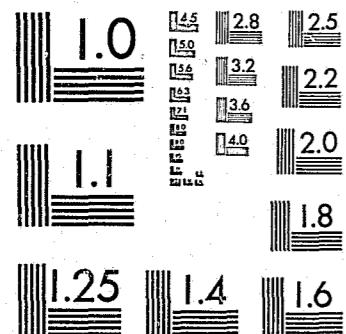


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National Institute of Justice
United States Department of Justice
Washington, D. C. 20531

2/10/83



STATE OF WASHINGTON

John Spellman, Governor

PRISON POPULATION FORECAST FOR WASHINGTON STATE—FY 1982-1995:

TECHNICAL PROGRAMMING DOCUMENTATION

Prepared for
Governor's Interagency Criminal Justice
Work Group
by the
Office of Financial Management
Division of Forecasting & Estimation

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July 1982



STATE OF WASHINGTON

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ACQUISITIONS

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U.S. Department of Justice
National Institute of Justice

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ACKNOWLEDGEMENTS

The Technical documentation was primarily the work of Felix D'Allesandro, Jack O'Connell, and Jeffrey Tayman. Each contributed uniquely to the final documentation of how the prison population forecast functions. This type of detail reflects the thinking of the Governor's Criminal Justice Work Group to make known prison population forecasting process to all those interested.

The graphics were the work of Patty Curry and the many drafts and final typing was done by Peggy Walker.

Part of this project was supported by the U.S. Department of Justice, Bureau of Justice Statistics grant number 81BJCX01.

PRISON POPULATION FORECAST:
TECHNICAL PROGRAMMING DOCUMENTATION

OVERVIEW

The prison population forecast computer model is a multiphased system of initial data inputs, numerous programs, and intermediate outputs--which later serve as inputs, and a final prison population forecast report. There are five major programs, one minor program, eight data input files, four subpopulation forecast files, and two output reports. The first report is an intermediate report which shows the number of annual new admissions to prison. The second report is the actual prison population forecast.

The computer model allows for a fifteen year forecast with the option of reporting monthly or annual prison populations for males, females, and totals. The model also provides monthly or annual information on the number of admissions by the type of admissions and the number of releases for males, females and totals. The types of admissions include new admissions, parole returnees via the courts, and parole returnees via the parole board. All types of admissions to prison are calculated as a annual forecast and then distributed across the individual months using a historical seasonal pattern. Releases are calculated on a monthly basis. For example, once it had been determined that a specific group of prison admissions (i.e. male, first time, robbery offenders) arrive in a specific month, the individuals within this group are released in a future array of months per the established release pattern for this type of offender. Releases from the existing prison population are also estimated on a monthly basis.

All of the data input files can be manipulated for the purposes of testing alternative forecast assumptions or for updating the forecast. The ability to alter the various initial or intermediate input files allows the decision makers and analyst to determine the impact of changes in the age

and sex structure of the state's population, in the size and characteristics of the existing prison population, in the conviction patterns, in the judicial decision to imprison percentages and changes in the length of stay patterns.

The prison population forecast is broken down into four subpopulations. The first of the four subpopulations is the base population. This subpopulation is comprised of the individuals in prison on the day prior to the first month of the forecast (e.g., June 30, 1981). The second subpopulation is the new admissions from the courts. The third and fourth subpopulations result from parole failure. One type of parole failure is the result of an individual committing a new crime or a technical parole violation wherein he is returned through a parole revocation. The other type of parole failure is when an individual is sentenced anew in court after committing another crime while on parole.

This forecast model is based on demographic techniques of population change. In effect, this amounts to adding the net of arrivals and departures to and from prison in each future period to the prison population of the prior period. In order to accurately gauge this net change, a cohort component methodology is utilized. This methodology considers each new group of admissions to prison as a cohort which has a life course of its own. That is, each month's admissions is considered as an aggregate with its own distribution across nine crime categories. Each cohort is then survived, that is, released according to expected patterns of length of stay in prison for the various crime categories. The size of the prison population at any one time is then the sum of the declining balances of the several cohorts.

As in most population models, the death rate or its equivalent, plays an important role in determining the size of the population. In the prison forecast model length of stay is analogous to the death rate. Another important factor in determining the size of a population is the birth rate; in this model, the number of admissions is analogous to it. There are three types of admissions in this model; the new admissions from the

courts, parole failures who are readmitted through parole board action, and those who are readmitted after being convicted of a new felony. In this model, the number of new admissions is primarily driven by the state's official population age and sex forecast.¹

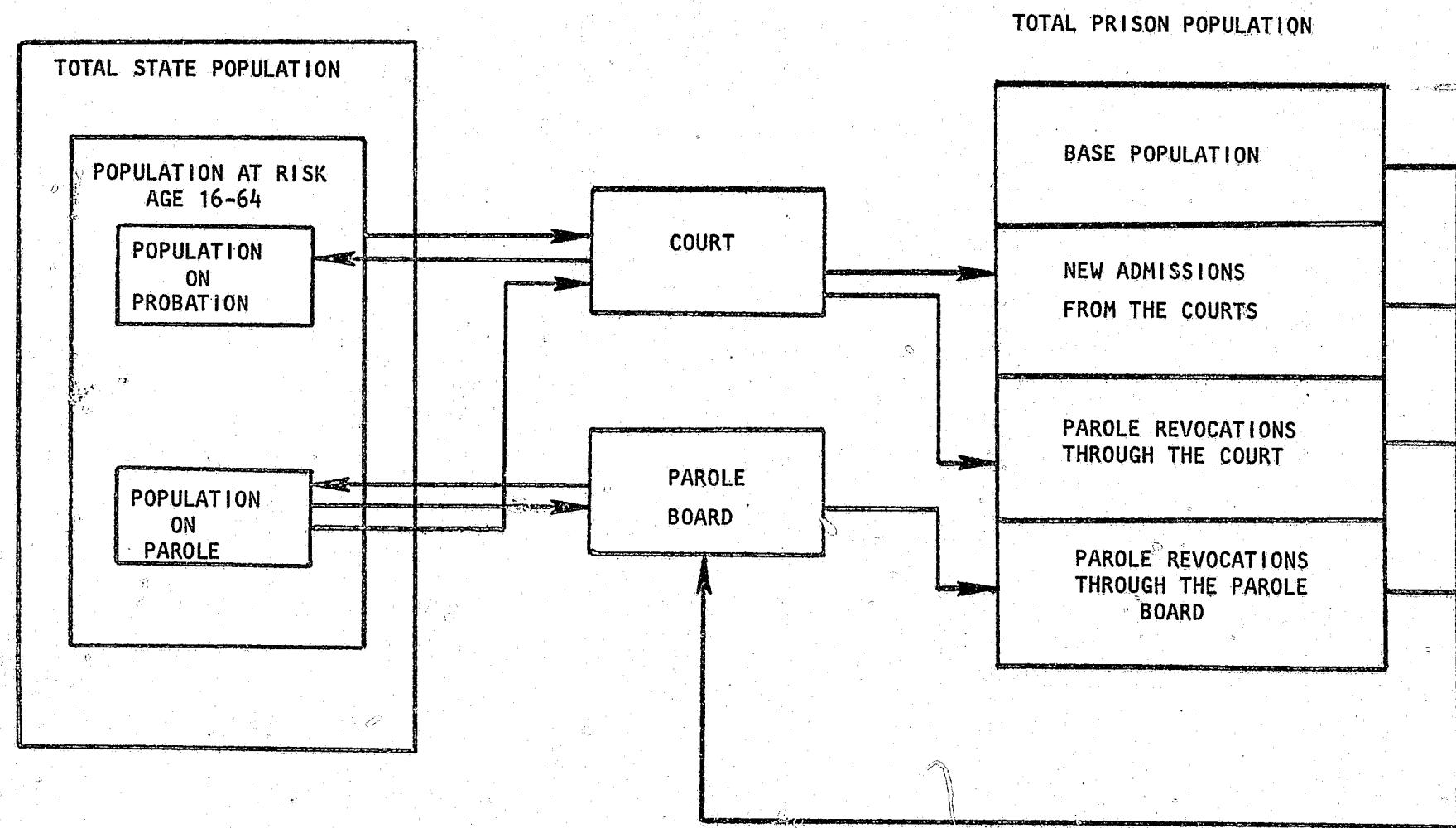
In Exhibit 1 the conceptual structure of the prison population forecast model is diagrammed. The purpose of the model is to accurately convey the results of several interrelated assumptions concerning the change in the prison population. The population at risk is seen to be a subset of the community at large. (This at risk population is defined as those individuals between the ages of 16 and 54.) A certain proportion of the "at risk" population is convicted each year and committed to the Department of Corrections. Of those committed a certain proportion are sent on to prison and the remainder are returned to the community on probation.

The new admissions to prison from the courts and admissions from parole failures both via the court and the parole board are added to the base population. Prisoners are released by the Parole Board to the community. A certain proportion of those released on parole will return to prison either through actions of the parole board or upon conviction for a new crime. In this model distinct return routes are maintained because the sentence lengths are quite different -- depending on the route used.

The model is cyclical in that once a person is released from prison and then readmitted because of a violation, that same person can serve his new sentence, be released, and again return to prison. This cycle can continue throughout the fifteen years of the forecast. The factor which determines whether or not a person returns to prison is the recidivism pattern. Anyone released from prison has approximately a 30 percent chance of being returned to prison within a five year period.

¹The state's population forecast is fully documented in the Office of Financial Management's Publication, Washington State: Population Projection System.

EXHIBIT 1. The Conceptual Structure of the Prison Population Forecast Model



Report Organization

This report is divided into major parts. Part 1 is entitled: File Structure and Program Documentation. Part 2 is entitled: User Aid.

Part 2 of this report shows how to run, update, and test alternative assumptions for the prison population forecast model. In addition to an overview of the general operations of the computer model, this part of the report provides six detailed examples of how to update or test alternative.

In Part 1, except for the initial section, which discusses the overall file structure of the computer model, each of the sections in this part of the report focuses on one of the computer model's six programs. These include (1) the base population program, (2) the new admissions from the courts program, (3) admissions due to parole failures program, (4) the report writer, (5) the historical analysis file and (6) the generation of the length of stay matrix. Within each of these sections there is a general discussion of the program noting specifically the input and output files, and any particularly important switches or data entry lines that are internal to the program. Also, where they exist, the input data matrices appended to the program are described. Furthermore, each section contains a generalized flow chart of the program. Finally, the actual Fortran program is published.

PART 1

FILE STRUCTURE AND PROGRAM DOCUMENTATION

THE FILE STRUCTURE

The file structure of the prison population forecast is diagrammed in Exhibit 2. There are three types of files in the model. These are (1) data files, (2) programs, and (3) subpopulation forecast files.

There are eight data input files, seven programs, and four subpopulation forecast files in the computer model.

DATA FILES

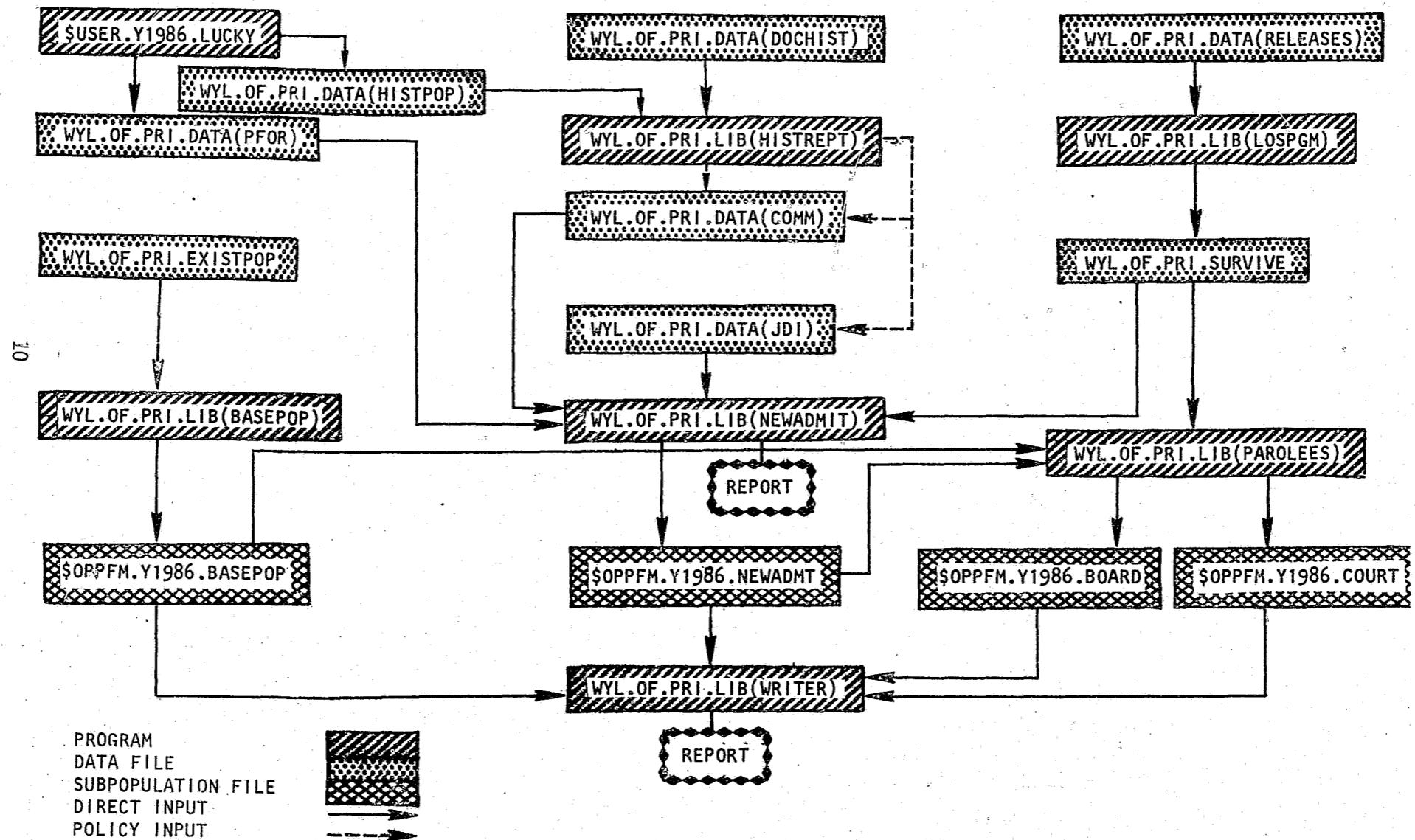
WYL.OF.PRI.DATA(DOCHIST): This file consists of the number of annual historical admissions for both those going to prison and those going on probation by sex, age, and type of crime for the fiscal years 1970 through 1981.

WYL.OF.PRI.EXISTPOP: This file consists of the individual records of all those in prison on the last day of the fiscal year.

WYL.OF.PRI.DATA(PFOR): This file consists of the population forecast by single years of age for the entire state population for both sexes. It is a modified version of the file USER.Y1986.LUCKY which is produced using the OUTDAT option of the population projection system.

WYL.OF.PRI.DATA(HISTPOP): This file consists of the historical population by single years of age for the entire state population for both sexes. The historical period covered by the data file is 1970 through 1981. This file is used in conjunction with WYL.OF.PRI.DATA (DOCHIST) and is a modified version of the file USER.Y1986. LUCKY which is included in state's population projection system.

EXHIBIT 2: The File Structure For the Prison Population Forecast Computer Model



WYL.OF.PRI.DATA(COMM): This file consists of the forecasted rates of felony conviction by age, sex and crime type as measured by the commitment to the Department of Corrections. In this model the rates were determined by the Governor's Interagency Criminal Justice Workgroup.

WYL.OF.PRI.DATA(JDI): This file consists of the forecasted rates of judicial decisions to imprison by age, sex and crime type. In this model the rates were also determined by the Governor's Interagency Criminal Justice Workgroup.

WYL.OF.PRI.DATA.(RELEASES): This file consists of the release patterns for the various lengths of stay by sex and crime. Data in this file represents, for each subcategory of sex, crime, and type of guideline an offender was sentenced under, the number of persons who are planned to be released within a specific month within the range of 1 to 180 months. Those persons released after the 180th month are all recorded in the 181st month which represents those not released before the end of the forecast period.

WYL.OF.PRI.SURVIVE: This file consists of the length of stay curves by sex and crime type. These curves were generated from current sentencing patterns and guidelines. The shape of these curves can be modified in accordance with expert judgement or new information.

PROGRAMS

There are seven programs used in the prison population forecast computer model. Three of the programs are input programs and four are source programs. All programs are written in FORTRAN IV (G1).

INPUT PROGRAMS

One program -- \$USER.Y1986.LUCKY -- is actually external to the prison population forecast computer model. This program which is under the jurisdiction of the Office of Financial Management Division of Forecasting and Estimation is the source of the demographic input of the prison population forecast. This state population program is used to produce WYL.OF.PRI.DATA(HISTPOP) and WYL.OF.PRI.DATA(PFOR).

Two programs were written to facilitate analysis in the generation of basic input data. Both of these programs access separate data files. Depending on the situation these programs may or may not be used. They should be used when establishing an updated prison population forecast, but they may not be necessary to use them when analyzing alternative assumptions once a forecast is established.

WYL.OF.PRI.LIB(HISTREPT): This program summarizes historical data provided by the Department of Corrections found in data file WYL.OF.PRI.DATA(DOCHIST). Information produced from WYL.OF.PRI.LIB(HISTREPT) is used as background information to establish the values in the conviction rate data file WYL.OF.PRI.DATA(COMM) and the judicial decision to imprison data file WYL.OF.PRI.DATA(JDI). WYL.OF.PRI.LIB(HISTREPT) also utilizes as input a special historical state population file WYL.OF.PRI(HISTPOP).

WYL.OF.PRI.LIB(LOSPGM): This program was written to transform the numbers of released prisoners WYL.OF.PRI.DATA(RELEASES) into length of stay curves stored in WYL.OF.PRI.SURVIVE. The information in WYL.OF.PRI.DATA(RELEASES) was obtained from the Board of Prison Terms and Paroles.

SOURCE PROGRAMS

There are four source programs, written in FORTRAN IV (G1), that are part of the file structure of the model.

WYL.OF.PRI.LIB(BASEPOP): This program releases the base population.

WYL.OF.PRI.LIB(NEWADMIT): This program forecasts admissions and then releases these admissions.

WYL.OF.PRI.LIB(PAROLEES): This program generates releases from prison and, from this base, admissions due to parole failure. It then goes on to release these admissions.

WYL.OF.PRI.LIB(WRITER): This program generates printed reports that detail and summarize the forecast.

SUBPOPULATION FORECAST FILES

Four files were created which house the four subpopulation forecasts generated by the forecast model. These files are generated by three of the source programs and then read by WYL.OF.PRI.LIB(WRITER).

\$OPPFM.Y1986.BASEPOP: This file consists of the monthly forecast of the base population by crime type and sex. It is generated by the source program WYL.OF.PRI.LIB(BASEPOP).

\$OPPFM.Y1986.NEWADMIT: This file consists of the monthly forecast of the new admissions from the court by crime type and sex. It is generated by the source program WYL.OF.PRI.LIB(NEWADMIT).

\$OPPFM.Y1986.COURT: This file consists of the monthly forecast of parole failures readmitted through the court by crime type and sex. It is generated by the source program WYL.OF.PRI.(PAROLEES)

\$OPPFM.Y1986.BOARD: This file consists of the monthly forecast of parole failures readmitted through the parole board by crime type and sex. It is generated by the source program WYL.OF.PRI. (PAROLEES).

THE BASE POPULATION

The subpopulation referred to as the base population consists of those individuals in prison on the last day of the most recently completed fiscal year (i.e. June 30, 1981). Information describing the characteristics and expected release dates of the base population is in the data file WYL.OF.PRI.EXISTPOP. An example of this file and data definition information is displayed in Exhibit 3.

The source program that calculates the monthly forecast of the base population is WYL.OF.PRI.LIB(BASEPOP). Exhibit 4 presents the algorithm for the calculations. There are no admissions to this subpopulation; therefore, the task of the program is to accurately simulate the release process.

The first step in calculating the base population forecast is the sorting of the individual records into aggregations delineated along three dimensions; sex of the offender, offense type, and expected release date. The sort by sex is straightforward and does not require any calculation or data transformation. The sorts by offense type and expected release date do involve data transformations and calculations.

In order to maintain consistency with the historical analysis the offenses listed on the individual records were coded to conform to the summary offense types. These types are as follows: murder I, murder II, manslaughter, sex crimes, robbery, assault, property crimes, drugs, parole violators, other felonies, not reported, and unknown. An early decision in model development determined that parole violation would not be considered a crime type in the forecast. Underlying this decision was the assumption, maintained throughout the model, that prisoners would retain the crime type of their most recent admission if they returned to prison as a failure from parole.

The first set of questions addressed in the program WYL.OF.PRI.LIB(BASEPOP) requires flagging those records coded as parole violators, other felonies, felony not reported and unknown. The three later categories are

combined into another felony category. The parole violators are disaggregated and redistributed across the nine forecast categories of crime.

The redistribution of parole violators reflects the proportionate distribution of felony crime types. This distribution is input to the program through the data statement on line 8 "INC" in Exhibit 7. This input reassigned nine-twentieths of the parole violators as property offenders, two-twentieths as sex criminals, two-twentieths as robbery offenders, three-twentieths as assaultive offenders, two-twentieths as drug offenders, one-twentieth as other offenders, and one-twentieth as manslaughter offenders.

The distribution of releases from the base population constitutes a central problem for this subpopulation forecast. Those persons with release dates in the forecast period of month 1 through month 180 --or July 1981 to June 1996 are released on the recorded estimated month of release. Persons remaining after the 180th month, except for special cases, are considered as still remaining in prison at the end of the forecast. Special cases fall into one of three categories:

- (1) Persons without a minimum term set,
- (2) Persons backlogged -- i.e. those persons who were originally scheduled for release before July 1981, but who still remain in prison,
- (3) Persons whose release dates were judged to be probable miscodes.

