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Report on Investigative Effectiveness ----A Comparison of Three Investigative Models

AND

PREPARED BY microwith Police but COM-SEC EVALUATION SECTION

THE URBAN INSTITUTE

7-10-74



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#### DATE 7/10/74 CITY OF CINCINNATI

INTERDEPARTMENT CORRESPONDENCE SHEET

Lt. Robert L. Pope, Acting Commander, Program Management Bureau

Lt. Robert J. Heinlein, COMSEC Evaluation Section Commander FROM COPIES TO Mr. Al Schwartz, Dr. Sumner Clarren, Urban Institute

REPORT ON INVESTIGATIVE EFFECTIVENESS SUBJECT

> Attached is the investigative effectiveness report which has been prepared in collaboration with the Urban Institute. Mr. Lind has indicated that he would like a copy sent to him at home so that he can review it before it goes to the Chief. Since the Chief has not yet seen it, distribution has been restricted to only the parties listed above.

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The Cincinnati Police Division conducted an experiment between March, 1973 - January, 1974 to determine whether organizational structure had a measurable impact on investigative effectiveness. During that period the Police Division operated three "models":

Team Policing - District 1 was organized around six geographical sectors. Officers with investigative skills were assigned to each sector "team". Under District 1's COMSEC plan, all officers were to be encouraged to perform investigative functions. District 1 had responsibility for all crimes except Homicide.

Decentralized District - Officers with investigative skills were assigned to District 5 and operated as a specialized unit within the district. The investigative function was organized by the nature of the crime - investigators were assigned to deal with either crimes against property or crimes against persons. District investigators had responsibility for all crimes except Homicide.

Centralized Investigation (C.I.S.) - The other four districts were supported by Cincinnati's Centralized Investigative Section. That section consisted of specialized sub-units (Drugs, Vice, Burglary, Homicide, Youth Aid, Robbery and Documents). The centralized unit was the "standard mode" of investigation - the other two models were seen as "experiments".

The findings presented in this report were derived from two sources. The Division's COMSEC evaluation team collected and organized data from Division records to determine shifts in statistics which might reflect changes in investigative effectiveness. This data was taken from District keybooks for the entire year of 1973.

The statistical findings were supplemented by interviews conducted by Urban Institute personnel in March and April of 1974. At that time, portions of C.I.S. had been decentralized due to the January reorganization. Those officers interviewed in March showed markedly different attitudes from officers still assigned to C.I.S. Central. Consequently, this evaluation reports the attitudes of four groups of officers. In all, 47 officers were personally interviewed. They were chosen as being especially knowledgeable about the investigative function in their respective units of assignment.

TABLE 1

NUMBER OF INTERVIEWS FOR EACH MODEL

District 1	District 5	C. I. S.					
		Centralized	District				
N = 13	N = 8	N = 12	N = 14				

#### INVESTIGATIVE EFFECTIVENESS IN CINCINNATI

#### Major Findings

The District 1 Team Policing model showed the best overall level of effectiveness during the experimental period. This is best seen in the clearance by arrest rate and in the overall clearance rate, both of which were highest for District 1. To a large extent, this success can be attributed to the District 1 patrol force.

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When only investigative functions are considered, however, it was the District 5 model which exhibited the best results. The major statistical finding was that the clearance rate for cases requiring investigative follow-up was highest in this model. This ranking was supported both by other statistical measurements and by the opinions of the officers interviewed. In situations where the respondents could not choose their own model, the great majority preferred the District 5 model.

The third major finding was that the ideal investigative model, as pictured by the investigators interviewed, would involve a district assignment for most investigators. Other components of the model would be a team policing set-up for patrol functions and a central coordinating agency for handling specialized cases and for disseminating information.

#### A Critique of the Experiment

The three models are not completely comparable either in geography, population served, or responsibility. To some extent, this can be adjusted for by comparing each model with its own baseline period two months prior to the start of the experiment.

More crucial were some unique factors in District 1. First, District 1 had responsibility for a broader range of crimes than District 5, making workload comparisons impossible. Second, and most important, the District 1 model was never fully realized. Training for patrolmen in investigative skills was not available until June of 1973. Even then, the stress upon "quality performance" discouraged young patrolmen from following through with too many investigations on their own, so that investigations remained the responsibility of a skilled few on most teams. The District 1 model was actually a further decentralization of skilled investigators to the team level. The "generalist" officer model was never tested. At present, it appears that the existing structure consists of "generalist teams" composed of officers with specific skills.

