

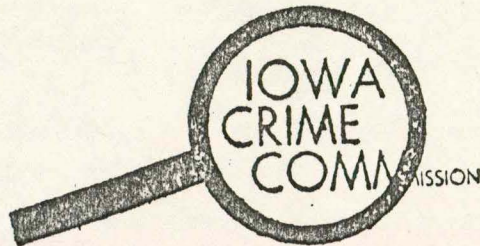
HV
8145
.18
I59
1974

IOWA HIGHWAY PATROL
MANPOWER STUDY

IOWA HIGHWAY PATROL MANPOWER STUDY

PREPARED BY THE
STATE PLANNING AGENCY
OF THE
IOWA CRIME COMMISSION

STATE LIBRARY COMMISSION OF IOWA
Historical Building
DES MOINES, IOWA 50319



SEPTEMBER, 1974

C. 197:17

H53

IOWA HIGHWAY PATROL MANPOWER STUDY
SUMMARY

This study was undertaken to determine the current manpower needs of the Iowa Highway Patrol. The two major factors that have affected the manpower resources of the Highway Patrol since 1968 have been isolated and used to compute suggested current manpower levels.

These factors are:

- Personnel Policy Changes
- Certain Variable Conditions That Affect the Demand for Service Placed on the Highway Patrol

Examination of each of these factors indicates that since 1968, the Iowa Highway Patrol has experienced a decline in the level of available manhours in its patrol force while the various factors affecting the demand for service have increased substantially. This situation has developed while the Highway Patrol is required to operate at a statutory limit of 410 men which was established in 1968.

A formula has been developed that relates the manpower level of the Highway Patrol to the factors that affect the demand for service placed on the Patrol. This formula is used to compute the overall manpower increase needed to accommodate the increase in service demand factors and to compute the relative manpower levels of each Highway Patrol post.

It is concluded that in order for the Iowa Highway Patrol to regain the service potential that was available in 1968, 133 additional troopers would be needed.

exp 1-

1/16/75

gt Crane Commission

IOWA HIGHWAY PATROL MANPOWER STUDY

TABLE OF CONTENTS

	<u>PAGE</u>
I. ORGANIZATION OF THE HIGHWAY PATROL	1-4
II. COMPUTATION OF IHP MANPOWER NEEDS	
A. PERSONNEL POLICY CHANGES	5-8
B. VARIABLE FACTORS THAT AFFECT THE LEVEL OF SERVICE PROVIDED BY THE HIGHWAY PATROL	8-9
C. EXPLANATION OF VARIABLE FACTORS	9-13
D. ASSIGNED VALUES OF EACH VARIABLE FACTOR	14-17
E. CONCLUSIONS	17
APPENDIX	
I. CHART - FACTORS AFFECTING THE LEVEL OF HIGHWAY PATROL SERVICE	A-1
II. GRAPH - PERCENTAGE CHANGE IN FACTORS AFFECTING MANPOWER NEEDS OF THE IOWA HIGH- WAY PATROL (1968-1973)	A-2
III. PERSONNEL POLICY CHANGE FORMULA DETAIL	A-3
IV. ROAD PATROL FORMULA DETAIL	A-4
V. COMPUTED ROAD PATROL DATA BY POST	A-5 TO A-10
VI. RECOMMENDED MANPOWER INCREASES BY POST	A-11
VII. COMPUTED ROAD PATROL FORMULA DATA BY COUNTY	A-12 TO A-26

ORGANIZATION OF THE HIGHWAY PATROL

The Iowa Highway Patrol was created by the Iowa Legislature in 1935 with an original complement of 53 men, expanding to the current level of 410 men in 1968. The general responsibilities and authority of the Highway Patrol are found in Chapter 80 of the Iowa Code. Approximately 85% of the patrol man-hours are spent in enforcing state motor vehicle laws and traffic related responsibilities. The remaining 15% is dedicated to criminal activities and other nonrelated traffic activity. Each trooper has the authority to enforce all laws in Iowa and therefore provides the capabilities of a highly mobile law enforcement body with state-wide jurisdiction. The need for a well trained, highly disciplined, police force that can be unhindered in its operation with the state by local jurisdictional boundaries has become increasingly apparent in the past five years.

Charts 1 and 2 illustrate the organizational structure of the Iowa Highway Patrol. Of the 410 men, 332 are road troopers and field sergeants, 32 are supervisory personnel, and 46 are on special assignments, which includes pilots, safety education officers, Drivers License examiners, and Hearing Officers. Effective July 1, 1973 the Division now identified as the Driver's License Division was separated from the Highway Patrol. By July 1, 1975, it is expected that practically all uniformed officers will be phased out of the driver licensing program. The number of men involved in this transition includes 30 road troopers and ten supervisory personnel. These men will become an integral part of the Highway Patrol and will carry out the responsibilities identified by statute. The Patrol employs 25 civilians, primarily in secretarial and clerical positions.

The Highway Patrol is divided into four divisions comprising 14 posts located in strategic points throughout the state (see Chart 2).

The posts comprising each division are as follows:

<u>Division</u>	<u>Headquarters</u>	<u>Comprising Posts</u>
A	Des Moines	1, 2, 3, 14
B	Storm Lake	4, 5, 6, 7
C	Cedar Falls	8, 9, 10
D	Iowa City	11, 12, 13

The Highway Patrol maintains a garage where all emergency

equipment, including radios are installed. The Patrol has six fixed-winged aircraft and 12 pilots stationed at locations throughout the state. The aircraft are employed primarily in traffic surveillance, but are also utilized in general surveillance work, crime searches, emergency blood and organ relays, attempts to locate missing persons, and other police related functions.

As stated, the Highway Patrol's major responsibility has been the enforcement of Iowa motor vehicle laws. However, with the recent dramatic increase in criminal activity, both nationally and in Iowa, combined with the increasing mobility of the modern day criminal, the Patrol has expanded its activity in the area of criminal law enforcement. As is the general trend nationally, Iowa law enforcement agencies, at both state and local levels, have not been able to keep pace with the factors which continually increase the demand for service.

Chart 2
 Assignments of Iowa State Patrol Officers
 February 19, 1974

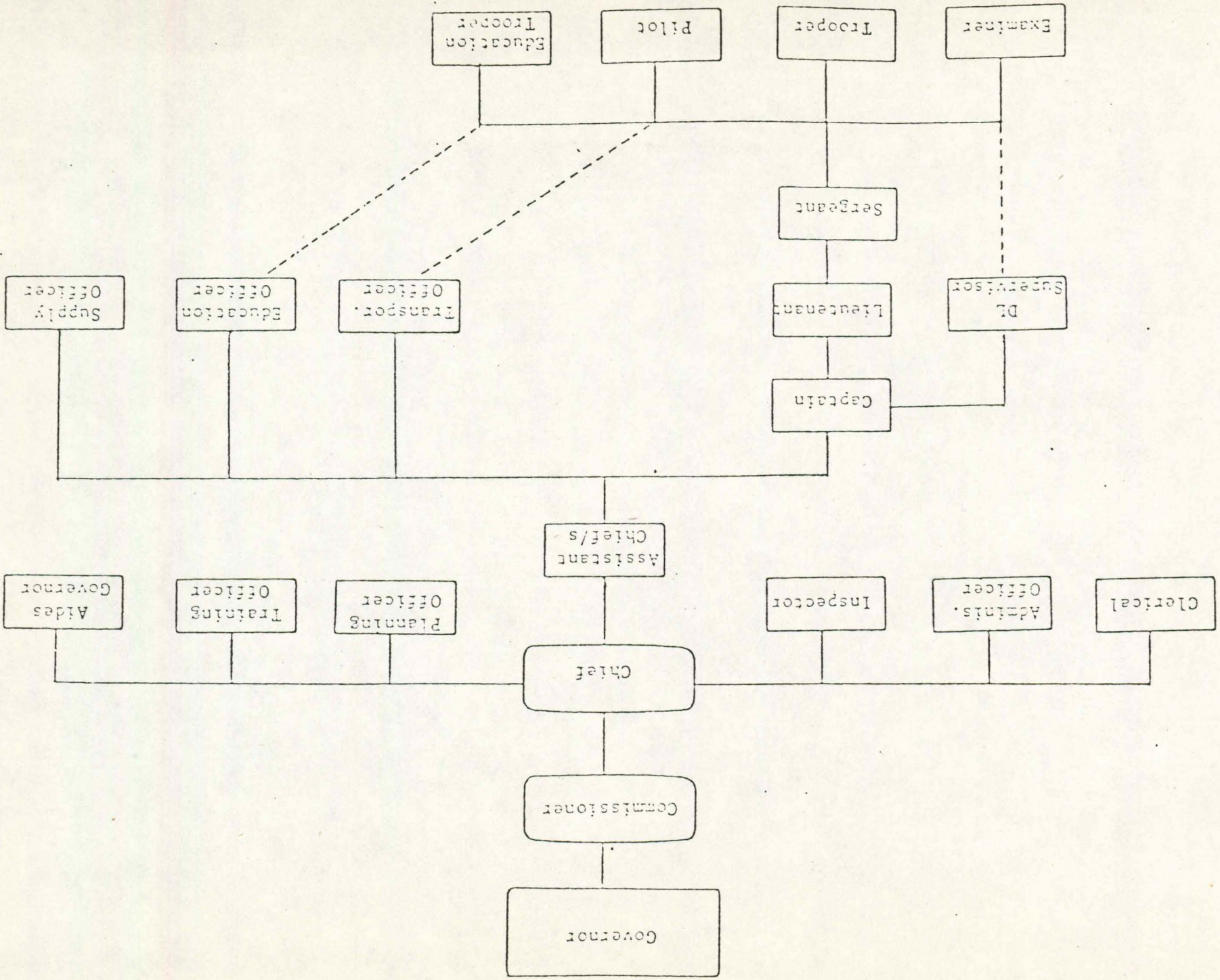
<u>Location & Post</u>	<u>Total</u>	<u>Sgts. & Troopers</u>	<u>Supervisors</u>	<u>Assignments</u>
<u>Headquarters</u>	14		14	
Post 1				
<u>Des Moines</u>	53	44	2	7
Post 2				
<u>Osceola</u>	26	23	1	2
Post 3				
<u>Atlantic</u>	34	29	1	4
Post 4				
<u>Denison</u>	24	22	1	1
Post 5				
<u>Cherokee</u>	28	19	2	7
Post 6				
<u>Spencer</u>	18	16	1	1
Post 7				
<u>Fort Dodge</u>	21	17	1	3
Post 8				
<u>Mason City</u>	21	19	1	1
Post 9				
<u>Cedar Falls</u>	26	17	2	7
Post 10				
<u>Oelwein</u>	25	21	1	3
Post 11				
<u>Cedar Rapids</u>	41	34	2	5
Post 12				
<u>Davenport</u>	40	37	1	2
Post 13				
<u>Mt. Pleasant</u>	21	18	1	2
Post 14				
<u>Ottumwa</u>	<u>18</u>	<u>16</u>	<u>1</u>	<u>1</u>
Totals	410	332	32	46

Total is total of Iowa State Patrol Officers.

