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Internal Audit Unit

Internal Audit Overview

"Vigilance Through Knowing"

Workers' Compensation Annual Report 12-06

December, 2012

Objectives

The objectives of this report are to continue the recommendations put forth in the City's 2010 audit. The specific recommendations are listed below.

- Annual cost trend analysis of the department's workers' compensation cost data
- Annual trend and pattern analysis of its workers' compensation incident data.

Methodology and Scope

- The primary data source for this report and the city's audit is the RiskMaster system utilized by the Department. The RiskMaster system is a database that stores many data fields about each workers' compensation incident. In addition, data for this project was obtained from the Department's computer unit.
- The scope of this report is primarily limited to the Workers' Compensation data provided by RiskMaster.

Findings

1. There had been an overall expense decline from the years 2008 through 2011, however fiscal year 2012 had a $531,215.66 increase over fiscal year 2011 even though there were exactly the same number of incidents.
2. The "injured during arrest" category is the largest category listed for injuries.
3. The most common body part injured during arrest was the hand.
4. Knee was the most common body part injured, regardless of activity.
5. The police officer position had the most number of total injuries.
6. About 37% of employees that were involved in a workers' compensation incident had 2 or more incidents in the listed time period (fiscal year 2008- 2012).
7. The five year average of incidents resulting in loss time was 11.74%.
8. The activity which resulted in the greatest loss time was vehicular accident.
9. The body part injury which resulted in the greatest frequency of loss time was neck soft tissue and knee.
10. "Contusion" was the most common injury description listed for the listed fiscal years 2008-2012

For further information please contact: Officer Marvin Forbes, 234-5247 mforbes@kcpd.org

Endorsement Page

Re: Workers Compensation Annual Report 12-06

Unit/Section Supervisor

Unit Commander

Major Pruetting,
Submitted for information and review by the Chief. I recommend after the Chief's review the report be distributed to all bureau commanders and that the Human Resources Division, Office of the General Counsel and the Training Division also receive copies. I also recommend that the report be presented to the Audit Committee.

[signature] Dee 12/6/12

Division Commander

Chief,
For your review, approval and forwarding to the Audit Committee.
Maj. J. Pruetting

Bureau Commander

Chief of Police

Approved for forwarding to the Audit Committee

Chief [signature]
12-12-12

Form 220 P.D. (2-2006)

Workers' Compensation Annual Report 12-06

December 2012

Internal Audit Unit

Kansas City, Missouri Police Department

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Introduction

In November 2010, an audit tilted, *Performance Audit Police Department Workers Compensation,* was completed by the City Auditor's office. The audit focused on "cost and incident trend and pattern analysis the Police Department can perform on its workers' compensation data." The city "analyzed the departments' workers' compensation cost to give the department examples of analyses the department could do." The information is presented in several charts, tables, and graphs.

In addition to information about workers' compensation expenses, the city's audit further outlined information about patterns involving workers' compensation incidents. The city examined incidents involving body part injuries, activity engaged at time of injury ("service"), injuries by assignment of employee (position and division), and injury by day of week. The city provides this information in order to identify patterns that might be managed if an injury trend is increasing. However, if a decreasing pattern of injuries is identified, then hopefully the factors that led to the decrease can be determined and applied to all divisions.

In response to the city's audit, the Chief of Police directed the Internal Audit Unit to prepare an annual report that reflects the information prepared by the city. The report is broken into three sections and data is pulled from the 2008 through 2012 fiscal years. The first section contains the charts, graphs and tables that appeared in the city's audit. The city's rationale and importance of the information from the original audit is also provided in this section. The next section contains additional information suggested by the city. This information is also contained in charts, graphs and tables (however these were not produced in the original audit). Likewise, this section contains the rationale and importance of the information provided by the city. The last section contains additional workers' compensation information produced by the Internal Audit Unit.

Scope

The scope of this report is primarily limited to the information provided in the city's audit titled, *Performance Audit Police Department Workers' Compensation*. The city's recommendation was that the Department should prepare an annual detailed analysis of workers compensation data. Their audit provides examples of analysis that could be performed with the existing data provided by the RiskMaster system. The specific analysis that was to be done was left up to the department. However, the examples provided by the city seemed to be appropriate for the workers compensation analysis. Therefore, this report utilizes most of those examples. Additionally, this report does expand on the examples provided by including additional information that seemed appropriate for workers'' compensation analysis.

Objectives

The objectives of this report are to address the recommendations put forth in the city's audit. The specific recommendations are listed below.

- Annual cost trend analysis of the department's workers' compensation cost data
- Annual trend and pattern analysis of its workers' compensation incident data.

Methodology

The primary data source for this report and the city's audit is the RiskMaster system utilized by the Department. The RiskMaster system is a database that stores many data fields about each workers' compensation incident. In addition, data for this project was obtained from the Department's computer unit.

Workers' Compensation Expenses

Workers' Compensation Expenses

	fiscalYear				
	2008	2009	2010	2011	2012
expense	$	$	$	$	$
A- Medical Claims	$1,400,080.00	$1,088,837.00	$1,212,432.25	$1,077,477.04	$1,324,682.66
B- Beneficiary Payments	$97,811.00	$112,761.00	$111,323.33	$110,892.08	$100,546.88
C- Settlements	$123,148.00	$271,308.00	$445,458.85	$305,336.18	$330,052.32
D- HR Staff Salary	$152,996.00	$152,996.00	$126,565.88	$129,313.91	$130,106.54
E- Billing Services	$123,549.00	$136,297.00	$167,521.38	$107,372.06	$194,210.91
F- Extra WkComp Ins	$123,351.00	$118,996.00	$117,656.00	$116,920.00	$131,007.00
G- Liab/Prop Ins		$2,254.00	$1,254.00	$1,254.00	
H- Taxes 2Inj & Self	$129,257.00	$183,535.00	$70,662.21	$169,395.72	$106,173.79
I- Audit/Actuarial			$2,000.00	$16,500.00	$27,000.00
J- Self Ins Escrow	$700,000.00				$238,048.00
K-Training				$3,438.50	
L- Software Mnt RSK MSTR			$8,110.00		
M- Curr Yr Encumb	$35,740.00	$207,077.00	$70,658.41	$61,326.16	$39,280.96
N- Prior Yr Encumb		($35,740.00)	($207,076.91)	($70,658.41)	($61,326.16)
Grand Total	$2,885,932.00	$2,238,321.00	$2,126,565.40	$2,028,567.24	$2,559,782.90

Table 1

City's Rationale and Importance

By analyzing the cost trends using annual cost data over multiple years, the department will be able to identify the cost components that are increasing and the rate of increase. Analyzing trends in workers' compensation costs can also highlight when costs are above and below expected values. Knowing which costs are driving workers' compensation costs can help focus where the department can reduce costs or slow increases. Tracking workers' compensation cost trends also provides data for making cost projections.

Report Discussion

The information provided in this table was provided by the accounting section of the police department. Category D (HR Staff Salary) is an estimation of expenses and has been modified since the original calculations were performed. The City's calculation included three individual's salaries and benefits as a percentage of the time that was spent dealing with workers' compensation. The percentages of those three indviduals

was 25%, 90% and 90% of salary and benefits. However, upon interviewing those same three individuals, the percentages have been modified to 20%, 75%, and 75%.

In addition to calculation changes, there are additional categories that were not included in the city's table and therefore would not have data for those years. The categories "Audit/Actuarial", "Training" "Software Maintenance of Riskmaster" have been added.

There had been an overall expense decline from the years 2008 through 2011, however fiscal year 2012 had a $531,215.66 increase over fiscal year 2011 even though there were exactly the same number of incidents (table 3).