#### Changes in Crime

Many factors influence reported crime. Reported crime represents part of the workload of the police - a portion of which requires investigative follow-up. Dr. Clifford Marshall of the Urban Institute compared the first 6 months of the experiment with a compar-

able period in 1973 to determine what changes were larger than one would expect by chance<sup>1</sup>. These are reported in Table 2 (see following page).

From Table 2 it is clear that no experimental district shows changes which out-strip other comparable areas. Similar positive changes appear in District 7 (which received C.I.S. support) and District 1.

#### **Overall** Effectiveness

In Cincinnati, the preliminary investigation has traditionally been performed by a patrol officer. Moreover, patrol officers may make on-site apprehensions. Consequently, the effectiveness of any district in solving crimes is the result of the combined efforts of both the investigators and patrol officers. The district clearance by arrest rate is one measure of overall effectiveness<sup>2</sup> (see Table 3).

	District 1*	District 5	Other Districts
Baseline Period (Jan - Feb)	18.7%	13.5%	16.6%
Experimental Period (Mar - Dec)	24.4%	15.5%	16.2%

District 1's team policing model shows the highest clearance by arrest rate, and the highest net gain during the experimental period. Likewise, District 1's total clearance rate is higher than that of the other areas. This higher level of effectiveness is apparent even after arrests made by store security guards are systematically excluded from consideration as in Table 3 above.

As might be expected, most investigators felt their model was most effective. The exception was C.I.S. personnel now assigned in the districts (see Table 4).

- <sup>1</sup> Working Draft, "an elementary statistical analysis of pre and post COMSEC offense data", June 21, 1974.
- <sup>2</sup> Clearance by arrest rate = <u># Clearances by Arrest</u>

\* Arrests by store security guards are not included.

TABLE 3

CLEARANCE BY ARREST RATE<sup>2</sup>

# Part I Crimes Reported

#### TABLE 2

#### REPORTED CRIME BY TYPE AND DISTRICT

#### Test Statistic Z

## Region

Crime Type	Dist 1	Outside Dist l	Entire City	Dist 3	Dist 4	Dist 5	Dist 6	Dist 7
Rape		ł	L L					
Robbery		↓н	ЪH		↓H	<b>↓</b> H	4	ł
Aggravated Assault								
Burglary	↓н	Ť		ΎΗ	ΥĦ	↑		V
Larceny (over \$50)	1	Ϋ́Η	Ϋ́H	↑н	1		1 H	
Larceny (under \$50)		↓ н	↓н			٦	↑н	
Auto Theft		↑H	↓H			J	1 1	ΛH
Total Index <sup>1</sup>	↓ ↓				<b>↑</b>		4	↑Н
Minor (other) Assault	ŢН	ŤН	↑Н	↑н	ΛH			↑н
Total Part I <sup>2</sup>				Ϋ́Η	<b>†</b> H			4
Total Part II	1			ΥĦ	4			
Grand Total <sup>2</sup>				ΥH				

1. Does not include Homicide

2. Does not include Homicide or Negligent Manslaughter.

LEGEND:

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	Blank space indicates no significant change.
1	Indicates a decrease when the first 6 months are compared with a
	comparable period 1 year earlier (p<.05, two-tailed test).
ΥH	Indicates a highly significant decrease (p(.01).
1	Indicates an increase (p(.05).
↑ H	Indicates a highly significant increase (p(.01).

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	District 1	District 5	C. I. S. Centralized	C. I. S. in District
% who saw own model as most	62%	100%	92%	21%
effective				

Investigators also felt they were given little information about other units so that comparisons were difficult to make.

To some extent the clearance rates for districts (again excluding clearances due to arrests by security guards) may be inflated. Clearance rates are reported in Table 5.

	District 1	District 5	Districts with C.I.S.
District Clearance Rate - baseline (Jan - Feb)	30.5%	34.7%	41.2%
District Clearance Rate (Mar - Dec)	48.7%	40.2%	31.3%

Fifty-one percent of the investigators interviewed felt that the models were not accurately portrayed by the statistics. Another 13% were not sure. Table 6 gives those reasons given by officers for their opinions (see following page).

## Effectiveness of Investigative Follow-up

To a large extent, District 1's high clearance by arrest rate is due to apprehensions and arrests made on the same day as the crime was reported. In this study, any apprehension made on the same date as the crime was reported was called a "Patrol Arrest". If the arrest was made later, it was termed an arrest which required investigative follow-up (see Table 7).