Sergeants and Troopers is total of Road Troopers plus 32 Field Sergeants.

Supervisors is total of 14 Headquarters officers plus four Area Field Commanders and 14 District Commanders.

Special Assignments is total of Pilots, Safety Education Officers, Drivers License Examiners, and Hearing Officers.



COMPUTATION OF IHP MANPOWER NEEDS

Two major factors that have affected the manpower resources of the Iowa Highway Patrol since 1968 were examined and used to compute the increase in manpower recommended in this study. The two factors are:

1. Personnel Policy Changes.
2. Certain variable factors that affect the level of service that should be provided by the Iowa Highway Patrol.

IT IS IMPORTANT TO NOTE THAT THE MANPOWER INCREASES DETERMINED IN THIS STUDY WOULD ONLY ALLOW THE HIGHWAY PATROL TO REGAIN THE SERVICE POTENTIAL LOST SINCE 1968.

Any computation of manpower needed in addition to the levels recommended in this study would require an extensive staff commitment beyond the present capability of the State Planning Agency. This is due to a lack of readily available data regarding the numerous aspects of such an undertaking.

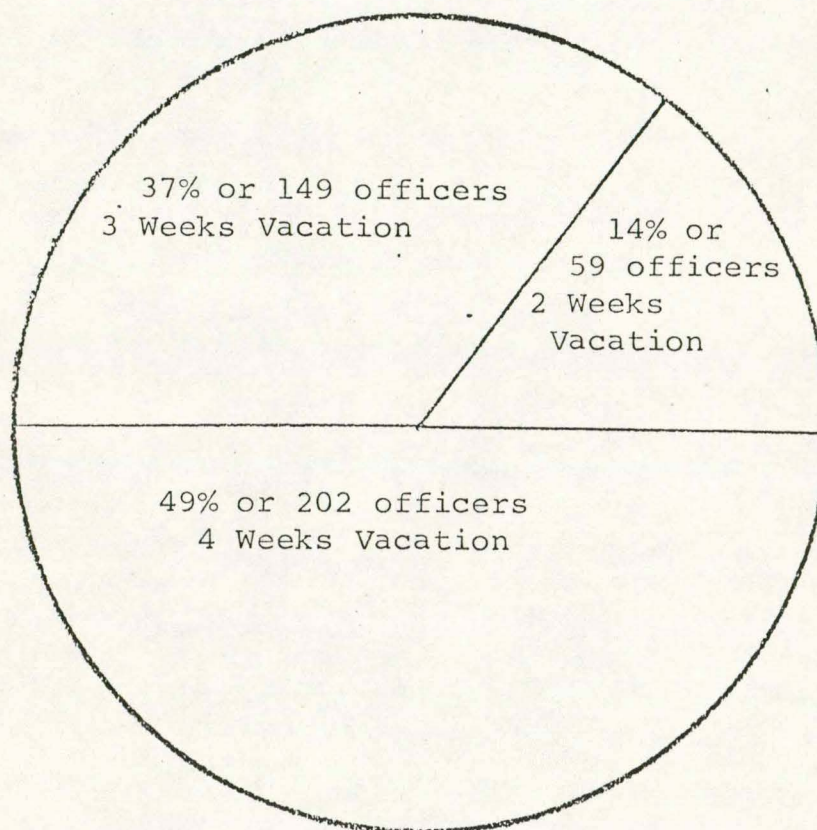
PERSONNEL POLICY CHANGES

Chapter 80.4, Code of Iowa sets the current statutory limit of 410 men. The statutory limit prevents the Patrol from realistically responding to changes in the factors that influence the level of service that must be provided.

Even though the authorized strength has remained constant at 410 men since 1968, the net manhours available have decreased by 11% (No.: 100,000 manhours) due to two major factors:

1. A Department of Public Safety personnel policy change which reduced the work week of the individual trooper from approximately 50 hours to a 42 hour week.
2. Legislative action that increased the amount of vacation time authorized. Chart 3 indicates that almost half of the Highway Patrol receives four weeks vacation annually. This situation is a result of the extremely low employee attrition rate of approximately 2-3% which provides for retention of a large number of troopers with considerable longevity.

Chart 3
Iowa State Patrol Vacation Allotment



This chart illustrates one of the factors that have reduced available manpower within the Highway Patrol. As indicated, almost half of the Highway Patrol receives four weeks vacation annually. This situation is a result of the extremely low employee attrition rate of approximately 2-3% which provides for retention of a large proportion of troopers with considerable longevity.

Chart 4
Average Number of Road Troopers and Field
Sergeants on Duty on a Friday During 1973

<u>Location and Post</u>	<u>Day Shift</u>	<u>Night Shift</u>	<u>Midnight Shift</u>
Post 1 - Des Moines	8	10	3
Post 2 - Osceola	8	8	
Post 3 - Atlantic	7	7	2
Post 4 - Denison	7	7	
Post 5 - Cherokee	7	4	
Post 6 - Spencer	6	6	
Post 7 - Fort Dodge	5	4	
Post 8 - Mason City	5	7	
Post 9 - Cedar Falls	7	7	
Post 10 - Oelwein	4	8	
Post 11 - Cedar Rapids	9	10	2
Post 12 - Davenport	10	10	2
Post 13 - Mt. Pleasant	6	5	
Post 14 - Ottumwa	<u>5</u>	<u>5</u>	<u> </u>
Totals	94	98	9

This chart clearly illustrates the impact of the factors which have caused a decrease in the Patrol's net manpower available. As indicated in the chart, on an average Friday in 1973, of 332 officers and field sergeants assigned to road duty, only 201 were available to work due to vacations, days off, the shortened work week, sick leave, etc.

Chart 4 clearly illustrates the impact of the two factors which have caused a decrease in the Patrol's net manpower available. As indicated in the chart, on an average Friday in 1973, of 332 officers and field sergeants assigned to road duty, only 201 were available to work due to vacations, days off, the shortened work week, sick leave, etc.

As mentioned previously, personnel policy changes since 1968 resulted in a net loss of 100,000 manhours per year. Based on the average number of hours a man presently works per year, this reduction in the work week resulted in a loss of hours that would equal the work of 75 men. Theoretically, 69 of these men would be troopers and six would be in a supervisory position.

The Driver's License examining stations have previously been manned by personnel from the Highway Patrol. Civilians are gradually replacing the Highway Patrol in these positions, with total civilianization scheduled to be completed by July 1, 1975. These men will now be free to perform regular Highway Patrol functions. Thus, the result is a net gain of 40 men from the Patrol to be utilized in enforcement functions. These men--30 troopers and ten supervisory personnel--can be expected to work 52,680 hours per year. Even with the addition of these 40 men, the Highway Patrol still recognizes a net loss of 47,320 manhours annually.

Therefore, after July 1, 1975 the Highway Patrol will still need the services of 35 additional men in order to compensate for the effect of changes in personnel policy on available manpower. Of these 35 men, 33 should be troopers and two should be in a supervisory position. These additional 35 troopers would compensate for losses incurred through personnel policy changes since 1968. (See Appendix III for details of this computation.)

VARIABLE FACTORS THAT AFFECT THE LEVEL OF SERVICE PROVIDED BY THE HIGHWAY PATROL

The second stage of the computation process determines the additional men needed to perform the Patrol function effectively in view of their increasing workload. A road patrol formula has been devised which takes into account variable factors that affect the level of service demanded of the Highway Patrol. Several factors or variables affecting

the level of service required of the Iowa Highway Patrol were isolated and used to compute a manpower level quotient for each Post.

This formula was applied only to the troopers who actually perform the road patrol function. At the present time these men number 332.

The variables utilized listed in order of relative importance are:

1. Vehicle Miles Driven by Iowans.
2. Number of Miles of Iowa Road Requiring Iowa Highway Patrol coverage.
3. Workload.
4. County Sheriff Capability to Provide 24 Hour Patrol Service in Each County.
5. Population Age Factors.
6. Crime Rate.
7. Number of Registered Vehicles.
8. Population.

Most of the data compiled regarding each variable utilized was initially assembled at the county level and then consolidated to provide a manpower requirement for each Highway Patrol Post. An attempt to indicate manpower assignment or utilization procedures within each Post would be much beyond the scope of this study and is best left to those directly responsible for that particular function.

EXPLANATION OF VARIABLES

I. Vehicle Miles Driven by Iowans

The data utilized for this variable is the total vehicle miles driven by Iowans on interstate, primary, and secondary roads during 1972. The information utilized is exclusive of vehicle miles driven within incorporated areas as the Iowa Highway Patrol normally exercises its functions outside municipalities. Additional personnel requirements caused by special situations such as the interstate highway system, recreational areas, etc. are computed within this variable. It is felt this variable is the most important of those used in this study because it most directly relates to all of the major functions of the Patrol.

II. Number of Miles of Road Requiring Iowa Highway Patrol Coverage

One of the most important assets the Iowa Highway Patrol possesses is the capability to provide continuous patrol of Iowa highways regardless of county jurisdictional boundaries. It is well known that the modern criminal is becoming increasingly mobile thus reinforcing the need for a mobile police force free to operate without jurisdictional limitations within the state. The threat offered to criminal activity through discovery by a mobile patrol force is illustrated by the fact that nationally, during the period 1963-1972, 68% or 531 of the 786 police officers slain by felons were engaged in routine patrol duties. The number of miles of Iowa road requiring coverage by the Iowa Highway Patrol in order to carry out the important function of active road patrol directly bears on the capability to perform that function.

Ideally, every mile of Iowa road would be driven by a state or local patrol officer at least once during each 24 hour period. Development of this ideal situation would probably likely result in an unrealistic manpower requirement and is complicated by the necessity of programming patrol within a geographical area to focus on specific areas of importance, i.e. high traffic volume roads, high crime areas, etc.