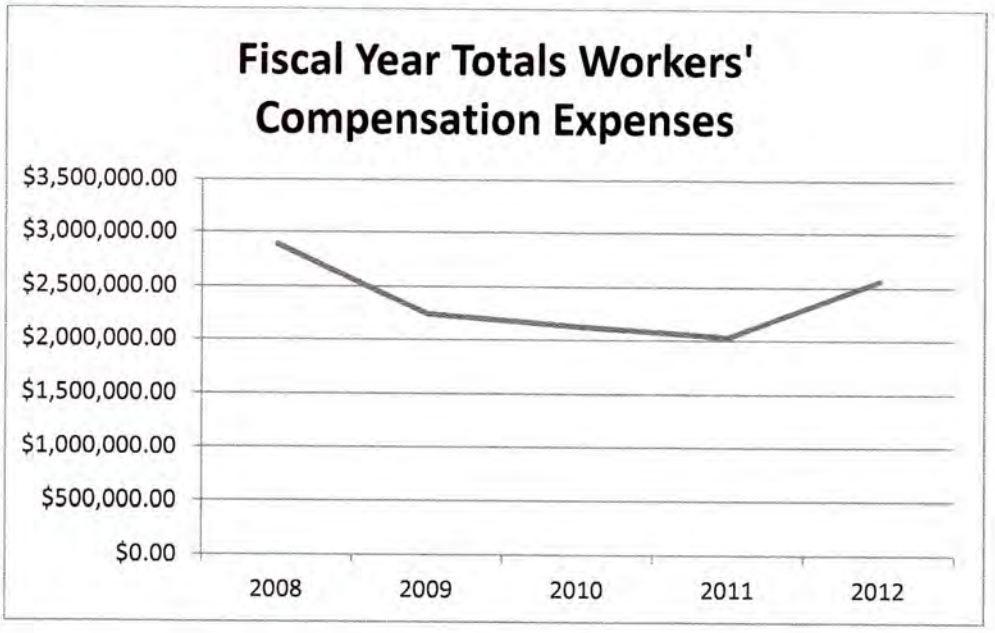

Table 2

Incidents By Service

Incident By Service Pivot Table

	FiscalYear					
	2008	2009	2010	2011	2012	Grand Total
Service	#	#	#	#	#	#
INJURED DURING ARREST	60	83	65	49	39	296
VEHICULAR ACCIDENT	61	47	41	31	40	220
OTHER	59	45	51	31	26	212
SLIP AND FALL	34	25	21	31	27	138
FOOT CHASE	36	29	13	10	29	117
Physical Training/Defensive Tactics	30	14	14	19	15	92
ASSAULT	15	20	8	17	18	78
LIFTING INJURY	12	10	6	10	10	48
SLIP AND FALL - WEATHER RELATED	16	8	12	10	1	47
Injury caused by sharp object				10	11	21
POISON IVY	7	3	1	3	2	16
Dog Bite				7	6	13
Exposure to toxic substance			1	6	6	13
FIREARMS TRAINING	4	2	2	2	3	13
REPETITIVE MOTION		2	3	1	1	7
BIKE PATROL	3		1	1	1	6
Foreign object in eye				2	4	6
Injury caused by uneven surface				1	2	3
Grand Total	337	288	239	241	241	1346

Table 3

City's Rationale and Importance

Analysis of injuries by service can reveal trends and fluctuations. Reviewing annual trend analysis would allow the department to notice increases and decreases in incidents involving specific activities. Service is defined as the activity the employee was engaged in at the time of the injury.

Report Discussion

The incident by service table does provide an excellent starting point to determine the most common activities that employees were engaged in at the time of an injury. Additional discrete categories such as, "foreign object in eye", "injury caused by uneven surface", "dog bite", "injury caused by sharp object", and "exposure to toxic substances" were added in FY 2010 in order to reduce the amount of injuries that were marked "other." Table 3 indicates that overall the "other" category is third on the list on a total

FY basis. However, it is falling on a strictly category basis. The category, "injured during arrest" continues to lead for most common service among workers' compensation injuries. But, the category has posted three continuous years of decreasing injuries in FY 2010 through FY 2012.

Incidents by Service - Chart

Incident By Service Chart

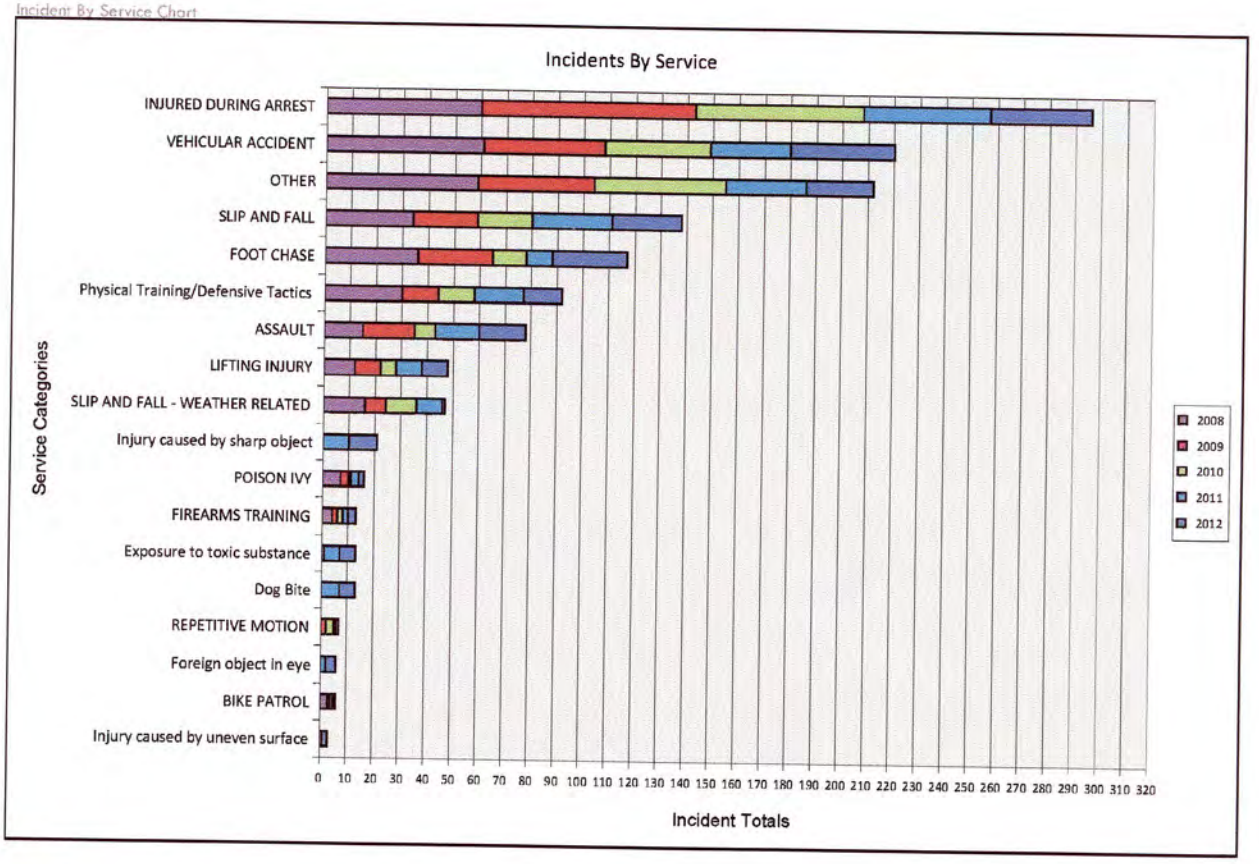

Table 4

City's Rationale and Importance

Same as Incident by Service Table

Report Discussion

The incident by service chart displays the aggregate numbers for each type of service for the listed time period. This is a graphical representation of the information contained in the previous table. The colors indicate the rate at which each fiscal year contributed to the aggregate number. The colors might indicate that while a certain category may lead in overall incident number, the rate may be decreasing.

Body Part Incidents

BodyPart Injuries

	Fiscal Year					
	2008	2009	2010	2011	2012	Grand Total
BodyPart	#	#	#	#	#	#
Knee	56	49	39	29	38	211
Hand	40	45	32	30	26	173
Shoulder	24	32	20	16	19	111
Lower Back (Lumbar)	27	22	22	17	16	104
Finger	21	25	16	13	19	94
Neck Soft Tissue	29	21	13	17	12	92
Ankle	17	27	16	15	12	87
Lower Arm	17	13	13	13	12	68
Wrist	24	8	14	10	12	68
Soft Tissue	15	16	11	9	14	65
Upper Back Area (Thoracic Area)	26	15	7	7	10	65
Elbow	14	12	9	13	11	59
Lower Leg	12	14	14	10	8	58
Eye (s)	16	9	10	10	6	51
Body Systems & Multiple Body Systems	10	5	2	10	6	33
Foot	10	2	3	9	9	33
Thumb	7	4	6	8	8	33
Hip	11	3	8	6	1	29
Upper Arm (inc: Clavicle and Scapula)	3	9	1	6	5	24
Chest-Ribs, Sternum	7	6	4	3	3	23
Skull	9	4	2	1	3	19
Abdomen Including Groin	4	4	2	2		12
Multiple Body Parts	1	2	5	2	2	12
Ear	1	2		4	4	11
Upper Leg	2	3	1	1	4	11
Grand Total	403	352	270	261	260	1546

Table 5

City's Rationale and Importance

The department could investigate injuries to specific body parts that have a consistently higher frequency of occurrence or are trending higher. Further analysis of the increase of injuries might show a common cause for the increase. Once the department identifies the cause, it could seek opportunities to change how it performs some functions or provide different equipment or training to reduce injuries to this body part.

