Productivity Analysis

For Basic Police Patrol Activities

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Abstract

For decades, police agencies have struggled with the need to accurately detect and reflect activities associated with Basic Police Patrol Functions for the purpose of evaluating the performance of individual officers. The need grows exponentially as one activity leads to another and is compared to the time available for the performance of these functions. In the past, Police Evaluation Processes have not had a proven format or standard for the determination of Productivity Levels for individual patrol officers.

The collection of data occurs daily at almost every police agency by way of daily activity reports generated by individual officers regarding their activities for that particular shift. Correlation of that data over a given time period (monthly and yearly) allows the supervisor to analyze the officers' and the shifts' activities, and to use that analysis to validate performance evaluations.

All analysis begins with the collection/input of information which is organized as relevant data and then studied by the Manager/First Line Supervisor. The data may take the form of a spreadsheet, however, only the immediate supervisors can factor in the many variables represented by that data.

Introduction. The Law Enforcement Community has oft been at odds over the best methods for gauging a patrol officers' individual productivity. With such a varied and specialized profession, a multitude of variables must be considered by the managers and supervisors at all levels of command. Therefore, any format selected must be narrowly defined and relate directly to the duties performed. All the effort put forth will be for naught if analysis tries to include immeasurable or over quantified activities.

Productivity analysis should be done with the end in mind. The ultimate goal is to be able to assimilate the information into the overall performance evaluation report. However, within the law enforcement profession, quality rather than quantity is often important. That is one reason why Productivity Analysis is only a small part of the overall performance evaluation process. Competence and courtesy in handling requests for service are important factors. According to Jones (1998, p. 112):

"Operating without performance standards can doom a department and its officers to work in an energy-draining atmosphere full of inconsistency, bickering and chaos. Operating with performance standards enables supervisors to bring sanity, fairness and consistency to supervisory tasks, enhance performance levels, and make promotions, awards and disciplinary actions fair."

While developing this program, we considered quantitative criteria which could be measured with number of tasks performed and for the sake of fairness two separate control areas were factored together. The importance of the control areas cannot be over emphasized, especially when utilizing the data for inclusion in the overall performance evaluation process.

"In The Beginning" – The Process to gather Raw Data

All things have a beginning and an end. This is no different. We begin with the development of the Officers Daily Activity Report and use this report for the collection of the raw data which will eventually become the "Monthly Productivity Analysis Report". The raw data is broken down into two categories also know as "Control Areas". Herndon (2004, February 9) states: "Analysis of the cumulative data serves the agency need to verify individual performance and allows for a balance, with the employees need to provide input into their own evaluations. True success and the simplest format in the data collection stage require that the data come from at least Two (2) Control Areas. One area which the employee has absolutely NO control over and another area which the employee has TOTAL and ABSOLUTE control over."

A. The "No Control" area can come from the assignments made by dispatchers such as: Calls for service, Incident Reports Taken, Accidents Worked, Alarms and Other Calls.

B. The "Total Control" area comes from those items which only the Officer has control over such as: Citizen/Violator Contacts, Citations Written, Warnings Written, DWI's, Felony and Misdemeanor Arrests, etc.

The combination of the two control areas creates the ability to reasonably perform an analysis of the officers activities when gauged against the availability of time afforded the officer to perform all activities. Kramer (1998, p. 26) states: "When employees feel their hard work counts for something, they strive to do their best."

Every agency can make its own assessment of which activities performed can be placed in which control area. The agency can then design their daily activity report accordingly. The following is an example of ours filled in:

Police Department

OFFICER'S DAILY REPORT

I. C. Wisdom	1357	03-01-04	51 .
OFFICER	BADGE NO.	DATE	DISTRICT

4063	12		16758	16800	42 .
UNIT #	SPIKE #		ODOMETER READING		TOTAL MILES
	OUT	IN	START	FINISH	

CRIMINAL ARREST					
FELONY	0		MISDEMEANOR	2	
TRAFFIC ARREST					
DWI	0		WARNING	11	
MOVING	4		NON-MOVING	2	
REPORTS & CALLS					
ACCIDENTS	2	INCIDENTS	3	OTHER	6
HOURS SPENT					
SCHEDULED ON-DUTY	10	ON DETAIL: COURT			2

OTHERS LOGGED / NOTES: _____

_____

1.) Alarm Call 1416 Willow Street – False – Human Error . . .

2.) Alarm Call 1201 Oak Street – False – Mechanical . .

3.) Traffic Assist – Salem Rd & Prince Street . .