III. Workload

The current workload in each Highway Patrol post was developed by assigning values relating to the time expended on various major types of activity involving direct contact with the public as opposed to routine patrolling. Activities such as issuance of summons, misdemeanor and felony arrests, and OMVUI arrests were considered in computing the workload variable.

IV. Capability of County Sheriff to Provide 24 Hour Patrol Coverage

The National Advisory Commission on Criminal Justice Standards and Goals states in the discussion of planning and organizing for providing adequate law enforcement services that:

"The first objective of every agency should be to

provide 24-hour police service. Agencies that cannot provide it should contract out for it. It is imperative that every citizen have continuous access to police service."

The National Advisory Commission Report on Criminal Justice Standards and Goals further states that:

"Studies show that five sworn police officers are required to provide one sworn police officer on a full-time, around-the-clock basis allowing for days off, vacation, sick time, and other variables."

Currently of the approximately 950 cities and towns in Iowa, only 8.4% (No. = 80) provide police services with five or more full time men. This means that only 8.4% of the cities and towns in Iowa possess the tax base or the willingness or both to provide 24 hour police patrol made theoretically possible through police agency staffing of five full-time officers. On the county level, 36.5% (N=36) of the sheriff's offices are staffed with five or more officers and theoretically can offer 24 hour patrol coverage to the entire county. It must be considered, however, that the county sheriffs in Iowa must provide civil support to the courts and this reduces manpower available to engage in active patrol. The Iowa Crime Commission has been concerned with increasing the capability of local law enforcement to provide this very basic element of adequate service, that is, 24 hour patrol coverage.

It is realized that the means of reaching the goal of adequate 24 hour law enforcement patrol coverage for all areas in Iowa is not solely vested in increasing personnel levels within the county sheriffs' departments. The concept of consolidated law enforcement as applied to Iowa offers several alternatives for attaining the goal of adequate 24 hour patrol coverage. Expanding county sheriffs' staff, city-city, and city-county contract agreements, formation of metropolitan and county or regional public safety commissions and cooperative agreements between local agencies and the Iowa Department of Public Safety are all reasonable alternatives for improving the level of police patrol coverage in Iowa. Any alternative can be selected and implemented to conform to the particular situation in any jurisdiction in Iowa.

The Iowa Highway Patrol currently shares responsibility with the county sheriffs for patrol of approximately 90,000 miles of rural secondary road. Considering that only 36% of Iowa counties receive 24 hour patrol coverage from their sheriffs', the importance of insuring that the Iowa Highway Patrol can adequately perform its share of the responsibility for rural secondary road patrol is obvious. There is a need for close cooperation between the Iowa Highway Patrol and the county sheriffs in order to expedite realization of the goal of 24 hour active patrol coverage in all jurisdictions in Iowa. Upgrading of both local and state police manpower levels will be necessary to accomplish the goal of 24 hour patrol coverage in Iowa.

This variable provides for additional troopers to compensate for those counties that cannot provide 24 hour active patrol service due to inadequate manpower. It is not proposed that the state trooper can replace the sheriffs' deputy in performing the numerous duties unique to county level law enforcement, but simply that the Iowa Highway Patrol be staffed in a manner that enables adequate performance of its shared responsibility of rural road patrol.

V. Age

According to FBI national statistics, the population age group of 15-24 years make up a disproportionate share of those arrested for serious index offenses.

A study conducted by the Iowa Department of Public Safety revealed that Iowa drivers under the age of 19 years make up a disproportionate share of those Iowans cited for traffic law violations and involvement in motor vehicle accidents.

In each age group cited for disproportionate involvement in criminal and traffic violations/accidents, the involvement of males outweighed female involvement by approximately four to one.

In this study, a value was assigned to the crime/traffic violation/accident prone age group with requisite weight given the male index.

VI. Crime Rate

The crime rate, of course, affects the level of police patrol service required in any jurisdiction. The crime rate utilized in this study is comprised of Part I offenses reported to the FBI as occurring outside the large and medium sized cities and towns in Iowa thus occurring in areas patrolled by the Highway Patrol. Normally, in a study of this type, a higher value would be assigned to crime rate. However, the FBI Uniform Crime Report for Iowa contains statistics of which 16% are estimates developed at the FBI to compensate for nonreporting Iowa agencies. The questionable nature of the crime rate figures available for use in this study (rural crime statistics) is increased by the fact that most nonreporting Iowa agencies are located in rural areas patrolled by the Highway Patrol. It is felt, however, that other variables utilized and related to the level of crime, i.e. age, workload, population will serve to partially compensate for any deficiency in the crime rate variable.

VII. Number of Vehicles Registered

This variable affects the level of service required of the Highway Patrol but was given a relatively low value as it is a less dynamic factor affecting demand for service than for instance the variable "Vehicle Miles Driven by Iowans".

VIII. Population

The population level affects police service requirements as it presents a level of potential demand for service. In studies of police manpower requirements in urban areas, a variable regarding "population density" is often used as this factor affects the level of crime. Population density was not deemed appropriate in this study as the Highway Patrol functions largely in the rural areas of Iowa. It was not felt that the population density of rural Iowa has reached the level that triggers the factors that correlate population density to the level of crime experienced in urban areas.

ASSIGNED VALUES

Each of the eight variables were assigned a point range, the size of which was based on the importance of that particular variable to the highway patrol function. When totaled these values formed an index number consisting of 110 possible points per county in the state. Each of the 14 highway patrol districts consists of several counties. Thus, the county points were added together to form 14 overall district numbers for each variable.

Variable	Value
Vehicle Miles	1-25
Road Miles	1-25
Workload	1-15
Ability for 24-Hour Coverage	0-15
Number of Persons 15-24 Years of Age	1-10
Crime Rate	1-10
Vehicle Registration	1-5
Population	1-5

The ratio of 5:10: 15:25 reflects the importance of each variable to the patrol function.

# Miles	<u>Vehicle Miles</u>	Value
Under 50,000		1
50,001 - 60,000		2
60,001 - 70,000		3
70,001 - 80,000		4
80,001 - 90,000		5
90,001 - 100,000		6
100,001 - 110,000		7
110,001 - 120,000		8
120,001 - 130,000		9
130,001 - 140,000		10
140,001 - 150,000		11
150,001 - 160,000		12
160,001 - 170,000		13
170,001 - 180,000		14
180,001 - 190,000		15
190,001 - 200,000		16
200,001 - 210,000		17
210,001 - 220,000		18
220,001 - 230,000		19
230,001 - 240,000		20
240,001 - 250,000		21
250,001 - 260,000		22
260,001 - 270,000		23
270,001 - 280,000		24
Over 280,000		25

Road Miles

<u># Miles</u>	<u>Value</u>
600 - 650	1
651 - 700	2
701 - 750	3
751 - 800	4
801 - 850	5
851 - 900	6
901 - 950	7
950 - 1000	8
1001 - 1050	9
1051 - 1100	10
1101 - 1150	11
1151 - 1200	12
1201 - 1250	13
1251 - 1300	14
1301 - 1350	15
1351 - 1400	16
1401 - 1450	17
1451 - 1500	18
1501 - 1550	19
1551 - 1600	20
1601 - 1650	21
1651 - 1700	22
1701 - 1750	23
1751 - 1800	24
Over 1800	25

Ability for 24-Hour Coverage

<u># Men Needed for Coverage</u>	<u>Value</u>
0	0
1	5
2	10
3 or More	15

Persons 15-24 Years of Age

<u># Persons</u>	<u>Value</u>
Below 1,000	1
1,001-3,000	2
3,001-5,000	3
5,001-7,000	4
7,001-10,000	5
10,000-13,000	6
13,001-16,000	7
16,001-19,000	8
19,001-22,000	9
Over 22,000	10

Females x 1
Males x 4.25

Workload

<u># Contacts</u>	<u>Value</u>
15,000 - 20,000	1
21,000 - 25,000	3
26,000 - 30,000	5
31,000 - 35,000	7
36,000 - 40,000	9
41,000 - 45,000	11
46,000 - 50,000	13
Over 50,000	15

Traffic Related offenses x 1
Felony, OMVUI, other Misdemeanors x 6

<u>Crime Rate Per 100,000</u>	
<u>Rate</u>	<u>Value</u>
Under 200	1
201-300	2
301-400	3
401-500	4
501-600	5
601-700	6
701-800	7
801-900	8
901-1,000	9
Over 1,000	10

<u>Vehicle Registration</u>	
<u># Registrations</u>	<u>Value</u>
Under 10,000	1
10,001-20,000	2
20,001-30,000	3
30,001-40,000	4
Over 40,000	5

<u>Population</u>	
<u># Persons</u>	<u>Value</u>
Under 10,000	1
10,000-20,000	2
20,001-30,000	3
30,001-40,000	4
Over 40,000	5

Data is available which allows a comparison of four different variables which have a direct impact on the average Highway Patrol trooper's duties. These variables are vehicle miles driven, vehicles registered in Iowa, population, and crime rate. Percentage increases in each variable were obtained by comparing the figures of 1968 to those of 1973.

These percentage increases were then applied to the number of men currently available for road patrol duty. The results were then weighed according to the importance of each to the patrol function, as indicated in the list of variable factors affecting demand for service. (See Appendix IV for details of this computation.)

The results of this formula indicate the number of additional men needed to perform the duties required of them in the face of an increasing workload. According to the formula, an additional 91 road patrol troopers are necessary. Based on the existing ratio of troopers and supervisory personnel, seven additional men will be needed in supervisory positions.

CONCLUSIONS

1. In conclusion, 35 men are needed to bring the Highway Patrol up to the level of performance available before the personnel policy changes which reduced the work week to 42 hours. An additional 91 road patrol troopers are needed in order to perform this function effectively in view of the increases in the variables which affect the performance of their duties. Seven men will be needed in supervisory positions if these troopers are added. Thus, this formula suggests a total of 133 men be added to the Highway Patrol.
2. The Highway Patrol may want to consider utilizing several of the recommended additional positions to provide sufficient field sergeants to man each post headquarters around the clock as required by the Code of Iowa. Currently, only three post headquarters are manned by any supervisory personnel on a 24 hour basis.
3. The estimated cost of a new trooper for his first year of employment is \$18,507.97. The second year cost is \$13,087.88 with a total biennial cost of \$31,595.85 per man.

The approximate cost of adding the 133 additional troopers recommended in this study would be \$4.2 million per biennium.