TABLE 4

OFFICER'S REPORTED EFFECTIVENESS

TABLE 5

CLEARANCE FOR TOTAL PART I CRIMES

- 4 -

## TABLE 6

Why does the Division look better or worse on paper than is actually the case?

REASON	# of	Responses
District l has more people, making a higher arrest rate easier.		4
District 1 gets credit for arrests by security guards.		4
The Division data is distorted by misuse of multiple-closures (exceptional clearances).		4
C.I.S. takes credit away from districts.		2
C.I.S. has more difficult cases.		2
All crimes are not reported to the police.		2
District 1 can control what the figures show.		1
District 5 gets credit for arrests made at U.C.		1
District 5 is blamed for crime at U.C.		1
District 1 crime is more difficult.		1
District 1 does not properly report youth problems.		
		23

# District 1 Jan - Feb 9.5% March - Dec 20.6%

\*Definition - # of Cases Closed by Patrol Arrest # of Part I Crimes

Keeping in mind that the activities of a model's patrol force affects its investigators, we can sharpen our focus to consider strictly investigative functions. We have chosen three indices of investigative effectiveness to illustrate differences among the three models. The first is the clearance by arrest rate due to investigative follow-up. Examination of these figures (see Table 8) shows that, while all three models exhibited a decline since the baseline period, District 5 out-performed its rivals in both periods.

	District 1	District 5	Districts with C.I.S.		
Jan - Feb	5.2%	7.7%	7.6%		
March - Dec	3.8%	7.5%	4.9%		

\*Definition - # of Cases Closed by Investigative Arrest # of Part I Crimes

Another important measure of investigative effectiveness is proportion of investigative workload cleared by investigative arrest. Rather than the above-mentioned arrest rate which has as its base all Part I offenses, this measure considers only investigative workload. Investigative workload consists of all Part I crimes

TABLE 7

CLEARANCE BY PATROL ARREST RATE FOR PART I CRIMES\*

	District	5	Districts with C.I.S.
	5.8%		9.0%
	8.0%		11.3%
:		•	

TABLE 8

% OF CASES CLEARED BY ARREST DUE TO INVESTIGATIVE FOLLOW-UP\* (PART I CRIMES)

- 5 -

with the exception of those closed by patrol arrest. In a sense, the offenses represent these offenses which require follow-up investigation. A glance at Table 9 shows that while the COMSEC and C.I.S. models showed some deterioration, District 5 held steady at 8.2%.

#### TABLE 9

#### CLEARANCE BY INVESTIGATIVE ARREST AS A PROPORTION OF INVESTIGATIVE WORKLOAD\*

	District 1	District 5	Districts with C.I.S.
Jan - Feb	6.4%	8.2%	8.3%
March - Dec	5.5%	8.2%	5.7%
			•

*Definition	÷	#	of	Case	es Clos	ed	by	/ Investig	ati	ve	Arres	t		1997 - 1997 1997 - 1997 - 1997
•		Ŧ	Par	rt I	Crimes		#	Clearance	by	Pa	trol	Arrest	Crj	mes

The final measure of investigative effectiveness is the ratio of clearances to arrests for investigative follow-ups. Ideally, every closure made by an investigator would be by arrest. The closer to 1.0 that this ratio is, the better is the approximation to this ideal. By this standard, both District 5 and the centralized model have done rather well (Table 10).

#### TABLE 10

CLEARANCES PER ARREST FOR INVESTIGATIVE FOLLOW-UP\*

	District 1	District 5	Districts with C.I.S.	
Jan - Feb	4.0	3.7	4.2	
March - Dec	7.4	4.3	4.0	

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\*Definition - Closures by Investigative Arrest and Exceptional Clearances Closures by Investigative Arrest

This statistical focus on investigative effectiveness was supported by the interview findings. As noted above, when asked to pick the "best" model, most respondents chose their own model. If we look further however, we can make some more tentative conclusions (Table 11).

- 7 -

Q: "Which investigative model do you feel was doing the best job considering the overall investigative effectiveness?" .

