contribution to the pension plan is 24.7% of the firefighter's salary.

^d The 2003-2006 collective bargaining agreement requires the city to pay 4% of the firefighters require contribution.

^e Firefighters are issued department uniforms at the time of hire, the annual uniform allowance is not paid until the second year of employment.

^f The costs of hiring a firefighters is detailed in Table 3.

What are the costs associated with hiring and promoting firefighters?

It costs \$3874 to hire a firefighter in Ashtabula a figure that falls in the range cited in the Federation of Government Employee paper. The specific cost is detailed in Table 3 promotional expenses are estimated in Table 4.

Table 3.

The Cost of Hiring a Fire Fighter (dollars)

	Cost in \$
Entrance Exam ^a	0
Practical Exam ^b	0
Background Check	15
Polygraph	100
Psychological Exam	300
Pre-employment medical exam	1000
Initial uniform issue	1150
PPE	1309
TOTAL	3874

- ^a The entrance exam is funded by the registration fees of the participants
- ^b The practical exam is administered by the fire department under the supervision of the Civil Service Commission. There is no out of pocket expense.

Table 4.

Promotional Expense^a

	Costs
Written Exam	\$1000 + \$10 per candidate
Oral Board	\$1000 + \$250 per candidate over six
Uniform & Equipment Expenses ^c	\$860/promotion

^a William Lee, Ohio Fire Chiefs Association

^c Source, IAFF 165 collective bargaining agreement

Can firefighter age be used to accurately predict sick or injury time use?

When the patterns of sick/injury time are considered, the U shaped curve referenced by Cellier, Eyrolle & Bertrand, and Szuber & Sobala is evident (see Figures 3, 4 & 5).

Two age groups of firefighters account for the vast majority of the health related paid time off taken. The 31-35 group and the 51-55/ 56 plus group. The ratio between the two groups is not consistent. The younger group consists of an expanding number of members that increases from twenty-six to thirty percent of the total members of the department. However,

this group never accounts for more than twenty percent of the health related paid time off. The other group initially only includes department members who are age fifty-one to fifty-five. The first department member exceeds age fifty-five in 2003. If we combine these two age groups, they eventually grow to represent thirty percent of the total department members, who account for over half of the health related paid time off. In summary, at least in AFD, the older firefighters do use more health related time off than the younger ones.