APPENDIX

	<u>PAGE</u>
I. CHART - FACTORS AFFECTING THE LEVEL OF HIGHWAY PATROL SERVICE	A-1
II. GRAPH - PERCENTAGE CHANGE IN FACTORS AFFECTING MANPOWER NEEDS OF THE IOWA HIGHWAY PATROL (1968-1973)	A-2
III. PERSONNEL POLICY CHANGE FORMULA DETAIL	A-3
IV. ROAD PATROL FORMULA DETAIL	A-4
V. COMPUTED ROAD PATROL DATA BY POST	A-5 TO A-10
VI. RECOMMENDED MANPOWER INCREASE BY POST	A-11
VII. COMPUTED ROAD PATROL FORMULA DATA BY COUNTY	A-12 TO A-26

APPENDIX I

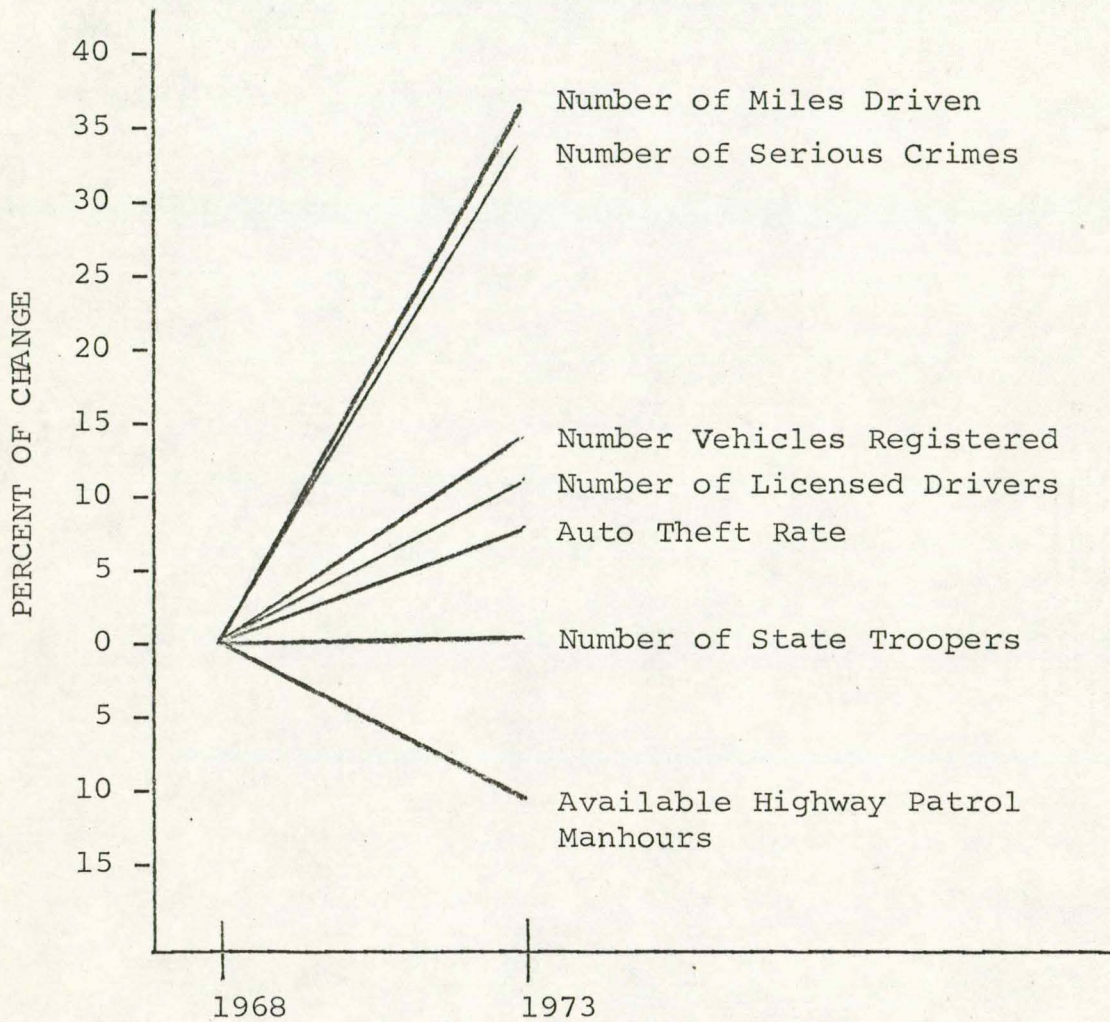
Some Factors Affecting the Level of Highway Patrol Service

	<u>1968</u>	<u>1973</u>	<u>Difference</u>	<u>% Change</u>
Vehicle Miles Driven in Iowa (In Billions)	14,915	20,732	+5,817	+28.1%
Vehicle Registration	1,727,125	2,039,942	+912,817	+15.3%
Licensed Drivers	1,518,300	1,787,169	+268,869	+15.0%
Accidents	78,531	96,620	+18,089	+19.0%
Miles of Inter-state	516	670	+154	+23.0%
Serious Crimes	31,282	42,130	+10,848	+34.7%
Auto Theft	4,523	4,874	+351	+7.8%
Man-hours Available	880,000	780,000	-100,000	-11.0%
Patrol Complement	410	410	-	-

This chart depicts the changes in factors affecting the demand for Iowa Highway Patrol Service. While factors affecting the level of service have all increased, the net manpower available to the patrol has decreased due to factors previously discussed.

APPENDIX II

Percentage of Change in Factors Affecting Manpower
Needs of the Iowa Highway Patrol 1968-1973



This chart depicts the changes in factors affecting the demand for Iowa Highway Patrol Service. While factors affecting the level of service have all increased, the net manpower available to the patrol has decreased due to factors previously discussed.

APPENDIX III

Personnel Policy Change - Formula Detail

100,000 man-hours lost annually between 1968 and 1973 = 75
man years lost per annum

410 - 75 = 335 man years available in 1973

309 sergeants, special assignment troopers,
and 26 supervisory personnel

By July 1, 1975 Drivers License Division Disbanded

30 Troopers freed for road patrol duties

10 Supervisory Personnel freed for other assignments

40 total men freed from Drivers License Division

100,000 man-hours lost annually between 1968-1973 - 52,680
man-hours gained by disbanding Drivers License Division =
47,320 net man-hours to be lost annually as of July 1, 1975

35 men will still be needed after July 1, 1975

33 sergeants and troopers

2 supervisory personnel

APPENDIX IV

Road Patrol Formula Detail

Percentage Change Between 1968 and 1973

Miles Driven - +28.1%
Vehicles Registered - +15.3%
Population - +1.2%
Crime Rate - +21.2%
 (Serious Crime - +34.6%)
 (Auto Theft - +7.8%)

Increase in Troopers Multiplied by Weighted Factor

Miles Driven - $93 \times 2.5 = 232$
Vehicles Registered - $51 \times 0.5 = 25$
Population - $4 \times 0.5 = 2$
Crime Rate - $70 \times 1.5 = 105$
 (Serious Crime - $115 \times 1.5 = 172$)
 (Auto Theft - $26 \times 1.5 = 39$)

$= 364 \div 4$

= 91 troopers and sergeants needed

(without using crime rate variable, the total would be 77 troopers and sergeants needed)

These men will need seven supervisors. This fact was computed on the basis of the current supervisor to trooper ratio.

$\sum \frac{(\% \text{ increase} \times 332) \times \text{weighted factor}}{N}$

Total men needed by July 1, 1975

 91
+ 35
 126
+ 7 supervisory personnel
 133 total men needed on Iowa Highway
 Patrol

APPENDIX V

Computed Data by Patrol Post

Total Computed Data by Patrol Post

<u>Post</u>	<u>Vehicle Miles</u>	<u>Road Miles</u>	<u>Work Load</u>	<u>24-Hour Coverage</u>	<u># Persons 15-24 Yrs. of age</u>	<u>Crime Rate</u>	<u>Vehicle Registration</u>	<u>Population</u>	<u>Total</u>
1 <u>Des Moines</u>	105	63	26	0	44	39	24	25	326
2 <u>Osceola</u>	28	47	4	85	25	49	12	13	263
3 <u>Atlantic</u>	66	78	16	70	36	59	17	17	359
4 <u>Denison</u>	35	82	6	65	31	53	15	16	303
5 <u>Cherokee</u>	39	73	8	35	32	33	14	16	250
6 <u>Spencer</u>	33	64	6	35	35	33	16	16	238
7 <u>Fort Dodge</u>	49	80	2	40	33	47	17	18	286
8 <u>Mason City</u>	37	50	6	70	31	44	18	18	274
9 <u>Cedar Falls</u>	37	44	8	45	34	33	15	17	233
10 <u>Oelwein</u>	42	69	8	40	38	32	18	21	268
11 <u>Cedar Rapids</u>	97	74	16	25	39	41	18	20	330
12 <u>Davenport</u>	61	38	20	10	41	36	20	21	247
13 <u>Mt. Pleasant</u>	39	42	2	35	42	67	19	21	267
14 <u>Ottumwa</u>	23	34	4	35	28	44	13	15	196
Total	691	838	132	590	489	610	236	254	3840

Post 1 - Des Moines

Counties: Boone, Dallas, Jasper, Marshall, Polk, Story.

Vehicle Miles: 105
Road Miles: 63
Workload: 26
24 Hour Coverage: 0
Persons 15-24: 44
Crime Rate: 39
Vehicle Registration: 24
Population: 25

Post 2 - Osceola

Counties: Clarke, Decatur, Lucas, Madison, Ringgold, Union,
Warren, Wayne.

Vehicle Miles: 28
Road Miles: 27
Workload: 4
24 Hour Coverage: 85
Persons 15-24: 25
Crime Rate: 49
Vehicle Registration: 12
Population: 13

Post 3 - Atlantic

Counties: Adair, Adams, Cass, Fremont, Mills, Montgomery,
Page, Pottawattamie, Taylor.

Vehicle Miles: 66
Road Miles: 78
Workload: 16
24 Hour Coverage: 70
Persons 15-24: 36
Crime Rate: 59
Vehicle Registration: 17
Population: 17

Post 4 - Denison

Counties: Audubon, Carroll, Crawford, Greene, Guthrie,
Harrison, Monona, Shelby.

Vehicle Miles: 35
Road Miles: 82
Workload: 6
24 Hour Coverage: 65
Persons 15-24: 31
Crime Rate: 53
Vehicle Registration: 15
Population: 16

Post 5 - Cherokee

Counties: Buena Vista, Cherokee, Ida, Plymouth, Sac,
Woodbury.