Model Doing	Mode:	l To Which Res	spondent Was Ass:	igned Districts
"Best.Job"	District 1	District 5	CIS "Central"	with CIS
	(N) %	(N) %	(N) %	(N) %
District 1	8 61.5			1 7.1
District 5	2 15.4	8 100.0	1 8.3	9 57.1
C.I.S.			11 91.6	3 21.4
Other (don't know,	3 23.1			1 7.1
TOTAL	13	8	12	14

The first striking point is the near-unanimity of opinion among District 5 and C.I.S. "Central" respondents. Both groups felt very strongly that their own model was "best". If the breakdown of C.I.S. respondents is any indication, previously centralized investigators quickly adopt a new viewpoint when exposed to a situation involving more decentralization. In fact, of the above four groups, only the decentralized C.I.S. respondents chose a model other than their own.

The other significant finding is that among those who did not choose their own model, District 5 was the most frequently mentioned. Of 17 interviewees who chose a model other than their own (or didn"t know which was best) 71% (12) chose the District 5 model. The reasons given for the various choices are listed below (Table 12).

#### TABLE 11

TABLE 12

- 8 -

"What contributed to the superiority of the model that the 0: respondent said was doing the best job."

Model Chosen As Doing Best Job Most Important C.I.S. District 1 District 5 Other Total Factor (N) Training 3 2 1 10 21.3 5 5 13 27.7 Experienced 2 1 Officers Organizational 3 7 6 16 34.0 Structure Supervisors 5 1 2 8 17.0

Part II Crimes

The primary focus of this report has been on Part I crime. There are two reasons for this. First, Part I offenses are generally considered to be "more serious" than are Part II offenses. Secondly, a Part II offense is only entered into the keybook when an arrest is made. Therefore, it is impossible to determine what level of investigation was necessary for closure. Table 13 shows the number of arrests in two Part II categories for the 12-month periods prior to and immediately after the implementation of COMSEC in March, 1973.

## TABLE 13

#### PART II ARRESTS

	District 1 Pre* Post	District 5 Pre Post	Others Pre Post
Drug Arrests	251 376	125 157	599 624
Total Vice Arrests**	1047 913	310 388	1319 1405

\* Pre COMSEC period was 3/72 - 2/73; Post COMSEC period was 3/73 - 2/74

\*\*Total Vice Arrests include those for prostitution and commercialized vice, narcotic drug laws, gambling, and liquor law violations.

Table 14 yields some insight into the relative effectiveness of handling specialized types of investigations. Respondents were asked to rank, on a 5-point scale, how their model did on these specialized cases.

Q: "How did your model do compared to other models with vice cases, drug cases, fraud and document cases, and youth aid cases?"

	•	· · ·							
C.I.S.	3.5	4.0	4.3	3.3					
District 5	2.9	2.6	3.0	3.5					
District l	4.3	4.2	3.2	3.1					
Model	Vice	Drug	Frauds	Youth Aid					
	Type of Case								

Scale

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(5)	(4)
Much	Better
Better	Job
Job	

14.5

#### The Ideal Investigative Model

The final questions of the interview dealt with the preferred investigative model. The respondents were asked to list the components of the "ideal" investigative model. The results are listed below in Table 15.

TABLE 14

(3)

(2)

(1)

Similar	Worse	Much
Job	Job	Worse
		Job

FABLE	15
-------	----

Cor	nponent	<pre># of Responses</pre>
1.	Train patrolmen as investigators	3
2.	Eliminate most specialized units.	1
3.	Give patrolmen responsibility for follow-up.	3
4.	Team policing.	15
5.	District assignment for investigators a. With separate investigative supervision. b. Responsible to District Commander.	29 2 2
6.	Drug cases as an exception.	1
7.	Homicides as an exception.	8
8.	Collators for coordination.	1
9.	C.I.S. as it was (good image).	6
10.	Mini-Tac Units for coordination.	2
11.	Different organizational structure for different areas.	2
12.	Document Squad centralized.	1
13.	COMSEC as it is.	2

## ADVANTAGES AND DISADVANTAGES OF MODELS

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Officers critiqued their own models describing the strengths and weaknesses of each model. Table 14.1 contains the advantages mentioned by officers, grouped by the investigator's assignment. Table 14.2 lists weaknesses mentioned by investigators in describing their own models. The ideal investigative model follows naturally from these observations of current practice.