Exhibit 5 highlights these special categories by showing the distribution of release months. The release month, labeled as TIMEGO in Exhibit 5, is calculated for all individuals in the base population including the special cases. TIMEGO is calculated as follows:

$$(\text{Year of Release} * 12 + \text{Month of Release}) - 978 = \text{TIMEGO}$$

Therefore, someone scheduled for release in June 1981 would have a TIMEGO value of zero, or $(81 * 12 + 6) - 978 = 0$. Month 1 of the forecast (i.e. TIMEGO = 1) represents July 1981. Month 2 represents August 1981. Month

EXHIBIT 3: The Data File WYL.OF.PRI.EXISTPOP; The Data Base From Which
The Base Population Forecast is Made

A. An Example of the Cases Residing in the File

25014 1 1 2 4 1 97 11 700924 326 5
 25016 1 1 5 4 4 82 12 801205 24 2
 25287 1 1 4 9 1 87 4 760820 128 4
 25629 1 1 2 2 1 95 10 751007 240 5
 26176 1 1 1 2 3 84 8 790213 66 1
 26306 1 1 5 7 4 82 4 791218 28 2
 26442 1 2 2 8 4 81 11 801113 12 9
 26450 1 1 2 7 1 87 3 750707 140 5
 26503 1 1 2 5 1 97 8 740418 280 5
 26568 1 1 5 4 1 92 1 780919 160 1
 26687 1 1 1 4 4 82 3 790326 36 2
 26835 1 1 2 8 1 88 6 680618 240 5
 26873 1 1 2 5 4 82 7 791220 31 1
 26936 1 1 2 6 4 81 5 791108 18 2
 26953 1 1 2 4 1 87 12 740819 160 5
 27242 1 1 2 5 1 88 7 750310 160 5

B. The Record Layout

SERIAL NUMBER	SEX	RACE	ADMTYPE	OFFENSE TYPE	GUIDELINE CATEGORY	ADMIT DATE			LENGTH OF STAY	FELONY CLASS																										
						YEAR	MONTH	DAY																												
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37

C. Data Definition

SEX 1= Male 2= Female 9=Unknown
 RACE 1=White 2=Black 3=American Indian
 4=Mexican 5=Other 9=Unknown

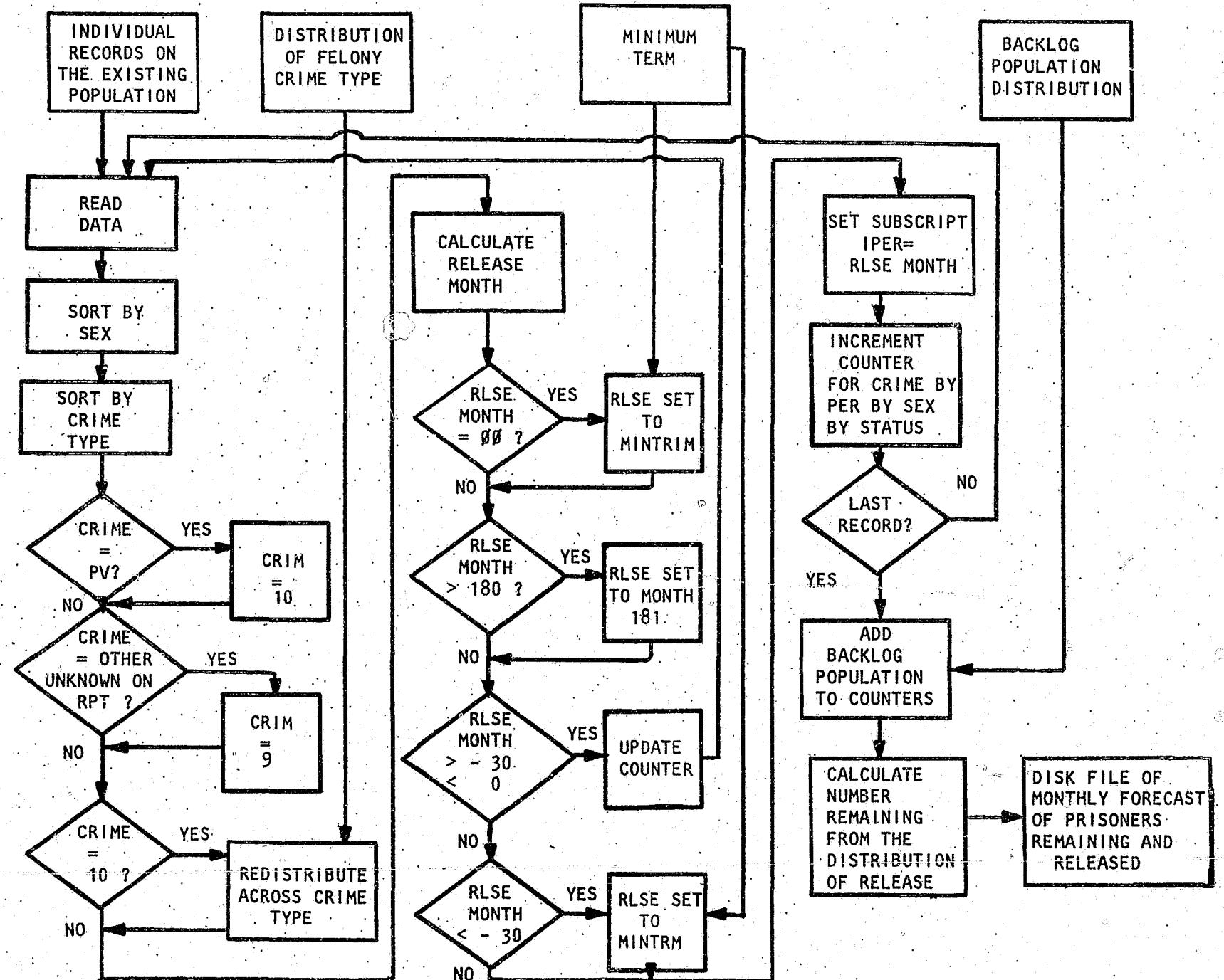
ADMTYPE 1=A 2=B 3=C 4=D
 5=Other 9=Unknown

OFFENSE TYPE 1=Murder I 2=Murder II
 3=Manslaughter 4=Sex Crimes
 5=Robbery 6=Assault
 7=Property 8=Drugs
 9=Parole Violators 10=Other
 11=Not Reproved 99=Unknown

CATEGORY 1=Preguideline 2=Nonguideline
 3=GUSS I 4=GUSS II

FELONY CLASS 1=A 2=B 3=C 4=P
 5=R 9=Unknown

EXHIBIT 4: Forecast Algorithm For the Base Population



180 represents the last month of the forecast. Cases beyond month 180, except for the special categories, represent persons remaining in prison at the end of the forecast.

The special categories can be understood by reviewing the rationale for their establishment. Persons without a minimum term are coded as 00 00 in columns 19-23 in WYL.OF.PRI.LIB(BASEPOP). This value yields a TIMEGO value of -978; i.e., $(00 * 12 + 0) - 978 = -978$. There are 547 cases in this category.

The assumed miscodes include those cases where TIMEGO = -31 (December 1978) through TIMEGO = -145 (May 1969). It was reasoned that few if any persons would be kept longer than 30 months beyond their original estimated date of release. It was further assumed that the difference between TIMEGO = -967 (November 2000) and TIMEGO = -145 (either May 1969 or May 2069) provided a natural breaking point between those with release dates in the 21st century and the lower limit for miscodes. There are 41 cases in the miscode category.

The backlog subpopulation ranges from TIMEGO = 0 (June 1981) to TIMEGO = -30 (January 1979). There are 446 cases in the backlog category. Persons in the backlog category include those who had a release date of June 1981 or up to 30 months earlier yet remained in prison. The major reasons for this backlog of prisoners are the loss of good time credits and unacceptable parole plans.

Both the special categories of persons without a minimum term and the assumed miscodes are granted release dates in the program by utilizing a condensed release schedule based on the full release patterns in WYL.OF.PRI.DATA(RELEASES). This is read in as card image data following the main body of the program--WYL.OF.PRI.LIB(BASEPOP)--in lines 105 through 122. In this matrix, the rows represent the types of crimes, the columns represent the month of release. The first nine rows pertain to males while the last nine rows pertain to females.

EXHIBIT 5: The Distribution of Release Dates For the Base Population in Terms of Time Remaining in Prison

TIMEGO	FREQ	CUM FREQ	TIMEGO	FREQ	CUM FREQ	TIMEGO	FREQ	CUM FREQ
NO MINIMUM TERM			BACKLOG POPULATION			8 100 1811		
-978	547	547	-30	2	594	10	93	2012
			-28	3	597	11	91	2103
			-27	1	598	12	85	2188
			-26	1	599	13	82	2270
			-25	8	607	14	77	2347
			-24	3	610	15	60	2407
			-23	5	615	16	74	2481
			-22	1	616	17	82	2563
			-21	1	617	18	61	2624
			-20	4	621	19	62	2686
			-19	3	624	20	64	2750
			-18	5	629	21	52	2802
			-17	6	635	22	67	2869
			-16	7	642	23	51	2920
			-15	7	649	24	57	2977
			-14	14	663	25	45	3022
			-13	7	670	26	31	3053
			-12	15	685	27	41	3094
			-11	17	702	28	44	3138
			-10	20	722	29	47	3185
			-9	24	746	30	37	3222
			-8	24	770	31	37	3259
			-7	16	786	32	33	3292
			-6	24	810	33	31	3323
			-5	29	839	34	31	3354
			-4	24	863	35	34	3388
			-3	48	911	36	35	3423
			-2	35	946	37	34	3457
			-1	37	983	38	27	3484
			0	55	1038	39	28	3512
						40	29	3541
						41	24	3565
						42	29	3594
						FORECAST PERIOD		
						43	19	3613
						44	29	3642
						45	16	3650
						46	17	3675
						47	21	3696
						48	26	3722
						49	26	3748

EXHIBIT 5: Continued

TIMEGO	FREQ	CUM FREQ	TIMEGO	FREQ	CUM FREQ	TIMEGO	FREQ	CUM FREQ
FORECAST PERIOD (cont)								
50	23	3771	97	3	4215	151	1	4378
51	11	3782	98	4	4219	152	1	4379
52	19	3801	99	4	4223	153	5	4384
53	16	3817	100	2	4225	154	1	4385
54	23	3840	101	4	4229	155	2	4387
55	12	3852	102	5	4234	156	1	4388
56	16	3868	103	11	4245	157	2	4390
57	18	3886	104	2	4247	159	2	4392
58	10	3896	105	3	4250	161	2	4394
59	8	3904	106	5	4255	162	2	4396
60	8	3912	107	4	4259	164	2	4398
61	8	3920	108	5	4264	165	2	4400
62	15	3935	109	2	4266	166	2	4402
63	18	3953	110	2	4268	167	1	4403
64	9	3962	111	7	4275	168	3	4406
65	12	3974	112	2	4277	170	1	4407
66	9	3983	113	4	4281	172	2	4409
67	7	3990	114	4	4285	174	1	4410
68	9	3999	115	2	4287	175	4	4414
69	8	4007	116	5	4292	176	1	4415
70	10	4017	117	2	4294	177	2	4417
71	12	4029	118	2	4296	REMAINING IN PRISON AT END OF FORECAST PERIOD		
72	12	4041	119	6	4302			
73	9	4050	120	1	4303			
74	1	4051	121	3	4306			
75	12	4063	122	3	4309			
76	7	4070	123	4	4313			
77	8	4078	124	2	4315	181	1	4418
78	9	4087	125	10	4325	182	2	4420
79	12	4099	126	5	4330	183	1	4421
80	9	4108	127	3	4333	184	2	4423
81	8	4116	128	6	4339	186	3	4426
82	6	4122	129	3	4342	187	5	4431
83	7	4129	130	5	4347	188	1	4432
84	3	4132	131	1	4348	189	3	4435
85	12	4144	132	2	4350	190	1	4436
86	6	4150	133	2	4352	191	1	4437
87	7	4156	134	1	2453	194	1	4438
88	9	4165	135	3	4356	196	2	4440
89	7	4172	136	5	4361	197	2	4442
90	10	4182	137	2	4363	200	2	4444
91	5	4187	138	2	4365	201	1	4445
92	4	4191	140	3	4368	202	1	4446
93	6	4197	143	1	4369	205	1	4447
94	8	4205	144	2	4371	206	3	4450
95	3	4208	145	2	4373	208	1	4451
96	4	4212	146	1	4374	209	2	4453
						210	1	4454
						211	1	4455
						213	1	4456

EXHIBIT 5: Continued

TIMEGO	FREQ	CUM FREQ	TIMEGO	FREQ	CUM FREQ
236	1	4457	237	1	4458
241	2	4459	242	1	4460
244	1	4461	245	1	4462
246	1	4463	247	1	4464
248	1	4465	249	1	4466
254	1	4467	255	1	4468
257	1	4469	258	1	4470
258	1	4471	259	1	4472
260	1	4473	261	1	4474
265	2	4475	266	1	4476
270	1	4477	271	1	4478
272	1	4479	273	1	4480
274	1	4481	275	201	4682
309	201	4683	311	1	4684
327	1	4685	329	1	4686
332	1	4687	335	1	4688
343	1	4689	344	1	4690
346	1	4691	348	1	4692
350	1	4693	355	1	4694
357	1	4695	358	1	4696
365	1	4697	367	1	4698
368	1	4699	371	1	4700
374	1	4701	376	1	4702
393	1	4703	405	1	4704
419	2	4705	422	1	4706
446	1	4707	452	1	4708
454	1	4709			

The special category of backlogged prisoners is released via a matrix following the release matrix for the persons without a minimum term and the miscodes in lines 123 through 162 of WYL.OF.PRI.LIB(BASEPOP). Lacking any knowledge of the historical rate of release for backlogged persons, it was decided that inverting the pattern of retaining persons beyond their release date would serve as the overriding rationale for releasing this group. In this way a greater number of persons would initially be released with the number of releases declining over time. The latest anyone is released from the backlog population is month 30 of the forecast.

The structure of the release matrix for the backlogged offenders is as follows. The first 20 lines pertain to males and the second twenty lines pertain to females. Each crime within the sex categories requires two lines with each successive entry on these lines representing the number of backlogged offenders being released in a specific month. On the first line within each crime category releases for months 1-15 are shown, and on the second line releases for months 16-30 are shown. There are ten crime categories within each sex category. The first two rows represent murder 1, the second set of two rows represent murder 2, and then follow sex crimes, robbery, assault, property crimes, drug crimes, other offenses and parole violators. Notice that zeros are entered in the lines for parole violators. Parole violators who were backlogged were redistributed proportionately across the other crime types so as to comply with the crime structure of the overall prison population forecast model.

The distribution of the releases for the total base population is the result of adding the backlog population distribution to that calculated for the non-backlog population. The non-backlog population at this point in the program includes the special categories of miscodes and persons without minimum terms. This total distribution is then utilized to calculate the number of prisoners remaining and released in each month of the forecast for the base population. These two distributions, prisoners remaining in prison and prisoners released, are combined and written out to a disk file -- \$OPPFM.Y1986.BASEPOP.

Exhibit 6 shows the distribution of the base prison population across sex and crime types. Exhibit 7 is a listing of the forecast program WYL.OF.PRI.LIB(BASEPOP).

SPECIAL PROBLEMS

Updating this section of the prison population forecast presents special problems because the size and makeup of a new prison population will differ from the one used in this forecast. The change in the size of the new base population can easily be incorporated by the forecast model by altering the second parameter on line 19 of the WYL.OF.PRI.LIB(BASEPOP). In Exhibit 7, the present size of the prison population on line 19 is shown as 4720. The analysis be performed for the special categories of prisoners without minimum terms, with miscodes, and who are backlogged. Furthermore, new length of stay and backlog release matrices need to be developed to meet the changes in the future prison population.

EXHIBIT 6. The Distribution of the Base Population
As of June, 1981, Classified by Sex and Crime Type

	MURDER	MURDER II	MANSLAUGHTER	SEX CRIMES	ROBBERY	ASSAULT	PROPERTY CRIMES	DRUGS	OTHER	TOTAL
MALE	220	203	105	719	847	596	1616	144	70	4520
FEMALE	14	7	14	6	41	27	66	21	4	200
TOTAL	234	210	119	725	888	623	1682	165	74	4720

EXHIBIT 7: The Program Listing of WYL.OF.PRI.LIB(BASEPOP)
The Forecast of Base Prison Population

```
1. //BASEPOP JOB (,,99,0,,01),FELIX,TIME=(,09),MSGLEVEL=(1,1)
2. // EXEC FORG1CLG
3. //FORT.SYSIN DD *
4.      DIMENSION MINTRM(2,9,20),MBCKLG(2,10,30),INPUT(13)
5.      DIMENSION INC(20),ICOUNT(2,9),IOUT(10,180,2,2)
6.      DATA MINTRM /360*0/,MBCKLG /600*0/, INPUT /13*0/, IOUT /7200*0/
7.      DATA ICOUNT /18*0/
8.      DATA INC /7,7,7,7,7,7,7,7,4,4,5,5,6,6,6,8,8,9,3/
9.      READ(5,500) (((MINTRM(I,J,K),K=1,20),J=1,9),I=1,2)
10.     500 FORMAT(20I3)
11.     READ(5,501) (((MBCKLG(I,J,K),K=1,30),J=1,10),I=1,2)
12.     501 FORMAT(15I4/15I4)
13.     502 FORMAT(I7,1X,I1,1X,I1,1X,I1,1X,I2,1X,I1,1X,I2,1X,I2,1X,I2,1X,I4,
14.           1X,I1)
15.           LL=0
16.           ISUM = 0
17.           MBACK = 0
18.           NREC = 0
19.           DO 100 NCASES = 1,4720
20.           NREC = NREC + 1
21.           READ(12,502) (INPUT(I),I = 1,13)
22.           ISEX = INPUT(2)
23.           ICRIM = INPUT(5)
24.           IF(ICRIM .EQ. 9) ICRIM = 10
25.           IF(INPUT(5) .EQ. 10) ICRIM = 9
26.           IF(INPUT(5) .EQ. 11) ICRIM = 9
27.           IF(INPUT(5) .EQ. 99) ICRIM = 9
28.           IF(ICRIM .NE. 10) GO TO 800
29.           LL=LL+1
30.           ICRIM=INC(LL)
31.           IF(LL .EQ. 20) LL=0
32.           800  IF(INPUT(7) .EQ. 00 .AND. INPUT(8) .EQ. 00) GO TO 300
33.           IF(INPUT(7) .EQ. 00 .AND. INPUT(8) .NE. 00)
34.               INPUT(7) = INPUT(7) + 100
35.               IF(INPUT(7) .GT. 00 .AND. INPUT(7) .LT. 69)
36.                   INPUT(7) = INPUT(7) + 100
37.                   IPER = (((INPUT(7) * 12) + INPUT(8)) - 978)
38.                   *****978 REFERS TO JUNE,1981*****
39.                   GO TO 302
40.           300  ICOUNT(ISEX,ICRIM)=ICOUNT(ISEX,ICRIM)+1
41.               NM=ICOUNT(ISEX,ICRIM)
42.               IPER=MINTRM(ISEX,ICRIM,NM)
43.               IF(ICOUNT(ISEX,ICRIM) .EQ. 20) ICOUNT(ISEX,ICRIM)=0
44.               302  IF(IPER .GT. 180) GO TO 305
45.                   IF(IPER .GT. 0 .AND. IPER .LT. 181) GO TO 304
46.                   IF(IPER .GE. -30 .AND. IPER .LE. 0) GO TO 301
47.                   IF(IPER .LT. -30) GO TO 400
48.                   GO TO 304
```