Report Discussion

Body Part Injuries table displays the top 25 body part injuries by fiscal year. The table indicates that knee, hand, and shoulder are the most common injuries. It should be noted that an incident may injure more than one body part. Therefore, the total number of injuries can be more than the number of incidents in a given time period.

Body Part Incident Chart

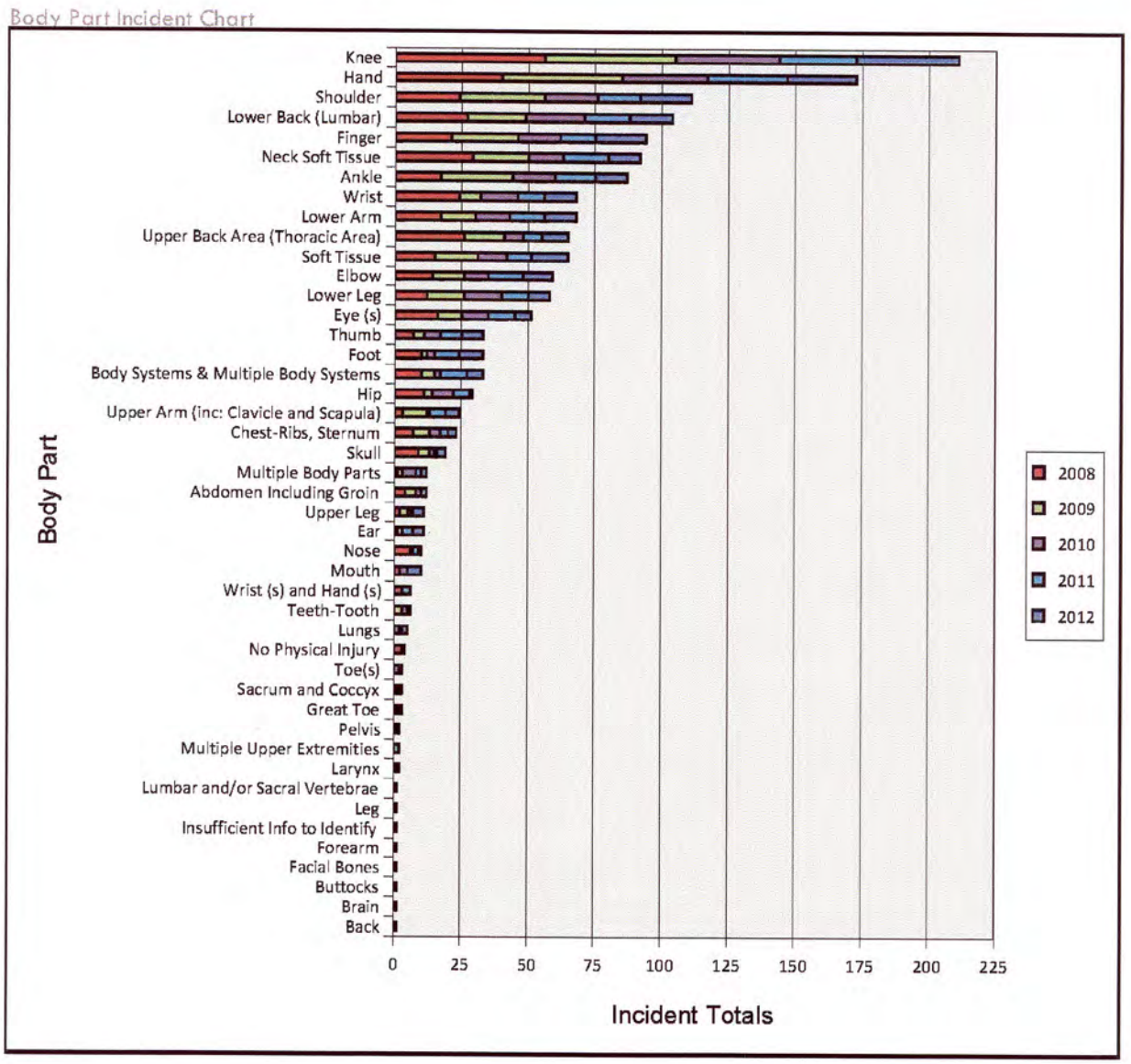

Table 6

City's Rationale and Importance

Same as Incident by Service Table

Report Discussion

The body part incident chart displays the aggregate numbers for each type of body part for the listed time period. This is a graphical representation of the information contained in the previous table. The colors indicate the rate at which each fiscal year contributed

to the aggregate number. The colors might indicate that while a certain category may lead in overall incident number, the rate may be decreasing

Body Part Incidents By Service

BodyPart Injuries By Service

	BodyPart			
	Knee	Hand	Shoulder	Grand Total
Service	#	#	#	#
INJURED DURING ARREST	48	60	26	134
FOOT CHASE	36	29	4	69
SLIP AND FALL	46	14	9	69
VEHICULAR ACCIDENT	26	14	27	67
OTHER	11	17	9	37
ASSAULT	17	12	2	31
Physical Training/Defensive Tactics	12	1	10	23
SLIP AND FALL - WEATHER RELATED	7	7	7	21
LIFTING INJURY	3	2	14	19
Injury caused by sharp object	3	8		11
Exposure to toxic substance		4		4
BIKE PATROL	1		2	3
REPETITIVE MOTION		2	1	3
Dog Bite		2		2
FIREARMS TRAINING	1	1		2
Grand Total	211	173	111	495

Table 7

City's Rationale and Importance

Combined analysis of incident frequency by service and body part injury could help identify needed safety improvements. The department could examine why certain activities lead to injuries involving the most frequent body part injuries. Similar causes could suggest safety precautions to take to protect those body parts.

Report Discussion

Table 7 displays the top 3 body parts injured in relation to the type of activity being performed at the time of injury. The totals are displayed in the aggregate for the listed time frame (FY 08-12). Knee and hand injuries most often occur during arrest activities. However, shoulder injuries most often occur in vehicular accidents.

Percent of Division Employees By Incidents

Personnel Assigned By Division and Incidents

	FiscalYear														
	2008			2009			2010			2011			2012		
Division	#	Pos	%	#	Pos	%	#	Pos	%	#	Pos	%	#	Pos	%
Center	56	217	25.81%	57	224	25.45%	41	237	17.30%	46	220	20.91%	55	230	23.91%
East	52	222	23.42%	48	216	22.22%	38	223	17.04%	47	207	22.71%	35	206	16.99%
Facilities Mgmt	8	51	15.69%	6	51	11.76%	3	51	5.88%	6	51	11.76%	6	49	12.24%
Logistical Support							22	227	9.69%	24	233	10.30%	14	232	6.03%
Metro	45	201	22.39%	37	195	18.97%	43	201	21.39%	32	185	17.30%	40	185	21.62%
Narcotics and Vice	13	92	14.13%	11	91	12.09%	18	112	16.07%	14	102	13.73%	17	103	16.50%
North	12	107	11.21%	8	109	7.34%	11	114	9.65%	12	114	10.53%	8	114	7.02%
Shoal Creek	10	63	15.87%	14	101	13.86%	9	107	8.41%	10	107	9.35%	10	106	9.43%
South	17	120	14.17%	14	117	11.97%	8	123	6.50%	11	122	9.02%	9	120	7.50%
Special Operations	18	138	13.04%	20	138	14.49%	19	138	13.77%	17	193	8.81%	20	184	10.87%
Training	21	130	16.15%	8	83	9.64%	7	52	13.46%	10	52	19.23%	10	50	20.00%
Violent Crimes	5	109	4.59%	4	112	3.57%	9	144	6.25%	3	144	2.08%	3	146	2.05%

Table 8

City's Rationale and Importance

Disparities in total incident frequencies by division could identify internal "best practices." The department could compare frequencies of injuries in divisions that perform like duties. The department could try to determine what factors are influencing the rates and creating disparities between divisions. If these factors are within its control, the department can make changes

Report Discussion

The city's original audit spanned the fiscal years 2005 through 2009 and included many divisions. Starting in fiscal year 2010, displaying data for divisions that had extremely low incident data did not seem to make sense and they were dropped. In addition, there was some organizational realignment. For example, property crimes was dropped as a division and added to the patrol division. Therefore, while property crimes did have data in fiscal years 2007-2009, there was no data for fiscal years 2010 through 2012 and thus was not included.