#### TABLE 14.1

# ADVANTAGES OF INVESTIGATIVE MODELS

		Dist. One	Dist. Five	C.I.S. District	C.I.S. Central	
		÷				
Patrolma Interact	n - Investigator ions					
1.	Cooperation, rapport	3	5	1	1	
2.	Continuing Exchange of information	2	2	0	0	
3.	Credit to patrolman for case closures	1	2	0	0	
Patrolma Investig	n - Performance of ative functions					
1.	Partial performance of all functions	1	0	0	0	
2.	Complete performance of some functions	1	0	ана селания албания албания Органия	0	
3.	Complete performance of all functions	2		0	0	
4.	Unspecified performance of functions	2	0	0	0	
amiliar peratio	ity with area of ns		•			
1.	Geographic familiarity with area	0	0	0	0	
2.	Familiarity with area residents	2	1	0	0	
3.	Familiarity with specif	`ic 2	0	0	ан артана 1916 <b>- З</b> аран	
4.	Familiarity with in- formants	0	0	1	3	
5.	Familiarity with crime types, trends, etc.	0	0	1	2	
6.	Community generated in- formation, community meetings	- 4	0	0	0	
7.	Police-Community ` relations	1	0	0	0	

Familiarity with type of opera-tion (Specialization and Expertise)

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- 1. Training investigati techniques
- 2. Training specific crime types requiring investigation
- Experience investig tive techniques (thor case work) 3.
- 4. Experience specific types

Centraliztion (for handling multi-district crimes)

- 1. Exchange and dissemi tion of information
- 2. Direction and performance of investigation
- . 3. Coordination with outside agencies

# Characteristics of the Unit

- 1. Plexibility of open (excluding early c) sures) · .
- 2. Early closures
- Effectiveness of supervisor 3.
- 4, Internal communica
- 5. Equipment and tim
- 6. Faster response lag overcome)
- 7. Responsibility for performance of in gations
- 8. Inter-Sector cool and assistance
- 9. Team-work (pride
- Relieves patrolm all investigativ 10.

ADVANTAGES INVESTIGATIVE	of Model	S				
Dist One	. Di Fi	lst. Lve	C.I.S Distr	ict	C.I.S Centr	al
and						
investigative 2		1	0		1	•
specific requiring lon 0		0	•	) )	3	
- investiga- iques (thorough	2	0		2	•	4
- specific cri	me O	0		1		5
handling nes)	· · · · ·					
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response (time ercome)	2		0	0		U
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TABLE 14.1

# TABLE 14.2

# WEAKNESSES OF INVESTIGATIVE MODELS

	District l	District 5	C.I.S. District	C.I.S. Central
1. Communications Problems: Between sectors To and from C.I.S. Internal (general)	3 1 1	0 2 0	0 7 0	0 6 0
2. Specialization Problems: Lack of Too much	3 0	. 2 0	0 2	000
3. Supervisory Problems: Internal Lines of control (C.I.S. and District)	2 0	0 0	1 3	0 1
4. Not Enough Familiarity With Neighborhood or Are	a 0	0	2	2
5. Need for More Training	3	0	0	0
6. Job Environment: Need for early closures Other problems	0 1	0 0	2	0 2
7. Workload or Equipment Problems: Workload too heavy Lack of manpower Lack of equipment	1 0 1	1 2 2 2	0 0 0	2 0 1

- iveness during the experimental period.
  - •District 1 clearance by arrest rate was higher than other districts.
  - District 1 overall clearance rate was higher than other districts.
  - higher.
- cases requiring investigative follow-up.

Much of District 1's high clearance by arrest rate is due to apprehensions made the same day as the arrest is reported.

- where they could not choose their own model.
- 4. The "ideal investigative model" would have:
  - •District assignment for most investigators.
  - •Team policing for patrol functions with partial investigations.
  - •A central coordinating agency to provide:
    - 1. Analysis.
    - 2. Coordination with outside agencies.

    - 4. Special, scarce skills.

#### SUMMARY

1. District 1 - Team Policing - showed the best overall effect-

These results do not include arrests made by Department Store Security Guards which would make the District 1 rates even

2. District 5 showed the best results for clearance by arrest for

3. Investigators tended to prefer a District 5 model in situations

3. Consolidation and dissemination of information.

The great bulk of hard data used in this study was obtained from District keybooks rather than from regular Division sources. By using this keybook data a more accurate impression of investigative effectiveness could be obtained. The primary reason for this improved accuracy can be illustrated by considering the derivation of clearance rates. If we had used, for instance, the monthly offense and arrest reports produced by R.C.C., we would have had a problem of association. That is, while the offenses listed had occurred during the month in question, the arrests may have been for offenses which occurred during a prior month. In the keybooks, by contrast, the type of clearance is listed immediately to the right of the report of the offense. So, by using keybook data, we can obtain an accurate association of offenses and clearances.