EXHIBIT 7: Continued

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49.    400 ICOUNT(ISEX,ICRIM)=ICOUNT(ISEX,ICRIM)+1
50.          MM=ICOUNT(ISEX,ICRIM)
51.          IPER=MINTRM(ISEX,ICRIM,MM)
52.          IF(ICOUNT(ISEX,ICRIM) .EQ. 20)ICOUNT(ISEX,ICRIM)=0
53.          IF(IPER .GT. 180)GO TO 305
54.    304 IOU(IICRIM,IPER,ISEX,2) = IOU(IICRIM,IPER,ISEX,2) + 1
55.          GO TO 100
56.    305 IOU(IICRIM,180,ISEX,1) = IOU(IICRIM,180,ISEX,1) + 1
57.          GO TO 100
58.    301 MBACK = MACK + 1
59.    100 CONTINUE
60.          DO 308 ISEX = 1,2
61.          DO 309 ICRIM = 1,10
62.          DO 310 IPER = 1,30
63.          IOU(IICRIM,IPER,ISEX,2) = IOU(IICRIM,IPER,ISEX,2) +
64.                                MBCKLG(ISEX,ICRIM,IPER)
65.    310 CONTINUE
66.    309 CONTINUE
67.    308 CONTINUE
68.          DO 311 ISEX = 1,2
69.          DO 312 ICRIM = 1,10
70.          DO 313 IPER = 1,180
71.          ISUM = IOU(IICRIM,IPER,ISEX,2) + ISUM
72.    313 CONTINUE
73.          ISUM = ISUM + IOU(IICRIM,180,ISEX,1)
74.          DO 314 IPER = 1,179
75.          IOU(IICRIM,IPER,ISEX,1) = ISUM - IOU(IICRIM,IPER,ISEX,2)
76.          ISUM = ISUM - IOU(IICRIM,IPER,ISEX,2)
77.    314 CONTINUE
78.          ISUM = 0
79.    312 CONTINUE
80.    311 CONTINUE
81.          DO 315 I = 1,1
82.          DO 316 K = 1,2
83.          DO 317 J = 1,180
84.          WRITE(6,606) IOU(I,J,K,1),IOU(I,J,K,2),
85.                      1,IOU((I+1),J,K,1),IOU((I+1),J,K,2),
86.                      2,IOU((I+2),J,K,1),IOU((I+2),J,K,2),
87.                      1,IOU((I+3),J,K,1),IOU((I+3),J,K,2),
88.                      2,IOU((I+4),J,K,1),IOU((I+4),J,K,2),
89.                      1,IOU((I+5),J,K,1),IOU((I+5),J,K,2),
90.                      2,IOU((I+6),J,K,1),IOU((I+6),J,K,2),
91.                      1,IOU((I+7),J,K,1),IOU((I+7),J,K,2),
92.                      2,IOU((I+8),J,K,1),IOU((I+8),J,K,2),
93.                      1,IOU((I+9),J,K,1),IOU((I+9),J,K,2)
94.    606 FORMAT(1X,20I6)
95.    317 CONTINUE
96.    316 CONTINUE
97.    315 CONTINUE
98.    WRITE(13,600) (((((IOU(I,J,K,L),L=1,2),K=1,2),J=1,180),I=1,10)
99.    600 FORMAT(2I10)
100.    STOP
101.    END
102. //GO.FT12F001 DD DSN=WYL.OF.PRI.EXISTPOP,DISP=GHR
103. //GO.FT13F001 DD DSN=OPPFH.Y1986.BASEPDP,DISP=(OLD,KEEP,DELETE)
104. //GO.SYSIN DD *

```

EXHIBIT 7: Continued

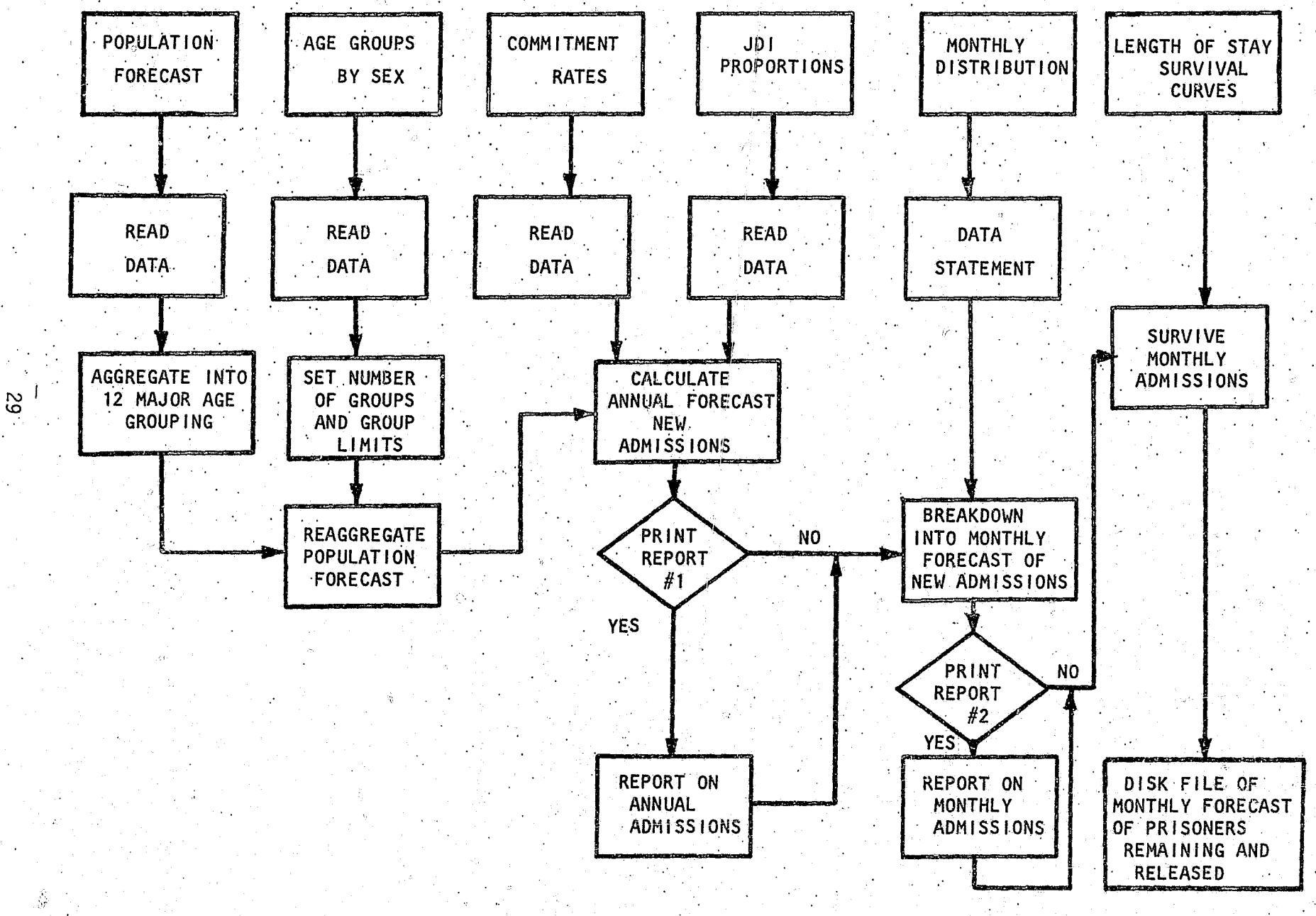
NEW ADMISSIONS FROM THE COURTS

The subpopulation of new admissions from the courts is a forecasted component of the total prison population. The algorithm used to develop the new admissions population is presented in Exhibit 8. The tasks of this program -- WYL.OF.PRI.LIB(NEWADMIT) -- are many fold. First, there are numerous basic data inputs, that are themselves forecasted series. The major data inputs include a state population forecast, a conviction rate forecast, and a judicial decision to imprison forecast. Using these data inputs, a projection of annual new admissions to prison is calculated. The annual admissions are then broken down into a monthly projection. Each month's admissions are subsequently considered individual cohorts which are then survived through the forecast period using the length of stay curves. The subpopulation forecast for new admissions to prison is the result of the summation, across cohorts, of those remaining in prison in each month and of those released each month.

As outlined above, the new admissions to prison are the result of the combination of several data series. Most of these data series--state population forecast, conviction rate forecast, JDI forecast, and length of stay curves--are developed from assumptions and methodologies that are independent of the mechanics of the program. The assumptions and methodologies utilized to develop the input for this forecast may be found in Washington State: Population Projection System and Prison Population Forecast For Washington State FY 1982-1995: Methods, Procedures and Findings. Both reports are published by the Washington State Office of Financial Management's Forecasting and Estimation Division.

The State's population forecast --WYL.OF.PRI.DATA(PFOR)-- is an exogenous force driving the forecast of new prison admissions from the courts. The denominator, or base, from which the prison population may be drawn is taken to be all individuals in the state between the ages of 16 and 54, both males and females. This base is the population that is "at risk" of going to prison for the commission of a felony crime. Greater precision in the estimation of convictions can be gained by controlling for age and sex.

EXHIBIT 8
NEW ADMISSIONS FROM THE COURTS



That is, certain age groups are more likely to commit one particular type of crime as opposed to another type of crime. Therefore, in order to give flexibility to the forecaster the program first organizes the at "Risk Population" into twelve major age groupings, as follows: 16 to 17, 18, 19, 20, 21, 22, 23, 24, 25 to 29, 30 to 34, 35 to 39, and 40 and over (ie, 40 to 54). These age subclassifications are then uniquely grouped to provide the best estimations for each type of crime.

Prior to any further data preparation the decision must be made as to which age groupings are significant, by sex, for each crime type. The age groupings of the current forecast are stored as input in card image immediately following the source program, lines 268 to 285 in Exhibit 11.

Two other data sets must be developed prior to calculating the forecast. The first of these is WYL.OF.PRI.DATA(COMM), the conviction rates, by age, sex, and crime type. The rates currently stored in this data set were developed by the Governor's Interagency Criminal Justice Workgroup after examination of historical patterns². (See Exhibit 9)

The second dataset that must be developed is WYL.OF.PRI.JDI. This data set represents the proportions for the judicial decisions to imprison once convicted by age, sex, and crime type. The rates currently stored in the system were developed in a similar manner as described above for the conviction rates (see also footnote 2). (See Exhibit 10)

The data statement, line 18 in Exhibit 11, which fills the array MONTH provides the program with a means of breaking the annual admission figures out to monthly figures. The rationale underlying the distribution

²The analysis of historical patterns of conviction rates (as measured by commitment to the Department of Corrections) and of judicial decisions to imprison was facilitated by the algorithm in the file WYL.OF.WWU.LIB (HISTREPT) which summarized historical data provided by the Department of Corrections. The files related to this analysis are described in the section describing the Historical Analysis.

EXHIBIT 9. Example of Data From WYL.OF.PRI.DATA(COMM): The Commitment Rates By Age and Sex For the Forecast Period

- 1) Each Input Record requires two cards.
 - 2) The record Layout Is As Follows:

Card 1

COLUMNS	DATA	COLUMNS	DATA
1-2	Crime Type	50-55	Eight Year of Forecast
3	Sex	56-61	Ninth Year of Forecast
4-5	Lower Limit of Age Group	62-67	Tenth Year of Forecast
6-7	Upper Limit of Age Group	68-73	Eleventh Year of Forecast
8-13	First Year of Forecast	74-79	Twelfth Year of Forecast
14-19	Second Year of Forecast		Card 2
20-25	Third Year of Forecast	1-7	Blank
26-31	Fourth Year of Forecast	8-13	Thirteenth Year of Forecast
32-37	Fifth Year of Forecast	14-19	Fourteenth Year of Forecast
38-43	Sixth Year of Forecast	20-25	Fifteenth Year of Forecast
44-49	Seventh Year of Forecast		

-) The Crime Types Are As Follows:

- 4) The Age Limits Are As Follows:

1	Murder I	6	Assault	1	16	to	17	7	23
2	Murder II	7	Property Crimes	2	18		8		24
3	Manslaughter	8	Drugs	3	19		9	25	to 29
4	Sex Crimes	9	Other	4	20		10	30	to 34
5	Robbery			5	21		11	35	to 39
				6	22		12	40	and over

- 5) The Sexes Are As Follows:**

1 Male
2 Female

EXHIBIT 10: Example of Data From WYL.OF.PRI.DATA(JD1): Judicial Decision
To Imprison Proportions, By Age, Sex, and Crime Type

51 .632 .632 .632 .632 .632 .632 .632 .632 .632 .632 .632 .632 .632 .632 .632
51 .556 .556 .556 .556 .556 .556 .556 .556 .556 .556 .556 .556 .556 .556 .556
51 .584 .584 .584 .584 .584 .584 .584 .584 .584 .584 .584 .584 .584 .584 .584
51 .583 .583 .583 .583 .583 .583 .583 .583 .583 .583 .583 .583 .583 .583 .583
51 .620 .620 .620 .620 .620 .620 .620 .620 .620 .620 .620 .620 .620 .620 .620
51 .626 .626 .626 .626 .626 .626 .626 .626 .626 .626 .626 .626 .626 .626 .626
52 .478 .478 .478 .478 .478 .478 .478 .478 .478 .478 .478 .478 .478 .478 .478
61 .713 .713 .713 .713 .713 .713 .713 .713 .713 .713 .713 .713 .713 .713 .713

- 1) The Record Layout Is As Follows:

Columns	Data
1-2	Crime Type
3	Sex
4-9	First Year of Forecast
10-14	"
15-19	"
20-24	"
25-29	"
30-34	"
35-39	"
40-44	"
45-49	"
50-54	"
55-59	"
60-64	"
65-69	"
70-74	"
75-79	Fifteenth Year of Forecast

32

- 2) The Crime Type and sex coding is detailed in Exhibit 9.

- 3) The number of cards for each crime type by sex should equal the number of age groupings. The number of cards must correspond to the number of cards in data set WYL.OF.PRI.DATA(COMMA).

requires the rank ordering of the months to correspond to the seasonality of admissions; that is, the month with the highest number of admissions is rank 1. Further research is warranted to assess the seasonal pattern for the admissions to prison.

Finally, the length of stay curves must be read into the program so that the individual cohorts can be survived through the forecast. These curves are developed by the program WYL.OF.PRI.SURVIVE which is documented in Appendix II. Again, as with all input, these curves should be reassessed prior to each update of the model.

The calculations that produce the forecast are rather straightforward once the input has been prepared. The annual forecast of new admissions is simply the product of each age by sex and crime aggregate of the three input matrices: the population forecast, the conviction rates, and the judicial decision to imprison proportions. The program allows the option of printing a report on the forecasted annual admissions by sex and crime type.

Utilizing the seasonality vector in the data array MONTH the forecasted annual admissions are spread back over the year. This calculation produces a 180 month admissions forecast. The program allows the option of printing this monthly forecast.

The next assumption necessary prior to the final calculation of the forecast, is the recognition of each forecasted monthly admission as a cohort, ie, a group that has a life course unique unto itself as a result of the month in which it came into being. This assumes a more accurate reflection of reality within the model.

Each cohort is survived through the forecast period. The number remaining and the number released in each month of the forecast is recorded for each cohort. The forecast of new admissions from the court subpopulation is then the sum of the number remaining and released across the 180 cohorts that appear in the forecast.

The program WYL.OF.PRI.LIB(NEWADMIT) has the option of producing two different reports. One report shows the number of annual new admissions from the courts to prison by sex and type of crime. The other report shows the number of monthly new admissions from the courts by sex and type of crime. The switches for these reports are on lines 26 and 27. If IDISP2 = 0 there will be no output for the monthly forecast admission report. Either switch can be turned on by entering a "1" in place of the "0". Whether or not the reports are desired WYL.OF.PRI.LIB(NEWADMIT) generates the output subpopulation forecast file -- \$OPPFM.Y1986.NEWADMIT.

The program listing for WYL.OF.PRI.LIB(NEWADMIT) follows and is listed as Exhibit 11.

**EXHIBIT 11: The Program Listing of WYL.OF.PRI.LIB(NEW ADMIT)
The Forecast of the New Admissions From the Courts**

USE L

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1. //NEWADMIT JOB (,,99,0,,01),FELIX,TIME=(,09),MSGLEVEL=(1,1)
2. // EXEC FORGICLG,REGION=500K
3. //FORT.SYSIN DD *
4.      DIMENSION IPDP(3,15,13),COMMIT(9,2,13,15),AJDI(9,2,13,15),
5.      1  IFORE(15,2,67),R(2,12,13),ICRNAM(28,15),LABEL(9,2,156)
6.      DIMENSION NPUT(29),NAGG(9,2,27),IOUT(2,12,26),IOUT1(3,3,12,13)
7.      DIMENSION RJDI(3,12,13),RJDP(3,12,13),IPDP1(234,15)
8.      DIMENSION NCOMM(9,2,13,15),NADIM(10,3,14,15),MADM(10,3,180)
9.      DIMENSION MONTH(12),IWORK(9,2,180),IREL(2,9,2,180),
10.     *BREAK(10,2,180),NAD1(10,3,14,15)
11.     DATA RJDI /468*0.0/,RJDP /468*0.0/,NCOMM /3510*0/
12.     DATA IPDP /585*0/,COMMIT /3510*0.0/, AJDI /3510*0.0/,
13.     4  IFORE /2010*0/,R /312*0.0/,ICRNAM /420*0/,LABEL /2808*0/
14.     DATA NPUT /29*0/,NAGG /486*0/,IOUT /624*0/,IOUT1/1404*0/,
15.     *  IPDP1 /3510*0/,NADIM /6300*0/,MADM /5400*0/
16.     DATA IWORK /3240*0/, IREL /6480*0/,BREAK /3240*0.0/
17.     DATA NAD1 /6300*0/
18.     DATA MONTH /9,10,1,6,2,4,3,5,11,12,7,8/
19. C INDATA(1=YEAR;2=SEX;3=AGE;4=RACE;5=DISPOSITION;6THRU15=CRIME
20. C      MUR1,MUR2,MANSLAT,SEX,ROBBERY,ASSAULT,PROPERTY,DRUGS,
21. C      OTHER FELONIES,NOT REPORTED
22. C      ICRIIME(CRIME,DISPOSITION,SEX,YEAR,AGE)
23. C      IPDP(SEX,YEAR,AGE)
24. C      IFORE(YEAR,SEX,AGE)
25. C      R(CRIME,SEX,YEAR,AGE)
26.      IDISP1 = 1
27.      IDISP2 = 1
28.      READ(12,11) (((IFORE(I,J,K),K = 1,67),J = 1,2),I = 1,15)
29.      DO 111 J = 1,2
30.          DO 112 I = 1,15
31.              IPDP(J,I,1) = IFORE(I,J,17) + IFORE(I,J,18)
32.              DO 113 K = 2,8
33.                  IPDP(J,I,K) = IFORE(I,J,(K+17))
34.      113 CONTINUE
35.      DO 114 KK = 26,30
36.          IPDP(J,I,9) = IPDP(J,I,9) + IFORE(I,J,KK)
37.      114 CONTINUE
38.      DO 115 KK = 31,35
39.          IPDP(J,I,10) = IPDP(J,I,10) + IFORE(I,J,KK)
40.      115 CONTINUE
41.      DO 116 KK = 36,40
42.          IPDP(J,I,11) = IPDP(J,I,11) + IFORE(I,J,KK)
43.      116 CONTINUE
44.      DO 117 KK = 41,55
45.          IPDP(J,I,12) = IPDP(J,I,12) + IFORE(I,J,KK)
46.      117 CONTINUE
47.      112 CONTINUE
48.      111 CONTINUE
49.      READ(5,12) ((ICRNAM(I,J),J = 1,15),I = 1,28)
50.      12 FORMAT(15A1)

```

Exhibit 11: Continued

```

51.      DO 140  MR=1,18
52.      READ(5,14)(NPUT(I),I=1,29)
53.      N = NPUT(1)
54.      NSEX = NPUT(2)
55.      NGRF = NPUT(3)
56.      LIMIT = NGRF*2+1
57.      NAGG(N,NSEX,1) = NGRF
58.      DO 141  IGRP = 2,LIMIT
59.          NAGG(N,NSEX,IGRP) = NPUT(IGRP + 2)
60.      141  CONTINUE
61.      140  CONTINUE
62.      DO 354  INDEX = 1,18
63.          READ(5,13) N,ISEX,(LABEL(N,ISEX,LGRP),LGRP = 1,156)
64.          13  FORMAT(I2,I1,2X,72A1 / 72A1 / 12A1)
65.      354  CONTINUE
66.      14  FORMAT(I2,I1,27I2)
67.      11  FORMAT(7X,9I8/10I8/10I8/10I8/10I8/8I8/)
68.      LL = 0
69.      DO 600  I = 1,10
70.          DO 601  J = 1,2
71.              READ(14,597)(BREAK(I,J,L),L=1,180)
72.          597  FORMAT(7(24F5.3/),12F5.3/)
73.          IF(I .EQ. 10)GO TO 600
74.          NGRPS=NAGG(I,J,1)
75.          DO 602  K=1,NGRPS
76.              ILow=NAGG(I,J,(K*2))
77.              IHi=NAGG(I,J,(K*2+1))
78.              READ(11,599)(COMMIT(I,J,K,L),L=1,15)
79.          599  FORMAT(7X,12F6.3/7X,3F6.3)
80.              READ(13,598)(AJDI(I,J,K,L),L=1,15)
81.          598  FORMAT(4X,15F5.3)
82.          LL=LL+1
83.          DO 603  IYR=1,15
84.              DO 604  IAGE=ILow,IHi
85.                  IPOP1(LL,IYR)=IPOP1(LL,IYR)+IPOP(J,IYR,IAGE)
86.          604  CONTINUE
87.          NCOMM(I,J,K,IYR)=(COMMIT(I,J,K,IYR)*
88.              (FLOAT(IPOP1(LL,IYR)))/1000.
89.          NADIM(I,J,K,IYR)=(NCOMM(I,J,K,IYR)*AJDI(I,J,K,IYR))+.5
90.          603  CONTINUE
91.          602  CONTINUE
92.          601  CONTINUE
93.          600  CONTINUE
94.          DO 610  I=1,9
95.              DO 611  J=1,2
96.                  DO 612  L=1,15
97.                      DO 613  K=1,13
98.                          NADIM(I,J,14,L)=NADIM(I,J,14,L)+NADIM(I,J,K,L)
99.          613  CONTINUE
100.         612  CONTINUE
101.         611  CONTINUE
102.         610  CONTINUE

```

Exhibit 11: Continued

```

103.      DO 670  J=1,2
104.      DO 671  K=1,14
105.      DO 672  L=1,15
106.      DO 673  I=1,9
107.          NADIM(10,J,K,L)=NADIM(10,J,K,L)+NADIM(I,J,K,L)
108.      673  CONTINUE
109.      672  CONTINUE
110.      671  CONTINUE
111.      670  CONTINUE
112.      DO 690  I=1,10
113.      DO 691  K=1,14
114.      DO 692  L=1,15
115.          DO 693  J=1,2
116.              NADIM(I,3,K,L)=NADIM(I,3,K,L)+NADIM(I,J,K,L)
117.      693  CONTINUE
118.      692  CONTINUE
119.      691  CONTINUE
120.      690  CONTINUE
121.      DO 840  I=1,10
122.          DO 841  J=1,3
123.              DO 842  K=1,14
124.                  DO 843  L=1,15
125.                      NADIM(I,J,K,L)=NADIM(I,J,K,L)
126.          843  CONTINUE
127.          842  CONTINUE
128.          841  CONTINUE
129.          840  CONTINUE
130.          IF(IDISPI .EQ. 0)GO TO 810
131.          WRITE(6,700)
132.      700  FORMAT(1H1,35X,'ADMISSION FORECAST BY CRIME TYPE AND SEX',1X,
133.      *, 1982-1995///1X,'CRIME',16X,'FY-82 FY-83 FY-84 FY-85',2X,
134.      *'FY-86 FY-87 FY-88 FY-89 FY-90 FY-91 FY-92 FY-93',2X,
135.      *'FY-94 FY-95')
136.          DO 800  I=1,10
137.              WRITE(6,701)(ICRNAM(I,J),J=1,15)
138.          701  FORMAT(//1X,15A1)
139.          DO 801  J=1,3
140.              KK=J+10
141.              WRITE(6,702)(ICRNAM(KK,M),M=1,6),(NADIM(I,J,14,L),L=1,14)
142.          702  FORMAT(2X,6A1,12X,14(2X,15))
143.          801  CONTINUE
144.          800  CONTINUE
145.          810  DO 620  I=1,9
146.              DO 621  J=1,2
147.                  DO 622  L=1,15
148.                      KK=1
149.          629  IF(NADIM(I,J,14,L) .EQ. 0)GO TO 622
150.          IF(L .EQ. 1)LM=MONTH(KK)
151.          LM=MONTH(KK)+(12*(L-1))
152.          MADM(I,J,LM)=MADM(I,J,LM)+1
153.          NADIM(I,J,14,L)=NADIM(I,J,14,L)-1
154.          KK=KK+1
155.          IF(KK .EQ. 13)KK=1
156.          GO TO 629

```

Exhibit 11: Continued

```

157. 622 CONTINUE
158. 621 CONTINUE
159. 620 CONTINUE
160. DO 680 J=1,2
161. DO 681 K=1,180
162. DO 682 I=1,9
163.      MADM(10,J,K)=MADM(10,J,K)+MADM(I,J,K)
164. 682 CONTINUE
165. 681 CONTINUE
166. 680 CONTINUE
167. DO 695 I=1,10
168.      DO 696 K=1,180
169.      DO 697 J=1,2
170.      MADM(I,3,K)=MADM(I,3,K)+MADM(I,J,K)
171. 697 CONTINUE
172. 696 CONTINUE
173. 695 CONTINUE
174. IF(IDISP2 .EQ. 0)GO TO 830
175. LL=-11
176. L=0
177. 820 L=L+1
178. KK=LL+13
179. IF(L .GT. 14)GO TO 830
180. LL=LL+12
181. MM=LL+11
182. WRITE(6,703)(ICRNAME(KK,M),M=1,5)
183. 703 FORMAT(1H1,34X,'ADMISSION FORECAST BY CRIME TYPE, SEX',1X,
184. *'AND MONTH'//1X,'CRIME',16X,'JULY AUG SEPT OCT',4X,
185. *'NOV DEC JAN FEB MAR APR MAY JUNE',2X,
186. *5A1)
187. DO 831 I=1,10
188.      WRITE(6,701)(ICRNAME(I,J),J=1,15)
189.      DO 832 J=1,3
190.          KKK=J+10
191.          WRITE(6,704)(ICRNAME(KKK,M),M=1,6),(MADM(I,J,K),K=LL,MM),
192. * NAD1(I,J,14,L)
193. 704 FORMAT(2X,6A1,10X,13(2X,15))
194. 832 CONTINUE
195. 831 CONTINUE
196. GO TO 820

```

Exhibit 11: Continued

```

197. 830 DO 650 I=1,9
198.      DO 652 J=1,2
199.          IL0=1
200.      641 L=0
201.      DO 642 IA=IL0,180
202.          L=L+1
203.          IWORK(I,J,IA)=((FLOAT(MADM(I,J,IL0)))*BREAK(I,J,L))+.5
204.      642 CONTINUE
205.      ISUM=0
206.      ICOUNT=0
207.      DO 643 IB=IL0,179
208.          IC=IB+1
209.          ISUM=ISUM+(IWORK(I,J,IB)-IWORK(I,J,IC))
210.          IF(ISUM .LE. MADM(I,J,IL0))GO TO 643
211.          ICOUNT=IC
212.      GO TO 646
213. 643 CONTINUE
214. IF(ICOUNT .EQ. 0) GO TO 647
215. 646 DO 644 ID=ICOUNT,180
216.          IWORK(I,J,ID)=0
217. 644 CONTINUE
218. 647 DO 648 IH=IL0,179
219.          IG=IH+1
220.          IREL(2,I,J,IG)=IREL(2,I,J,IG)+(IWORK(I,J,IH)-IWORK(I,J,IG))
221. 648 CONTINUE
222. 645 IE=1,180
223. 646 IREL(1,I,J,IE)=IREL(1,I,J,IE)+IWORK(I,J,IE)
224.          IWORK(I,J,IE)=0
225. 645 CONTINUE
226. 646 IL0=IL0+1
227. 647 IF(IL0 .LT. 180)GO TO 641
228. 652 CONTINUE
229. 650 CONTINUE
230.      WRITE(15,500) (((IREL(I,J,K,L),I=1,2),K=1,2),L=1,180),J=1,9
231. 500 FORMAT(2I10,60X)
232. STOP
233. END
234. //GO.FT11F001 DD DSN=WYL.OF.PRI.DATA(COMMA),DISP=SHR
235. //GO.FT12F001 DD DSN=WYL.OF.PRI.DATA(PFOR),DISP=SHR
236. //GO.FT13F001 DD DSN=WYL.OF.PRI.DATA(JDIA),DISP=SHR
237. //GO.FT14F001 DD DSN=WYL.OF.PRI.SURVIVE,DISP=SHR
238. //GO.FT15F001 DD DSN=OPPFM.Y1986.REQUEST,DISP=(OLD,KEEP,DELETE)
239. //GO.SYSIN DD *

```

Exhibit 11: Continued

240. MURDER 1
241. MURDER 2
242. HANSLAUGHTER
243. SEX CRIMES
244. ROBBERY
245. ASSAULT
246. PROPERTY CRIMES
247. DRUGS
248. OTHER FELONIES
249. ALL CRIMES
250. MALE
251. FEMALE
252. TOTAL
253. FY-82
254. FY-83
255. FY-84
256. FY-85
257. FY-86
258. FY-87
259. FY-88
260. FY-89
261. FY-90
262. FY-91
263. FY-92
264. FY-93
265. FY-94
266. FY-95
267. FY-96
268. 11 1 112
269. 12 1 112
270. 21 1 112
271. 22 1 112
272. 31 1 112
273. 32 1 112
274. 41 1 112
275. 42 1 112
276. 51 6 1 1 2 4 5 7 8 910101112
277. 52 1 112
278. 61 4 1 1 2 910111212
279. 62 1 112
280. 71 7 1 1 2 4 5 7 8 910101111212
281. 72 1 112
282. 81 1 112
283. 82 1 112
284. 91 1 112
285. 92 1 112

Admissions Due to Parole Failure

Two subpopulations are forecasted that consist of individuals who were previously released from prison on parole and subsequently returned to prison as a result of parole failure. The subpopulations are differentiated on the basis of the agency that initiates the return to prison either the courts or the parole board. The strategy of two separate subpopulation forecasts for parole failure stems from the observation that the length of stay patterns are substantially different depending on the agency of readmission. Exhibit 13 presents the algorithm which details the approach taken in forecasting admissions due to parole failure. Simply stated, this approach calculates the annual releases from all subpopulations, uses this base to calculate annual admissions, divides these admissions by agency, releases these admissions and then utilizes the new round of releases to calculate the next forecast cycle. The forecast is calculated first on an annual basis and subsequently broken out to a monthly forecast.