Vehicle Miles: 39
Road Miles: 73
Workload: 8
24 Hour Coverage: 35
Persons 15-24: 32
Crime Rate: 33
Vehicle Registration: 14
Population: 16

Post 6 - Spencer

Counties: Clay, Dickinson, Emmet, Lyon, O'Brien, Osceola,
Palo Alto, Sioux.

Vehicle Miles: 33
Road Miles: 64
Workload: 6
24 Hour Coverage: 35
Persons 15-24: 35
Crime Rate: 33
Vehicle Registration: 16
Population: 16

Post 7 - Fort Dodge

Counties: Calhoun, Hamilton, Humboldt, Kossuth, Pocahontas,
Webster, Wright.

Vehicle Miles: 49
Road Miles: 80
Workload: 2
24 Hour Coverage: 40
Persons 15-24: 33
Crime Rate: 47
Vehicle Registration: 17
Population: 18

Post 8 - Mason City

Counties: Cerro Gordo, Chickasaw, Hancock, Howard, Floyd,
Mitchell, Winnebago, Worth.

Vehicle Miles: 37
Road Miles: 51
Workload: 6
24 Hour Coverage: 70
Persons 15-24: 31
Crime Rate: 44
Vehicle Registration: 18
Population: 18

Post 9 - Cedar Falls

Counties: Black Hawk, Bremer, Butler, Franklin, Grundy,
Hardin.

Vehicle Miles: 37
Road Miles: 44
Workload: 8
24 Hour Coverage: 45
Persons 15-24: 34
Crime Rate: 33
Vehicle Registration: 15
Population: 17

Post 10 - Oelwein

Counties: Allamakee, Buchanan, Clayton, Delaware, Dubuque,
Fayette, Winneshiek.

Vehicle Miles: 42
Road Miles: 69
Workload: 8
24 Hour Coverage: 40
Persons 15-24: 38
Crime Rate: 32
Vehicle Registration: 18
Population: 21

Post 11 - Cedar Rapids

Counties: Benton, Iowa, Johnson, Linn, Poweshiek, Tama.

Vehicle Miles: 98
Road Miles: 74
Workload: 16
24 Hour Coverage: 25
Persons 15-24: 39
Crime Rate: 41
Vehicle Registration: 18
Population: 20

Post 12 - Davenport

Counties: Cedar, Clinton, Jackson, Jones, Muscatine, Scott.

Vehicle Miles: 61
Road Miles: 38
Workload: 20
24 Hour Coverage: 10
Persons 15-24: 41
Crime Rate: 36
Vehicle Registration: 20
Population: 21

Post 13 - Mt. Pleasant

Counties: Des Moines, Henry, Jefferson, Keokuk, Lee, Louisa,
Van Buren, Washington.

Vehicle Miles: 37
Road Miles: 42
Workload: 2
24 Hour Coverage: 35
Persons 15-24: 42
Crime Rate: 67
Vehicle Registration: 19
Population: 21

Post 14 - Ottumwa

Counties: Appanoose, Davis, Mahaska, Marion, Monroe, Wapello.

Vehicle Miles: 23
Road Miles: 34
Workload: 4
24 Hour Coverage: 35
Persons 15-24: 28
Crime Rate: 44
Vehicle Registration: 13
Population: 15

APPENDIX VI

Recommend Manpower Increases by Post

<u>Post</u>	<u>Points</u>	<u>Manpower</u>	<u>Additional Men Needed</u>
#1 Des Moines	326	53	None
#2 Osceola	263	26	9
#3 Atlantic	359	34	13
#4 Denison	303	24	14
#5 Cherokee	250	28	6
#6 Spencer	238	18	14
#7 Fort Dodge	286	21	17
#8 Mason City	274	21	16
#9 Cedar Falls	233	26	6
#10 Oelwein	268	25	11
#11 Cedar Rapids	330	41	3
#12 Davenport	247	40	None
#13 Mt. Pleasant	267	21	15
#14 Ottumwa	<u>196</u>	<u>18</u>	<u>9</u>
Headquarters	-	14	-
Total	3840	410	133

APPENDIX VII

Computed Data by County

CHECKING SHEET

SUBJECT
Computed Co.
Vehicle Miles

COUNTY		COUNTY		COUNTY		COUNTY	
Adair 1	11	Davis 26	2	Jefferson 51	3	Pocahontas 76	4
Adams 2	1	Decatur 27	3	Johnson 52	22	Polk 77	25
Allamakee 3	2	Delaware 28	6	Jones 53	6	Pottawatt. 78	25
Appanoose 4	2	Des Moines 29	6	Keokuk 54	4	Poweshiek 79	16
Audubon 5	1	Dickinson 30	5	Kossuth 55	9	Ringgold 80	1
Benton 6	11	Dubuque 31	12	Lee 56	9	Sac 81	5
Black Hawk 7	10	Emmet 32	2	Linn 57	22	Scott 82	15
Boone 8	8	Fayette 33	8	Louisa 58	2	Shelby 83	2
Bremer 9	7	Floyd 34	5	Lucas 59	2	Sioux 84	9
Buchanan 10	6	Franklin 35	4	Lyon 60	2	Story 85	18
Buena Vista 11	6	Fremont 36	4	Madison 61	2	Tama 86	7
Butler 12	5	Greene 37	3	Mahaska 62	6	Taylor 87	1
Calhoun 13	4	Grundy 38	5	Marion 63	6	Union 88	2
Carroll 14	5	Guthrie 39	1	Marshall 64	10	Van Buren 89	1
Cass 15	13	Hamilton 40	11	Mills 65	6	Wapello 90	6
Cedar 16	18	Hancock 41	7	Mitchell 66	2	Warren 91	13
Cerro Gordo 17	11	Hardin 42	6	Monona 67	7	Washington 92	7
Cherokee 18	4	Harrison 43	10	Monroe 68	1	Wayne 93	1
Chickasaw 19	4	Henry 44	5	Montgom'ry 69	2	Webster 94	11
Clarke 20	4	Howard 45	1	Muscatine 70	8	Winnebago 95	2
Clay 21	6	Humboldt 46	3	O'Brien 71	4	Winneshiek 96	4
Clayton 22	6	Ida 47	2	Osceola 72	2	Woodbury 97	12
Clinton 23	9	Iowa 48	18	Page 73	3	Worth 98	4
Crawford 24	5	Jackson 49	5	Palo Alto 74	3	Wright 99	7
Dallas 25	20	Jasper 50	24	Plymouth 75	9	Total	

CHECKING SHEET

 SUBJECT
 Computed Road Miles
 Primary &
 Secondary

COUNTY		COUNTY		COUNTY		COUNTY	
Adair 1	11	Davis 26	5	Jefferson 51	5	Pocahontas 76	10
Adams 2	4	Decatur 27	6	Johnson 52	10	Polk 77	9
Allamakee 3	8	Delaware 28	8	Jones 53	7	Pottawatt. 78	22
Appanoose 4	5	Des Moines 29	2	Keokuk 54	10	Poweshiek 79	11
Audubon 5	5	Dickinson 30	3	Kossuth 55	24	Ringgold 80	8
Benton 6	15	Dubuque 31	7	Lee 56	5	Sac 81	11
Black Hawk 7	5	Emmet 32	2	Linn 57	14	Scott 82	1
Boone 8	10	Fayette 33	14	Louisa 58	1	Shelby 83	9
Bremer 9	4	Floyd 34	8	Lucas 59	3	Sioux 84	18
Buchanan 10	9	Franklin 35	10	Lyon 60	10	Story 85	10
Buena Vista 11	11	Fremont 36	6	Madison 61	8	Tama 86	14
Butler 12	9	Greene 37	9	Mahaska 62	10	Taylor 87	8
Calhoun 13	10	Grundy 38	6	Marion 63	7	Union 88	4
Carroll 14	10	Guthrie 39	9	Marshall 64	9	Van Buren 89	5
Cass 15	10	Hamilton 40	10	Mills 65	4	Wapello 90	4
Cedar 16	10	Hancock 41	10	Mitchell 66	6	Warren 91	9
Cerro Gordo 17	9	Hardin 42	10	Monona 67	12	Washington 92	9
Cherokee 18	10	Harrison 43	13	Monroe 68	2	Wayne 93	6
Chickasaw 19	7	Henry 44	5	Montgom'ry 69	4	Webster 94	13
Clarke 20	3	Howard 45	4	Muscatine 70	3	Winnebago 95	4
Clay 21	9	Humboldt 46	4	O'Brien 71	10	Winneshick 96	11
Clayton 22	12	Ida 47	4	Osceola 72	4	Woodbury 97	18
Clinton 23	12	Iowa 48	10	Page 73	9	Worth 98	3
Crawford 24	15	Jackson 49	7	Palo Alto 74	8	Wright 99	9
Dallas 25	9	Jasper 50	16	Plymouth 75	19	Total	

CHECKING SHEET

SUBJECT
Computed 24 Hr.
Coverage

COUNTY		COUNTY		COUNTY		COUNTY	
Adair 1	15	Davis 26	15	Jefferson 51	10	Pocahontas 76	10
Adams 2	10	Decatur 27	0	Johnson 52	0	Polk 77	0
Allamakee 3	5	Delaware 28	15	Jones 53	0	Pottawatt. 78	0
Appanoose 4	10	Des Moines 29	0	Keokuk 54	5	Poweshlek 79	10
Audubon 5	10	Dickinson 30	0	Kossuth 55	10	Ringgold 80	15
Benton 6	5	Dubuque 31	0	Lee 56	0	Sac 81	5
Black Hawk 7	0	Emmet 32	5	Linn 57	0	Scott 82	0
Boone 8	0	Fayette 33	5	Louisa 58	0	Shelby 83	15
Bremer 9	5	Floyd 34	10	Lucas 59	15	Sioux 84	10
Buchanan 10	10	Franklin 35	5	Lyon 60	0	Story 85	0
Buena Vista 11	5	Fremont 36	5	Madison 61	10	Tama 86	0
Butler 12	15	Greene 37	10	Mahaska 62	0	Taylor 87	15
Calhoun 13	10	Grundy 38	15	Marion 63	5	Union 88	15
Carroll 14	0	Guthrie 39	5	Marshall 64	0	Van Buren 89	10
Cass 15	10	Hamilton 40	0	Mills 65	5	Wapello 90	0
Cedar 16	10	Hancock 41	10	Mitchell 66	10	Warren 91	0
Cerro Gordo 17	0	Hardin 42	5	Monona 67	10	Washington 92	0
Cherokee 18	10	Harrison 43	10	Monroe 68	5	Wayne 93	15
Chickasaw 19	10	Henry 44	10	Montgom'ry 69	10	Webster 94	0
Clarke 20	15	Howard 45	10	Muscatine 70	0	Winnebago 95	10
Clay 21	5	Humboldt 46	0	O'Brien 71	10	Winneshick 96	0
Clayton 22	5	Ida 47	10	Osceola 72	5	Woodbury 97	0
Clinton 23	0	Iowa 48	10	Page 73	0	Worth 98	10
Crawford 24	5	Jackson 49	0	Palo Alto 74	0	Wright 99	10
Dallas 25	0	Jasper 50	0	Plymouth 75	5	Total	