APPENDICES

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Appendix A

#### DATA SOURCES

Appendix B

When, during the interviews, investigators were asked to list components of an ideal investigative system, many (often conflicting) answers were received. One especially thoughtful and coherent answer is the following:

Q: Considering cost and overall levels of service, what would be the <u>best</u> way to organize the delivery of investigative services in Cincinnati; using the best ideas from any of the three models?

District assigned units [should be] doing on-the-street investigations; [their] closeness to patrolmen and district area allows them to be better aware of what is going on. Mini-tactical units also function as liaison between districts and centralized units. [They] can link up with R.E.N.U., Vice Control, Burglary Squad, etc., when needed. [We would] still need a central unit for continuity of effort, centralized information, [and the] expertise required for some crime types.

Sector assignment, task oriented patrol functions like COMSEC are [an] excellent way to obtain very close, accurate information about problems and conditions in neighborhoods. This would link up well with a district level investigative unit. [The] environment provided by COMSEC is an improvement in the life of a patrolman. [He has] more opportunity to do investigations, select and pursue [his own] specialization. [This] can be done without censorship, since creativity and individual initiative are encouraged. The following graphs are included to illustrate trend in various rates over the course of an entire year (1973). In this sense, they supplement that data presented in the body of the text.

Appendix C



والعالية العلاقة الراجعات الكالالما

20 Squares to the Inch

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1973 District #1 Clearance Arrest Rate Due to District Personnel

Exhibit 2

# 1973 District #5 Clearance Arrest Rate Due to District Personnel

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Exhibit 3





# 1973 District #5 Clearance by Patrol Arrest Rate

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Exhibit 7

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Exhibit 8

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## 1973 District #5 Clearance by Investigative Arrest as Proportion of Investigative Workload