Several files are required in the calculation of the parole failure forecast (see Exhibit 2). The source program, WYL.OF.PRI.LIB(PAROLEES), is presented in Exhibit 14. Three external files are accessed by the program WYL.OF.PRI.LIB(PAROLEES), they are WYL.OF.PRI.SURVIVE, \$OPPFM.Y1986.BASEPOP, and \$OPPFM.Y1986.NEWADMIT. The latter two datasets are the results of the subpopulation forecasts discussed above while the former is the length of stay distributions.

Several sets of input are included in the program file. Two input data sets are found in the DATA statements. The vector MS contains the monthly release pattern (line 14). The vector MREM contains the monthly remaining pattern (line 15). Two small data sets follow the source program as card image input. The first of these is the historical releases for the last five years, with sex and crime detail. The second is the recidivism rates which has similar detail.

Exhibit 12 presents an example worksheet that is filled in by the program WYL.OF.PRI.LIB(PAROLEES). Note that a worksheet is completed for each sex and crime type. The first task of the subpopulation forecast is to initialize the worksheet. Utilizing the already generated forecasts for the base population from \$OPPFM.Y1986.BASEPOP and the new admissions from the court from \$OPPFM.Y1986.NEWADMIT the first two columns of both those remaining and those released are filled in. In the case of 'remaining in prison' this process is a straight transfer of data from these files. That is, every twelfth figure is transferred to the worksheet. The number released per year is the result of the summation, across months, of the particular year. It is this sum that is transferred to the worksheet as the number released.

The actual calculation of the forecast is described below. The same calculations are repeated for each year of the forecast, consequently, only the first cycle will be described.

The first major calculation of the forecast is annual admissions. This calculation uses two data sets that are found in card image immediately following the source code in Exhibit 14. The first data matrix, historical releases is located in lines 340 to 349. The first five rows represent males, and the second five rows represent females. The columns of data refer to the type of crime and are ordered left to right as murder 1, murder 2, manslaughter, sex offenses, assault, robbery, property crime, drug offenses, and other crimes. The rows within the male and female segments represent fiscal year; the first row being FY1977 and the fifth row being FY 1981. Each cell in the matrix represents the number of releases by sex and type of crime for a specific year.

The second data matrix, recidivism rates, is located in lines 350 to 367. This data set is structured as shown in the following example:

EXHIBIT 12: Example Worksheet That is Calculated By the Program WYL.OF.PRI.LIB(PAROLEES)

CRIME =

SEX =

NUMBER REMAINING

	BASE POP	NEW ADMITS	1982 COURT	1982 BOARD	1983 COURT	1983 BOARD	1995 COURT	1995 BOARD	TOTAL COURT	TOTAL BOARD	TOTAL TOTAL
--	-------------	---------------	---------------	---------------	---------------	---------------	----	----	----	---------------	---------------	----------------	----------------	----------------

1982

1983

.

.

.

.

1995

43 NUMBER RELEASED

	BASE POP	NEW ADMITS	1982 COURT	1982 BOARD	1983 COURT	1983 BOARD	1995 COURT	1995 BOARD	TOTAL COURT	TOTAL BOARD	TOTAL TOTAL
--	-------------	---------------	---------------	---------------	---------------	---------------	----	----	----	---------------	---------------	----------------	----------------	----------------

1982

1983

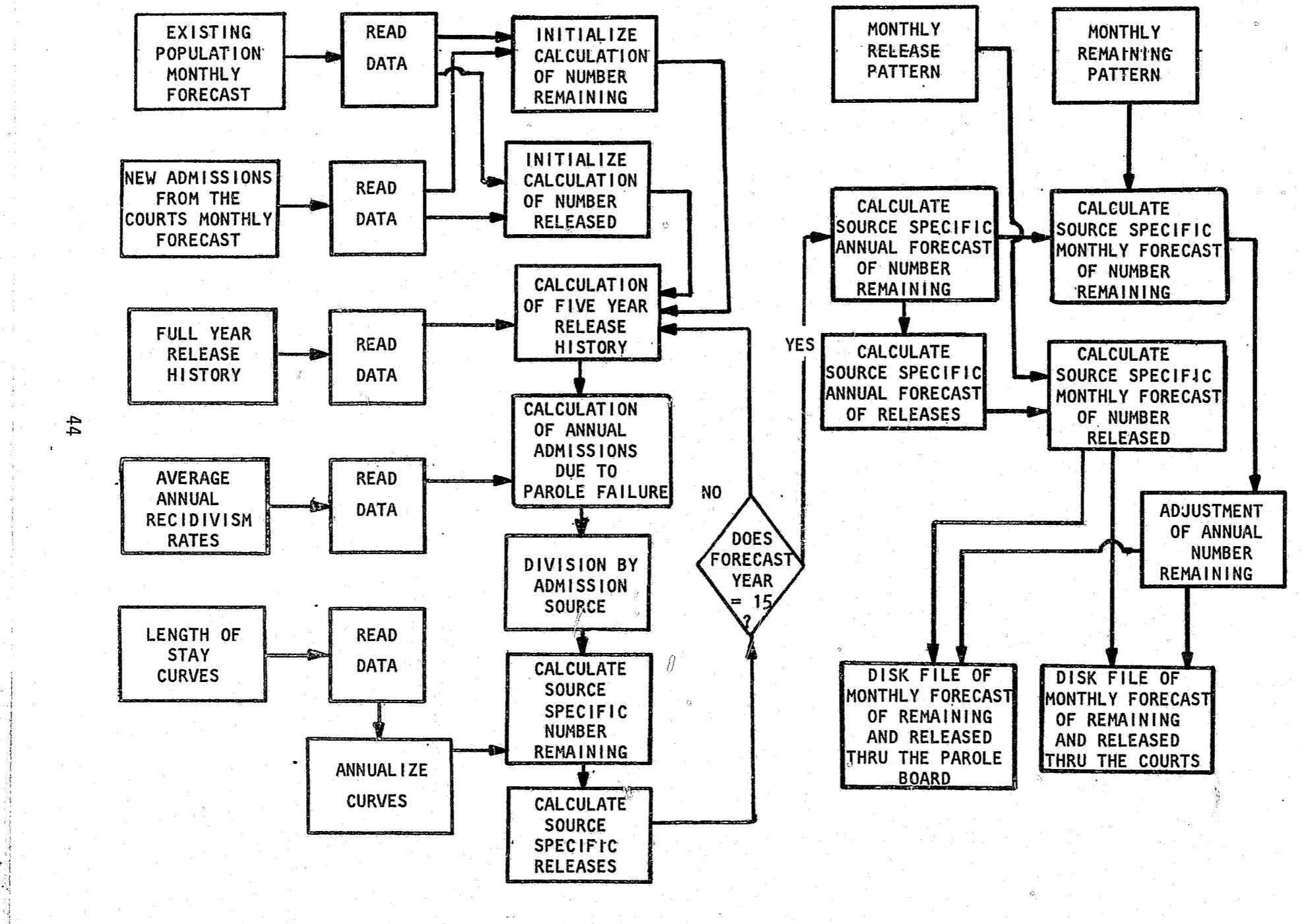
.

.

.

1995

EXHIBIT 13. Algorithm Depicting Calculation of Parole Returnee Forecast



Years past release from prison

	1	2	3	4	5	
.103	.026	.071	.116	.184		Male
.092	.037	.019	.024	.031		Female
.102	.063	.037	.016	.011		Male
.		Female
.		Male
.		Female

murder 1

murder 2

manslaughter

Each cell in this matrix represents the percentage of persons who return to prison after release by crime and sex for one year past release, two years past release, ..., and so on.

The historical releases are used to prime the model. That is, for the parole returnee cycle to work readmissions must be calculated for each year of the forecast. In the first year of the forecast (FY 1982) readmissions for each crime and sex category is the product of releases and the corresponding recidivism percentage. For example, of the 22 manslaughter offenders released in FY 1977, 2.4 percent are returned to prison in FY 1982, which after rounding equals one readmission. This calculation is then repeated for assaultive releases in FY's 1978, 1979, 1980, and 1981. The sum of all of these products equals the readmissions for male assaultive offenders in FY 1982. For FY 1983 the historical releases matrix is incremented by one year; that is, FY 1977 is dropped and using the estimated releases FY 1982 is added. This cycle continues throughout the forecast. By FY 1987 the historical release matrix is no longer used.

The annual admissions due to parole failure, as calculated above, are divided into those coming from the courts and those coming from the parole board. The current (March, 1982) version of the program WYL.OF.PRI.LIB (PAROLEES) has .3333 of the admissions designated as coming from the courts. In order to vary this proportioned program line number 69 may be altered.

Prior to the next major calculation, where the annual admissions due to parole failures are released, the forecast program selects an annual

Exhibit 14: The Program Listing of WYL.OF.PRI.LIB(PAROLEES)

length of stay distribution from the monthly length of stay distributions found in the data set WYL.OF.PRI.SURVIVE. For those returning via the courts a separate length of stay pattern is used for each type of sex crime category. For those returning via the parole board, unique parole violator length of stay patterns are used for males and females.

The strategy for forecasting the releases is built on a calculation of the number remaining in prison at the end of the fiscal year of those who entered at approximately the same time. The releases then become the difference between those remaining in a future year and those remaining in the year just prior. The number remaining and the number of releases for each forecast year are then transferred to the worksheet. The numbers are specific to sex, crime type, agency of admission and forecast year.

This process will repeat itself until fifteen years worth of annual data have been produced. The particular results of each cohorts experience are then summed to produce the two subpopulation annual forecasts. Utilizing the data input through the vectors MS and MREM the program breaks the annual figures out to monthly figures. The monthly forecast of remaining and released returning offenders who are processed through the parole board are entered on the disk file \$OPPFM.Y1986.BOARD. The monthly forecast of remaining and released returning offenders who are processed through the courts are entered on the disk file OPPFM.Y1986.COURT.

The program listing for WYL.OF.PRI.LIB(PAROLEES) follows and is listed as Exhibit 14.

```

1. //PAROLEES JOB (,,99,0,,01),FELIX,MSGLEVEL=(1,1)
2. // EXEC FORG1CLG,REGION=500K,TIME=5.
3. //FORT.SYSIN DD *
4.      DIMENSION MATRIX(9,2,2,15,35),IBASE(10,180,2,2),NEWPOP(9,180,2,2),
5.      1      IRLSE(2,20,9),RTNRTE(2,9,5),BLOS(10,2,182),NDIF(15),
6.      2      IRTN(2,9),NCOURT(2,9),NBOARD(2,9),CURVE(2,10,15),
7.      3      KWORK1(2,2,9,16),KWORK2(2,2,9,16),MS(12),IP(12),
8.      4      ICOURT(2,9,2,180),IBOARD(2,9,2,180),MREM(12)
9.      DATA MATRIX /18900*0/, IBASE /7200*0/, NEWPOP /6480*0/,
10.     1      IRLSE /360*0/, RTNRTE /90*0.0/, BLOS /3640*0.0/,
11.     2      IRTN /18*0/, NCOURT /18*0/, NBOARD /18*0/, CURVE /300*0.0/,
12.     3      KWORK1 /576*0/, KWORK2 /576*0/, IP /12*0/,
13.     4      ICOURT /6480*0/, IBOARD /6480*0/, NDIF /15*0/,
14.     5      MS /9,10,1,6,2,4,3,5,11,12,7,8,
15.     6      MREM /3,5,7,6,8,4,11,12,1,2,9,10/
16.     READ(5,10) (((IRLSE(I,J,K),K=1,9),J=1,5),I=1,2)
17.     READ(5,11) (((RTNRTE(I,J,K),K=1,5),J=1,9),I=1,2)
18.     READ(10,12) (((BLOS(I,J,K),K=1,182),J=1,2),I=1,10)
19.     READ(11,13) (((((IBASE(I,J,K,L),L=1,2),K=1,2),J=1,180),I=1,10)
20.     READ(12,13) (((((NEWPOP(I,J,K,L),L=1,2),K=1,2),J=1,180),I=1,9)
21.    10 FORMAT(9I4)
22.    11 FORMAT(5F4.3)
23.    12 FORMAT(24F5.3/24F5.3/24F5.3/24F5.3/
24.    13 24F5.3/24F5.3/24F5.3/24F5.3/)
25.    FORMAT(2I10)
26.    DO 100 ICR = 1,9
27.    DO 101 ISEX = 1,2
28.    DO 102 IYR = 1,15
29.    MATRIX(ICR,ISEX,1,IYR,1) = IBASE(ICR,(IYR*12),ISEX,1)
30.    MATRIX(ICR,ISEX,1,IYR,2) = NEWPOP(ICR,(IYR*12),ISEX,1)
31.    CONTINUE
32.    101 CONTINUE
33.    100 CONTINUE
34.    DO 103 ICR = 1,9
35.    DO 104 ISEX = 1,2
36.    MIN = 1
37.    MAX = 12
38.    DO 105 IYR = 1,15
39.    DO 106 NYR = MIN,MAX
40.    MATRIX(ICR,ISEX,2,IYR,1) = MATRIX(ICR,ISEX,2,IYR,1) +
41.    1      IBASE(ICR,NYR,ISEX,2)
42.    1      MATRIX(ICR,ISEX,2,IYR,2) = MATRIX(ICR,ISEX,2,IYR,2) +
43.    1      NEWPOP(ICR,NYR,ISEX,2)
44.    106 CONTINUE
45.    MIN = MIN + 12
46.    MAX = MAX + 12
47.    105 CONTINUE
48.    104 CONTINUE
49.    103 CONTINUE

```

Exhibit 14: Continued

```

50.      N = 5
51.      MATYR = 1
52.      NROW = 1
53.      KCOL1 = 3
54.      KCOL2 = 4
55. 300 DO 107 ICR = 1,9
56.      DO 108 ISEX = 1,2
57.          JYR = N
58.          MSUM = 0
59.          DO 109 IYR = 1,5
60.              NSUM = (FLOAT(IRLSE(ISEX,JYR,ICR)) *  

61.                          RTNRTE(ISEX,ICR,IYR)) + .5
62.              IRTN(ISEX,ICR) = IRTN(ISEX,ICR) + MSUM
63.              JYR = JYR - 1
64. 109 CONTINUE
65. 108 CONTINUE
66. 107 CONTINUE
67.      DO 110 ICR = 1,9
68.      DO 111 ISEX = 1,2
69.          NCOURT(ISEX,ICR) = (FLOAT(IRTN(ISEX,ICR)) * .3333) + .5
70.          NBOARD(ISEX,ICR) = IRTN(ISEX,ICR) - NCOURT(ISEX,ICR)
71. 111 CONTINUE
72. 110 CONTINUE
73.      DO 112 ICR = 1,9
74.      DO 113 ISEX = 1,2
75.          DO 114 IYR = 1,15
76.              CURVE(ISEX,ICR,IYR) = BLOS(ICR,ISEX,(IYR*12))
77. 114 CONTINUE
78. 113 CONTINUE
79. 112 CONTINUE
80.      DO 115 ISEX = 1,2
81.          DO 116 IYR = 1,15
82.              CURVE(ISEX,10,IYR) = BLOS(10,ISEX,(IYR*12))
83. 116 CONTINUE
84. 115 CONTINUE
85.      DO 117 ICR = 1,9
86.          DO 118 ISEX = 1,2
87.              KWORK1(1,ISEX,ICR,1) = NCOURT(ISEX,ICR)
88.              KWORK2(1,ISEX,ICR,1) = NBOARD(ISEX,ICR)
89.          DO 119 IYR = 2,16
90.              KWORK1(1,ISEX,ICR,IYR) = (FLOAT(NCOURT(ISEX,ICR)) *  

91.                                          CURVE(ISEX,ICR,(IYR-1))) + .5
92.              KWORK2(1,ISEX,ICR,IYR) = (FLOAT(NBOARD(ISEX,ICR)) *  

93.                                          CURVE(ISEX,10,(IYR-1))) + .5
94. 119 CONTINUE
95.      DO 120 IYR = 1,15
96.          LL = IYR + 1
97.          KWORK1(2,ISEX,ICR,LL) = KWORK1(2,ISEX,ICR,LL) +  

98.              (KWORK1(1,ISEX,ICR,IYR) -  

99.                 KWORK1(1,ISEX,ICR,LL))
100.         KWORK2(2,ISEX,ICR,LL) = KWORK2(2,ISEX,ICR,LL) +  

101.             (KWORK2(1,ISEX,ICR,IYR) -  

102.                KWORK2(1,ISEX,ICR,LL))

```

Exhibit 14: Continued

```

103. 120 CONTINUE
104. 118 CONTINUE
105. 117 CONTINUE
106. DO 123 ICR = 1,9
107. DO 124 ISEX = 1,2
108. DO 125 ISTAT = 1,2
109. LLYR = 1
110. DO 127 IYR = MATYR,15
111. MATRIX(ICR,ISEX,ISTAT,IYR,KCOL1) =  

112. 1 KWORK1(ISTAT,ISEX,ICR,LLYR)
113. LLYR = LLYR + 1
114. 127 CONTINUE
115. 125 CONTINUE
116. DO 126 ISTAT = 1,2
117. LLYR = 1
118. DO 128 IYR = MATYR,15
119. MATRIX(ICR,ISEX,ISTAT,IYR,KCOL2) =  

120. 1 KWORK2(ISTAT,ISEX,ICR,LLYR)
121. LLYR = LLYR + 1
122. 128 CONTINUE
123. 126 CONTINUE
124. 124 CONTINUE
125. 123 CONTINUE
126. N = N + 1
127. DO 132 I = 1,2
128. DO 133 J = 1,2
129. DO 134 K = 1,9
130. DO 135 L = 1,16
131. KWORK1(I,J,K,L) = 0
132. KWORK2(I,J,K,L) = 0
133. 135 CONTINUE
134. 134 CONTINUE
135. 133 CONTINUE
136. 132 CONTINUE
137. DO 136 I = 1,2
138. DO 137 J = 1,9
139. NCOURT(I,J) = 0
140. NBOARD(I,J) = 0
141. IRTN(I,J) = 0
142. 137 CONTINUE
143. 136 CONTINUE
144. DO 129 ISEX = 1,2
145. DO 130 ICR = 1,9
146. DO 131 ICOL = 1,32
147. IRLSE(ISEX,N,ICR) = IRLSE(ISEX,N,ICR) +  

148. 1 MATRIX(ICR,ISEX,2,NROW,ICOL)
149. 131 CONTINUE
150. 130 CONTINUE
151. 129 CONTINUE
152. MATYR = MATYR + 1
153. NROW = NROW + 1
154. KCOL1 = KCOL1 + 2
155. KCOL2 = KCOL2 + 2

```

Exhibit 14: Continued

```

156.      IF(N .LT. 20) GO TO 300
157.      DO 138 ICR = 1,9
158.          DO 139 ISEX = 1,2
159.              DO 140 ISTAT = 1,2
160.                  DO 141 NROW = 1,15
161.                      DO 142 ICOL = 3,31,2
162.                          MATRIX(ICR,ISEX,ISTAT,NROW,33) =
163.                              1     MATRIX(ICR,ISEX,ISTAT,NROW,33) +
164.                                2     MATRIX(ICR,ISEX,ISTAT,NROW,ICOL)
165.      142      CONTINUE
166.          DO 143 ICOL = 4,32,2
167.              MATRIX(ICR,ISEX,ISTAT,NROW,34) =
168.                  1     MATRIX(ICR,ISEX,ISTAT,NROW,34) +
169.                    2     MATRIX(ICR,ISEX,ISTAT,NROW,ICOL)
170.      143      CONTINUE
171.      141      CONTINUE
172.      140      CONTINUE
173.      139      CONTINUE
174.      138      CONTINUE
175.      DO 144 ICR = 1,9
176.          DO 145 ISEX = 1,2
177.              DO 146 ISTAT = 1,2
178.                  DO 147 NROW = 1,15
179.                      MATRIX(ICR,ISEX,ISTAT,NROW,35) =
180.                          1     MATRIX(ICR,ISEX,ISTAT,NROW,33) +
181.                            2     MATRIX(ICR,ISEX,ISTAT,NROW,34)
182.      147      CONTINUE
183.      146      CONTINUE
184.      145      CONTINUE
185.      144      CONTINUE
186.      DO 148 ICR = 1,9
187.          DO 149 ISEX = 1,2
188.              LITTLE = 0
189.              DO 150 NROW = 1,15
190.                  JJ = 1
191.      301      IF(MATRIX(ICR,ISEX,2,NROW,33) .EQ. 0) GO TO 302
192.          II = MS(JJ)
193.          IP(II) = IP(II) + 1
194.          MATRIX(ICR,ISEX,2,NROW,33) = MATRIX(ICR,ISEX,2,NROW,33) - 1
195.          JJ = JJ + 1
196.          IF (JJ .EQ. 13) JJ = 1
197.          GO TO 301
198.      302      DO 151 MM = 1,12
199.          ICOURT(2,ICR,ISEX,(MM+LITTLE)) = IP(MM)
200.      151      CONTINUE
201.          LITTLE = LITTLE + 12
202.          DO 152 NN = 1,12
203.              IP(NN) = 0
204.      152      CONTINUE
205.      150      CONTINUE
206.      149      CONTINUE
207.      148      CONTINUE
208.          DO 153 ICR = 1,9
209.              DO 154 ISEX = 1,2
210.                  LITTLE = 0

```

Exhibit 14: Continued

```

211.      DO 155 NROW = 1,15
212.          JJ = 1
213.      304      IF(MATRIX(ICR,ISEX,2,NROW,34) .EQ. 0) GO TO 303
214.          II = MS(JJ)
215.          IP(II) = IP(II) + 1
216.          MATRIX(ICR,ISEX,2,NROW,34) = MATRIX(ICR,ISEX,2,NROW,34) - 1
217.          JJ = JJ + 1
218.          IF (JJ .EQ. 13) JJ = 1
219.          GO TO 304
220.      303      DO 156 MM = 1,12
221.          IBOARD(2,ICR,ISEX,(MM+LITTLE)) = IP(MM)
222.      156      CONTINUE
223.          LITTLE = LITTLE + 12
224.          DO 157 NN = 1,12
225.              IP(NN) = 0
226.      157      CONTINUE
227.      155      CONTINUE
228.      154      CONTINUE
229.      153      CONTINUE
230.      DO 158 ICR = 1,9
231.          DO 159 ISEX = 1,2
232.              NDIF(1) = MATRIX(ICR,ISEX,1,1,34)
233.              DO 160 NROW = 2,15
234.                  NDIF(NROW) = MATRIX(ICR,ISEX,1,NROW,34) -
235.                                MATRIX(ICR,ISEX,1,(NROW-1),34)
236.      160      IF(NDIF(NROW) .LT. 0) NDIF(NROW) = 0
237.      CONTINUE
238.          LITTLE = 0
239.          DO 161 NROW = 1,15
240.              JJ = 1
241.      306      IF(NDIF(NROW) .EQ. 0) GO TO 305
242.          II = MREM(JJ)
243.          IP(II) = IP(II) + 1
244.          NDIF(NROW) = NDIF(NROW) - 1
245.          JJ = JJ + 1
246.          IF(JJ .EQ. 13) JJ = 1
247.          GO TO 306
248.      305      DO 162 MM = 1,12
249.          IBOARD(1,ICR,ISEX,(MM+LITTLE)) = IP(MM)
250.      162      CONTINUE
251.          LITTLE = LITTLE + 12
252.          DO 163 NN = 1,12
253.              IP(NN) = 0
254.      163      CONTINUE
255.      161      CONTINUE
256.          DO 164 L = 1,15
257.              NDIF(L) = 0
258.      164      CONTINUE
259.      159      CONTINUE
260.      158      CONTINUE
261.      DO 165 ICR = 1,9
262.          DO 166 ISEX = 1,2
263.              DO 167 LL = 2,180
264.                  IBOARD(1,ICR,ISEX,LL) = IBOARD(1,ICR,ISEX,LL) +
265.                                IBOARD(1,ICR,ISEX,(LL-1))