CHECKING SHEET

SUBJECT
Computed # Person
15-24 Years of
Age

COUNTY		COUNTY		COUNTY		COUNTY	
Adair 1	3	Davis 26	2	Jefferson 51	5	Pocahontas 76	3
Adams 2	2	Decatur 27	4	Johnson 52	10	Polk 77	10
Allamakee 3	4	Delaware 28	5	Jones 53	5	Pottawatt. 78	10
Appanoose 4	4	Des Moines 29	8	Keokuk 54	3	Poweshiek 79	5
Audubon 5	3	Dickinson 30	3	Kossuth 55	5	Ringgold 80	2
Benton 6	5	Dubuque 31	10	Lee 56	10	Sac 81	4
Black Hawk 7	10	Emmet 32	4	Linn 57	10	Scott 82	10
Boone 8	6	Fayette 33	6	Louisa 58	3	Shelby 83	4
Bremer 9	6	Floyd 34	4	Lucas 59	3	Sioux 84	7
Buchanan 10	5	Franklin 35	4	Lyon 60	4	Story 85	10
Buena Vista 11	5	Fremont 36	3	Madison 61	3	Tama 86	5
Butler 12	4	Greene 37	3	Mahaska 62	5	Taylor 87	2
Calhoun 13	4	Grundy 38	4	Marion 63	6	Union 88	3
Carroll 14	5	Guthrie 39	3	Marshall 64	6	Van Buren 89	3
Cass 15	4	Hamilton 40	5	Mills 65	4	Wapello 90	8
Cedar 16	4	Hancock 41	3	Mitchell 66	3	Warren 91	6
Cerro Gordo 17	9	Hardin 42	6	Monona 67	3	Washington 92	5
Cherokee 18	4	Harrison 43	5	Monroe 68	3	Wayne 93	2
Chickasaw 19	4	Henry 44	5	Montgom'ry 69	3	Webster 94	9
Clarke 20	2	Howard 45	3	Muscatine 70	7	Winnebago 95	2
Clay 21	5	Humboldt 46	3	O'Brien 71	4	Winneshiek 96	6
Clayton 22	5	Ida 47	3	Osceola 72	4	Woodbury 97	10
Clinton 23	10	Iowa 48	4	Page 73	5	Worth 98	3
Crawford 24	5	Jackson 49	5	Palo Alto 74	4	Wright 99	4
Dallas 25	5	Jasper 50	7	Plymouth 75	6	Total	

CHECKING SHEET

SUBJECT
Computed Crime
Rate

COUNTY		COUNTY		COUNTY		COUNTY	
Adair	1	Davis	26	Jefferson	51	Pocahontas	76
Adams	2	Decatur	27	Johnson	52	Polk	77
Allamakee	3	Delaware	28	Jones	53	Pottawatt.	78
Appanoose	4	Des Moines	29	Keokuk	54	Poweshiek	79
Audubon	5	Dickinson	30	Kossuth	55	Ringgold	80
Benton	6	Dubuque	31	Lee	56	Sac	81
Black Hawk	7	Emmet	32	Linn	57	Scott	82
Boone	8	Fayette	33	Louisa	58	Shelby	83
Bremer	9	Floyd	34	Lucas	59	Sioux	84
Buchanan	10	Franklin	35	Lyon	60	Story	85
Buena Vista	11	Fremont	36	Madison	61	Tama	86
Butler	12	Greene	37	Mahaska	62	Taylor	87
Calhoun	13	Grundy	38	Marion	63	Union	88
Carroll	14	Guthrie	39	Marshall	64	Van Buren	89
Cass	15	Hamilton	40	Mills	65	Wapello	90
Cedar	16	Hancock	41	Mitchell	66	Warren	91
Cerro Gordo	17	Hardin	42	Monona	67	Washington	92
Cherokee	18	Harrison	43	Monroe	68	Wayne	93
Chickasaw	19	Henry	44	Montgom'ry	69	Webster	94
Clarke	20	Howard	45	Muscatine	70	Winnebago	95
Clay	21	Humboldt	46	O'Brien	71	Winneshiek	96
Clayton	22	Ida	47	Osceola	72	Woodbury	97
Clinton	23	Iowa	48	Page	73	Worth	98
Crawford	24	Jackson	49	Palo Alto	74	Wright	99
Dallas	25	Jasper	50	Plymouth	75	Total	

CHECKING SHEET

Computed #
Vehicle
Registrations

COUNTY		COUNTY		COUNTY		COUNTY	
Adair 1	1	Davis 26	1	Jefferson 51	2	Pocahontas 76	2
Adams 2	1	Decatur 27	1	Johnson 52	5	Polk 77	5
Allamakee 3	2	Delaware 28	2	Jones 53	2	Pottawatt. 78	5
Appanoose 4	2	Des Moines 29	4	Keokuk 54	2	Poweshiek 79	2
Audubon 5	1	Dickinson 30	2	Kossuth 55	3	Ringgold 80	1
Benton 6	2	Dubuque 31	5	Lee 56	4	Sac 81	2
Black Hawk 7	5	Emmet 32	2	Linn 57	5	Scott 82	5
Boone 8	3	Fayette 33	3	Louisa 58	2	Shelby 83	2
Bremer 9	2	Floyd 34	2	Lucas 59	1	Sioux 84	3
Buchanan 10	2	Franklin 35	2	Lyon 60	2	Story 85	5
Buena Vista 11	2	Fremont 36	1	Madison 61	2	Tama 86	2
Butler 12	2	Greene 37	2	Mahaska 62	2	Taylor 87	1
Calhoun 13	2	Grundy 38	2	Marion 63	3	Union 88	2
Carroll 14	2	Guthrie 39	2	Marshall 64	4	Van Duren 89	1
Cass 15	2	Hamilton 40	2	Mills 65	2	Wapello 90	4
Cedar 16	2	Hancock 41	2	Mitchell 66	2	Warren 91	3
Cerro Gordo 17	5	Hardin 42	2	Monona 67	2	Washington 92	2
Cherokee 18	2	Harrison 43	2	Monroe 68	1	Wayne 93	1
Chickasaw 19	2	Henry 44	2	Montgom'ry 69	2	Webster 94	4
Clarke 20	1	Howard 45	1	Muscatine 70	4	Winnebago 95	2
Clay 21	2	Humboldt 46	2	O'Brien 71	2	Winneshiek 96	2
Clayton 22	2	Ida 47	1	Osceola 72	1	Woodbury 97	5
Clinton 23	5	Iowa 48	2	Page 73	2	Worth 98	1
Crawford 24	2	Jackson 49	2	Palo Alto 74	2	Wright 99	2
Dallas 25	3	Jasper 50	4	Plymouth 75	2	Total	

CHECKING SHEET

SUBJECT
Computed
Population

COUNTY		COUNTY		COUNTY		COUNTY	
Adair	1	Davis	26	Jefferson	51	Pocahontas	76
Adams	2	Decatur	27	Johnson	52	Polk	77
Allamakee	3	Delaware	28	Jones	53	Pottawatt.	78
Appanoose	4	Des Moines	29	Keokuk	54	Poweshlek	79
Audubon	5	Dickinson	30	Kossuth	55	Ringgold	80
Benton	6	Dubuque	31	Lee	56	Sac	81
Black Hawk	7	Emmet	32	Linn	57	Scott	82
Boone	8	Fayette	33	Louisa	58	Shelby	83
Bremer	9	Floyd	34	Lucas	59	Sioux	84
Duchanan	10	Franklin	35	Lyon	60	Story	85
Buena Vista	11	Fremont	36	Madison	61	Tama	86
Butler	12	Greene	37	Mahaska	62	Taylor	87
Calhoun	13	Grundy	38	Marion	63	Union	88
Carroll	14	Guthrie	39	Marshall	64	Van Duren	89
Cass	15	Hamilton	40	Mills	65	Wapello	90
Cedar	16	Hancock	41	Mitchell	66	Warren	91
Cerro Gordo	17	Hardin	42	Monona	67	Washington	92
Cherokee	18	Harrison	43	Monroe	68	Wayne	93
Chickasaw	19	Henry	44	Montgom'ry	69	Webster	94
Clarke	20	Howard	45	Muscatine	70	Winnebago	95
Clay	21	Humboldt	46	O'Brien	71	Winneshick	96
Clayton	22	Ida	47	Oscola	72	Woodbury	97
Clinton	23	Iowa	48	Page	73	Worth	98
Crawford	24	Jackson	49	Palo Alto	74	Wright	99
Dallas	25	Jasper	50	Plymouth	75	Total	