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╎╍┼╍┼╍┼╍┨╺┼╍┽╍┼╍┨╴┼╼┥╼┽╼┼╶╎╌╁╾╎	╌╞╾┾╍╏┄┠╶┽╍┾╍╀╴	┠╍┨╍┠╍╊╍╊╍┠╼┠╶╢	┉╈╍╂╍╂╌╂╌╂╴╊╺╉╴╏╴╏	┊╎╫╷╟┉┇╷╟╍╫╌┝╸╄╴	╶╂╴┨╺╊╌╊╌┨╍╊╶╂╼╋╌╂╼╋	╺┟╶┠╍╉╾╞╍┠╼┠╧┾╍╉╾┡╍╋╴┨╌	<b>┧╷╅╶╈╴╏╶┟╸┧╶╪╶┥╴╇╶┧╶╅╶┿╸╆╸╴┨╶</b> ╕	
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╴ <del>┠╍┫╍╏╍╏╍┨╍┨╍┠╍┨╍╏╍┨╸╈</del> ╵┥╍┨╴┽╴┞		┨ <del>╡</del> ╋┽┟┨┾┽┿┥╽			╶╅╏╘╞╚┽╅┠╋╈╈	┥╏┠╌╬╌╬╍╬╼╬╌╢╴		• • • • • • • • • •
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┣╍╊╼╂╼╂╼╂╼╂╼╂╾╂╴╏╺┠╼╡╼╂╴╂╌╏╴┇╍┧	╺┽╍┝╍╏╺┽╴╿╼╁╺╁╸	┨╺╅╌╊╍╄╼╡ゃ┨╶┟╌╃╴╅╾┠╶╽	┉╆╍┲┈┽╓╕╶╽╶╞┉╡╷┼╶╽	╺╻╽╷┚╸╞╍╁╵╄╵╽╺╄╴╂╼	┊┠╺╏┈╊╌╊╌╄╺╋╍┫╼╊╍╉╺╋	╺┽╴┾╶┼╾┼╾┦╴┟╶┨╺┼╍┽╺┽╶╄╴┠╶		\$~\$
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┠╾╂╾╂╼╂╼┨╼┠╼┠╍╅╺╂╾╏╺┠╍╆╾╄╶┠╶┨╸╊	┈┾╌┾╴┟╌┥╌┥╼┿╺┽╶╸	┥╌┽╌┽╶╡╼ <mark>╅</mark> ╼╿╴┿╵┽╸┿╌┾╶╎	·∔·∱·╡·╡·╡ ╡		╶╶╪╺┟╍╪┉╅┈╬╌╣┈╣╵┇╺┽┑╞╵	┉┫┑╍┫╌╌┫╍╌┨╌╍╊╸╴┫┈╍╄╍╾┠╌╼╉╍╌┨╌╴┠╴╺	╅┈╂╍╉╸╂╌┠╌╆╼┲╺╅╸┥╴╏╴╊╸┝╌┡╍╅╶┨┈	<u>┽╍</u> ╅┉┇╶╅┊╏╌╪╍╪╍┿╍┽╌┑
								· · · · · · · · · · · · · · · · · · ·
╶ <mark>┠╍╊╍╊╍╋╍╋╍╉╍╉╍╉╍</mark> ╋╸╋╺╋ <mark>╺┽╺┽╴</mark> ╅┈┨╴╆╵╉	╺┼┽╽┼┼┼┼	<mark>┟╺╅╺╅</mark> ┉ <u>┧</u> ╺┦╺╎╷┢┈┼╴┧╶┧				╶┨╍╏╍╏╲┊╛╺╂╌╏╺┧╺╂╸┠╸╞╸╞╸	┨╍┫┅╂┅╪╸╏╶╪ <mark>╶┠╍</mark> ╁┅┇╼╏╴╄┉╡╺┽┉╡╴┠┉	╪┉┇╶┫┉╪╌┠╶┥╶╅┉╄┉┥┉
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╞╍╉╍╉╍╃╍╃╍╂╍╄╍╄╍╏╺┟╍╏╺╁╍╂╍╉╼╏╴╏╶╆	-+-+ + + <b>N</b>					╶┫╶┨╴┨╴╋┷┨╼╊╸╢╸╊╼╊╼╋╍╉╌┫╶	┟╺╁╾┿╼┾╴╏┶╅┈┾┉┩╵┾╴╞╶┦╴┇╺┇╻╡╺┞╴	· · · · · · · · · · · · · · · · · · ·
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<u>}</u> ++++++++++++++++++++++++++++++++++++	┽╪┾┊┊┼┊		╺╂┼┼┼┼┼┼┤	╉╋	╺┼╼┠╌┟╌┥╼╂╌╁╼╂╼╂	<del>┥╸┝╶╎╺╎╺╎╸╎╶╎╶╎╺╎╸┥╸┥╸</del>	┟╴┋╶┨╸╋╶┫╴┥╴┥╴┥	<del>╞╪╪┽┠┊╤╿</del> ╡┥
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┟╺╁╍┼╍┼╍┨╶┠╍┽╸╂╺╃╌┨╶┟╼┾	╍╂╾┠╶┠╍╉╾┠╴╂╺╋╴	╽╶╄╌╞╍┾╍┽╼┠╶┝╍╅╼┠╍┽┄╎	┉╂┉╂┉╂┉┨┈╏┈┠╴╉┉┠╺	╘┊┫╞╝╞┿┨╞┲┨┙╋┈╅┈	╴┋┈ <b>┠╶┧╸╠╴┠╍┞┈┨╶┾╌╊╍┾</b>	╶╂╌┠╌┤╼╁╸╆╼╉╾┨╼╊╾╂╼╋╼╉╺┨╍	<del>┧╍╡</del> ╾┨╶┨╌┨╌┨╼┨╼╄╺┥╌┨╴┧╴┽ <b>╌╉╴┦╶</b> ╏╴	┨╾ <del>╿╺┫┙┧╴┨╴┡╺╂╍╋╺╄╸</del>
	┈┼╾┧╾┨╼┼╼┧╼┨╌┥╴	╽╶┼╍┟╼┠╾┨╼┞╼╄╼╄╼╄╸╿	┈┾╍┾╍┼╌╎╌┝╌┥		┊┝╽╶┨╌┠╍┠╍┠╺┠╼┠╼┠	┽╶┼╍┾╍┾╍┝╍┝╍┝╍┝╼	┨╍┠╼┨╼┠╼┠╼┠╼┠╺┠╶┠╴	╎╎┟╎╽┤┿╍┝╍┝╼
┢╍┼╾┽╍┼╍┼╍┼╍┼╍┼╍┼╍┼╍┼╍┼	╺┫╶┨╌┨╾┨╾┨╾┠╸	<u>┥</u> ┥ <del>╎╍┿┝╹</del> ╎┥┥┽┥╸	╶╁┥┿┾╢╫┿┿┥	╺╻┥╴┟╴╁╍╁╍┽╶┨╸┠┉┿╶	╸ <del>╏╶╏╶┠╺╊╍╊╌┨╺┨╍╉╶┣</del>	┽┟╍┼╍┾╍┼╌┼╸	<del>╎┝┢╋┪┥╡╞╞╞╎╏┇</del> ╡ <u></u> ┊╏╵	┥ <del>╷┥┥┨╋╋╹</del>
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 10 Squares to the Inch