```

Exhibit 14: Continued

```

266. 167  CONTINUE
267. 166  CONTINUE
268. 165  CONTINUE
269. DO 168 ICR = 1,9
270.   DO 169 ISEX = 1,2
271.     DO 170 IPER = 1,15
272.       IBOARD(1,ICR,ISEX,(IPER*12)) = MATRIX(ICR,ISEX,1,IPER,34)
273. 170  CONTINUE
274. 169  CONTINUE
275. 168  CONTINUE
276.   DO 171 ICR = 1,9
277.     DO 172 ISEX = 1,2
278.       NDIF(1) = MATRIX(ICR,ISEX,1,1,33)
279.       DO 173 NROW = 2,15
280.         NDIF(NROW) = MATRIX(ICR,ISEX,1,NROW,33) -
281.           MATRIX(ICR,ISEX,1,(NROW-1),33)
282.         IF(NDIF(NROW) .LT. 0) NDIF(NROW) = 0
283. 173  CONTINUE
284. LITTLE = 0
285. DO 174 NROW = 1,15
286.   JJ = 1
287. 308  IF(NDIF(NROW) .EQ. 0) GO TO 307
288.   II = MREM(JJ)
289.   IP(II) = IP(II) + 1
290.   NDIF(NROW) = NDIF(NROW) - 1
291.   JJ = JJ + 1
292.   IF(JJ .EQ. 13) JJ = 1
293.   GO TO 308
294. 307  DO 175 MM = 1,12
295.   ICOURT(1,ICR,ISEX,(MM+LITTLE)) = IP(MM)
296. 175  CONTINUE
297. LITTLE = LITTLE + 12
298. DO 176 NN = 1,12
299.   IP(NN) = 0
300. 176  CONTINUE
301. 174  CONTINUE
302. DO 775 L = 1,15
303.   NDIF(L) = 0
304. 775  CONTINUE
305. 172  CONTINUE
306. 171  CONTINUE
307. DO 776 ICR = 1,9
308.   DO 177 ISEX = 1,2
309.     DO 178 LL = 2,180
310.       ICOURT(1,ICR,ISEX,LL) = ICOURT(1,ICR,ISEX,LL) +
311.           ICOURT(1,ICR,ISEX,(LL-1))
312. 178  CONTINUE
313. 177  CONTINUE
314. 776  CONTINUE
315. DO 179 ICR = 1,9
316.   DO 180 ISEX = 1,2
317.     DO 181 IPER = 1,15
318.       ICOURT(1,ICR,ISEX,(IPER*12)) = MATRIX(ICR,ISEX,1,IPER,34)

```

```

319. 181  CONTINUE
320. 180  CONTINUE
321. 179  CONTINUE
322.   WRITE(6,55)
323. 55   FORMAT(1X,'ICOURT')
324.   WRITE(6,54) (((ICOURT(I,J,K,L),L=1,180),I=1,2),K=1,2),J=1,9)
325.   WRITE(6,58)
326. 58   FORMAT(1X,'IBOARD')
327.   WRITE(6,54) (((IBOARD(I,J,K,L),L=1,180),I=1,2),K=1,2),J=1,9)
328.   WRITE(16,500) (((IBOARD(I,J,K,L),I=1,2),K=1,2),L=1,180),J=1,9)
329.   WRITE(17,500) (((ICOURT(I,J,K,L),I=1,2),K=1,2),L=1,180),J=1,9)
330. 500  FORMAT(2I10)
331. 54   FORMAT(15(1X,12I7)//)
332.   STOP
333.   END
334. //GO.FT16F001 DD DSN=OPPFM.Y1986.BOARD,DISP=(OLD,KEEP,DELETE)
335. //GO.FT17F001 DD DSN=OPPFM.Y1986.COURT,DISP=(OLD,KEEP,DELETE)
336. //GO.FT11F001 DD DSN=OPPFM.Y1986.BASEPOP,DISP=SHR
337. //GO.FT12F001 DD DSN=OPPFM.Y1986.NEWADMIT,DISP=SHR
338. //GO.FT10F001 DD DSN=WYL.OF.PRI.SURVIVE,DISP=SHR
339. //GO.SYSIN DD *
340.   6 11 22 61 171 91 873 192 43
341.   6 14 25 88 211 1351050 205 54
342.   6 26 28 102 192 155 960 206 77
343.   2 23 34 118 232 169 980 163 38
344.   8 35 40 95 251 151 921 115 65
345.   0 4 6 0 9 7 56 25 2
346.   0 3 2 0 9 10 80 28 2
347.   1 7 3 2 13 14 85 30 2
348.   0 3 2 1 8 6 67 31 7
349.   0 1 6 0 14 4 79 12 4
350.   .103.026.071.116.084
351.   .092.037.019.024.031
352.   .102.063.037.016.011
353.   .109.085.048.027.017
354.   .133.099.053.028.024
355.   .123.101.055.020.011
356.   .181.114.056.028.018
357.   .098.094.061.023.021
358.   .173.095.044.020.011
359.   .070.040.040.040.015
360.   .070.040.040.040.015
361.   .070.040.040.040.015
362.   .070.040.040.040.015
363.   .070.040.040.040.015
364.   .070.040.040.040.015
365.   .079.064.039.024.027
366.   .079.064.039.024.027
367.   .079.064.039.024.027

```

Exhibit 15: Example of the Report Produced by WYL.OF.PRI.LIB(WRITER)

THE REPORT WRITER

An important part of any forecast is the presentation of the reports in a useful format. The current version of the report writer allows the analyst to select from two printed reports. The first report is titled, "Detailed Report on the Prison Population Forecast, Fiscal Years 1982-1995, for all offense types." Exhibit 15 presents a page of this report. The second report is titled, "Prisoners released and remaining by crime and sex: 1982-1995." Exhibit 16 presents a page of this report.

The process for writing the reports is rather straightforward. The four subpopulation forecasts are read into a workspace. Totals are calculated across the dimensions of crime type, sex, subpopulation and status, that is, either remaining in prison or released. The remainder of the program is primarily concerned with formats for reports on selected items.

The program listing for WYL.OF.PRI.LIB(WRITER) follows and is listed as Exhibit 17.

TABLE 1. DETAILED REPORT ON THE PRISON POPULATION FORECAST, FISCAL YEARS 1982-1995,
FOR MURDER I.

I. FISCAL YEAR 1982

A. THE MALE POPULATION

	REMAINING IN PRISON	RELEASED THIS MONTH	REMAINING IN PRISON	RELEASED THIS MONTH	REMAINING IN PRISON	RELEASED THIS MONTH
JULY			AUGUST		SEPTEMBER	
BASE POPULATION (JUNE, 1981)	220	0	219	1	219	0
NEW POPULATION FROM THE COURTS	3	0	6	0	9	0
PAROLE RETURNNEES	0	0	0	0	2	0
VIA THE COURT	0	0	0	0	1	0
VIA PAROLE BOARD	0	0	0	0	1	0
TOTAL	223	0	225	1	230	0
OCTOBER			NOVEMBER		DECEMBER	
BASE POPULATION (JUNE, 1981)	219	0	218	1	218	0
NEW POPULATION FROM THE COURTS	12	0	15	0	18	0
PAROLE RETURNNEES	2	0	3	0	3	0
VIA THE COURT	1	0	1	0	1	0
VIA PAROLE BOARD	1	0	2	0	2	0
TOTAL	233	0	236	1	239	0
JANUARY			FEBRUARY		MARCH	
BASE POPULATION (JUNE, 1981)	218	0	217	1	217	0
NEW POPULATION FROM THE COURTS	21	0	24	0	27	0
PAROLE RETURNNEES	3	0	3	0	3	0
VIA THE COURT	1	0	1	0	1	0
VIA PAROLE BOARD	2	0	2	0	2	0
TOTAL	242	0	244	1	247	0
APRIL			MAY		JUNE	
BASE POPULATION (JUNE, 1981)	216	1	216	0	215	1
NEW POPULATION FROM THE COURTS	30	0	33	0	36	0
PAROLE RETURNNEES	3	0	3	0	3	0
VIA THE COURT	1	0	1	0	1	0
VIA PAROLE BOARD	2	0	2	0	2	0

Exhibit 16: Example of the Report Produced by WYL.OF.PRI.LIB(WRITER)

PRISONERS RELEASED AND REMAINING BY CRIME AND SEX: 1982-1995

CRIME	FY 1982		FY 1983		FY 1984		FY 1985		FY 1986		FY 1987	
	REM	REL										
MURDER I.												
MALE	254	5	286	5	317	5	345	5	376	3	401	6
FEMALE	16	0	18	0	19	1	20	1	22	0	24	0
TOTAL	270	5	304	5	336	6	365	6	398	3	425	6
MURDER II.												
MALE	252	2	283	17	319	15	344	23	363	29	373	38
FEMALE	9	0	10	1	12	0	12	2	13	1	13	3
TOTAL	261	2	293	18	331	15	356	25	376	30	386	41
HANSLAUGHTER												
MALE	122	31	129	44	143	40	155	46	163	52	165	59
FEMALE	7	10	8	3	9	2	8	4	8	3	7	4
TOTAL	129	41	137	47	152	42	163	50	171	55	172	63
SEX CRIMES.												
MALE	839	80	915	134	973	168	1036	181	1093	206	1157	219
FEMALE	9	1	12	1	16	0	18	2	19	3	19	4
TOTAL	848	81	927	135	989	168	1054	183	1112	209	1176	223
ROBBERY.												
MALE	942	178	1005	216	1034	256	1067	268	1098	286	1145	282
FEMALE	44	12	44	17	51	10	48	22	52	16	53	20
TOTAL	986	190	1049	233	1085	266	1115	290	1150	302	1198	302
ASSAULT.												
MALE	719	114	779	177	823	209	873	220	936	225	990	250
FEMALE	27	11	29	10	28	12	26	13	25	12	27	11
TOTAL	746	125	808	187	851	221	899	233	961	237	1017	261
PROPERTY CRIMES.												
MALE	1825	859	1914	959	1996	968	2058	990	2099	1020	2142	1032
FEMALE	85	54	102	56	100	74	101	74	104	73	106	76
TOTAL	1910	913	2016	1015	2096	1042	2159	1064	2203	1093	2248	1108
DRUGS.												
MALE	177	83	196	97	214	111	235	122	250	138	267	150
FEMALE	23	14	26	14	24	21	29	18	31	21	32	23
TOTAL	200	97	222	111	230	132	264	140	281	159	299	173
OTHER FELONIES.												
MALE	94	52	123	56	128	87	139	92	158	98	177	111
FEMALE	6	2	5	5	4	5	4	4	5	4	5	5
TOTAL	100	54	128	61	132	92	143	96	163	102	182	116
ALL OFFENSE TYPES.												
MALE	5224	1404	5630	1705	5947	1859	6252	1947	6536	2057	6817	2147
FEMALE	226	104	254	107	263	125	266	140	279	133	286	146
TOTAL	5450	1508	5884	1812	6210	1904	6518	2087	6815	2190	7103	2293

Exhibit 17: The Program Listing of WYL.OF.PRI.LIB(WRITER).

```

L
1. //WRITER JOB (,,99,0,,01),FELIX,TIME=(,09),MSGLEVEL=(1,1)
2. // EXEC FORG1CLG,REGION=500K
3. //FORT.SYSIN DD *
4. DIMENSION MBINS(11,180,3,6,2),ICRNAM(11,50),NUM(19,6)
5. DIMENSION IBASE(10,180,2,2),NEWPOP(9,180,2,2)
6. DIMENSION ICOURT(10,180,2,2),IBOARD(10,180,2,2),
7. *IYBINS(11,15,3,6,2)
8. DATA MBINS /71280*0/, ICRNAM /550*1/, NUM /114*1/
9. DATA IBASE /7200*0/, NEWPOP /6480*0/
10. DATA ICOURT /7200*0/, IBOARD /7200*0/, IYBINS /5940*0/
11. READ(5,200) ((ICRNAM(I,J),J = 1,50),I = 1,10)
12. READ(5,201) ((NUM(I,J),J = 1,6),I = 1,19)
13. READ(12,202) (((IBASE(I,J,K,L),L=1,2),K=1,2),J=1,180),I=1,10)
14. READ(13,202) (((NEWPOP(I,J,K,L),L=1,2),K=1,2),J=1,180),I=1,9)
15. READ(14,202) (((ICOURT(I,J,K,L),L=1,2),K=1,2),J=1,180),I=1,9)
16. READ(15,202) (((IBOARD(I,J,K,L),L=1,2),K=1,2),J=1,180),I=1,9)
17. 200 FORMAT(50A1)
18. 201 FORMAT(6A1)
19. 202 FORMAT(2I10)
20. IDISP=1
21. IDISP1=1
22. DO 101 I = 1,9
23. DO 102 J = 1,180
24. DO 103 K = 1,2
25. DO 104 L = 1,2
26. MBINS(I,J,K,1,L) = MBINS(I,J,K,1,L) + IBASE(I,J,K,L)
27. MBINS(I,J,K,2,L) = MBINS(I,J,K,2,L) + NEWPOP(I,J,K,L)
28. MBINS(I,J,K,4,L) = MBINS(I,J,K,4,L) + ICOURT(I,J,K,L)
29. MBINS(I,J,K,5,L) = MBINS(I,J,K,5,L) + IBOARD(I,J,K,L)
30. MBINS(I,J,K,3,L) = MBINS(I,J,K,4,L) + MBINS(I,J,K,5,L)
31. MBINS(I,J,K,6,L) = MBINS(I,J,K,1,L) + MBINS(I,J,K,2,L)
32. *
33. 104 CONTINUE
34. 103 CONTINUE
35. 102 CONTINUE
36. 101 CONTINUE
37. DO 105 J=1,180
38. DO 106 K=1,2
39. DO 107 L=1,6
40. DO 108 M=1,2
41. MBINS(11,J,K,L,M) =MBINS(10,J,K,L,M)
42. MBINS(10,J,K,L,M)=0
43. DO 109 I=1,9
44. 109 MBINS(10,J,K,L,M)=MBINS(10,J,K,L,M)+MBINS(I,J,K,L,M)
44.1 109 CONTINUE
45. 108 CONTINUE
46. 107 CONTINUE
47. 106 CONTINUE

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Exhibit 17: Continued

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48.    105    CONTINUE
49.          DO 110 I=1,11
50.          DO 111 J=1,180
51.          DO 112 L=1,6
52.          DO 113 M=1,2
53.          DO 114 K=1,2
54.          MBINS(I,J,3,L,M)=MBINS(I,J,3,L,M)+MBINS(I,J,K,L,M)
55.    114    CONTINUE
56.    113    CONTINUE
57.    112    CONTINUE
58.    111    CONTINUE
59.    110    DO 115 I=1,11
60.          DO 116 K=1,3
61.          DO 117 L=1,6
62.          LL=11
63.          J=0
64.    120    J=J+1
65.          IF(J .GT. 15) GO TO 117
66.          LL=LL+12
67.          MM=LL+11
68.          DO 121 ISUM=LL,MM
69.          IYBINS(I,J,K,L,2)=IYBINS(I,J,K,L,2)+MBINS(I,ISUM,K,L,2)
70.          IYBINS(I,J,K,L,1)=IYBINS(I,J,K,L,1)+MBINS(I,MM,K,L,1)
71.          GO TO 120
72.    117    CONTINUE
73.    116    CONTINUE
74.    115    CONTINUE
75.          IF(IDISP .EQ. 0) GO TO 700
76.          DO 100 I = 1,10
77.          MM = 1982
78.          II = 1
79.          JMALE=1
80.          JFEM=1
81.    403    JUMP = 0
82.          K = 1
83.    400    MONCT = 0
84.          WRITE(6,302) I,(ICRNAME(I,JOHN),JOHN=1,50)
85.    302    FORMAT(1H1,10X,'TABLE ',I2,'. DETAILED REPORT ON THE PRISON',1X,
86.                  'POPULATION FORECAST, FISCAL YEARS 1982-1995',/
87.                  1     21X,'FOR ',50A1/)
88.                  2     WRITE(6,303) (NUM(II,JJ),JJ = 1,5),MM
89.    303    FORMAT(10X,5A1,1X,'FISCAL YEAR',15/)
90.          IF(K .EQ. 1) WRITE(6,300)
91.          FORMAT(11X,'A. THE MALE POPULATION')
92.          IF(K .EQ. 2) WRITE(6,301)
93.          FORMAT(11X,'B. THE FEMALE POPULATION')
94.          WRITE(6,304)
95.          FORMAT(31X,'REMAINING RELEASED  REMAINING RELEASED',
96.                  1     5X,'REMAINING RELEASED'/31X,'IN PRISON',3X,
97.                  2     'THIS MONTH IN PRISON THIS MONTH IN PRISON',3X,
98.                  3     'THIS MONTH')
99.          MONCT = MONCT + 1
100.         WRITE(6,305)
101.        305    FORMAT(40X,'JULY',20X,'AUGUST',18X,'SEPTEMBER')
102.        401    IF(K .EQ. 1)J=JMALE
103.        IF(K .EQ. 2)J=JFEM
104.          WRITE(6,306) MBINS(I,J,K,1,1),MBINS(I,J,K,1,2),
105.          MBINS(I,(J+1),K,1,1),MBINS(I,(J+1),K,1,2),
106.          MBINS(I,(J+2),K,1,1),MBINS(I,(J+2),K,1,2)

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Exhibit 17: Continued

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107.    306    FORMAT(12X,'BASE POPULATION',7X,I5,BX,I5,7X,I5,BX,I5,
108.          1     7X,I5,BX,I5/13X,'(JUNE, 1981')/')
109.          1     WRITE(6,307) MBINS(I,J,K,2,1),MBINS(I,J,K,2,2),
110.          1     MBINS(I,(J+1),K,2,1),MBINS(I,(J+1),K,2,2),
111.          2     MBINS(I,(J+2),K,2,1),MBINS(I,(J+2),K,2,2)
112.    307    FORMAT(12X,'NEW POPULATION',BX,I5,BX,I5,7X,I5,BX,I5,
113.          1     7X,I5,BX,I5/12X,'FROM THE COURTS')
114.          1     WRITE(6,308) MBINS(I,J,K,3,1),MBINS(I,J,K,3,2),
115.          1     MBINS(I,(J+1),K,3,1),MBINS(I,(J+1),K,3,2),
116.          2     MBINS(I,(J+2),K,3,1),MBINS(I,(J+2),K,3,2)
117.    308    FORMAT(12X,'PAROLE RETURNNEES',6X,I5,BX,I5,7X,I5,BX,I5,
118.          1     7X,I5,BX,I5)
119.          1     WRITE(6,309) MBINS(I,J,K,4,1),MBINS(I,J,K,4,2),
120.          1     MBINS(I,(J+1),K,4,1),MBINS(I,(J+1),K,4,2),
121.          2     MBINS(I,(J+2),K,4,1),MBINS(I,(J+2),K,4,2)
122.    309    FORMAT(13X,'VIA THE COURT ',5X,I5,BX,I5,7X,I5,BX,I5,
123.          1     7X,I5,BX,I5)
124.          1     WRITE(6,310) MBINS(I,J,K,5,1),MBINS(I,J,K,5,2),
125.          1     MBINS(I,(J+1),K,5,1),MBINS(I,(J+1),K,5,2),
126.          2     MBINS(I,(J+2),K,5,1),MBINS(I,(J+2),K,5,2)
127.    310    FORMAT(13X,'VIA PAROLE BOARD',5X,I5,BX,I5,7X,I5,BX,I5,
128.          1     7X,I5,BX,I5)
129.          1     WRITE(6,311) MBINS(I,J,K,6,1),MBINS(I,J,K,6,2),
130.          1     MBINS(I,(J+1),K,6,1),MBINS(I,(J+1),K,6,2),
131.          2     MBINS(I,(J+2),K,6,1),MBINS(I,(J+2),K,6,2)
132.    311    FORMAT(12X,'TOTAL ',6X,I5,BX,I5,7X,I5,BX,I5,
133.          1     7X,I5,BX,I5)
134.          1     IF(K .EQ. 1)JMALE=JMALE+3
135.          1     IF(K .EQ. 2)JFEM=JFEM+3
136.          MONCT = MONCT + 1
137.          IF(MONCT .EQ. 2) WRITE(6,312)
138.          IF(MONCT .EQ. 3) WRITE(6,313)
139.          IF(MONCT .EQ. 4) WRITE(6,314)
140.          IF(MONCT .LT. 5) GO TO 401
141.          IF(JUMP .EQ. 1) GO TO 402
142.          K = 2
143.          IF(MONCT .EQ. 5) JUMP = 1
144.          GO TO 400
145.    402    II = II + 1
146.          MM = MM + 1
147.          IF(II .LT. 16) GO TO 403
148.    312    FORMAT(39X,'OCTOBER',17X,'NOVEMBER',17X,'DECEMBER')
149.    313    FORMAT(39X,'JANUARY',17X,'FEBRUARY',19X,'MARCH')
150.    314    FORMAT(40X,'APRIL',22X,'MAY',21X,'JUNE')
151.    100    CONTINUE
152.    700    IF(IDISP1 .EQ. 0) GO TO 800
153.          WRITE(6,701)
154.    701    FORMAT(1H1,30X,'PRISONERS RELEASED AND REMAINING BY CRIME',1X,
155.                  *'AND SEX: 1982-1995'//23X,'FY 1982      FY 1983',6X,
156.                  *'FY 1984      FY 1985      FY 1986      FY 1987',6X,
157.                  *'FY 1988',1X,'CRIME',16X,'REM   REL   REM   REL   REM   REL   REL   REL')
158.                  *'REL   REM   REL   REL   REM   REL   REL   REM   REL   REL')
159.          DO 715 I=1,10
160.          WRITE(6,702)(ICRNAME(I,MM),MM=1,20)
161.    702    FORMAT(/1X,20A1)
162.          DD 716 J=1,3
163.          JJ=J+16
164.          WRITE(6,703)(NUM(JJ,MM),MM=1,6),IYBINS(I,1,J,6,1),
165.          *IYBINS(I,1,J,6,2),IYBINS(I,2,J,6,1),IYBINS(I,2,J,6,2),
166.          *IYBINS(I,3,J,6,1),IYBINS(I,3,J,6,2),IYBINS(I,4,J,6,1),
167.          *IYBINS(I,4,J,6,2),IYBINS(I,5,J,6,1),IYBINS(I,5,J,6,2),

```

Exhibit 17: Continued

```

168. *IYBINS(I,6,J,6,1),IYBINS(I,6,J,6,2),IYBINS(I,7,J,6,1),
169. *IYBINS(I,7,J,6,2)
170. 703 FORMAT(2X,6A1,10X,7(2X,15,2X,15))
171. 716 CONTINUE
172. 715 CONTINUE
173. WRITE(6,704)
174. 704 FORMAT(1H1,30X,'PRISONERS RELEASED AND REMAINING BY CRIME',1X,
175. *'AND SEX: 1982-1995///23X,'FY 1989   FY 1990',6X,
176. *'FY 1991   FY 1992   FY 1993   FY 1994',6X,
177. *'FY 1995/1X,'CRIME',16X,'REM   REL   REM   REL   REM',4X,
178. *'REL   REM   REL   REM   REL   REM   REL')
179. DO 717 I=1,10
180. WRITE(6,702)(ICRNAM(I,MM),MM=1,20)
181. DO 718 J=1,3
182. JJ=J+16
183. WRITE(6,703)(NUM(JJ,MM),MM=1,6),IYBINS(I,8,J,6,1),
184. *IYBINS(I,8,J,6,2),IYBINS(I,9,J,6,1),IYBINS(I,9,J,6,2),
185. *IYBINS(I,10,J,6,1),IYBINS(I,10,J,6,2),IYBINS(I,11,J,6,1),
186. *IYBINS(I,11,J,6,2),IYBINS(I,12,J,6,1),IYBINS(I,12,J,6,2),
187. *IYBINS(I,13,J,6,1),IYBINS(I,13,J,6,2),IYBINS(I,14,J,6,1),
188. *IYBINS(I,14,J,6,2)
189. 718 CONTINUE
190. 717 CONTINUE
191. 800 CONTINUE
192. STOP
193. END
//GO.FT12F001 DD DSN=OPPFM.Y1986.BASEPOP,DISP=SHR
//GO.FT13F001 DD DSN=OPPFM.Y1986.NEWADMIT,DISP=SHR
//GO.FT14F001 DD DSN=OPPFM.Y1986.COURT,DISP=SHR
//GO.FT15F001 DD DSN=OPPFM.Y1986.BOARD,DISP=SHR
//GO.SYSIN DD *
199. MURDER I.
200. MURDER II.
201. MANSLAUGHTER
202. SEX CRIMES.
203. ROBBERY.
204. ASSAULT.
205. PROPERTY CRIMES.
206. DRUGS.
207. OTHER FELONIES.
208. ALL OFFENSE TYPES.
209. I.
210. II.
211. III.
212. IV.
213. V.
214. VI.
215. VII.
216. VIII.
217. IX.
218. X.
219. XI.
220. XII.
221. XIII.
222. XIV.
223. XV.
224. XVI.
225. MALE
226. FEMALE
227. TOTAL