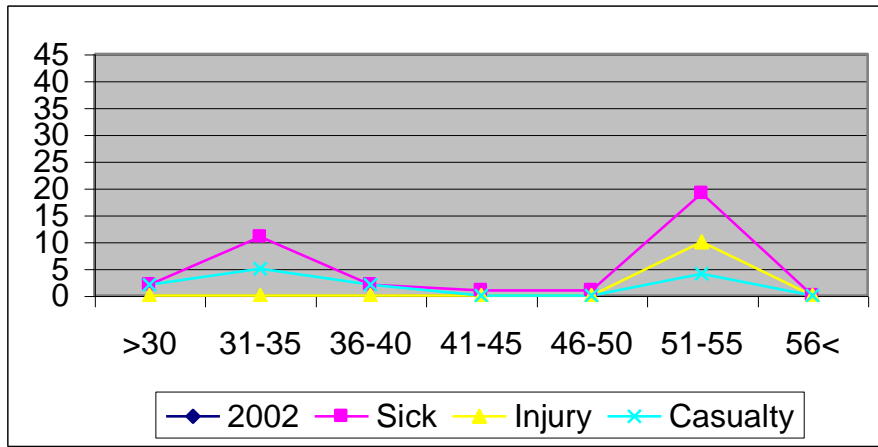


Figure 3. AFD health related time off analysis 2002

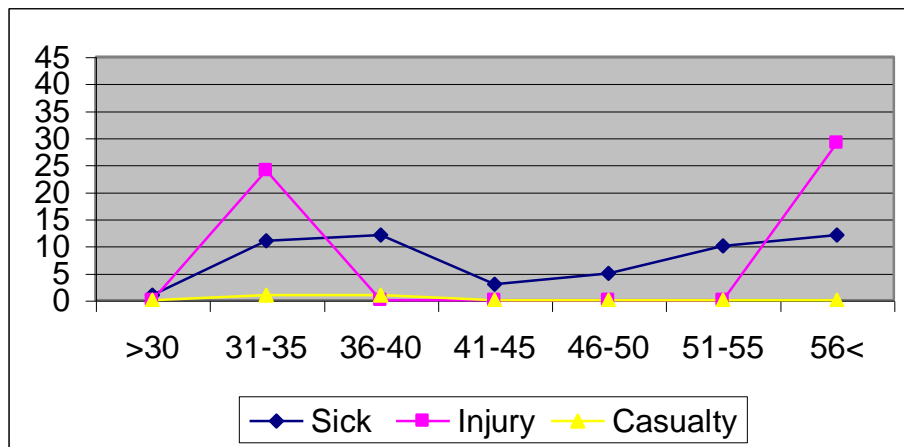


Figure 4. AFD health related time off analysis 2003

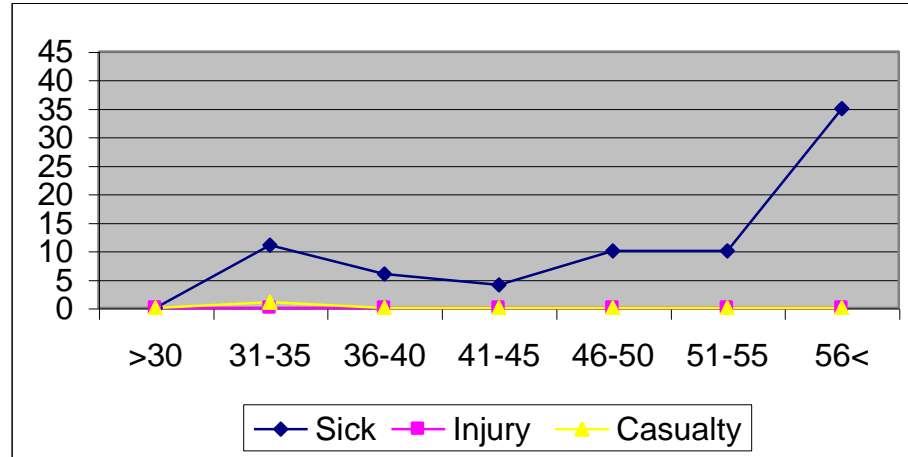


Figure 5. AFD health related time off analysis 2004

Will the DROP program increase the cost of employing firefighters for the city of Ashtabula?

When the direct costs are projected and included over the three -year period DROP will burden the city of Ashtabula with an increased expense to employ firefighters (See Table 5). Of equal concern is the DROP participants use health related paid time off at a higher rate than their non-DROP counterparts.

Table 5.

Three year cost projections (in dollars)

Model	Salary	Hiring ^a	Promotional ^b	Total
Option 1	6,094,370	30,992	6,150	6,125,362
Option 2	6,143,786	15,496	6,150	6,149,936
Option 3	6,193,202	0	0	6,193,202

^a In Option 1 eight firefighters retire and are replaced, in Option 2 four firefighters retire and are replaced, in Option 3 no firefighters retire.

^b All promotional exams are given (Chief, Captain, Lieutenant and Engineer).

DISCUSSION

The DROP program will be an economic burden to the city of Ashtabula, however there are non-economic considerations that may be more significant than the direct expenses. DROP has been implemented in other states to retain more experienced staff. (Lombardo, 2000). Had all of the eligible members of AFD had retired in 2003, the department could have been damaged significantly. Virtually every promoted member of the department would have left (retired), taking hundreds of years of experience with them, and resulting in eighteen promotions. With only two lieutenants remaining in the department, the exam for captain would have been opened to the engineers. Only one captain would have remained in the department, thus opening the exam for chief to the lieutenant rank. In summary, several department members would have "jumped" ranks.

Another potential promotional complication is the exam failure rate. Spaulding speaks to this in the Alton paper. If a thirty percent failure rate were predicted, the ensuing promotional lists would be insufficient to fill the openings, setting off another series of exams open to the next lower rank (Spaulding, 2000, p.7).

DROP seems to promote a more orderly turnover of promoted staff, provided all department members do not enroll and terminate their participation in the program simultaneously. It is possible that the promotional chaos previously discussed here is only delayed by DROP until 2006. Given the differences age, tenure, and personal issues this (group program termination) does not seem likely.

Another troublesome component of this research are the human effects of retaining older staff members. A significant portion of the fire department budget is consumed by overtime

expense, and the primary source of overtime expense are sick/injury days and the subsequent need to bring in replacement firefighters who are receiving overtime pay.

The use of health related paid time off within AFD is consistent with the “U” shaped distribution pattern established by other authors (Cellier, Eyrolle & Bertrand). This connection between firefighter age and the use of health related paid time off, but has failed to clearly determine the reason for the connection.

Many factors affect health related paid time off. As firefighter age increases, so does the age of the firefighter’s family. Time off may not be due to firefighter health, but the health of an immediate family member. These factors exceed the scope of this research, however sufficient evidence exists to presume that as the age of a firefighter increases, a corresponding likelihood exists for the firefighter to use more health related paid time off.

Isolating the factor(s) that contribute to this relationship could suggest actions to reduce the impact of the increased use of health related paid time. While it would be helpful to identify these trends, it is not necessary to answer the research questions proposed in this paper.

Increased firefighter age results in a corresponding increase in the use of health related paid time off, and a subsequent increase in the financial burden to the City of Ashtabula.

Much of this paper has been focused on the economic effects of DROP on the city. It has proven very difficult to calculate what the costs are. The direct costs have been calculated and included in previous sections of this paper. What cannot be calculated are the intangible expenses. These include;

The increase in probability of a line of duty death (LODD). Firefighters participating in DROP are typically in the age group at greatest risk for catastrophic cardiac events. It is

impossible to accurately predict the psychological effects of a LODD on a department or city, but there are corresponding costs as well. Direct and indirect overtime expense, counseling, workers compensation benefits and the costs of replacing the firefighter will all be felt. A search of the literature relating to LODD effects on fire departments and cities was unsuccessful.