RAW DATA

BY COUNTY

CHECKING SHEET

Co. Vehicle Miles
for 1972 Rural Pri-
mary -secondary &

COUNTY		COUNTY		COUNTY		Interstate COUNTY					
Adair	1	141,653,580	Davis	26	56,243,215	Jefferson	61	61,228,750	Pocahontas	76	76,543,000
Adams	2	37,496,815	Decatur	27	67,694,725	Johnson	62	260,325,300	Polk	77	483,230,400
Allamakee	3	57,526,920	Delaware	28	93,915,960	Jones	63	93,465,185	Pottawatt.	78	345,462,600
Appanoose	4	51,185,775	Des Moines	29	96,601,130	Keokuk	64	80,022,235	Poweshiek	79	199,195,800
Audubon	5	39,350,285	Dickinson	30	81,090,955	Kossuth	65	129,455,280	Ringgold	80	41,306,300
Benton	6	149,800,745	Dubuque	31	158,496,505	Lee	66	129,329,355	Sac	81	88,223,700
Black Hawk	7	133,137,765	Emmet	32	54,633,200	Linn	67	253,414,755	Scott	82	189,589,000
Boone	8	113,706,260	Fayette	33	114,074,180	Louisa	68	60,743,665	Shelby	83	57,045,100
Bremer	9	102,662,455	Floyd	34	83,676,250	Lucas	69	51,407,330	Sloux	84	125,589,500
Duchanan	10	96,138,810	Franklin	35	77,825,665	Lyon	70	59,692,465	Story	85	219,157,300
Buena Vista	11	96,202,320	Fremont	36	79,934,635	Madison	71	57,969,300	Tama	86	102,837,600
Butler	12	85,176,400	Greene	37	64,772,535	Mahaska	72	96,809,680	Taylor	87	38,188,400
Calhoun	13	75,933,140	Grundy	38	88,657,405	Marion	73	95,302,960	Union	88	51,160,700
Carroll	14	88,696,095	Guthrie	39	57,081,985	Marshall	74	131,378,100	Van Buren	89	40,283,200
Cass	15	165,261,415	Hamilton	40	141,659,055	Mills	75	91,329,570	Wapello	90	92,733,300
Cedar	16	216,771,675	Hancock	41	101,911,285	Mitchell	76	60,360,415	Warren	91	163,290,700
Cerro Gordo	17	146,313,535	Hardin	42	95,287,265	Monona	77	105,906,940	Washington	92	103,256,600
Cherokee	18	70,981,090	Harrison	43	133,170,250	Monroe	78	47,194,500	Wayne	93	47,268,900
Chickasaw	19	74,259,980	Henry	44	81,513,260	Montgom'ry	79	51,442,005	Webster	94	148,184,500
Clarke	20	70,232,570	Howard	45	48,012,100	Muscatine	80	114,047,170	Winnebago	95	51,117,800
Clay	21	91,292,340	Humboldt	46	69,436,505	O'Brien	81	77,289,845	Winneshick	96	80,762,000
Clayton	22	96,535,930	Ida	47	50,552,865	Osceola	82	53,636,020	Woodbury	97	156,898,100
Clinton	23	121,640,630	Iowa	48	215,845,305	Page	83	66,303,345	Worth	98	77,311,700
Crawford	24	84,685,110	Jackson	49	81,374,925	Palo Alto	84	65,570,425	Wright	99	106,096,700
Dallas	25	232,682,025	Jasper	50	274,902,670	Plymouth	85	130,446,620	Total		

10,616,481,375

CHECKING SHEET

SUBJECT
Number of rural
primary & secondary
road miles as of

Includes Interstate Road

COUNTY		COUNTY		COUNTY		COUNTY	COUNTY				
Adair	1	1107.65	Davis	26	857.99	Jefferson	51	803.78	Pocahontas	76	1099.64
Adams	2	773.71	Decatur	27	865.28	Johnson	52	1055.48	Polk	77	1011.31
Allamakee	3	979.05	Delaware	28	993.56	Jones	53	949.72	Pottawatt.	78	1696.90
Appanoose	4	804.23	Des Moines	29	678.35	Keokuk	54	1058.33	Poweshlek	79	1106.84
Audubon	5	811.52	Dickinson	30	713.68	Kossuth	55	1784.33	Ringgold	80	956.34
Benton	6	1338.74	Dubuque	31	902.72	Lee	56	823.79	Sac	81	1109.56
Black Hawk	7	836.66	Emmet	32	699.55	Linn	57	1279.25	Scott	82	635.13
Boone	8	1069.06	Fayette	33	1269.18	Louisa	58	639.01	Shelby	83	1049.80
Bremer	9	799.70	Floyd	34	933.58	Lucas	59	718.74	Sioux	84	1477.08
Buchanan	10	1010.13	Franklin	35	1054.56	Lyon	60	1085.09	Story	85	1073.72
Buena Vista	11	1112.73	Fremont	36	884.62	Madison	61	958.02	Tama	86	1265.08
Butler	12	1036.14	Greene	37	1031.49	Mahaska	62	1055.68	Taylor	87	993.41
Calhoun	13	1073.23	Grundy	38	899.35	Marion	63	947.43	Union	88	764.33
Carroll	14	1070.47	Guthrie	39	1042.23	Marshall	64	1028.25	Van Buren	89	819.89
Cass	15	1061.74	Hamilton	40	1061.64	Mills	65	760.79	Wapello	90	759.23
Cedar	16	1061.22	Hancock	41	1076.76	Mitchell	66	854.63	Warren	91	1001.66
Cerro Gordo	17	1034.97	Hardin	42	1066.12	Monona	67	1170.97	Washington	92	1015.51
Cherokee	18	1073.33	Harrison	43	1232.71	Monroe	68	668.24	Wayne	93	888.66
Chickasaw	19	915.00	Henry	44	804.34	Montgom'ry	69	786.79	Webster	94	1247.98
Clarke	20	728.15	Howard	45	797.41	Muscatine	70	725.93	Winnebago	95	761.78
Clay	21	1037.69	Humboldt	46	760.32	O'Brien	71	1099.19	Winnesbick	96	1132.52
Clayton	22	1178.26	Ida	47	796.62	Oscoola	72	787.92	Woodbury	97	1472.33
Clinton	23	1096.38	Iowa	48	1063.04	Page	73	1014.86	Worth	98	747.18
Crawford	24	1330.13	Jackson	49	947.42	Palo Alto	74	993.99	Wright	99	1034.37
Dallas	25	1042.38	Jasper	50	1372.16	Plymouth	75	1545.97	Total		98,903.28

Computed Workload*

	<u>1972</u>	<u>1973</u>
Post 1	11	15
Post 2	1	3
Post 3	9	7
Post 4	3	3
Post 5	5	3
Post 6	3	3
Post 7	1	1
Post 8	3	3
Post 9	3	5
Post 10	5	3
Post 11	7	9
Post 12	9	11
Post 13	1	1
Post 14	3	1

Workload*

	<u>Traffic Related</u>		<u>Other Misdemeanor Felony, OMVUI</u>		<u>Total</u>
	<u>1972</u>	<u>1973</u>	<u>1972</u>	<u>1973</u>	
Post 1	43089	48869	2784	3942	98,684
Post 2	17265	21220	2358	2340	43,183
Post 3	34330	27434	4236	3618	69,618
Post 4	20760	20696	4080	2778	48,314
Post 5	26909	22875	2784	2574	55,142
Post 6	22914	19222	2010	2184	46,330
Post 7	18501	15138	1722	1764	37,125
Post 8	23852	24159	1458	1518	50,987
Post 9	27304	25817	1494	2364	56,979
Post 10	28017	23342	2280	2634	56,273
Post 11	31647	34118	2604	2994	71,363
Post 12	37703	39733	2160	2490	82,086
Post 13	16146	13788	2178	2058	34,170
Post 14	20602	15964	1308	822	38,696

Adjusted traffic related offenses x 1
Adjusted OMVUI, other misdemeanor x 6

*Data available by Patrol Post only.

CHECKING SHEET

SUBJECT
24-Hour Coverage

Number of Men Needed

COUNTY		COUNTY		COUNTY		COUNTY					
Adair	1	3	Davis	26	3	Jefferson	61	2	Pocahontas	76	2
Adams	2	2	Decatur	27	0	Johnson	52	0	Polk	77	0
Allamakee	3	1	Delaware	28	3	Jones	53	0	Pottawatt.	78	0
Appanoose	4	2	Des Moines	29	0	Keokuk	54	1	Poweshlek	79	2
Audubon	5	2	Dickinson	30	0	Kossuth	55	2	Ringgold	80	3
Benton	6	1	Dubuque	31	0	Lee	56	0	Sac	81	1
Black Hawk	7	0	Emmet	32	1	Linn	57	0	Scott	82	0
Boone	8	0	Fayette	33	1	Louisa	58	0	Shelby	83	3
Bremer	9	1	Floyd	34	2	Lucas	59	3	Stoux	84	2
Buchanan	10	2	Franklin	35	1	Lyon	60	0	Story	85	0
Buena Vista	11	1	Fremont	36	1	Madison	61	2	Tama	86	0
Butler	12	3	Greene	37	2	Mahaska	62	0	Taylor	87	4
Calhoun	13	2	Grundy	38	3	Marion	63	1	Union	88	3
Carroll	14	0	Guthrie	39	1	Marshall	64	0	Van Duren	89	2
Cass	15	2	Hamilton	40	0	Mills	65	1	Wapello	90	0
Cedar	16	2	Hancock	41	2	Mitchell	66	2	Warren	91	0
Cerro Gordo	17	0	Hardin	42	1	Monona	67	2	Washington	92	0
Cherokee	18	2	Harrison	43	2	Monroe	68	1	Wayne	93	3
Chickasaw	19	2	Henry	44	2	Montgom'ry	69	2	Webster	94	0
Clarke	20	3	Howard	45	2	Muscatine	70	0	Winnebago	95	2
Clay	21	1	Humboldt	46	0	O'Brien	71	2	Winneshek	96	0
Clayton	22	1	Ida	47	2	Osceola	72	1	Woodbury	97	0
Clinton	23	0	Iowa	48	2	Page	73	0	Worth	98	2
Crawford	24	1	Jackson	49	0	Palo Alto	74	0	Wright	99	2
Dallas	25	0	Jasper	50	0	Plymouth	75	1	Total		