```

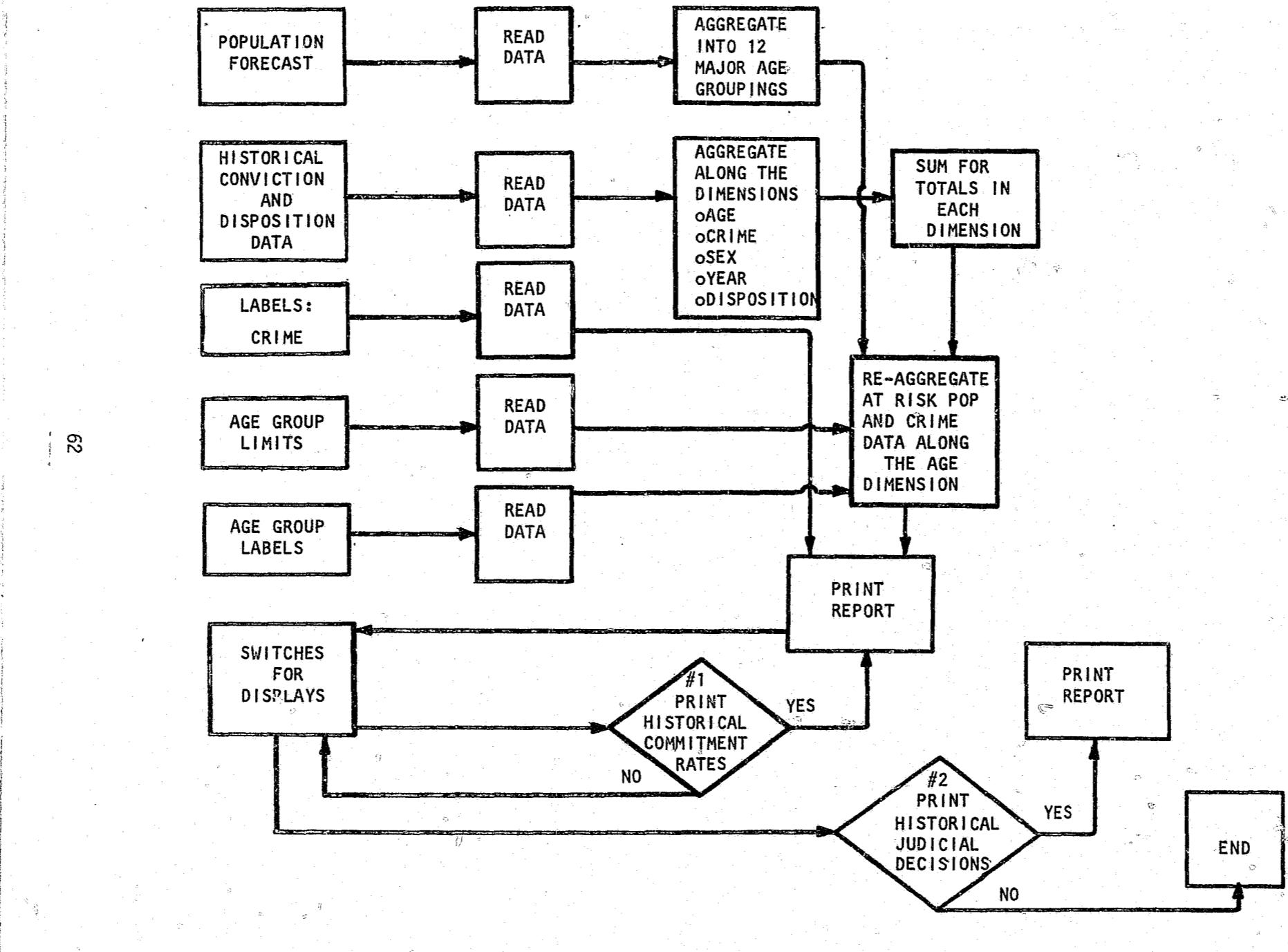
HISTORICAL ANALYSIS

The first phase of the prison population projection focused on the analysis of historical trends and relationships. A great deal of interest centered on the role of demographics. Consequently, the changing size and composition of the state population over the last decade was to be analyzed in the context of the changing prison population. Two other trends of interest were part of the criminal justice system itself, these being the convict rate (measured as the rate of commitment to the Department of Corrections) and the probability of imprisonment after conviction. The most useful presentation of these three series is in a format that decomposes the aggregate numbers along the dimensions of sex, age and crime type and recombines them in a fashion that illustrates the interrelationships among them.

For this phase of the project the program WYL.OFP.PRI.LIB(HISTREPT) was developed. Exhibit 18 presents the logic followed in the process of developing the reports that aided the historical analysis. Two external data files are linked to the source program to produce the printed reports (see also Exhibit 2). Data cards, internal to the source program, allow the analyst to vary the composition of the populations, both 'at risk' and prison, so that he can assess the importance of different age groupings. The analyst also has control over which reports will be generated.

The first two executable statements in the program WYL.OFP.PRI.LIB(HISTREPT) are logical switches which control the printing of the reports. The switch IDISP1 (line 19) when turned on, that is, set equal to 1, will produce the report, 'Historical DOC commitment rates during fiscal years 1970-1981 for all crimes, excluding parole returnees'. The phrase 'all crimes' will be replaced by the crime type actually being reported upon. The switch IDISP2 (line 20) when turned on will produce the report, 'Judicial Decision to Imprison (JDI) or to place on Probation (JDP) during fiscal years 1970-1981, all crimes, excluding parole returnees.'

EXHIBIT 18: Algorithm that produces the reports for the analysis of Historical Trends and Relationships.



The first major operation in the production of the reports for historical analysis is preparation of the at risk population data. The program WYL.OF.PRI.LIB(HISTREPT) reads the historical population from the file WYL.OF.PRI.DATA(HISTPOP). The population data used in the historical analysis is a special subset of the file created by the Washington state population projection system's option OUTDAT.

The single year of age data in the file WYL.OF.PRI.DATA(HISTPOP) is reorganized into twelve age groupings. These age groupings are; 16-17, 18, 19, 20, 21, 22, 23, 24, 25-29, 30-34, 35-39 and 40-54. These groupings represent the maximum age detail available to the analysis. The procedure for regrouping the data along other age group guidelines is explained below.

The next operation is the reformatting of the historical information on commitments and judicial decisions. Exhibit 19 provides a detailed illustration of the input dataset WYL.OF.PRI.DATA(DOCHIST). These data are provided by the Department of Corrections. The operation undertaken is the reorganization of the data into a five dimensional data array. The dimensions are crime type, disposition, sex, year and age.

The next step in the production of historical reports is the reading of the age groupings. This input begins in line 382 of the source program which is displayed in Exhibit 20. The first two columns are crime type. The second two are the number of age groups. The next 26 fields of two columns each contain, in pairs, the lower then the upper limits of the age groups. It is through this set of cards that the analyst gains flexibility in his analysis of the population composition.

After completing the three preparatory procedures the program combines the data with formatting instructions to produce the printed reports. Examples of the reports are presented in Exhibits 21 and 22.

EXHIBIT 19: Sample of Data in the File WYL.OF.PRI.DATA(DOCHIST)

```

70 1 17 1 1 00000 00000 00000 00000 00000 00011 00000 00000 00000
70 1 17 1 2 00000 00001 00000 00000 00002 00001 00009 00000 00000 00000
70 1 17 2 1 00000 00000 00000 00000 00001 00000 00000 00000 00000 00000
70 1 17 2 2 00000 00000 00000 00000 00002 00001 00001 00000 00000 00000
70 1 17 3 2 00000 00000 00000 00000 00000 00000 00002 00000 00000 00000
70 1 17 4 2 00000 00000 00000 00000 00000 00000 00001 00000 00000 00000
70 1 18 1 1 00000 00003 00002 00000 00003 00210 00029 00004 00000
70 1 18 1 2 00000 00000 00001 00004 00002 00053 00004 00002 00000
70 1 18 2 1 00000 00000 00001 00000 00003 00001 00012 00000 00000 00000
70 1 18 2 2 00000 00000 00001 00001 00002 00001 00006 00001 00000 00000
70 1 18 3 1 00000 00000 00000 00000 00000 00000 00004 00000 00000 00000
70 1 18 3 2 00000 00000 00000 00000 00000 00000 00002 00000 00000 00000
70 1 18 4 1 00000 00000 00000 00001 00000 00000 00003 00000 00000 00000
70 1 18 4 2 00000 00000 00000 00000 00000 00000 00000 00001 00000 00000
70 1 18 5 1 00000 00000 00000 00000 00000 00001 00000 00000 00000 00000
70 1 18 5 2 00000 00000 00000 00000 00000 00000 00001 00000 00000 00000
70 1 18 6 1 00000 00000 00000 00000 00000 00000 00005 00000 00000 00000

```

COLUMNS	DATA DESCRIPTION	COLUMNS	DATA DESCRIPTION
1-2	YEAR	27-31	MANSLAUGHTER COUNT
3	BLANK	32	BLANK
4	SEX	33-37	SEX CRIMES COUNT
5	BLANK	38	BLANK
6-9	AGE	39-43	ROBBERY COUNT
10	BLANK	44	BLANK
11	RACE	45-49	ASSAULT COUNT
12	BLANK	50	BLANK
13	DISPOSITION 1= IMPRISON 2= PROBATION	51-55	PROPERTY COUNT
		56	BLANK
14	BLANK	57-61	DRUG COUNT
15-19	MURDER I COUNT	62	BLANK
20	BLANK	63-67	OTHER FELONY COUNT
21-25	MURDER II COUNT	68	BLANK
26	BLANK	69-73	OFFENSE NOT REPORTED

EXHIBIT 20: The Program Listing of NYL.OF.PRI.LIB(HISTREPT)

```
1. //HISTREPT JOB (,,99,0,,01),FELIX,TIME=(,09),MSGLEVEL=(1,1)
2. // EXEC FDORG1CLG,REGION=500K
3. //FORT.SYSIN DD *
4.      DIMENSION INDATA(15),ICRIME(11,3,3,12,13),IPOP(3,12,13),
5.      1      IFORE(12,2,67),R(2,12,13),ICRNAM(11,50),LABEL(11,2,156)
6.      DIMENSION NPUT(29),NAGG(11,2,27),IOUT(2,12,26),IOUT1(3,3,12,13)
7.      DIMENSION RJDI(3,12,13),RJDP(3,12,13)
8.      DATA RJDI /468*0.0/,RJDP /468*0.0/
9.      DATA INDATA /15*0/,ICRIME /15444*0/,IPOP /468*0/,
10.     4      IFORE /1608*0/,R /312*0.0/,ICRNAM /550*/* /*,LABEL/3432*/* /*
11.     DATA NPUT /29*0/,NAGG /594*0/,IOUT /624*0/,IOUT1/1404*0/
12.     C      INDATA(1=YEAR;2=SEX;3=AGE;4=RACE;5=DISPOSITION;6THRU15=CRIME
13.     C      MUR1,MUR2,MANSLAT,SEX,ROBBERY,ASSAULT,PROPERTY,DRUGS,
14.     C      OTHER FELONIES,NOT REPORTED
15.     C      ICRIME(CRIME,DISPOSITION,SEX,YEAR,AGE)
16.     C      IPOP(SEX,YEAR,AGE)
17.     C      IFORE(YEAR,SEX,AGE)
18.     C      R(CRIME,SEX,YEAR,AGE)
19.     IDISP1 = 1
20.     IDISP2 = 1
21.     READ(12,11) (((IFORE(I,J,K),K = 1,67),J = 1,2),I = 1,12)
22.     DO 111 J = 1,2
23.     DO 112 I = 1,12
24.     IPOP(J,I,1) = IFORE(I,J,17) + IFORE(I,J,18)
25.     DO 113 K = 2,8
26.     IPOP(J,I,K) = IFORE(I,J,(K+17))
27. 113    CONTINUE
28.     DO 114 KK = 26,30
29.     IPOP(J,I,9) = IPOP(J,I,9) + IFORE(I,J,KK)
30. 114    CONTINUE
31.     DO 115 KK = 31,35
32.     IPOP(J,I,10) = IPOP(J,I,10) + IFORE(I,J,KK)
33. 115    CONTINUE
34.     DO 116 KK = 36,40
35.     IPOP(J,I,11) = IPOP(J,I,11) + IFORE(I,J,KK)
36. 116    CONTINUE
37.     DO 117 KK = 41,55
38.     IPOP(J,I,12) = IPOP(J,I,12) + IFORE(I,J,KK)
39. 117    CONTINUE
40.     112    CONTINUE
41.     111    CONTINUE
42.     DO 118 I = 1,2
43.     DO 119 J = 1,12
44.     DO 120 K = 1,12
45.     IPOP(I,J,13) = IPOP(I,J,13) + IPOP(I,J,K)
46. 120    CONTINUE
47. 119    CONTINUE
48. 118    CONTINUE
```

EXHIBIT 20 : Continued

```

49.    DO 121 J = 1,12
50.    DO 122 K = 1,13
51.    IPOP(3,J,K) = IPOP(1,J,K) + IPOP(2,J,K)
52. 122  CONTINUE
53. 121  CONTINUE
54.    DO 100 II = 1,1991
55.    READ(11,10) (INDATA(JJ),JJ = 1,15)
56.    I = INDATA(1) - 69
57.    IF (INDATA(3) .LT. 26) M = INDATA(3) - 16
58.    IF (INDATA(3) .EQ. 30) M = 10
59.    IF (INDATA(3) .EQ. 35) M = 11
60.    IF (INDATA(3) .EQ. 40) M = 12
61.    L = INDATA(2)
62.    J = INDATA(5)
63.    DO 127 N = 1,10
64.    ICRIME(N,J,L,I,M) = ICRIME(N,J,L,I,M) + INDATA(N+5)
65. 127  CONTINUE
66. 100  CONTINUE
67.    DO 128 N = 1,10
68.    DO 101 I = 1,2
69.    DO 102 J = 1,2
70.    DO 103 K = 1,12
71.    DO 104 L = 1,12
72.    ICRIME(N,I,J,K,13) = ICRIME(N,I,J,K,13)+ICRIME(N,I,J,K,L)
73. 104  CONTINUE
74. 103  CONTINUE
75. 102  CONTINUE
76. 101  CONTINUE
77. 128  CONTINUE
78.    DO 129 N = 1,10
79.    DO 105 J = 1,2
80.    DO 106 K = 1,12
81.    DO 107 L = 1,13
82.    ICRIME(N,3,J,K,L) = ICRIME(N,1,J,K,L) + ICRIME(N,2,J,K,L)
83. 107  CONTINUE
84. 106  CONTINUE
85. 105  CONTINUE
86. 129  CONTINUE
87.    DO 130 N = 1,10
88.    DO 108 I = 1,3
89.    DO 109 K = 1,12
90.    DO 110 L = 1,13
91.    ICRIME(N,I,3,K,L) = ICRIME(N,I,1,K,L)+ICRIME(N,I,2,K,L)
92. 110  CONTINUE
93. 109  CONTINUE
94. 108  CONTINUE
95. 130  CONTINUE
96.    DO 132 N = 1,10
97.    DO 133 I = 1,3
98.    DO 134 J = 1,3
99.    DO 135 K = 1,12
100.   DO 136 L = 1,13
101.   ICRIME(11,I,J,K,L) = ICRIME(11,I,J,K,L) +
102.                                ICRIME(N,I,J,K,L)
103. 136  CONTINUE
104. 135  CONTINUE

```

EXHIBIT 20 : Continued

```

105. 134  CONTINUE
106. 133  CONTINUE
107. 132  CONTINUE
108. READ(5,12) ((ICRNAM(I,J),J = 1,50),I = 1,11)
109. 12  FORMAT(50A1)
110. DO 140 MK=1,22
111. READ(5,14)(NPUT(I),I=1,29)
112. N = NPUT(1)
113. NSEX = NPUT(2)
114. NGRP = NPUT(3)
115. LIMIT = NGRP*2+1
116. NAGG(N,NSEX,1) = NGRP
117. DO 141 IGRP = 2,LIMIT
118. NAGG(N,NSEX,IGRP) = NPUT(IGRP + 2)
119. 141  CONTINUE
120. 140  CONTINUE
121. DO 354 INDEX = 1,22
122. READ(5,13) N,ISEX,(LABEL(N,ISEX,LGRP),LGRP = 1,156)
123. 13  FORMAT(I2,I1,2X,72A1 / 72A1 / 12A1)
124. 354  CONTINUE
125. C  WRITE(6,47)((NAGG(I,J,K),K=1,27),J=1,2),I=1,11
126. C47  FORMAT(1X,27I3)
127. 14  FORMAT(I2,I1,27I2)
128. DO 137 N = 1,11
129. DO 138 ISEX = 1,2
130. NGRPS = NAGG(N,ISEX,1)
131. NAGE = 1
132. NAGE1 = 2
133. JDAGE = 1
134. DO 142 IGRP = 1,NGRPS
135. ILO = NAGG(N,ISEX,(IGRP*2))
136. IHI = NAGG(N,ISEX,(IGRP*2+1))
137. DO 143 IYR = 1,12
138. DO 144 IAGE = ILO,IHI
139. IOUT(ISEX,IYR,NAGE) = IOUT(ISEX,IYR,NAGE) +
140.                                IPOP(ISEX,IYR,IAGE)
141. IOUT(ISEX,IYR,NAGE1) = IOUT(ISEX,IYR,NAGE1) +
142.                                ICRIME(N,3,ISEX,IYR,IAGE)
143. DO 355 IDIS = 1,3
144. IOUT1(ISEX,IDIS,IYR,JDAGE) =
145.                                IOUT1(ISEX,IDIS,IYR,JDAGE) +
146.                                ICRIME(N,1DIS,ISEX,IYR,IAGE)
147. 355  CONTINUE
148. 144  CONTINUE
149. 143  CONTINUE
150. NAGE = NAGE + 2
151. NAGE1 = NAGE1 + 2
152. JDAGE = JDAGE + 1
153. 142  CONTINUE
154. JACK = 0
155. IF(IDISP2 .EQ. 0) GO TO 310
156. 365  WRITE(6,91) N,(ICRNAM(N,NN),NN=1,50)
157. 91  FORMAT(1H1,2X,'TABLE',1X,I2,1X,(JDI) OR TO PLACE ON PROBATION (JDP) DURING FISCAL/
158. 1 1X,(YEARS 1970-1981,'1X,50A1/),
159. 2

```

CONTINUED

1 OF 3

EXHIBIT 20: Continued

```

160.      IF(ISEX .EQ. 1) WRITE(6,84)
161.      84      FORMAT(3X,'A. MALE POPULATION')
162.      IF(ISEX .EQ. 2) WRITE(6,85)
163.      85      FORMAT(3X,'B. FEMALE POPULATION')
164.      IF(ISEX .EQ. 3) WRITE(6,86)
165.      86      FORMAT(3X,'C. MALE AND FEMALE POPULATION COMBINED')
166.      WRITE(6,90)
167.      90      FORMAT(10X,'YEAR',8X,'AGE',9X,'NUMBER OF',8X,'NUMBER',11X,
168.           'JDI',7X,'NUMBER TO',9X,'JDP',21X,'GROUP',7X,
169.           'COMMITMENTS',6X,'TO PRISON',7X,'PERCENT',5X,
170.           'PROBATION',7X,'PERCENT')
171.      IF(JACK .EQ. 1) GO TO 366
172.      JACK = 1
173.      DO 356 IYR = 1,12
174.      DO 357 JAGE = 1,NGRPS
175.      IF(IOUT1(ISEX,3,IYR,JAGE) .EQ. 0) GO TO 357
176.      RJDI(ISEX,IYR,JAGE) = (FLOAT(IOUT1(ISEX,2,IYR,JAGE))/
177.           FLOAT(IOUT1(ISEX,3,IYR,JAGE)))*
178.           100
179.           2
180.           C
181.           C82
182.           357
183.           356
184.           CONTINUE
185.           MM = 1970
186.           MYR = 0
187.           IYR = 1
188.           L1 = 1
189.           L2 = 12
190.           MYR = MYR + 1
191.           DO 359 IAGE = 1,NGRPS
192.           IF(IAGE .EQ. 1) GO TO 360
193.           WRITE(6,83) (LABEL(N,ISEX,LGRP),LGRP=L1,L2),
194.               IOUT1(ISEX,3,IYR,IAGE),
195.               IOUT1(ISEX,2,IYR,IAGE),
196.               RJDI(ISEX,IYR,IAGE),
197.               IOUT1(ISEX,1,IYR,IAGE),
198.               RJDP(ISEX,IYR,IAGE)
199.           83
200.           FORMAT(17X,12A1,4X,I7,8X,I7,11X,F6.1,5X,I7,10X,F6.1)
201.           GO TO 361
202.           360
203.           MM,(LABEL(N,ISEX,LGRP),LGRP=L1,L2),
204.               IOUT1(ISEX,3,IYR,IAGE),
205.               IOUT1(ISEX,2,IYR,IAGE),
206.               RJDI(ISEX,IYR,IAGE),
207.               IOUT1(ISEX,1,IYR,IAGE),
208.               RJDP(ISEX,IYR,IAGE)
209.           94
210.           FORMAT(10X,I4,3X,12A1,4X,I7,8X,I7,11X,F6.1,5X,I7,10X,F6.1)
211.           L1 = L1 + 12
212.           L2 = L2 + 12
213.           CONTINUE
214.           IYR = IYR + 1
215.           MM = MM + 1
216.           IF(NGRPS .EQ. 3 .AND. MYR .EQ. 11) GO TO 365
217.           IF(NGRPS .EQ. 4 .AND. MYR .EQ. 9) GO TO 365
218.           IF(NGRPS .EQ. 5 .AND. MYR .EQ. 8) GO TO 365
219.           IF(NGRPS .EQ. 6 .AND. MYR .EQ. 7) GO TO 365
220.           IF(NGRPS .EQ. 7 .AND. MYR .EQ. 6) GO TO 365

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EXHIBIT 20: Continued

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221.           IF(NGRPS .EQ. 8 .AND. MYR .EQ. 5) GO TO 365
222.           IF(NGRPS .EQ. 8 .AND. MYR .EQ. 10) GO TO 365
223.           IF(NGRPS .EQ. 9 .AND. MYR .EQ. 5) GO TO 365
224.           IF(NGRPS .EQ. 9 .AND. MYR .EQ. 10) GO TO 365
225.           IF(NGRPS .EQ. 10 .AND. MYR .EQ. 4) GO TO 365
226.           IF(NGRPS .EQ. 10 .AND. MYR .EQ. 8) GO TO 365
227.           IF(NGRPS .EQ. 11 .AND. MYR .EQ. 4) GO TO 365
228.           IF(NGRPS .EQ. 11 .AND. MYR .EQ. 8) GO TO 365
229.           IF(NGRPS .EQ. 12 .AND. MYR .EQ. 3) GO TO 365
230.           IF(NGRPS .EQ. 12 .AND. MYR .EQ. 6) GO TO 365
231.           IF(NGRPS .EQ. 12 .AND. MYR .EQ. 9) GO TO 365
232.           96
233.           IF(IYR .LT. 13) GO TO 366
234.           C
235.           C81
236.           FORMAT(1X,13I8)
237.           DO 370 I = 1,3
238.           DO 371 J = 1,3
239.           DO 372 K = 1,12
240.           DO 373 L = 1,13
241.           IOUT1(I,J,K,L) = 0
242.           CONTINUE
243.           CONTINUE
244.           CONTINUE
245.           DO 413 I = 1,3
246.           DO 414 J = 1,12
247.           DO 415 K = 1,13
248.           RJDI(I,J,K) = 0.0
249.           RJDP(I,J,K) = 0.0
250.           CONTINUE
251.           414
252.           413
253.           310
254.           IF(IDISP1 .EQ. 0) GO TO 138
255.           DO 124 IYR = 1,12
256.           DO 125 IAGE = 1,NGRPS
257.           FORMAT(1X,F7.3,3X,I7,3X,I7)
258.           IF(IOUT(ISEX,IYR,(IAGE*2)) .EQ. 0) GO TO 125
259.           R(ISEX,IYR,IAGE) = (FLOAT(IOUT(ISEX,IYR,(IAGE*2)))/
260.                FLOAT(IOUT(ISEX,IYR,(IAGE*2-1))))*
261.                1000
262.           C
263.           C
264.           125
265.           124
266.           C
267.           C60
268.           NPAGE = 0
269.           WRITE(6,40) N,(ICRNAM(N,NN),NN = 1,50)
270.           FORMAT(1H1,2X,'FIGURE ',I2,' HISTORICAL DOC COMMITMENT',1X,
271.                 'RATES',1X,'DURING FISCAL YEARS 1970-1981 FOR',
272.                 '14X,50A1')
273.           IF(ISEX .EQ. 1) WRITE(6,41)
274.           FORMAT(3X,'A. MALE POPULATION')