4.) Road Hazard U. S. Hwy 64 & 65 split – Pipe in Roadway .

5.) VIN Assist @ P.D. . .

6.) Visit with a citizen at the Station . .

"Criminal Arrests" and "Traffic Arrests/Citations" fulfill the need within the **Total Control** area while "Reports & Calls" covers the area of **No Control**. It is important that every call or activity have some type of written documentation. Within our agency, warnings are in writing and miscellaneous other calls ("Others") are documented in the narrative area of the daily report. These items can then be compared with the Dispatch Log to verify that no calls were missed or dropped by the officer or, heaven forbid (and this surely never happens), that the officer is not padding his stats by adding activities that never occurred. It is here that the onus is placed upon the Shift Commander to verify and validate each Daily Report which is turned in by each of his patrol officers every day. Although this sounds very time consuming it actually takes only a few seconds to validate each report submitted.

Assimilation of Data

Under the heading of "Hours Spent", is where we develop the divisor for eventual use in the "Monthly Productivity Analysis Spreadsheet" report. It is developed in the analysis spreadsheet when Total Hours "Scheduled On-Duty" minus the Total Hours Spent "On Detail" reveals the total number of hours available for police patrol activities. Once again, this area of the report must be closely monitored for accuracy and completeness. Standards must be set and utilized for all patrol officers. The standard for hours "Scheduled On-Duty" will

usually equal forty hours per week, whether on eight or ten hour shifts. This can equate to between One Hundred Sixty to One Hundred Ninety hours per month, per officer, of scheduled “On-Duty” time. The standard for hours spent “On Detail” is a bit more complicated but here consistency is your guide. As long as the standard is applied uniformly for all patrol officers within the patrol division then ultimately fair and accurate ratios will be achieved. I define “On Detail” as any activity which takes the patrol officer away from his/her patrol functions during his/her scheduled work day. I do not include meal or rest breaks within this category because all of my personnel are subject to call, to respond while on these breaks. Now, if an officer is not present for duty on a scheduled work day because of sick leave, vacation, administrative leave or compensatory time off then, obviously he/she will not generate a daily report. However, the supervisor needs to record this time on the officers Monthly Report as “On Detail” because the officer is not available on his/her scheduled work day. The monthly activity report which I use breaks out sick time within the “On Detail” columns so I can track monthly use of sick leave and watch for any signs of possible abuse. The following is an example of the monthly data sheet that should be kept on each patrol officer on the shift:

POLICE DEPARTMENT OFFICERS MONTHLY ACTIVITY REPORT

NAME: Snuffy Markowitz	MONTH: January 2004

BADGE NUMBER:

1423

ACTIVITY:

(Patrol Officer or Sr. Patrol Officer)

DAYS OF MONTH	DISTRICT WORKED	MLES DRIVEN	FELONY	MISDEMEANOR	DWI	MOVING	NON-MOVING	WARNING TICKETS	ACCIDENT REPORTS	INCIDENT REPORTS	OTHER CALLS	SCHEDULED ON DUTY	SICK	ON DETAIL (Court, Vac, Comp, Tng, etc.)
DAY 1												10		10 V
DAY 2	R	21	1							1		10		
DAY 3	R	55							1	5		10		
DAY 4	R	54	2								3	10		4 T
DAY 5														
DAY 6														
DAY 7														
DAY 8	50	52						1			4	10		3 C
DAY 9	60	19	1	2				1	1	1	2	10		
DAY 10												10	10	
DAY 11	R	23		4		1				2	3	10		
DAY 12														
DAY 13														
DAY 14														
DAY 15	50	28					2			1	2	10		
DAY 16	60	19									5	10		2 D
DAY 17												10		10 A
DAY 18												10		10 A
DAY 19														
DAY 20														
DAY 21														
DAY 22	60	46						1			4	10		
DAY 23	51	39		2			1	1		1	3	10		
DAY 24												10	10	
DAY 25												10	10	
DAY 26														
DAY 27														
DAY 28														
DAY 29												10		10 T
DAY 30												10		10 T
DAY 31	61	20					1				2	10		5 T
TOTAL		376	4	8	0	1	4	4	2	11	28	190	30	64

C-Court, T-Training, V-Vacation, A-Administrative, CT-Compensatory Time Off, D-Dispatcher Relief

The TOTAL row across the bottom of this form contains the data which is transferred to the Monthly Productivity Analysis Spreadsheet. These totals are accumulated for every shift officer in the consolidated report.