CHECKING SHEET

SUBJECT _____
Age _____

Persons 15-24

COUNTY		COUNTY		COUNTY		COUNTY	
Adair	1	Davis	26	Jefferson	51	Pocahontas	76
	3,161.00		2,877.50		8,964.00		4,680.75
Adams	2	Decatur	27	Johnson	52	Polk	77
	2,178.25		5,643.75		57,875.25		126,442.00
Allamakee	3	Delaware	28	Jones	53	Pottawatt.	78
	5,549.25		2,197.50		9,698.50		35,178.50
Appanoose	4	Des Moines	29	Keokuk	54	Poweshiek	79
	6,066.00		18,415.75		4,973.50		9,415.20
Audubon	5	Dickinson	30	Kossuth	55	Ringgold	80
	3,429.00		4,739.50		8,490.75		2,165.20
Benton	6	Dubuque	31	Lee	56	Sac	81
	8,205.25		42,129.50		57,544.00		5,723.70
Black Hawk	7	Emmet	32	Linn	57	Scott	82
	66,672.25		6,362.58		69,671.00		60,362.50
Boone	8	Fayette	33	Louisa	58	Shelby	83
	11,056.50		11,774.25		4,003.00		5,675.70
Bremer	9	Floyd	34	Lucas	59	Stoux	84
	11,192.75		6,915.50		3,266.75		13,828.00
Buchanan	10	Franklin	35	Lyon	60	Story	85
	8,514.50		6,494.00		5,409.25		61,374.20
Buena Vista	11	Fremont	36	Madison	61	Tama	86
	8,782.50		3,117.00		3,970.50		7,503.70
Butler	12	Greene	37	Mahaska	62	Taylor	87
	6,346.25		4,364.00		9,923.50		2,981.50
Calhoun	13	Grundy	38	Marion	63	Union	88
	5,272.25		5,131.75		11,849.75		4,913.00
Carroll	14	Guthrie	39	Marshall	64	Van Buren	89
	8,246.00		3,907.75		11,934.00		3,709.00
Cass	15	Hamilton	40	Mills	65	Wapello	90
	5,488.25		7,189.25		5,061.25		16,089.70
Cedar	16	Hancock	41	Mitchell	66	Warren	91
	6,452.00		4,765.25		4,454.75		12,045.50
Cerro Gordo	17	Hardin	42	Monona	67	Washington	92
	21,160.00		10,462.25		4,197.25		7,032.20
Cherokee	18	Harrison	43	Monroe	68	Wayne	93
	6,751.50		8,398.50		3,346.50		2,853.00
Chickasaw	19	Henry	44	Montgom'ry	69	Webster	94
	5,361.00		8,580.25		4,179.25		20,066.70
Clarke	20	Howard	45	Muscatine	70	Winnebago	95
	2,467.75		3,763.25		14,941.75		1,677.50
Clay	21	Humboldt	46	O'Brien	71	Winneshiek	96
	7,179.00		4,628.75		6,329.25		12,089.00
Clayton	22	Ida	47	Osceola	72	Woodbury	97
	7,292.25		3,041.25		5,795.75		44,808.00
Clinton	23	Iowa	48	Page	73	Worth	98
	22,548.25		5,780.75		7,260.00		3,145.00
Crawford	24	Jackson	49	Palo Alto	74	Wright	99
	7,500.00		7,667.58		5,434.00		6,327.70
Dallas	25	Jasper	50	Plymouth	75	Total	
	9,649.75		13,424.00		11,657.75		

CHECKING SHEET

Crime Rate

COUNTY		COUNTY		COUNTY		COUNTY					
Adair	1	394.7	Davis	26	671.9	Jefferson	51	1166.6	Pocahontas	76	582.9
Adams	2	668.5	Decatur	27	680.8	Johnson	52	678.0	Polk	77	1959.9
Allamakee	3	441.2	Delaware	28	691.2	Jones	53	677.1	Pottawatt.	78	1664.7
Appanoose	4	758.8	Des Moines	29	805.6	Keokuk	54	726.6	Poweshiek	79	669.0
Audubon	5	1834.3	Dickinson	30	469.7	Kossuth	55	807.2	Ringgold	80	671.6
Benton	6	839.2	Dubuque	31	733.4	Lee	56	1115.2	Sac	81	683.6
Black Hawk	7	433.6	Emmet	32	518.1	Linn	57	1145.0	Scott	82	548.3
Boone	8	758.0	Fayette	33	595.4	Louisa	58	1908.2	Shelby	83	1045.5
Bremer	9	386.9	Floyd	34	314.7	Lucas	59	688.2	Sioux	84	681.0
Buchanan	10	726.5	Franklin	35	621.8	Lyon	60	170.8	Story	85	1133.8
Buena Vista	11	685.00	Fremont	36	1016.9	Madison	61	656.5	Tama	86	660.5
Butler	12	383.7	Greene	37	922.8	Mahaska	62	1203.3	Taylor	87	261.3
Calhoun	13	731.7	Grundy	38	720.4	Marion	63	915.9	Union	88	696.1
Carroll	14	679.4	Guthrie	39	144.9	Marshall	64	90.7	Van Buren	89	854.1
Cass	15	675.3	Hamilton	40	683.0	Mills	65	1816.2	Wapello	90	676.9
Cedar	16	714.2	Hancock	41	678.0	Mitchell	66	567.2	Warren	91	992.9
Cerro Gordo	17	1370.8	Hardin	42	1167.9	Monona	67	495.1	Washington	92	681.6
Cherokee	18	677.7	Harrison	43	764.3	Monroe	68	678.9	Wayne	93	447.7
Chickasaw	19	676.2	Henry	44	810.8	Montgom'ry	69	664.5	Webster	94	1036.8
Clarke	20	688.7	Howard	45	669.5	Muscatine	70	1124.3	Winnebago	95	438.9
Clay	21	674.1	Humboldt	46	585.00	O'Brien	71	681.8	Winnesheik	96	195.6
Clayton	22	261.7	Ida	47	333.4	Osceola	72	494.5	Woodbury	97	633.9
Clinton	23	499.7	Iowa	48	508.7	Page	73	662.2	Worth	98	412.7
Crawford	24	680.9	Jackson	49	420.7	Palo Alto	74	43.2	Wright	99	665.7
Dallas	25	344.0	Jasper	50	846.0	Plymouth	75	666.1	Total		

CHECKING SHEET

 SUBJECT
 Vehicle
 Registration

COUNTY		COUNTY		COUNTY		COUNTY	
Adair 1	9,103	Davis 26	7,289	Jefferson 51	13,039	Pocahontas 76	11,439
Adams 2	5,785	Decatur 27	7,566	Johnson 52	48,632	Polk 77	223,977
Allamakee 3	12,324	Delaware 28	14,258	Jones 53	16,279	Pottawatt. 78	66,583
Appanoose 4	13,344	Des Moines 29	38,289	Keokuk 54	12,318	Poweshiek 79	16,327
Audubon 5	7,937	Dickinson 30	13,383	Kossuth 55	20,076	Ringgold 80	6,098
Benton 6	19,344	Dubuque 31	59,708	Lee 56	34,787	Sac 81	13,884
Black Hawk 7	102,126	Emmet 32	12,309	Linn 57	123,231	Scott 82	106,423
Boone 8	23,047	Fayette 33	20,558	Louisa 58	10,664	Shelby 83	13,052
Bremer 9	19,132	Floyd 34	16,869	Lucas 59	9,358	Sioux 84	22,449
Buchanan 10	17,597	Franklin 35	12,537	Lyon 60	11,238	Story 85	44,977
Buena Vista 11	18,509	Fremont 36	9,146	Madison 61	11,115	Tama 86	17,246
Butler 12	15,124	Greene 37	12,005	Mahaska 62	19,689	Taylor 87	7,829
Calhoun 13	12,411	Grundy 38	12,705	Marion 63	22,167	Union 88	11,363
Carroll 14	17,885	Guthrie 39	11,044	Marshall 64	35,343	Van Buren 89	7,844
Cass 15	15,149	Hamilton 40	17,101	Mills 65	10,766	Wapello 90	33,800
Cedar 16	15,790	Hancock 41	12,633	Mitchell 66	10,600	Warren 91	25,790
Cerro Gordo 17	40,053	Hardin 42	19,225	Monona 67	11,687	Washington 92	17,191
Cherokee 18	15,209	Harrison 43	14,335	Monroe 68	7,857	Wayne 93	8,023
Chickasaw 19	12,133	Henry 44	15,783	Montgom'ry 69	11,811	Webster 94	38,067
Clarke 20	7,071	Howard 45	9,293	Muscatine 70	31,628	Winnebago 95	12,943
Clay 21	16,642	Humboldt 46	11,952	O'Brien 71	14,490	Winnesheik 96	15,698
Clayton 22	17,030	Ida 47	8,490	Osceola 72	7,808	Woodbury 97	76,587
Clinton 23	43,003	Iowa 48	13,678	Page 73	15,479	Worth 98	8,193
Crawford 24	15,368	Jackson 49	16,856	Palo Alto 74	11,224	Wright 99	15,054
Dallas 25	25,090	Jasper 50	31,821	Plymouth 75	19,538	Total	

CHECKING SHEET

SUBJECT

Population

COUNTY		COUNTY		COUNTY		COUNTY	
Adair 1	9,487	Davis 26	8,207	Jefferson 51	15,774	Pocahontas 76	12,729
Adams 2	6,322	Decatur 27	9,737	Johnson 52	72,127	Polk 77	286,101
Allamakee 3	14,969	Delaware 28	18,770	Jones 53	19,868	Pottawatt. 78	86,991
Appanoose 4	15,007	Des Moines 29	46,982	Keokuk 54	13,943	Poweshlek 79	18,803
Audubon 5	9,595	Dickinson 30	12,565	Kossuth 55	22,937	Ringgold 80	6,373
Benton 6	22,885	Dubuque 31	90,609	Lee 56	42,996	Sac 81	15,573
Black Hawk 7	132,916	Emmet 32	14,009	Linn 57	163,213	Scott 82	142,687
Boone 8	26,470	Fayette 33	26,898	Louisa 58	10,682	Shelby 83	15,528
Bremer 9	22,737	Floyd 34	19,860	Lucas 59	10,163	Sioux 84	27,996
Buchanan 10	21,746	Franklin 35	13,255	Lyon 60	13,340	Story 85	62,783
Buena Vista 11	20,693	Fremont 36	9,282	Madison 61	11,558	Tama 86	20,147
Butler 12	16,953	Greene 37	12,716	Mahaska 62	22,177	Taylor 87	8,790
Calhoun 13	14,287	Grundy 38	14,119	Marion 63	26,352	Union 88	13,557
Carroll 14	22,912	Guthrie 39	12,243	Marshall 64	41,076	Van Buren 89	8,643
Cass 15	17,007	Hamilton 40	18,383	Mills 65	11,832	Wapello 90	42,149
Cedar 16	17,655	Hancock 41	13,330	Mitchell 66	13,108	Warren 91	27,432
Cerro Gordo 17	49,355	Hardin 42	22,248	Monona 67	12,069	Washington 92	18,967
Cherokee 18	17,269	Harrison 43	16,240	Monroe 68	9,357	Wayne 93	8,405
Chickasaw 19	14,969	Henry 44	18,111	Montgom'ry 69	12,781	Webster 94	48,391
Clarke 20	7,581	Howard 45	11,442	Muscatine 70	37,181	Winnebago 95	12,990
Clay 21	18,464	Humboldt 46	12,519	O'Brien 71	17,522	Winnesheik 96	21,758
Clayton 22	20,606	Ida 47	9,190	Osceola 72	8,555	Woodbury 97	103,052
Clinton 23	56,749	Iowa 48	15,419	Page 73	18,507	Worth 98	8,968
Crawford 24	19,116	Jackson 49	20,839	Palo Alto 74	13,289	Wright 99	17,294
Dallas 25	26,085	Jasper 50	35,425	Plymouth 75	24,312	Total	

STATE LIBRARY OF IOWA



3 1723 02116 4322