```

EXHIBIT 20: Continued

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274.      IF(ISEX .EQ. 2) WRITE(6,42)
275.      42      FORMAT(3X,'B. FEMALE POPULATION//')
276.      IF(ISEX .EQ. 3) WRITE(6,43)
277.      43      FORMAT(3X,'C. MALE AND FEMALE POPULATION COMBINED//')
278.      IF(NGRPS .GE. 3) WRITE(6,44)
279.      IF(NGRPS .EQ. 2) WRITE(6,70)
280.      IF(NGRPS .EQ. 1) WRITE(6,71)
281.      70      FORMAT(10X,2('AT RISK' RATE PER%,2X)/10X,
282.           1 ('POPULATION COMMITMENTS THOUSAND',2X))
283.      71      FORMAT(10X,1('AT RISK' RATE PER%,2X)/10X,
284.           1 ('POPULATION COMMITMENTS THOUSAND',2X))
285.      44      FORMAT(10X,3('AT RISK' RATE PER%,2X)/10X,
286.           1 3('POPULATION COMMITMENTS THOUSAND',2X))
287.      WRITE(6,80)
288.      IF(NPAGE .EQ. 1) GO TO 303
289.      NPAGE = 1
290.      NNA = 1
291.      IIA = 1
292.      NCT = 0
293.      L1 = 1
294.      L2 = 12
295.      L3 = 13
296.      L4 = 24
297.      L5 = 25
298.      L6 = 36
299.      MM = 1970
300.      80      FORMAT(/)
301.      303      IF (3-NGRPS) 300,301,302
302.      300      WRITE(6,77) (LABEL(N,ISEX,LGRP),LGRP=L1,L2),
303.           1      (LABEL(N,ISEX,LGRP),LGRP=L3,L4),
304.           2      (LABEL(N,ISEX,LGRP),LGRP=L5,L6)
305.           77      FORMAT(3X,'AGE',14X,12A1,20X,12A1,21X,12A1//)
306.           L1 = L1 + 36
307.           L2 = L2 + 36
308.           L3 = L3 + 36
309.           L4 = L4 + 36
310.           L5 = L5 + 36
311.           L6 = L6 + 36
312.           DO 350 IYR = 1,12
313.           WRITE(6,72) MM,IOUT(SEX,IYR,IIA),IOUT(SEX,IYR,(IIA+1)),
314.           1      R(SEX,IYR,NNA),IOUT(SEX,IYR,(IIA+2)),
315.           2      IOUT(SEX,IYR,(IIA+3)),R(SEX,IYR,(NNA+1)),
316.           3      IOUT(SEX,IYR,(IIA+4)),IOUT(SEX,IYR,(IIA+5)),
317.           4      R(SEX,IYR,(NNA+2))
318.           72      FORMAT(3X,I4,5X,I7,5X,I7,3X,F6.3,5X,I7,5X,I7,3X,F6.3,
319.           1      5X,I7,5X,I7,3X,F6.3)
320.           MM = MM + 1
321.           350      CONTINUE
322.           MM = 1970
323.           WRITE(6,76)
324.           76      FORMAT(/)
325.           NNA = NNA + 3
326.           NGRPS = NGRPS - 3
327.           IIA = IIA + 6
328.           NCT = NCT + 1
329.           IF(NCT .EQ. 3 .AND. NGRPS .GT. 0) GO TO 305
330.           GO TO 303

```

EXHIBIT 20: Continued

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331.      302      IF(NGRPS .NE. 2) GO TO 304
332.      302      WRITE(6,78) (LABEL(N,ISEX,LGRP),LGRP=L1,L2),
333.           1      (LABEL(N,ISEX,LGRP),LGRP=L3,L4)
334.           78      FORMAT(3X,'AGE',14X,12A1,20X,12A1//)
335.           DO 351 IYR = 1,12
336.           WRITE(6,73) MM,IOUT(SEX,IYR,IIA),IOUT(SEX,IYR,(IIA+1)),
337.           1      R(SEX,IYR,NNA),IOUT(SEX,IYR,(IIA+2)),
338.           2      IOUT(SEX,IYR,(IIA+3)),R(SEX,IYR,(NNA+1))
339.           73      FORMAT(3X,I4,5X,I7,5X,I7,3X,F6.3,5X,I7,5X,I7,3X,F6.3)
340.           MM = MM + 1
341.           351      CONTINUE
342.           MM = 1970
343.           WRITE(6,76)
344.           GO TO 138
345.           304      WRITE(6,79) (LABEL(N,ISEX,LGRP),LGRP=L1,L2)
346.           79      FORMAT(3X,'AGE',14X,12A1//)
347.           DO 352 IYR = 1,12
348.           WRITE(6,74) MM,IOUT(SEX,IYR,IIA),IOUT(SEX,IYR,(IIA+1)),
349.           1      R(SEX,IYR,NNA)
350.           74      FORMAT(3X,I4,5X,I7,5X,I7,3X,F6.3)
351.           352      CONTINUE
352.           MM = 1970
353.           WRITE(6,76)
354.           GO TO 138
355.           301      WRITE(6,77) (LABEL(N,ISEX,LGRP),LGRP=L1,L2),
356.           1      (LABEL(N,ISEX,LGRP),LGRP=L3,L4),
357.           2      (LABEL(N,ISEX,LGRP),LGRP=L5,L6)
358.           DO 353 IYR = 1,12
359.           WRITE(6,72) MM,IOUT(SEX,IYR,IIA),IOUT(SEX,IYR,(IIA+1)),
360.           1      R(SEX,IYR,NNA),IOUT(SEX,IYR,(IIA+2)),
361.           2      IOUT(SEX,IYR,(IIA+3)),R(SEX,IYR,(NNA+1)),
362.           3      IOUT(SEX,IYR,(IIA+4)),IOUT(SEX,IYR,(IIA+5)),
363.           4      R(SEX,IYR,(NNA+2))
364.           MM = MM + 1
365.           353      CONTINUE
366.           MM = 1970
367.           WRITE(6,76)
368.           138      CONTINUE
369.           DO 145 I = 1,2
370.           DO 146 J = 1,12
371.           DO 147 K = 1,26
372.           IOUT(I,J,K) = 0
373.           CONTINUE
374.           147      CONTINUE
375.           146      CONTINUE
376.           145      CONTINUE
377.           DO 410 I = 1,2
378.           DO 411 J = 1,12
379.           DO 412 K = 1,13
380.           R(I,J,K) = 0.0
381.           412      CONTINUE
382.           411      CONTINUE
383.           410      CONTINUE
384.           137      CONTINUE

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EXHIBIT 20: Continued

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385. C      WRITE(6,22) (((IPOP(I,J,K),K=1,13),J=1,12),I=1,3)
386. C22    FORMAT(1X,13I8)
387. 11    FORMAT(7X,9I8/10I8/10I8/10I8/10I8/8I8/)
388. 10    FORMAT (I2,1X,I1,3X,I2,1X,I1,1X,I1,1X,10(I5,1X))
389. STOP
390. END
391. //GO.FT11F001 DD DSN=WYL.OF.PRI.DATA(DOCHIST),DISP=SHR
392. //GO.FT12F001 DD DSN=WYL.OF.PRI.DATA(HISTPOP),DISP=SHR
393. //GO.SYSIN DD *
394. MURDER 1, EXCLUDING PAROLE RETURNEES.
395. MURDER 2, EXCLUDING PAROLE RETURNEES.
396. MANSLAUGHTER, EXCLUDING PAROLE RETURNEES.
397. SEX CRIMES, EXCLUDING PAROLE RETURNEES.
398. ROBBERY, EXCLUDING PAROLE RETURNEES.
399. ASSAULT, EXCLUDING PAROLE RETURNEES.
400. PROPERTY CRIMES, EXCLUDING PAROLE RETURNEES.
401. DRUGS, EXCLUDING PAROLE RETURNEES.
402. OTHER FELONIES, EXCLUDING PAROLE RETURNEES.
403. CRIME NOT REPORTED, EXCLUDING PAROLE RETURNEES.
404. ALL CRIMES, EXCLUDING PAROLE RETURNEES.
405. 01104 1 1 21112121313
406. 01204 1 1 21112121313
407. 21 4 1 1 21112121313
408. 22 4 1 1 21112121313
409. 31 4 1 1 21112121313
410. 32 4 1 1 21112121313
411. 41 5 1 1 2 8 91112121313
412. 42 4 1 1 21112121313
413. 51 8 1 1 2 4 5 7 8 91010111112121313
414. 52 4 1 1 21112121313
415. 61 8 1 1 2 4 5 8 9 91010111112121313
416. 62 4 1 1 21112121313
417. 71 8 1 1 2 4 5 7 8 91010111112121313
418. 72 7 1 1 2 4 5 7 8 9101112121313
419. 81 8 1 1 2 5 6 8 9 91010111112121313
420. 82 4 1 1 21112121313
421. 91 4 1 1 21112121313
422. 92 4 1 1 21112121313
423. 101 4 1 1 21112121313
424. 102 4 1 1 21112121313
425. 11113 1 1 2 2 3 3 4 4 5 5 6 6 7 7 8 8 9 91010111112121313
426. 11213 1 1 2 2 3 3 4 4 5 5 6 6 7 7 8 8 9 91010111112121313
427. 11 4LESS THAN 18 18-39 40 AND OVER TOTAL GROUP 5 GROUP 6
428. GROUP 7 GROUP 8 GROUP 9 GROUP 10 GROUP 11 GROUP 12
429. GROUP 13
430. 12 4LESS THAN 18 18-39 40 AND OVER TOTAL GROUP 5 GROUP 6
431. GROUP 7 GROUP 8 GROUP 9 GROUP 10 GROUP 11 GROUP 12
432. GROUP 13
433. 21 4LESS THAN 18 18-39 40 AND OVER TOTAL GROUP 5 GROUP 6
434. GROUP 7 GROUP 8 GROUP 9 GROUP 10 GROUP 11 GROUP 12
435. GROUP 13
436. 22 4LESS THAN 18 18-39 40 AND OVER TOTAL GROUP 5 GROUP 6
437. GROUP 7 GROUP 8 GROUP 9 GROUP 10 GROUP 11 GROUP 12
438. GROUP 13
439. 31 4LESS THAN 18 18-39 40 AND OVER TOTAL GROUP 5 GROUP 6
440. GROUP 7 GROUP 8 GROUP 9 GROUP 10 GROUP 11 GROUP 12
441. GROUP 13

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EXHIBIT 20: Continued

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442. 32 4LESS THAN 18 18-39 40 AND OVER TOTAL GROUP 5 GROUP 6
443. GROUP 7 GROUP 8 GROUP 9 GROUP 10 GROUP 11 GROUP 12
444. GROUP 13
445. 41 5LESS THAN 18 18-24 25-39 40 AND OVER TOTAL GROUP 6
446. GROUP 7 GROUP 8 GROUP 9 GROUP 10 GROUP 11 GROUP 12
447. GROUP 13
448. 42 4LESS THAN 18 18-39 40 AND OVER TOTAL GROUP 5 GROUP 6
449. GROUP 7 GROUP 8 GROUP 9 GROUP 10 GROUP 11 GROUP 12
450. GROUP 13
451. 51 8LESS THAN 18 18-20 21-23 24-29 30-34 35-39
452. 40 AND OVER TOTAL GROUP 9 GROUP 10 GROUP 11 GROUP 12
453. GROUP 13
454. 52 4LESS THAN 18 18-39 40 AND OVER TOTAL GROUP 5 GROUP 6
455. GROUP 7 GROUP 8 GROUP 9 GROUP 10 GROUP 11 GROUP 12
456. GROUP 13
457. 61 9LESS THAN 18 18-20 21-24 25-29 30-34 35-39
458. 40 AND OVER TOTAL GROUP 9 GROUP 10 GROUP 11 GROUP 12
459. GROUP 13
460. 62 4LESS THAN 18 18-39 40 AND OVER TOTAL GROUP 5 GROUP 6
461. GROUP 7 GROUP 8 GROUP 9 GROUP 10 GROUP 11 GROUP 12
462. GROUP 13
463. 71 8LESS THAN 18 18-20 21-23 24-29 30-34 35-39
464. 40 AND OVER TOTAL GROUP 9 GROUP 10 GROUP 11 GROUP 12
465. GROUP 13
466. 72 7LESS THAN 18 18-20 21-23 24-29 30-39 40 AND OVER
467. TOTAL GROUP 8 GROUP 9 GROUP 10 GROUP 11 GROUP 12
468. GROUP 13
469. 81 8LESS THAN 18 18-21 22-24 25-29 30-34 35-39
470. 40 AND OVER TOTAL GROUP 9 GROUP 10 GROUP 11 GROUP 12
471. GROUP 13
472. 82 4LESS THAN 18 18-39 40 AND OVER TOTAL GROUP 5 GROUP 6
473. GROUP 7 GROUP 8 GROUP 9 GROUP 10 GROUP 11 GROUP 12
474. GROUP 13
475. 91 4LESS THAN 18 18-39 40 AND OVER TOTAL GROUP 5 GROUP 6
476. GROUP 7 GROUP 8 GROUP 9 GROUP 10 GROUP 11 GROUP 12
477. GROUP 13
478. 92 4LESS THAN 18 18-39 40 AND OVER TOTAL GROUP 5 GROUP 6
479. GROUP 7 GROUP 8 GROUP 9 GROUP 10 GROUP 11 GROUP 12
480. GROUP 13
481. 101 4LESS THAN 18 18-39 40 AND OVER TOTAL GROUP 5 GROUP 6
482. GROUP 7 GROUP 8 GROUP 9 GROUP 10 GROUP 11 GROUP 12
483. GROUP 13
484. 102 4LESS THAN 18 18-39 40 AND OVER TOTAL GROUP 5 GROUP 6
485. GROUP 7 GROUP 8 GROUP 9 GROUP 10 GROUP 11 GROUP 12
486. GROUP 13
487. 11113LESS THAN 18 18 19 20 21 22
488. 23 24 25-29 30-34 35-39 40 AND OVER
489. TOTAL
490. 11213LESS THAN 18 18 19 20 21 22
491. 23 24 25-29 30-34 35-39 40 AND OVER
492. TOTAL

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EXHIBIT 21: Example of Report Produced by WYL.OF.PRI.LIB(HISTREPT)

TABLE 2. JUDICIAL DECISION TO IMPRISON (JDI) OR TO PLACE ON PROBATION (JDP) DURING FISCAL YEARS 1970-1981, MURDER 2, EXCLUDING PAROLE RETURNEES.

A. MALE POPULATION

YEAR	AGE GROUP	NUMBER OF COMMITMENTS	NUMBER TO PRISON	JDI PERCENT	NUMBER TO PROBATION	JDP PERCENT
1970	LESS THAN 18	1	1	100.0	0	0.0
	18-39	13	12	92.3	1	7.7
	40 AND OVER	4	3	75.0	1	25.0
	TOTAL	18	16	88.9	2	11.1
1971	LESS THAN 18	0	0	0.0	0	0.0
	18-39	10	10	100.0	0	0.0
	40 AND OVER	1	1	100.0	0	0.0
	TOTAL	11	11	100.0	0	0.0
1972	LESS THAN 18	1	1	100.0	0	0.0
	18-39	9	9	100.0	0	0.0
	40 AND OVER	2	2	100.0	0	0.0
	TOTAL	12	12	100.0	0	0.0
1973	LESS THAN 18	0	0	0.0	0	0.0
	18-39	18	17	94.4	1	5.6
	40 AND OVER	1	0	0.0	1	100.0
	TOTAL	19	17	89.5	2	10.5
1974	LESS THAN 18	1	1	100.0	0	0.0
	18-39	25	22	88.0	3	12.0
	40 AND OVER	4	4	100.0	0	0.0
	TOTAL	30	27	90.0	3	10.0
1975	LESS THAN 18	2	2	100.0	0	0.0
	18-39	26	24	92.3	2	7.7
	40 AND OVER	9	9	100.0	0	0.0
	TOTAL	37	35	94.6	2	5.4
1976	LESS THAN 18	1	1	100.0	0	0.0
	18-39	34	31	91.2	3	8.8
	40 AND OVER	5	4	80.0	1	20.0
	TOTAL	40	36	90.0	4	10.0
1977	LESS THAN 18	2	2	100.0	0	0.0
	18-39	26	23	88.5	3	11.5
	40 AND OVER	6	6	100.0	0	0.0
	TOTAL	34	31	91.2	3	8.8
1978	LESS THAN 18	3	3	100.0	0	0.0
	18-39	23	21	91.3	2	8.7
	40 AND OVER	4	4	100.0	0	0.0
	TOTAL	30	28	93.3	2	6.7

EXHIBIT 21: Continued

TABLE 2. JUDICIAL DECISION TO IMPRISON (JDI) OR TO PLACE ON PROBATION (JDP) DURING FISCAL YEARS 1970-1981, MURDER 2, EXCLUDING PAROLE RETURNEES.

A. MALE POPULATION

YEAR	AGE GROUP	NUMBER OF COMMITMENTS	NUMBER TO PRISON	JDI PERCENT	NUMBER TO PROBATION	JDP PERCENT
1979	LESS THAN 18	1	1	100.0	0	0.0
	18-39	25	24	96.0	1	4.0
	40 AND OVER	11	11	100.0	0	0.0
	TOTAL	37	36	97.3	1	2.7
1980	LESS THAN 18	5	5	100.0	0	0.0
	18-39	29	28	96.6	1	3.4
	40 AND OVER	7	7	100.0	0	0.0
	TOTAL	41	40	97.6	1	2.4
1981	LESS THAN 18	2	2	100.0	0	0.0
	18-39	27	24	88.9	3	11.1
	40 AND OVER	3	2	66.7	1	33.3
	TOTAL	32	28	87.5	4	12.5

EXHIBIT 22: Example of Report Produced by WYL.OF.PRI.LIB(HISTREPT)

FIGURE 2. HISTORICAL DOC COMMITMENT RATES DURING FISCAL YEARS 1970-1981 FOR MURDER 2, EXCLUDING PAROLE RETURNEES.

A. MALE POPULATION

AT RISK POPULATION COMMITMENTS THOUSAND	RATE PER THOUSAND	AT RISK POPULATION COMMITMENTS THOUSAND	RATE PER THOUSAND	AT RISK POPULATION COMMITMENTS THOUSAND	RATE PER THOUSAND
--	----------------------	--	----------------------	--	----------------------

AGE	LESS THAN 18	18-39		40 AND OVER					
1970	68660	1	0.015	523705	13	0.025	289790	4	0.014
1971	68616	0	0.0	536353	10	0.019	287850	1	0.003
1972	69343	1	0.014	542239	9	0.017	282936	2	0.007
1973	69881	0	0.0	557247	18	0.032	279835	1	0.004
1974	71795	1	0.014	595327	25	0.043	280020	4	0.014
1975	72415	2	0.028	612014	26	0.042	279115	9	0.032
1976	73805	1	0.014	641348	34	0.053	279395	5	0.018
1977	75465	2	0.027	672827	26	0.039	279680	6	0.021
1978	75484	3	0.040	715678	23	0.032	284735	4	0.014
1979	76359	1	0.013	763164	25	0.033	292090	11	0.038
1980	76933	5	0.065	810327	29	0.036	300786	7	0.023
1981	74118	2	0.027	843441	27	0.032	307524	3	0.010

AGE	TOTAL
1970	882155
1971	892819
1972	894518
1973	906963
1974	937142
1975	963544
1976	994548
1977	1027972
1978	1075897
1979	1131613
1980	1188046
1981	1225083

GENERATION OF THE LENGTH OF STAY DISTRIBUTIONS

The length of stay distributions generated by the program WYL.OF.PRI.LIB (LOSPGM) are discrete approximations of survival functions that describe the decay of a prison cohort. Each distribution has 180 points to correspond with the 180 months in the forecast. Each point is associated with a percentage. The percentage indicates the proportion of the admission cohort still remaining in prison at that time.

The data used to develop the length of stay distribution are located in the data file WYL.OF.PRI.DATA(RELEASES). Exhibit 22 presents an example from this file. The rows represent the length of a sentence in months as measured by the EPRD (earliest possible release date) for guideline cases and the GTRD (good time release date) for nonguideline cases. The maximum sentence length in this file is 180 month which corresponds to the maximum length of the forecast. Information on those persons receiving a sentence longer than 180 months is recorded in line 181 of the file. The columns in this file represent the different types of crime controlling for whether or not the crime is seen as a guideline or nonguideline crime by the parole board. The crime and sex related to each of these columns is listed in Exhibit 22. The number in each cell of this file represents the number of persons sentenced under the guideline or nonguideline system who were released or are expected to be released at a specific month. This distribution is based on approximately 5,000 cases.

The program WYL.OF.PRI.LIB(LOSPGM), see Exhibit 23, reformats the data to correspond to ten categories; murder I, murder II, manslaughter, sex crimes, robbery, assault, property crimes, drugs, other felonies, and parole violators. After reformatting the data the program calculates a declining percentage distribution which reflects the percentage of the cohort remaining in prison for each month of the forecast.

EXHIBIT 22: Example of Report Produced by WYL.OF.PRI.LIB(HISTREPT)

FIGURE 2. HISTORICAL DOC COMMITMENT RATES DURING FISCAL YEARS 1970-1981 FOR MURDER 2, EXCLUDING PAROLE RETURNEES.

A. MALE POPULATION

AGE	AT RISK POPULATION COMMITMENTS THOUSAND	RATE PER AT RISK POPULATION COMMITMENTS THOUSAND		AT RISK POPULATION COMMITMENTS THOUSAND	RATE PER AT RISK POPULATION COMMITMENTS THOUSAND	
		LESS THAN 18	18-39		40 AND OVER	RATE PER AT RISK POPULATION COMMITMENTS THOUSAND
1970	68660	1	0.015	523705	13	0.025
1971	68616	0	0.0	536353	10	0.019
1972	69343	1	0.014	542239	9	0.017
1973	69881	0	0.0	557247	18	0.032
1974	71795	1	0.014	595327	25	0.043
1975	72415	2	0.028	612014	26	0.042
1976	73805	1	0.014	641348	34	0.053
1977	75465	2	0.027	672827	26	0.039
1978	75484	3	0.040	715678	23	0.032
1979	76359	1	0.013	763164	25	0.033
1980	76933	5	0.065	810327	29	0.036
1981	74118	2	0.027	843441	27	0.032
						289790
						4
						0.014

AGE	TOTAL					
1970	882155	18	0.020			
1971	892819	11	0.012			
1972	894518	12	0.013			
1973	906963	19	0.021			
1974	937142	30	0.032			
1975	963544	37	0.038			
1976	994548	40	0.040			
1977	1027972	34	0.033			
1978	1075897	30	0.028			
1979	1131613	37	0.033			
1980	1188046	41	0.035			
1981	1225085	52	0.026			

GENERATION OF THE LENGTH OF STAY DISTRIBUTIONS

The length of stay distributions generated by the program WYL.OF.PRI.LIB (LOSPGM) are discrete approximations of survival functions that describe the decay of a prison cohort. Each distribution has 180 points to correspond with the 180 months in the forecast. Each point is associated with a percentage. The percentage indicates the proportion of the admission cohort still remaining in prison at that time.

The data used to develop the length of stay distribution are located in the data file WYL.OF.PRI.DATA(RELEASES). Exhibit 22 presents an example from this file. The rows represent the length of a sentence in months as measured by the EPRD (earliest possible release date) for guideline cases and the GTRD (good time release date) for nonguideline cases. The maximum sentence length in this file is 180 month which corresponds to the maximum length of the forecast. Information on those persons receiving a sentence longer than 180 months is recorded in line 181 of the file. The columns in this file represent the different types of crime controlling for whether or not the crime is seen as a guideline or nonguideline crime by the parole board. The crime and sex related to each of these columns is listed in Exhibit 22. The number in each cell of this file represents the number of persons sentenced under the guideline or nonguideline system who were released or are expected to be released at a specific month. This distribution is based on approximately 5,000 cases.

The program WYL.OF.PRI.LIB(LOSPGM), see Exhibit 23, reformats the data to correspond to ten categories; murder I, murder II, manslaughter, sex crimes, robbery, assault, property crimes, drugs, other felonies, and parole violators. After reformatting the data the program calculates a declining percentage distribution which reflects the percentage of the cohort remaining in prison for each month of the forecast.

EXHIBIT 23: Example From the File WYL.OF.PRI.DATA(RELEASES)