The terminal cost of DROP participants must also be considered. Retiring firefighters are entitled by the collective bargaining agreement and Ohio law to compensation for unused sick time and unpaid compensatory (Comp) time. Terminal benefits are paid at the outgoing members' current rate of pay, which may be higher than the pay rate in effect when the time was earned.

In summary, the effects of DROP are still undetermined. At the onset of this study, the author believed the results would clearly indicate that DROP was significantly more expensive than thought. After completing the research the author believes that the issues concerning DROP will not be fully experienced for several years and the costs of DROP cannot be calculated with sufficient accuracy to support either position. Regardless, DROP is a reality and firefighters are likely to continue to participate in large numbers and fire departments must deal with the reality of DROP.

RECOMMENDATIONS

DROP has been shown to have a negative financial impact on the City of Ashtabula and since the City has no control over who participates in the DROP program it must begin to incorporate the realities of DROP into its financial planning. The city must plan for every eligible member to participate in the program and budget accordingly. The budget presumptions should include the additional direct cost of DROP and an allowance for an increase in overtime caused by health related paid time off.

Since fire department administration and city officials have no direct control over which department members enroll in the DROP program, they should try to assert indirect control. By considering a maximum hiring age and focus hiring efforts on the youngest qualified applicant, DROP will very likely extend the career of firefighters into the thirty-year range. Candidates who are hired after age thirty may be working until age sixty. Some of the research findings suggest that the effects of DROP may be less pronounced on younger department members.

Finally, improving the health and level of fitness among the fire department members may be a powerful tool in the battle against age related injury, illness and disability. Potential DROP participants must begin to plan for longer careers and staying physically fit is an integral part of that planning. To that end the city must continue the current health and wellness program, regardless of the cost.

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APPENDIX 1 – AGE DATA

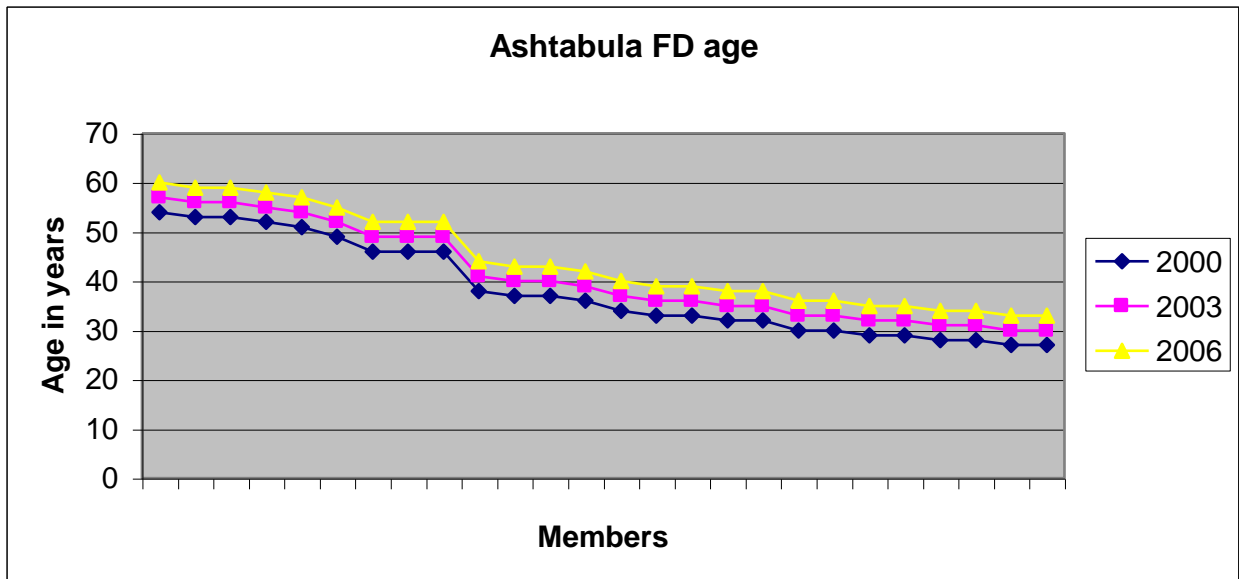


Figure 6. Age of AFD members through the initial phase of DROP

APPENDIX 2 – SALARY, BENEFIT AND PROMOTIONAL COST DETAILS

Table 8

Employment Costs for Ashtabula Municipal Employees^a

	Costs
Life Insurance	\$8.05/month
Fire Pension (city portion)	\$0.240/payroll dollar
Medicare tax	\$0.014/payroll dollar
Workers Comp	\$1819/per employee/year
State Unemployment Tax	self funded

^asource Ashtabula City Auditor