Monthly Productivity Analysis Spreadsheet

The use of a spreadsheet program (Microsoft Excel is recommended) allows the supervisor to see, very clearly, areas of interest such as vehicle mileage, enforcement services, calls for service and sick time usage. It also provides the manager with a way to study and analyze the information, and to make comparisons of individual performance averages against the overall shift average as a whole.

The supervisor should never compare an individual officer's average against another officer's average. All comparisons for individual officers should be done against the total shift average. Once the consolidated report is completed each month, it can be used to encourage an officer to bring his performance level up to the shift average or commend an officer for exceeding the shift average. Over a period of time, continued high or low performance levels will be reflected in the Employee Performance Appraisal, and the supervisor will have the documentation necessary for any sub-standard or outstanding rating. Likewise, because of the many differences and variables, the Patrol Division Commander should not attempt to make comparisons between the different shifts. But should instead, correlate the data for comparisons with the Division average. Again, the Division Commander will have to consider all the

many variables between the shifts and any specialty sections such as Traffic Reconstruction, Motorcycle Section or Code Enforcement. This will allow for the broadest analysis for the entire division as a whole. The following is an example of a Microsoft Excel Spreadsheet with actual data assimilated.

OFFICER	MILES DRIVEN	FELONY ARRESTS	MISDMEANOR ARRESTS	DWI	MOVING CITATIONS	NON MOVING CITATIONS	WARNING TICKETS	ENFORCEMENT SERVICES	ACCIDENT REPORTS	INCIDENT REPORTS	OTHER CALLS	TOTAL SERVICE CALLS	TOTAL HOURS	Hours of Sick Time Used	COURT HOURS (ON DUTY) Vac, Detail, etc.	HOURS WORKED	AVERAGE
Roberts	450	1	0	0	7	1	4	13	0	14	16	30	160	0	82	78	0.551
Davis	578	0	0	0	16	11	6	33	3	22	55	80	160	0	53	107	1.056
Yarrington	731	4	5	0	4	9	16	38	5	30	26	61	160	0	36	124	0.798
Killeen	629	1	2	0	4	0	22	29	5	19	20	44	160	16	21	123	0.593
Masters	568	2	2	0	5	3	15	27	2	26	36	64	160	0	8	152	0.599
Blakely	949	5	14	0	2	15	10	46	6	36	17	59	160	0	10	150	0.700
West	635	1	6	0	2	10	10	29	3	42	44	89	160	0	31	129	0.915
Hill	715	1	5	0	2	7	25	40	3	22	33	58	160	8	31	121	0.810
Franklin	822	0	1	1	5	12	13	32	8	27	16	51	160	0	21	139	0.597
Boyington	508	2	4	0	2	10	9	27	4	35	21	60	160	8	19	133	0.654
Patton	192	1	0	0	5	1	3	10	4	19	20	43	160	0	96	64	0.828
Pershing	847	0	3	0	5	10	12	30	5	18	4	27	160	0	50	110	0.518
								0				0				0	#DIV/0!
								0				0				0	#DIV/0!
								0				0				0	#DIV/0!
COLUMN TOTALS	7,624	18	42	1	59	89	145	354	48	310	308	666	1920	32	458	1430	8.62
AVERAGE	635.33	1.5	3.5	0.1	4.9	7.4	12	29.5	4	26	26	55.5	160	2.7	38.2	119	0.72

Analysis of the Data

Once the data is assimilated on the spreadsheet, several items immediately stand out in the TOTAL row. Total miles driven by the shift = 7,624; the total Enforcement Services for the month = 354 Citations, Arrests or Warnings; Calls for Service = 666, with 48 accidents worked, 310 incidents reported and 308 other calls for service. A total of 1,920 man-hours were scheduled, with 1430 devoted to patrol functions. The other 490 hours were consumed by Sick Leave, Training Time, Court Time and other types of leave or detail items and assignments.

By looking at the AVERAGE row at the bottom of the sheet and making comparisons with individual postings in each column, we can tell if the number for an individual officer is running above or below those average numbers. Then the AVERAGE Column at the right side of the sheet reflects the individual officer's **Ratio** for activities performed, compared to the amount of time available for the officer to perform these activities. This ratio is the foundation through which managers can determine productivity levels for each individual officer. Based upon the collection of this type of data since mid 1999, the following ratio standards form the basis for this system of evaluating productivity:

Substandard Average Ratio	**-**	**Below .50**
Average Ratio	**-**	**.50 - .65**
Above Average Ratio	**-**	**.66 - .80**
Excellent Ratio	**-**	**.81 - 1.0**
Outstanding Ratio	**-**	**Above 1.0**

The development of the formula to achieve the ratios is done simply by addition, subtraction and division. It amounts to the sum of Enforcement Activities added to the sum of Calls for Service divided by the Total Hours Worked.