# 1973 Dist. #5 Proportion of Investigative Workload Cleared

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10 Squares to the Inch

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### Appendix D

#### EARLY CLOSURES

As originally conceived, the two experimental models (Districts 1 and 5) were to have available an early closure option. The experimental use of this option was to lead to information as to its effect upon the investigative process. As the accompanying graphs illustrate, the option, in practice, has been employed in all three models, although somewhat more frequently in District 5.

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## EARLY CLOSURES

# Monthly Average Part I Offenses

	Early Closures	Early Closure Rate
District I:		
Jan-Feb Sept-Dec.	111.5 125.5	.200 .226
District 5:		
Jan-Feb. Sept-Dec.	27.5 288.7	.058 .543
Districts 3,4,6,7		
Jan-Feb. Sept-Oct.	231.5 274.5	.164 .158



## 1973 Dist. #5 Early Closure Rate

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75				N		
	┿┿╋┈┨╺╋╸┷╺╇╼╄╍╏╵ ╪╶┿╵┠╴╻╺╍┚╴┨╶╓	╺╪╍ <mark>┊╶╞╌╞╸</mark> ╢╴┠┈╪╶┠╶╏ ╶┇╴┇╶┇╺┺╶┠				
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65	┙╴╇╸╎╴╄╸╁╴┽╺┫╸╎╸					
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55						
<mark>╞╺╪╍╪╍╪╍╞╍╞╍╞╸┊</mark> ╶╞╍╡┍╞╶╡╶┺╸┨╶╡╺╪ ┝╼╪╍╪╍╪╍╪╍╪╍╪╸┊╴┟╍╪╌╞┍╅╍┠╴┨╶╉╌╉	╪╪ <mark>╋┙┙╴╋╺╋╺╸╸</mark>					
<mark>╽╾┿╾┿╼┿╼┥╼┿╍┾</mark> ╶┥╼┥╼┿╍╬╾┿╸┥╴╽╴┆╺╽ ┠╾╋╼┯╼╼╼┥╴╅╼┿╺┝╍╃╴┥╶┥╸┥╼┥┝╸╽╴╽╴┾	╺╋╍╪╍┠╌╄╸┠╍┽┶┛╺║╸ ╶╈╍┽╌┠╍╅╸┟╌┽╴┽╴╏╸	###				
.50						
		╺╁╸╽ <mark>╝╵┽╴╎╶┟╺┾╼┾╍┝╸</mark> ╸┧╾╿ <mark>╝╵┾╼╎╺┧╸┝╸</mark> ┝╸╎╸				┥╾╎╶╅╺╄╶┧╍╏╴╞╸┾╴┾┑╅╼┨╸┇┯╝╍┦╼┇╶╎╴┍╸┲╶╅╸┝╸┲╼┝╍ ┷╍┝┙┲╶┝╼┲┝┙╴╡╶╡╶╢╸╴╡╶╡╺┍╸┝ ┙╴╎╴╡╺┿╍╎┙╴╡╴╡╶╣╸╴╡╶╡╺╌╸╴
			╺╾	··· ┨╺╋╍╉┥┠╴┨╴┣╸┨╺╇┥┠╸ ╺╋╼╋┥┥╸┫╴┫╸╋╺╋┥┠╸	╶╏┄╞╶┠╍┨╍╎╌╎╌╏╶╋╍┨╺┞╗╋╍╏┲┽╍┫╸┝╼┽╼╊╍┿╸ ╾┪╾┨╌╡╌┥╶┥╴╌╴╴╴╴╴╴╴╴╴╴╴╴╴╴╴╴╴╴╴╴╴╴╴╴╴	╋╾┠╋╼╊╼╋╺┝╏╴╄╍╡╶┾╍╕╶┧╼╼╧╺┶ ╋┝╋╗┙╋╋┙┙┥╋┿┙┥┥╋┿┿┙┥╴╋┿┿╼┥
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10 Squares to the Inch



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