The "#" category indicates the total number of injuries for that year at that division. The "Pos" category indicates the total number of positions assigned to that division. This information was obtained from the department's budget unit. The "%" category displays the total number of injuries divided by the total number of positions and displayed as a percentage.

Patrol Division Incidents By Service

Incidents By Patrol-Divison And Service

	divisionName						
	Central	East	Metro	North	Shoal Creek	South	Grand Total
Service	#	#	#	#	#	#	#
INJURED DURING ARREST	78	67	61	18	17	14	255
VEHICULAR ACCIDENT	51	45	35	10	11	6	158
FOOT CHASE	37	38	24	1	4	8	112
OTHER	25	23	21	6	6	11	92
SLIP AND FALL	28	21	13	7	5	9	83
ASSAULT	20	15	12	2	2	4	55
Physical Training/Defensive Tactics	16	4	11	2	2		35
SLIP AND FALL - WEATHER RELATED	4	7	6	2	1	3	23
LIFTING INJURY	6	4	4	2	2	2	20
Injury caused by sharp object	3	2	4			3	12
FIREARMS TRAINING	3	3	3		1	1	11
POISON IVY	2	1	7		1		11
Dog Bite	3	2	1	1	1		8
BIKE PATROL	3		2				5
Exposure to toxic substance	1	2		1			4
Foreign object in eye	1	1					2
Injury caused by uneven surface	1		1				2
REPETITIVE MOTION						1	1
Grand Total	282	235	205	52	53	62	889

Table 9

City's Rationale and Importance

Comparisons by division and service could identify variances in similar operations. Further analysis could show that there may be some practices used by one division that other divisions could adopt in order to reduce injuries during arrest.

Report Discussion

This table displays information only for the Patrol Divisions. It lists each Patrol Division and the assorted service categories.

Position

Incidents By Position Historical

	Fiscal Year														
	2008			2009			2010			2011			2012		
Position	#	POS	%	#	POS	%	#	POS	%	#	POS	%	#	POS	%
Captain	0	52	0.00%	0	52	0.00%	1	57	1.75%	1	54	1.85%	1	51	1.96%
Civilian	33	648	5.09%	32	640	5.00%	30	680	4.41%	40	686	5.83%	29	669	4.33%
Detective	12	227	5.29%	5	240	2.08%	11	242	4.55%	6	244	2.46%	12	250	4.80%
Detention Facility Officer	7	45	15.56%	5	44	11.36%	4	50	8.00%	3	50	6.00%	4	50	8.00%
Entrant Officer	12	89	13.48%	4	49	8.16%	3	48	6.25%	6	48	12.50%	4	22	18.18%
Major													1	19	5.26%
Police Officer	214	881	24.29%	200	885	22.60%	163	884	18.44%	170	882	19.27%	179	879	20.36%
Sergeant	8	217	3.69%	7	234	2.99%	20	230	8.70%	8	230	3.48%	12	233	5.15%

Table 10

City's Rationale and Importance

Comparing incidents by position could identify unsafe condition. If a rash of injuries occurred in one position, it could indicate inadequate training, poor hiring practices, or unsafe conditions.

Report Discussion

The "Police Officer" position accounts for a large majority of incidents. This information is not a surprise since most incidents occur during arrests.

The "#" category indicates the total number of injuries for that year at that rank or position. The "Pos" category indicates the total number of positions appropriated for that rank or position. This information was obtained from the department's budget unit. The "%" category displays the total number of injuries divided by the total number of positions and displayed as a percentage.

Incidents By Day

Incident by day

	FiscalYear					
	2008	2009	2010	2011	2012	Grand Total
Day	#	#	#	#	#	#
Sunday	47	29	28	34	19	157
Monday	47	48	31	36	30	192
Tuesday	54	49	41	42	42	228
Wednesday	50	42	41	43	48	224
Thursday	55	43	47	30	35	210
Friday	49	38	27	29	31	174
Saturday	35	39	24	27	36	161
Grand Total	337	288	239	241	241	1346

Table 11

City's Rationale and Importance

A higher frequency of incidents occurring on the first day of the employee's work week may indicate workers' compensation fraud. Employees who are actually injured when off from work may report the injury at work on the first day back, in order to receive injury benefits. The department could compare the day of the week incidents occurred against the employees work schedules to determine whether employees are routinely involved in incidents on the first day of their work week

Report Discussion

The city's explanation for including the above information is ambiguous. On one hand, the city's information appears to identify statistical anomalies that might indicate fraud based on the first day of the work week by listing the total number of incidents per day. On the other hand, the city further explains that the department should use employees' work schedules compared to day of week incidents. It is unclear if the above table is a display of an attempt to make that comparison or whether the city is simply suggesting that the department should provide that information. The above information is the only information provided and would not take into account a rotating days off work schedule. Therefore, assuming that any given day is a day back from work by all employees would not be accurate. An additional attempt to identify a pattern that matches an employee's day off and first day back is discussed later in this report under the "Internal Audit Information" section. However, it is included for informational purposes. The chart does indicate that Friday, Saturday and Sunday have the lowest per day totals.

Incidents By Time Of Day

Time Of Day

	TOD				
	1. Morning	2. Afternoon	3. Evening	4. Overnight	Grand Total
WeekName	#	#	#	#	#
Sunday	20	28	63	46	157
Monday	55	69	47	21	192
Tuesday	65	79	58	26	228
Wednesday	61	67	65	31	224
Thursday	70	56	48	36	210
Friday	58	37	52	27	174
Saturday	27	43	50	41	161
Grand Total	356	379	383	228	1346

Table 12

City's Rationale and Importance

The department could perform additional analysis to determine the incident by day of the week and by time of day that incidents occur. The department may be able to identify conditions that contribute to high number of injuries. If those factors are under the department's control, the department can make changes to decrease incidents.

Morning 0600 – 1159 hours

Afternoon: 1200 – 1759 hours

Evening: 1800 – 2359 hours

Overnight: 0000 – 0559 hours

Report Discussion

This table provides further detail about the incident day of week and time. The table suggests that employees working the "overnight" shift are much less likely to be involved in a workers' compensation incident.

Frequency of Incidents by Employee

Employees Number Of Injuries

Number of Injuries	Number of Employees
1	532
2	180
3	87
4	28
5	7
6	5
8	2

Table 13

City's Rationale and Importance

Multiple workers' compensation incidents may signal a need for training. Employees having multiple workers' compensation injuries, especially when the same employee has more than one injury in a year can be a signal for employee error as opposed to unsafe conditions.

Report Discussion

Table 13 displays the number of injuries incurred by an individual over the listed period of time (fiscal years 2008 through 2012). There were 841 employees that were involved in 1346 workers' compensation incidents. 36.74% (that had a workers' compensation claim) of employees were involved in two or more incidents between fiscal years 2008 through 2012.