Enforcement Activities	354
Calls for Service	+666
Equals a Total of Patrol Activities	1,020

This Total	1,020
Divided by Hours Worked	1,430
Equals a Shift Ratio of	.72

To arrive at the “Hours Worked” figure, the total number of hours scheduled to work has to be established. Then any hours utilized for Court, Details, Training or Leave (sick or otherwise) is subtracted from that figure. This result then amounts to the Total Hours Available for Work Activities. The formula related above is the same for individual officers as it is for the total shift, using individual numbers across the spreadsheet.

When sufficient data is collected and documented in the Monthly Productivity Analysis reports (M.P.A.); the monthly reports can be consolidated into an annual report for submission to the Division Commander and ultimately to the Chief of Police. As annual reports accumulate, analysis of this information over longer periods of time (3 to 5 years) will reflect trends and provide insight for the manager to identify community problems or areas in need of improvement.

Annual Productivity – Day Shift 2001

YR 2001 STATISTICS	MILES DRIVEN	FELONY ARRESTS	MISDMEANOR ARRESTS	DWI	MOVING CITATIONS	NON MOVING CITATIONS	WARNINGS	ENFORCEMENT SERVICES	ACCIDENT REPORTS	INCIDENT REPORTS	OTHER CALLS	TOTAL SERVICE CALLS	TOTAL HOURS	Hours of Sick Time Used	COURT HOURS (ON DUTY) Vac, Detail, etc.	HOURS WORKED	PRODUCTIVITY LEVEL
January	10,522	23	103	1	72	28	152	379	39	368	238	645	2,290	73	398	1819	0.563
February	8,398	11	61	0	102	23	188	385	32	320	263	615	2,090	105	449	1536	0.651
March	8,019	15	67	3	98	29	144	356	69	371	226	666	2,280	233	463	1584	0.645
April	6,840	21	57	1	37	15	96	227	66	445	256	767	2,261	320	585	1356	0.733
May	8,466	23	72	1	69	25	163	353	52	395	283	730	2,322	128	613	1581	0.685
June	7,924	25	32	1	80	36	196	370	46	317	217	580	2,208	195	613	1400	0.679
July	8,696	9	51	0	86	53	191	390	33	315	268	616	2,136	142	468	1526	0.659
August	8,705	17	36	1	36	48	64	202	51	378	270	699	2,192	142	515	1535	0.587
September	7,940	19	46	1	23	38	38	165	55	367	246	668	2,024	165	358	1501	0.555
October	10,141	33	41	1	42	61	71	249	34	404	310	748	2,120	32	404	1684	0.592
November	8,991	6	67	0	10	29	67	179	37	354	314	705	2,232	196	378	1658	0.533
December	6,380	17	30	0	27	28	51	153	33	303	254	590	2,288	284	449	1555	0.478
COLUMN TOTALS	101,022	219	663	10	682	413	1421	3408	547	4337	3145	8029	26,443	2015	5693	18735	7.36
MONTHLY AVERAGES	8,418.50	18.3	55.3	0.83	56.8	34.4	118	284	45.58	361	262.1	669	2,204	167.9	474.4	1561.3	0.61

Annual Productivity – Day Shift 2002

YR 2002 STATISTICS	MILES DRIVEN	FELONY ARRESTS	MISDMEANOR ARRESTS	DWI	MOVING CITATIONS	NON MOVING CITATIONS	WARNINGS	ENFORCEMENT SERVICES	ACCIDENT REPORTS	INCIDENT REPORTS	OTHER CALLS	TOTAL SERVICE CALLS	TOTAL HOURS	Hours of Sick Time Used	COURT HOURS (ON DUTY) Vac, Detail, etc.	HOURS WORKED	PRODUCTIVITY LEVEL
January	7,457	31	30	2	55	49	88	255	41	252	245	538	1,768	99	380	1289	0.615
February	7,624	18	42	1	59	89	145	354	48	310	308	666	1,920	32	458	1430	0.713
March	10,144	34	88	1	48	59	157	387	40	384	419	843	2,096	85	381	1630	0.755
April	7,626	35	63	1	45	50	159	353	47	346	380	773	2,056	88	516	1452	0.775
May	8,555	13	43	1	49	57	177	340	43	409	416	868	2,320	83	654	1583	0.763
June	8,967	36	65	0	56	81	214	452	38	390	428	856	2,192	84	490	1618	0.808
July	8,026	8	49	1	37	63	95	253	33	343	364	740	2,124	64	734	1326	0.749
August	7,670	17	50	3	28	57	124	279	49	305	460	814	1,928	126	361	1441	0.759
September	8,419	15	39	1	22	35	96	208	56	371	464	891	1,930	44	313	1573	0.699
October	8,869	30	83	3	19	35	77	247	44	389	432	865	2,050	93	343	1614	0.689
November	7,312	13	48	2	31	53	55	202	72	385	397	854	2,050	174	413	1463	0.722
December	9,063	13	56	1	31	40	83	224	48	459	431	938	2,140	107	517	1516	0.766
COLUMN TOTALS	99,732	263	656	17	480	668	1470	3554	559	4343	4744	9646	24,574	1079	5560	17935	8.81
MONTHLY AVERAGES	8,311.00	21.9	54.7	1.42	40	55.7	123	296.2	46.58	362	395.3	804	2,048	89.92	463.3	1494.6	0.73