Additional Info Requested by City

Incidents- Loss Time

Loss Time

	FiscalYear														
	2008			2009			2010			2011			2012		
LossTime	#	TOT	%	#	TOT	%	#	TOT	%	#	TOT	%	#	TOT	%
LT	55	337	16.32%	37	288	12.85%	31	239	12.97%	16	241	6.64%	24	241	9.96%

Table 14

Loss Time By Service Chart

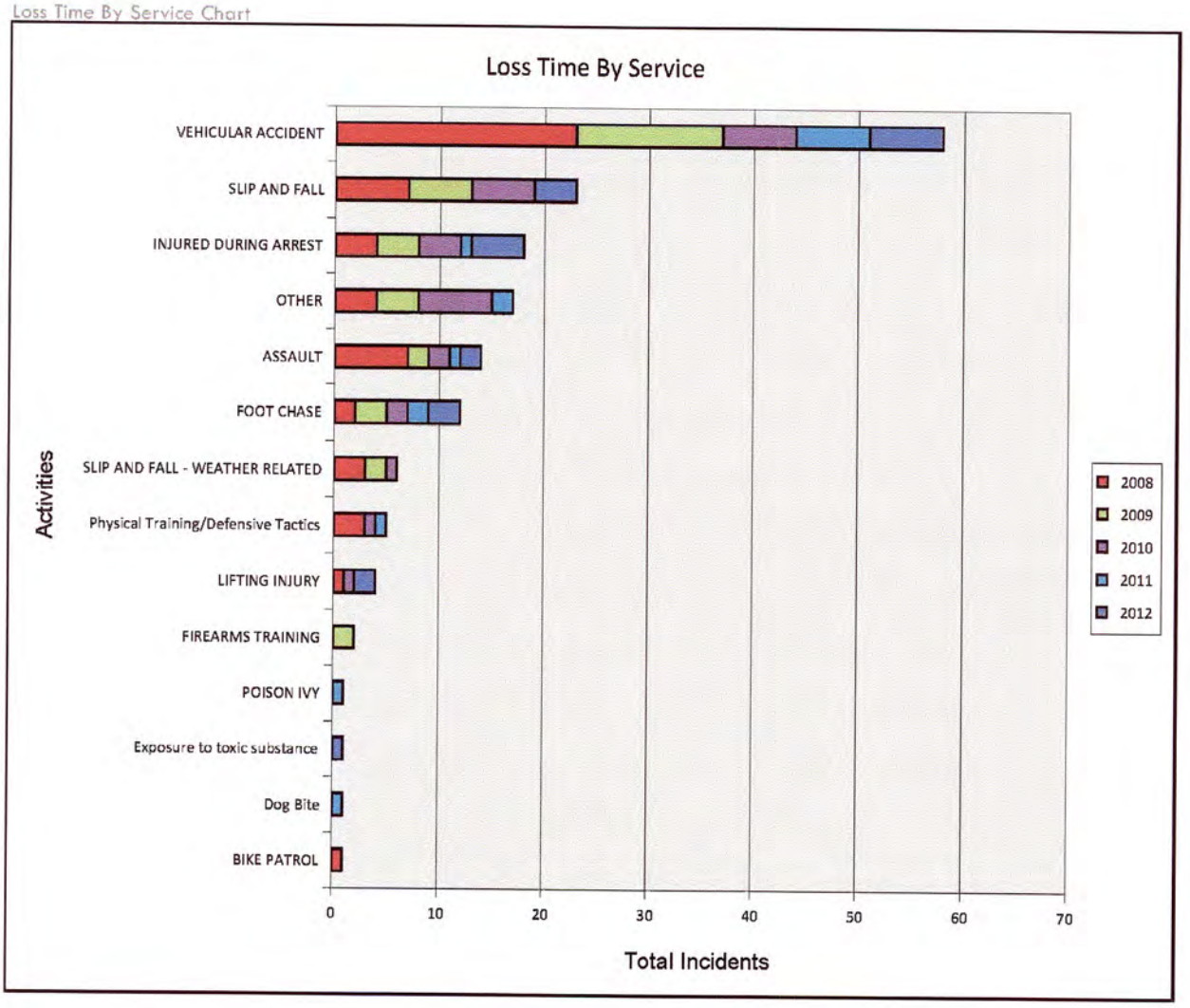

Table 15

Loss Time By Body Part Chart

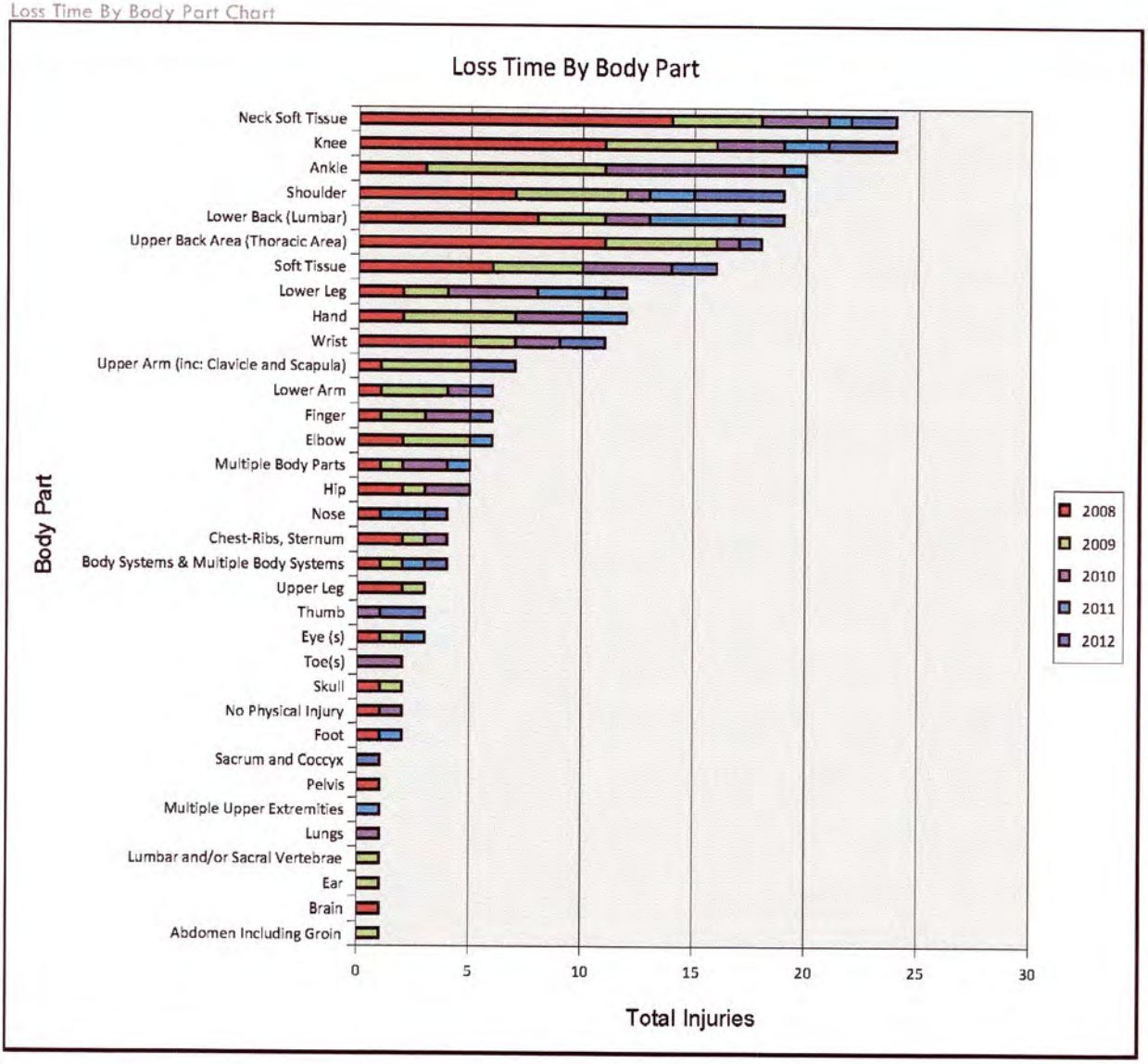

Table 16

City's Rationale and Importance

Loss time is time that injured employees miss from work. The more time spent on disability the more wage replacement and medical costs increase. Employers should try to reduce loss time by bringing employees back to work as soon as possible. High percentages can signal the need to look at the return to work process.

These tables do not show how much aggregate "Loss Time" occurred. But, they do provide an idea of the number of incidents, the specific activities and body part injuries that are resulting from incidents that require missed time from work.

In table 14, the "#" category indicates the total number of injuries that resulted in lost time. The "TOT" category indicates the total number of incidents that occurred for the listed fiscal year. The "%" category displays the total number of injuries that resulted in lost time divided by the total number of incidents for the fiscal year and displayed as a percentage. Although the table does not display the five year average, it can be calculated from the data listed by adding the listed percentages and dividing by five. The average percentage of loss time for fiscal years 2008 through 2012 was 11.74%.

Table 15 and 16 provide more information about the incidents that require time off from work. In addition, the activity which resulted in the greatest loss time was vehicular accident. The body part injury which resulted in the greatest frequency of loss time was neck soft tissue and knee

Reported Date

Date Range	Frequency
0	1161
1	79
2	25
3	14
4	5
5	7
6	6
7	6
8	5
9	5
10	1
12	2
13	2
15	1
16	3
17	2
19	1
21	2
23	1
25	1
27	1
28	1
29	1
30	1
31	1
34	1
45	1
49	1
53	1
57	1
68	1
83	1
84	1
93	1
142	1
145	1
367	1

Table 17

Time Between Incident Occurring and Reported

City's Rationale and Importance

Delays in reporting incidents increase costs and the probability of litigation. Promptly reporting incidents also sends employees the message management takes injuries seriously.

Report Discussion

The table displays the number of days between when the incident occurred and when the report was made. For example, the group "0" in date range means that the date the incident was reported and the injury date were the same day. There were 0 days between the two dates. The table represents 1346 total incidents for the time period, fiscal years 2008 through 2012. The majority of incidents are reported on the same date (86.26%). However, the table does display an incident that was reported 367 days after the incident occurred.

Internal Audit Information

The information contained in this section was added by the Internal Audit Unit. The information was gathered from incident data from the RiskMaster System. In addition, data from the department's computer unit was used.

Incident By Years Of Service Cohort

Incident By Years of Service Cohort

	FiscalYear					
	2008	2009	2010	2011	2012	Grand Total
Cohort	#	#	#	#	#	#
1. 0-3	117.00	68.00	35.00	29.00	28.00	277.00
2. 3-6	63.00	64.00	52.00	77.00	51.00	307.00
3. 6-9	51.00	55.00	44.00	37.00	36.00	223.00
4. 9-12	31.00	34.00	30.00	20.00	37.00	152.00
5. 12-15	35.00	22.00	23.00	25.00	29.00	134.00
6. 15-18	12.00	19.00	25.00	23.00	16.00	95.00
7. 18-21	12.00	10.00	7.00	11.00	11.00	51.00
8. 21+	16.00	16.00	23.00	19.00	33.00	107.00

Table 18

Report Discussion

Table 18 was prepared in order to provide information on the individuals that were injured. This table displays that individuals with less time on the department make up the majority of injuries when simply breaking down the incident totals by years of service. No additional analysis was done to determine the number of employees that are assigned to each cohort. This would have been difficult to determine for historical purposes. Therefore, while the 0-3 and 3-6 cohort categories make up the most injuries, it might also have been that those groups also contained more employees than other groups.

Incident by Years of Service Cohort and Bureau

Incident_By_YearsOfServ_Cohort_By_Bureau

	Range								
	1. 0-3	2. 3-6	3. 6-9	4. 9-12	5. 12-15	6. 15-18	7. 18-21	8. 21+	Grand Total
Cohort	#	#	#	#	#	#	#	#	#
Admin	2.00	6.00	6.00		2.00	1.00		2.00	19.00
BOPC	2.00	3.00	2.00	2.00	1.00	2.00	1.00	2.00	15.00
Exec Serv	31.00	17.00	26.00	15.00	16.00	8.00	7.00	17.00	137.00
Inves	2.00	10.00	22.00	22.00	19.00	23.00	8.00	15.00	121.00
Patrol	203.00	267.00	164.00	107.00	91.00	57.00	32.00	66.00	987.00
PD & R	37.00	4.00	3.00	6.00	5.00	4.00	3.00	5.00	67.00
Grand Total	277.00	307.00	223.00	152.00	134.00	95.00	51.00	107.00	1,346.00

Table 19

Report Discussion

Table 19 was prepared in order to display the breakdown of injuries by Bureau and length of service. The patrol Bureau has the most incidents regardless of cohort.

Service by Cohort

Service	Range: 1. 0-3	2. 3-6	3. 6-9	4. 9-12	5. 12-15	6. 15-18	7. 18-21	8. 21+	Grand Total
	#	#	#	#	#	#	#	#	#
INJURED DURING ARREST	61.00	80.00	47.00	39.00	25.00	16.00	10.00	18.00	296.00
VEHICULAR ACCIDENT	46.00	51.00	35.00	24.00	26.00	18.00	7.00	13.00	220.00
OTHER	37.00	41.00	34.00	23.00	23.00	20.00	10.00	24.00	212.00
SLIP AND FALL	24.00	27.00	29.00	13.00	17.00	8.00	3.00	17.00	138.00
FOOT CHASE	36.00	36.00	18.00	11.00	7.00	1.00	2.00	6.00	117.00
Physical Training/Defensive Tactics	36.00	10.00	12.00	8.00	12.00	7.00	4.00	3.00	92.00
ASSAULT	14.00	25.00	8.00	11.00	8.00	6.00	1.00	5.00	78.00
LIFTING INJURY	3.00	5.00	9.00	7.00	5.00	8.00	3.00	8.00	48.00
SLIP AND FALL - WEATHER RELATED	10.00	11.00	7.00	8.00	3.00	2.00	3.00	3.00	47.00
Injury caused by sharp object	5.00	5.00	2.00	2.00	1.00	3.00	1.00	2.00	21.00
POISON IVY	2.00	3.00	4.00	2.00		3.00	2.00		16.00
Dog Bite		3.00	2.00	1.00	3.00		2.00	2.00	13.00
Exposure to toxic substance	1.00	3.00	4.00	3.00	1.00		1.00		13.00
FIREARMS TRAINING		2.00	4.00		1.00	1.00	1.00	4.00	13.00
REPETITIVE MOTION		3.00	1.00		1.00	1.00		1.00	7.00
BIKE PATROL	1.00	2.00	2.00				1.00		6.00
Foreign object in eye	1.00		3.00			1.00		1.00	6.00
Injury caused by uneven surface			2.00		1.00				3.00
Grand Total	277.00	307.00	223.00	152.00	134.00	95.00	51.00	107.00	1,346.00

Table 20

Report Discussion

Table 20 displays the aggregate totals for fiscal years 2008 through 2012 by service and years of service cohorts. This information reveals that for the "0-3" cohort, "injured during arrest" is the most common activity that results in an injury. However, for the "15-18" cohort, "other" is the most common activity that results in an injury.

Days between Incident and Last Day Off

Day Back Injury

#OfDays	# Incidents
0	388
1	320
2	265
3	221
4	122
5	21
6	3
7	4
9	1
10	1
Grand Total	1346

Table 21

Report discussion

This table displays the amount of days between time off for an employee and the day the reported incident occurred. In the original audit the city attempted to provide information pertaining to potential fraud. The city's thought process is described below.

A higher frequency of incidents occurring on the first day of the employee's workweek may indicate workers' compensation fraud. Employees who are actually injured when off from work may report the injury at work on the first day back, in order to receive injury benefits. The department could compare the day of the week incidents occurred against the employees work schedules to determine whether employees are routinely involved in incidents on the first day of their work week.

The city's information was presented in table 11. However, a 24 hour, 365 day a year police schedule does not lend itself well to deduce potential fraud by simply looking at "Monday" as the first day of an employee's work week. Many department employees have rotating days off. Therefore, data that displays the incident date compared to the employees last day off work, regardless of the actual day of the week, would be more accurate. Table 20 displays the number of elapsed days between an incident date and the employee's last day off work. That day off work could be a regular day off, sick day, vacation day, etc. For example, the "0" in "#OfDays" category indicates that there were 0 elapsed days between the last day off work and the date of the incident. Therefore, assuming an employee was off on a Tuesday and was back to work on Wednesday, there have been zero elapsed days between these dates.

The majority of police officers are assigned to the Patrol Bureau where they experience the highest frequency of injuries. These officers are also on the 10-4 plan wherein they work 2 weeks of 4 days on and then 4 weeks of 5 days on. All work at least 4 days every week. This is likely why 88.71% of the injury incidents occur over the first four days back with only 9.06% occurring on the 5th day of work since 1/3 of the time officers will not work the 5th day and thus decrease their chances of injury.

Does this distribution indicate significant variation between the days? In other words do the 388 incidents on the first day back represent a statistically significant variation from the amounts for the other 4 days? The two control charts shown below indicate that while there is variation there is no statistically significant variation between the days and the frequency of injuries per day. It is likely that the variation shown is random in nature.