Annual Productivity – Day Shift 2003

YR 2003 STATISTICS	MILES DRIVEN	FELONY ARRESTS	MISDMEANOR ARRESTS	DWI	MOVING CITATIONS	NON MOVING CITATIONS	WARNINGS	ENFORCEMENT SERVICES	ACCIDENT REPORTS	INCIDENT REPORTS	OTHER CALLS	TOTAL SERVICE CALLS	TOTAL HOURS	Hours of Sick Time Used	COURT HOURS (ON DUTY) Vac, Detail, etc.	HOURS WORKED	PRODUCTIVITY LEVEL
January	10,463	12	95	6	69	62	220	464	49	241	520	810	2,130	139	353	1638	0.778
February	9,013	55	70	1	44	57	209	436	49	255	590	894	2,090	120	476	1494	0.890
March	8,807	16	85	0	68	61	248	478	77	293	598	968	2,350	118	738	1494	0.968
April	8,597	9	71	3	72	47	161	363	58	291	636	985	2,230	102	531	1597	0.844
May	8,557	17	89	2	46	23	166	343	49	193	659	901	2,180	160	580	1440	0.864
June	10,545	13	132	7	27	39	167	385	9	127	1074	1210	2,060	176	416	1468	1.087
July	9,699	75	117	10	32	52	155	441	7	186	790	983	2,120	189	467	1464	0.973
August	9,004	32	178	13	33	29	112	397	63	265	594	922	2,110	60	577	1473	0.895
September	8,237	17	121	2	34	37	138	349	75	239	516	830	1,850	90	324	1436	0.821
October	9,436	27	129	10	46	65	156	433	104	301	739	1144	2,090	145	254	1691	0.933
November	7,399	20	90	6	39	24	123	302	65	239	558	862	2,040	308	270	1462	0.796
December	8,751	17	139	7	53	35	85	336	77	225	544	846	2,130	132	560	1438	0.822
COLUMN TOTALS	108,508	310	1316	67	563	531	1940	4727	682	2855	7818	11,355	25,380	1739	5546	18095	10.67
MONTHLY AVERAGES	9,042.33	25.8	110	5.58	46.9	44.3	162	393.9	56.83	238	651.5	946.3	2,115	144.9	462.2	1507.9	0.89

Conclusion

The Criminal Justice Institute, a member of the University of Arkansas Systems, propagates the development of current, timely and useful information to improve management, leadership and performance skills of supervisors. According to Mashburn (1999, p. 3):

> Understandably, we are all in agreement that law enforcement organizations do not condone "quotas" as they are often reported in the media. Rather, each agency does have certain expected levels of performance that they attempt to monitor officers' performance by. The key is in developing some realistic measurement devices that will substantiate that the officer is working and that this work is meaningful to the community.

Mandating specific numbers for performance criteria must be avoided. It is therefore necessary to understand that through the use of ratios, specific activities can be critiqued relationally to the number of hours available to perform those activities. These ratios then become the performance standard by which productivity may be judged.

Daily reports can accumulate into monthly reports and the data from these monthly reports can be assimilated into a "Monthly Productivity Analysis Spreadsheet". The spreadsheet affords the opportunity to analyze individual productivity through the use of formulas which provide ratios that relate directly to an individual officer's performance. These ratios can be invaluable when used as documentation for use with both good and poor Personnel Evaluations. As with most things in the natural world, "The Cream Always Rises to the Top" and as this program is utilized, the officers themselves will continue to raise the "Bar" to higher standards.

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