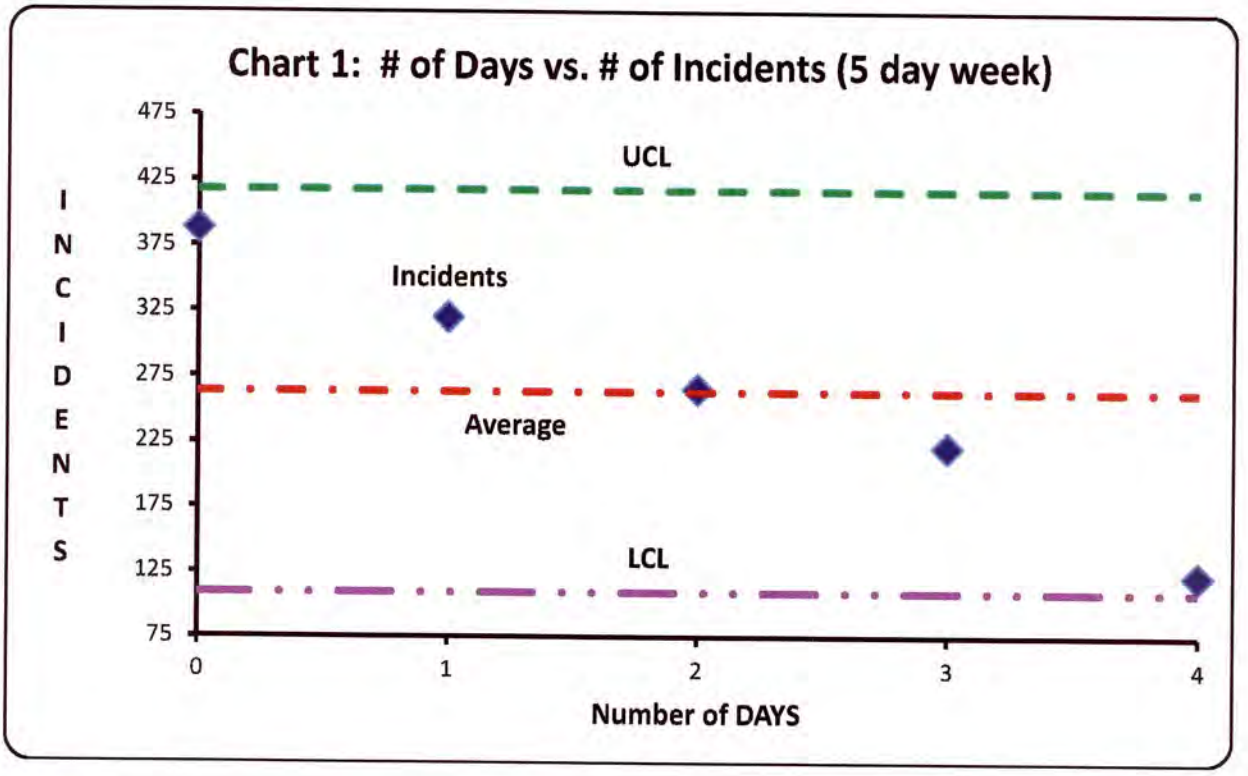

Table 22

Table 22 indicates the distribution of incidents remained within the upper and lower control limits when the 5th day of work is included indicating random variation.

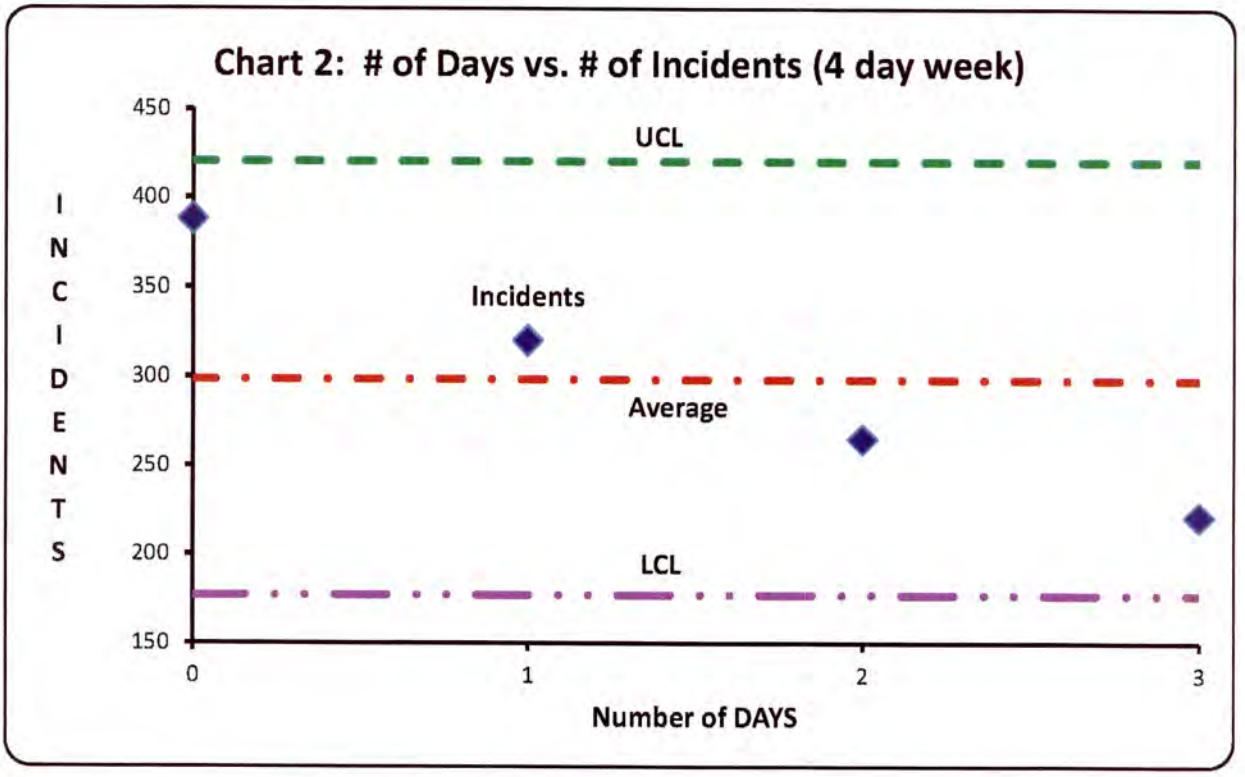

Table 23

Table 23 indicates the distribution of incidents remained within the upper and lower control limits when the 5th day of work is not included also indicating random variation. While the 388 incident data point (which represents the first day back) is greater than the others, it is not statistically significantly larger than the other frequencies. It is concluded that there is no convincing indication that employees are involved in worker's compensation fraud by reporting off duty injuries as on duty injuries on the first day back.

Service By Bureau

	bureauName						
	Patrol	Exec Serv	Inves	PD & R	Admin	BOPC	Grand Total
Service	#	#	#	#	#	#	#
INJURED DURING ARREST	259.00	14.00	23.00				296.00
VEHICULAR ACCIDENT	190.00	2.00	21.00	4.00		3.00	220.00
OTHER	119.00	53.00	18.00	11.00	6.00	5.00	212.00
SLIP AND FALL	94.00	22.00	13.00	3.00	5.00	1.00	138.00
FOOT CHASE	115.00		1.00	1.00			117.00
Physical Training/Defensive Tactics	36.00	2.00	12.00	38.00		4.00	92.00
ASSAULT	57.00	8.00	12.00	1.00			78.00
LIFTING INJURY	23.00	15.00	4.00	5.00		1.00	48.00
SLIP AND FALL - WEATHER RELATED	30.00	11.00			5.00	1.00	47.00
Injury caused by sharp object	12.00	3.00	5.00		1.00		21.00
POISON IVY	11.00	1.00	3.00	1.00			16.00
Dog Bite	12.00		1.00				13.00
Exposure to toxic substance	5.00	4.00	4.00				13.00
FIREARMS TRAINING	11.00		1.00	1.00			13.00
REPETITIVE MOTION	1.00		3.00	1.00	2.00		7.00
BIKE PATROL	6.00						6.00
Foreign object in eye	4.00	1.00		1.00			6.00
Injury caused by uneven surface	2.00	1.00					3.00
Grand Total	987.00	137.00	121.00	67.00	19.00	15.00	1,346.00

Table 24

Report discussion

Table 24 displays the aggregate total for fiscal years 2008 through 2012 broken down by service and bureau. This information reveals the most common activity that resulted in an injury by bureau. The most common activity resulting in an injury in the Patrol Bureau was "injured during arrest". However, in the Executive Services Bureau, the most common activity resulting in an injury was "other".

InjuryDesc

	FiscalYear					
	2008	2009	2011	2010	2012	Grand Total
InjuryDesc	#	#	#	#	#	#
Contusion	91	85	58	65	51	350
Sprain	67	60	62	49	65	303
Strain	93	55	44	55	54	301
Laceration	23	33	18	23	23	120
Puncture	21	16	19	10	12	78
Fracture	13	14	11	14	7	59
Foreign Body	10	3	8	8	6	35
Dermatitis	9	7	6	4	4	30
Respiratory Disorders	6	1	7	4	4	22
All Other	6	6		1	1	14
Carpal Tunnel Syndrome	1	2	1	3	1	8
Dizziness	2	2	2	1	1	8
Hearing Loss	1	1	3		3	8
Concussion	1	3		1	2	7
Dislocation	3	3			1	7
Poisoning/Chemical	1	1	1		3	6
Heat Prostration	2				2	4
Inflammation		1	2		1	4
Burn	2			1		3
Multiple Physical Injuries		1	1	1		3
Other Occpational diseases	1	1	1			3
Mental Stress	1			1		2
All Other Cumulative Injuries					1	1
Amputation		1				1
Mental Disorders		1				1
Poisoning				1		1
Rupture		1				1
Severance		1				1
Grand Total	354	299	244	242	242	1381

Table 25

Report discussion

Table 25 displays the total number of injury descriptions listed by year. The grand total may be more that the total number of incidents because an incident may have multiple injury descriptions. The information reveals that contusion was the most common type of injury experienced by members involved in a workers' compensation incident.

InjuryDesc By Service

	InjuryDesc					
	Contusion	Sprain	Strain	Laceration	Puncture	Grand Total
Service	#	#	#	#	#	#
INJURED DURING ARREST	77	65	51	37	22	252
VEHICULAR ACCIDENT	78	55	80	7		220
OTHER	44	23	27	29	22	145
SLIP AND FALL	39	56	29	9	1	134
FOOT CHASE	27	32	29	14	11	113
Physical Training/Defensive Tactics	10	24	42	2	1	79
ASSAULT	43	12	6	7	3	71
LIFTING INJURY	4	15	26	1	1	47
SLIP AND FALL - WEATHER RELATED	14	17	7	1	1	40
Injury caused by sharp object	5			10	7	22
Dog Bite	3			2	8	13
FIREARMS TRAINING	3		2	1	1	7
BIKE PATROL	2	2	1			5
Injury caused by uneven surface		2	1			3
POISON IVY	1					1
Grand Total	350	303	301	120	78	1152

Table 26

Report discussion

Table 26 displays the aggregate total for fiscal years 2008 through 2012 by the top 4 injury descriptions and the type of activity that caused the injury. The information reveals that a contusion was the most common injury experienced by members involved in an "injured during arrest" workers' compensation incident. However, in a slip and fall incident, a "sprain" is the most common injury description

Service_By_InjuryDesc

	Service				
	INJURED DURING ARREST	VEHICULAR ACCIDENT	OTHER	SLIP AND FALL	Grand Total
InjuryDesc	#	#	#	#	#
Contusion	77	78	44	39	238
Sprain	65	55	23	56	199
Strain	51	80	27	29	187
Laceration	37	7	29	9	82
Puncture	22		22	1	45
Fracture	19	8	4	7	38
Foreign Body	3		16		19
Respiratory Disorders	6		10		16
Dermatitis	2		13		15
All Other	4		5		9
Dislocation	3	2		1	6
Dizziness	2		3		5
Concussion		4			4
Hearing Loss	2		2		4
Burn			3		3
Inflammation			3		3
Multiple Physical Injuries		3			3
Heat Prostration			2		2
Mental Stress			2		2
Other Occpational diseases	2				2
Poisoning/Chemical	1		1		2
All Other Cumulative Injuries			1		1
Amputation			1		1
Carpal Tunnel Syndrome			1		1
Mental Disorders	1				1
Poisoning	1				1
Rupture				1	1
Severance	1				1
Grand Total	299	237	212	143	891

Table 27

Report discussion

Table 27 displays the same type of information as table 26, however in reverse order. The top 4 activities are displayed along with the total number of injury descriptions. The information reveals that experiencing a sprain is the most common type of injury that occurs during a vehicular accident.

Incident Control Chart

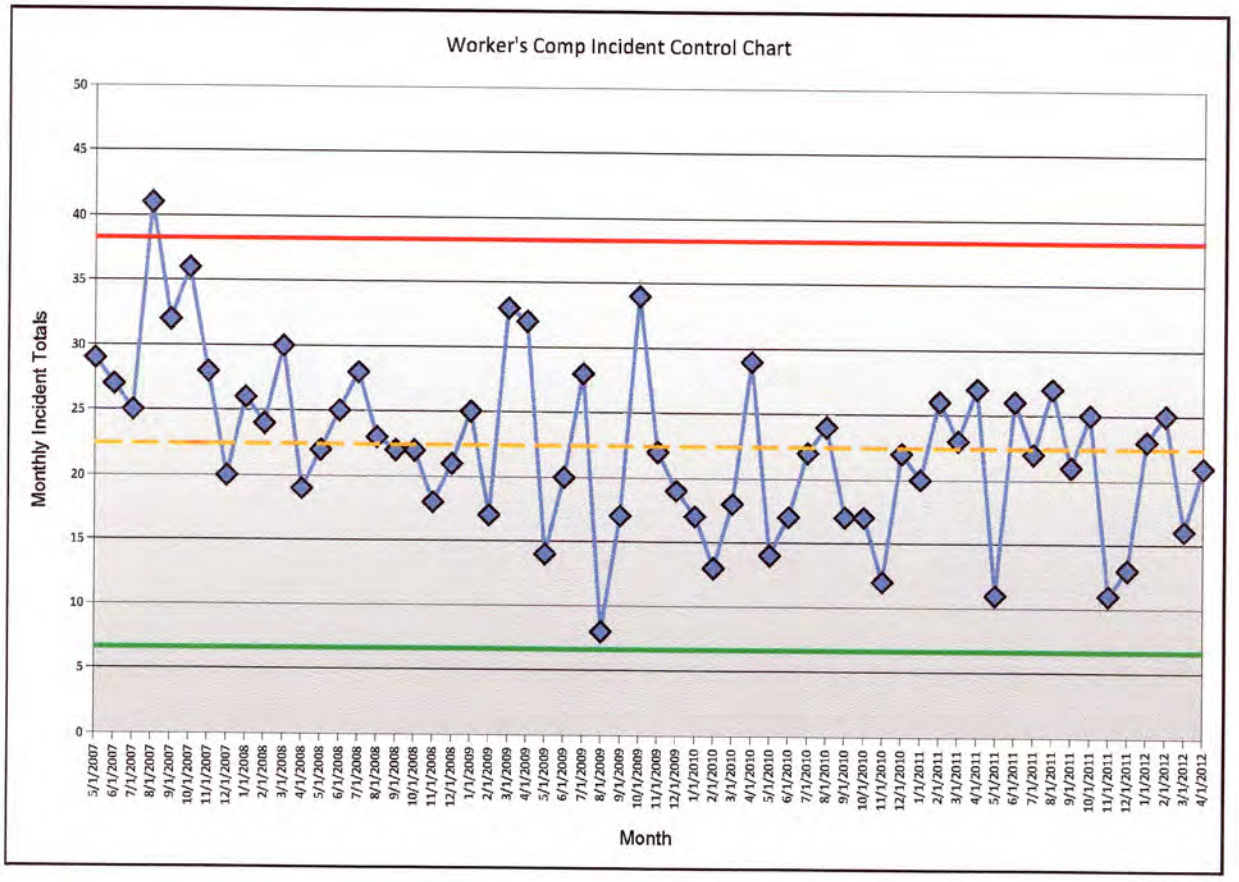

Table 28

Report discussion

Incident control chart displays the total number of incidents by month over the listed period of time. The chart is provided to give a contextual reference point for comparing monthly totals to one another. Certainly, some variation in the process from month to month is to be expected. However, how much variation is too much? The upper and lower control limits, the solid top and solid bottom line respectively, provide an answer to that question. If a point would fall outside these limits it indicates that there is an assignable cause and not the result of random variation in the process. The control chart can be seen as part of an objective and disciplined approach that enables correct decisions regarding control of the process, including whether or not to change process control parameters.

As can be seen in the above control chart, there is one month that is outside the control limits. August 2007 is above the upper control limit. Once an outlier is identified, the

next step would be to perform a root-cause analysis to determine exactly why that month produced an unexpected total. However, that type of analysis is beyond the scope of this audit.

PO Forbes 4887

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