```

0 0 0 0 9 2 0 0 0 1 0 1 0 6 1 3 0 43 0 0 1 10 0
0 0 0 0 0 0 0 0 2 1 1 0 7 0 6 0 37 2 3 0 7 0
0 0 1 1 14 12 1 0 0 1 0 1 0 7 0 5 0 53 2 5 1 6 0
0 0 0 0 0 0 0 0 0 1 1 2 0 5 0 9 1 37 3 4 0 2 0
0 0 0 0 5 2 0 0 0 0 0 4 0 7 1 3 3 35 1 5 1 7 0
0 0 0 0 0 0 0 0 0 3 0 0 0 3 1 6 0 24 0 4 0 5 0
0 1 2 1 16 20 5 0 0 0 0 7 0 12 0 7 1 47 1 6 0 7 1
0 0 0 0 0 0 0 0 4 0 1 0 12 2 8 1 23 2 2 1 4 0
0 0 0 0 4 1 0 0 0 0 0 5 0 6 1 2 1 28 0 2 0 7 0
0 0 0 0 2 0 0 0 0 2 0 5 0 7 0 7 0 5 1 4 0 4 0
0 1 0 1 4 1 0 0 0 0 1 11 0 9 0 11 2 20 0 0 0 4 0
0 0 0 0 0 0 0 0 0 0 0 4 0 9 1 7 0 4 0 1 0 4 0
0 1 1 0 9 0 0 0 0 0 6 1 13 0 7 1 7 0 13 0 1 0 7 0
0 0 0 0 0 0 0 0 0 3 0 1 0 5 1 10 3 5 1 1 1 3 0
0 1 0 2 6 5 1 0 0 3 0 7 0 19 2 8 0 20 0 3 0 5 0
0 0 0 0 0 0 0 0 0 1 3 0 11 1 13 0 4 0 1 0 2 0
0 0 0 1 2 1 0 3 0 2 1 8 0 17 1 15 2 11 0 0 0 1 0
0 0 0 0 0 0 0 0 1 0 4 0 8 0 6 0 3 0 0 1 1 0
0 1 3 1 3 2 0 0 1 2 0 8 0 26 1 8 0 7 0 1 0 2 0
0 0 0 0 0 0 0 0 2 1 4 0 9 1 2 0 1 0 0 0 2 0

```

FIELDS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
--------	---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----

FIELD	DATA DESCRIPTION	FIELD	DATA DESCRIPTION
1	MALE MURDER II - Nonguideline	13	FEMALE SEX CRIMES - Guideline
2	MALE SEX CRIMES	14	MALE ROBBERY
3	MALE ROBBERY	15	FEMALE ROBBERY
4	MALE ASSAULT	16	MALE ASSAULT
5	MALE PROPERTY	17	FEMALE ASSAULT
6	MALE PAROLE VIOLATOR	18	MALE PROPERTY
7	MALE OTHER	19	FEMALE PROPERTY/OTHER
8	MALE MURDER II - Guideline	20	MALE DRUG
9	FEMALE MURDER II	21	FEMALE DRUG
10	MALE MANSLAUGHTER	22	MALE PAROLE VIOLATOR
11	FEMALE MANSLAUGHTER	23	FEMALE PAROLE VIOLATOR
12	MALE SEX CRIMES		

EXHIBIT 24: The Program Listing of WYL.OF.PRI.LIB(LOSPGM)

```
L  
1. //LOSPGM JOB (,,99,0,,01),FELIX,TIME=(,09),MSGLEVEL=(1,1)  
2. // EXEC FORG1CLG  
3. //FORT.SYSIN DD *  
4.      DIMENSION LOS(182,23),LOS1(182),LOSOUT(12,182,2,2),LOS2(2,182,12)  
5.      DIMENSION RLOS3(10,2,182),RLOS4(10,2,182)  
6.      DATA RLOS3 /3640*0.0/, RLOS4 /3640*0.0/  
7.      DATA LOS /4186*0/, LOS1 /182*0/, LOSOUT /8736*0/, LOS2 /4368*0/  
8.      READ(12,200) ((LOS(I,J),J=1,23),I=1,181)  
9. 200 FORMAT(23I3)  
10. DO 100 J = 1,23  
11.   DO 101 I = 1,181  
12.     LOS1(I) = LOS(I,J)  
13. 101 CONTINUE  
14.   DO 102 I = 1,181  
15.     LOS1(182) = LOS1(182) + LOS1(I)  
16. 102 CONTINUE  
17.   DO 103 I = 1,182  
18.     LOS(I,J) = LOS1(I)  
19. 103 CONTINUE  
20.   DO 120 L = 1,182  
21.     LOS1(L) = 0  
22.   CONTINUE  
23. 100 CONTINUE  
24.   DO 104 I = 1,182  
25.     C MURDER I  
26.     LOS2(1,I,1) = 0  
27.     C MURDER II  
28.     LOS2(1,I,2) = LOS(I,1) + LOS(I,8)  
29.     C MANSLAUGHTER  
30.     LOS2(1,I,3) = LOS(I,10)  
31.     C SEX CRIMES  
32.     LOS2(1,I,4) = LOS(I,2) + LOS(I,12)  
33.     C ROBBERY  
34.     LOS2(1,I,5) = LOS(I,3) + LOS(I,14)  
35.     C ASSAULT  
36.     LOS2(1,I,6) = LOS(I,4) + LOS(I,16)  
37.     C PROPERTY  
38.     LOS2(1,I,7) = LOS(I,5) + LOS(I,18)  
39.     C DRUG  
40.     LOS2(1,I,8) = LOS(I,20)  
41.     C OTHER FELONY  
42.     LOS2(1,I,9) = LOS(I,7)  
43.     C PAROLE VIOLATOR  
44.     LOS2(1,I,10) = LOS(I,6) + LOS(I,22)  
45.     LOS2(2,I,1) = 0  
46.     LOS2(2,I,2) = LOS(I,9)  
47.     LOS2(2,I,3) = LOS(I,11)  
48.     LOS2(2,I,4) = LOS(I,13)  
49.     LOS2(2,I,5) = LOS(I,15)
```

EXHIBIT 24: Continued

```
50.      LOS2(2,I,6) = LOS(I,17)
51.      LOS2(2,I,7) = LOS(I,19)
52.      LOS2(2,I,8) = LOS(I,21)
53.      LOS2(2,I,9) = LOS(I,19)
54.      LOS2(2,I,10) = LOS(I,23)
55. 104  CONTINUE
56.      DO 121 I = 1,2
57.      DO 122 K = 1,10
58.      DO 123 J = 1,181
59. C      WRITE(6,70) RL0S3(K,I,J) ,LOS2(I,J,K),LOS2(I,182,K)
60. 70      FORMAT(1X,3I15)
61.      IF(LOS2(I,182,K) .EQ. 0) LOS2(I,182,K) = 1
62.      RL0S3(K,I,J) = FLOAT(LOS2(I,J,K)) /
63.      1          FLOAT(LOS2(I,182,K))
64. C      WRITE(6,70) RL0S3(K,I,J) ,LOS2(I,J,K),LOS2(I,182,K)
65. 123  CONTINUE
66. 122  CONTINUE
67. 121  CONTINUE
68. C      WRITE(6,61) (((RL0S3(K,I,J),J=1,182),I=1,2),K=1,10)
69. 61      FORMAT(24F5.3/24F5.3/24F5.3/24F5.3/
70. 1      24F5.3/24F5.3/24F5.3/24F5.3/14F5.3/
71. RCON = 1.0
72.      DO 124 I = 1,10
73.      DO 125 J = 1,2
74.      DO 126 K = 1,180
75.      RL0S4(I,J,K) = RCON - RL0S3(I,J,K)
76.      IF(RL0S4(I,J,K) .LT. 0.0) RL0S4(I,J,K) = 0.0
77.      RCON = RCON - RL0S3(I,J,K)
78. 126  CONTINUE
79.      RCON = 1.0
80. 125  CONTINUE
81. 124  CONTINUE
82.      WRITE(13,61) (((RL0S4(K,I,J),J=1,182),I=1,2),K=1,10)
83.      WRITE(6,62) (((RL0S4(K,I,J),J=1,182),I=1,2),K=1,10)
84. 62      FORMAT(1X,24F5.3/1X,24F5.3/1X,24F5.3/1X,24F5.3/
85. 1      1X,24F5.3/1X,24F5.3/1X,24F5.3/1X,14F5.3/)
86.      STOP
87.      END
88. //GO.FT12F001 DD DSN=WYL.OF.PRI.DATA(RELEASES),DISP=SHR
89. //GO.FT13F001 DD DSN=WYL.OF.PRI.SURVIVE,DISP=(OLD,KEEP,DELETE)
```

PART 2

USER AID

PART 2: USER AID

Part I of this document focused on the description of the prison population forecast computer model. In this earlier section the file structure, program descriptions, program algorithms, and the actual listings are provided. Furthermore, it was pointed out that the computer model is a multiphase process involving seven programs, eight input data files, four subpopulation forecast files, and two reports. The computer model allows for a fifteen year forecast with the option of reporting monthly or annual prison population for males, females, and totals.

Part II of this document deals with how to run, update, and test alternative assumptions for the prison population forecast model. The ability to update and test alternative assumptions with the prison population forecast model is made possible by the computer model's multiphased modular structure. The computer model's system of multiple programs and data sets allows decision makers and analysts to make changes in a single part of the model without affecting the other parts of the model. And thus, produce a forecast based on a single change in the criminal justice system. On the other hand, it is possible to produce a forecast that requires many changes throughout the computer model.

The programs for the computer model were developed in Fortran IV (G1) on the Washington State University Amdahl computer - which is also known as Service Center II in the Washington State Data Processing system. This "User Aid" presentation describes the methods necessary for operating the prison population forecast model, but it does not provide a comprehensive explanation for the use of the Washington State University Computer Service Center's interactive system -- WYLBUR. WYLBUR is an interactive terminal system used for text editing and remote job entry. Information regarding WYLBUR can be obtained from the Washington State University Computer Service Center's software manual "Using WYLBUR".

Before beginning the discussion of how to use the prison population forecast model, two points need to be reviewed. First, it is important that Part I of this document be reviewed carefully before attempting to

manipulate the computer model. This section does not provide a detailed review regarding the actual internal logic of the programs and data files definitions. Rather it focuses on the methods of running and altering the model.

The second point pertains to the expansion of the file structure that is necessary for the generation of new and alternative prison population forecast. Exhibit 2:1, which is an expanded version of Exhibit 2 in Part 1, shows that the minimum changes necessary in the file structure. As this exhibit shows, all that is necessary is the establishment of additional workspace for the data input files and the subpopulation forecast files.

Notice that some of the added file space in Exhibit 2:1 is labeled "update" while the other is labeled "workspace". This differentiation is important because it stresses the extent to which the data sets can be manipulated. Those data sets which have additional space labeled "workspace" are quite easily manipulated, and are the most efficient for making hypothetical inputs. On the other hand, the data sets which have their additional space labeled "update" are less efficiently used as hypothetical input. Meaningful changes in these data input files are largely dependent on external data sources which are periodically updated. However, it is possible to manipulate the "update" files hypothetically; that is it is possible to use test data that is not specifically related to any external data sources.

Although these additional workspaces are the minimum needed to perform an updated or alternative forecast, Exhibit 2:2 shows how a system of extended work files could prove beneficial. The illustrative plan portrayed in Exhibit 2:2 is a situation where one additional set of conviction rates, one of judicial decisions to imprison percentages, and one additional set length of stay curves, and a mixed test involving altered JDI percentages and conviction rates. Alternatives 1 through 3 show the file sequence needed to generate an alternative forecast when making one input file change at a time. Alternative 4 shows the file sequence needed for making two or more input changes at one time.

Notice that except for subpopulation forecast file \$OPPFM.Y1986.BASEPOP, each new data input in the Exhibit 2:2 generates a unique output for the subpopulation files. However, if a new input were used for WYL.OF.PRI. EXISTPOP, the subpopulation forecast file for \$OPPFM.Y1986.BASEPOP should be changed to \$OPPFM.Y1986.BASEPOP1. In this case the subpopulation forecast files for \$OPPFM.Y1986.BOARD and \$OPPFM.Y1986.COURT would advance one. That is, they would become \$OPPFM.Y1986.BOARD and \$OPPFM.Y1986.COURT. However the subpopulation forecast file for NEWADMIT -- \$OPPFM.Y1986. NEWADMIT -- would return to its original form because \$OPPFM.Y1986. BASEPOP1 would not impact the program NEWADMIT.

The remainder of this part of the document describes the methods that should be followed for generating new or alternative prison population forecast. In cases where internal program changes are necessary the appropriate lines in the program are identified and the required program changes noted. In all examples the appropriate method for making changes in data input files are explained. Then the appropriate JCL (job control language) changes are noted. And then the proper sequence for running the jobs and obtaining output are described.

Six forecast alternatives are described. Remember, however, it is not necessary to run each alternative separately. Information presented in these examples is sufficient to allow the analyst to run multiple changes during a single run. The key to running multiple inputs is to carefully follow the sequence of inputs and outputs shown on Exhibit 2:1. Failure to properly sequence the runs produces erroneous results.

The six forecast alternatives include.

- (1) Changing JDI percentages
- (2) Changing Conviction Rates
- (3) Changing Length of Stay Patterns
- (4) Changing the Existing Prison Population
- (5) Changing the State Population
- (6) Changing the Age Groupings

EXHIBIT 2:1 The File Structure For the Prison Population Forecast Computer Model

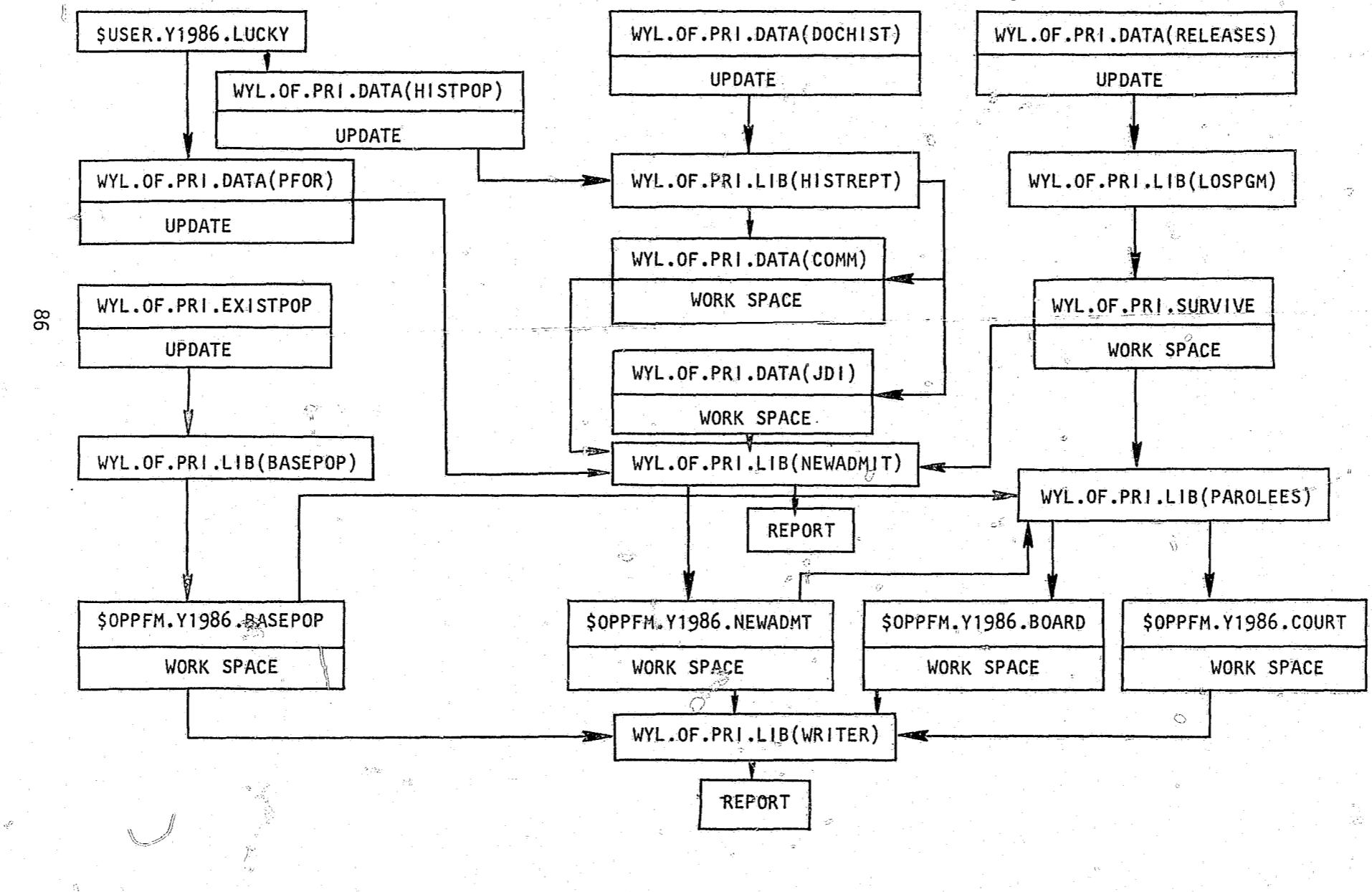


Exhibit 2:2: Example for File Structure For Alternative Forecasts

<u>File</u>	Original Forecast	Alter. 1 Change Conv. Rates	Alter. 2 Change JDI % (1)	Alter. 3 Change LOS	Alter. 4 Change and Conviction Rates
WYL.OF.PRI.DATA(COMM)	COMM	COMM1	COMM	COMM	COMM2
WYL.OF.PRI.DATA(JDI)	JDI	JDI	JDI1	JDI	JDI2
WYL.OF.PRI.SURVIVE	SURVIVE	SURVIVE	SURVIVE	SURVIVE1	SURVIVE
\$OPPFM.Y1986.BASEPOP	BASEPOP	BASEPOP	BASEPOP	BASEPOP	BASEPOP
\$OPPFM.Y1986.NEWADMT	NEWADMT	NEWADMT1	NEWADMT2	NEWADMT3	NEWADMT4
\$OPPFM.Y1986.BOARD	BOARD	BOARD1	BOARD2	BOARD3	BOARD4
\$OPPFM.Y1986.COURT	COURT	COURT1	COURT2	COURT3	COURT4

CHANGING THE JDI PERCENTAGES

There are two major steps necessary for altering the JDI percentages in the prison population forecast model. The first step is to determine what changes are desired in the JDI input data file -- WYL.OF.PRI.DATA(JDI). The second step is to make the necessary changes in JCL in the affected programs to run a new forecast.

Step 1

Exhibit 2:3 shows the JDI input data file - WYL.OF.PRI.DATA(JDI). It is a 32 line file with each line referring to a specific crime, sex, and age category. The first two columns of each line refer to one of the nine crime types. Be careful when reading the first two columns because the initial 0 is not printed. For instance in line one, the initial 1 should actually be read as 01. Column three refers to the type of sex. The remainder of each line is a sequential list for forecasted fiscal years of the percentage of persons within each of the subcategories sent to prison once convicted. In this case 1.000 equals 100 percent. It is important to notice that in some cases the initial two numbers on a line are repeated in the following lines. For instance in lines 9 through 14 a 51 is recorded. The 5 refers to the crime of robbery and the 1 refers to males. Each successive line beginning with 51 refers to a different age subgroup. The exact age subgroups represented in the JDI data file can be reviewed by reading the discussion on the JDI data file in Part I of this document.

Once the JDI data input file structure is understood, it is possible to proceed with altering the JDI input. The development of the original JDI input was aided by the review of the output from the program WYL.OF.PRI.LIB(HISTREPT). Once the alternative JDI values are selected the changes that are to be made in the JDI input file are straightforward. For example, if it is believed that property offenders will no longer be sent to prison, all the user has to do is change the JDI values for the lines in WYL.OF.PRI.DATA(JDI) pertaining to property offenders. For this example

EXHIBIT 2:3 JDI INPUT DATA FILE -- WYL.OF.PRI.DATA(JDI)

EXHIBIT 2:4 CHANGED JDI VALUES FOR PROPERTY OFFENDERS

changes only need to be made in the lines beginning with the numbers 71 and 72. Exhibit 2:4 shows these values changed to .000.

Step 2

Once the changes are made in the JDI data input file the next step is to run a new forecast. This requires a number of program alterations. In this example no alterations are required in the Fortran programs. All changes are limited to job control language (JCL). The following is the sequence of the necessary alterations.

After the changes are made in the JDI input data file make sure the file is saved under a new name. Failure to do this will cause the new file to overwrite the original file. In renaming the file it is important to use a method which enhances good record keeping, such as the one suggested in the earlier section (See Exhibit 2:2). The WYLBUR command used for saving the new JDI file is: SAVE DATA(JDI1)

Insure that the LIB(NEWADMIT) reads the correct input and generates the correct output files. The JCL should appear as shown below for the initial run for the new JDI data. Notice that in line 236 that JDI1 is read which corresponds with the name of the new JDI file. Also notice that in line 238 that NEWADMT1 is used as the output file. Failure to advance the numbering of the output file will cause the original output file to be overwritten.

```
234. //GO.FT11F001 DD DSN=WYL.OF.PRI.DATA(COMM),DISP=SHR  
235. //GO.FT12F001 DD DSN=WYL.OF.PRI.DATA(PFOR),DISP=SHR  
236. //GO.FT13F001 DD DSN=WYL.OF.PRI.DATA(JDI1),DISP=SHR  
237. //GO.FT14F001 DD DSN=WYL.OF.PRI.SURVIVE,DISP=SHR  
238. //GO.FT15F001 DD DSN=OPPFM.Y1986.NEWADMT1,DISP=(NEW,CATLG,DELETE),  
238.1 // UNIT=CDISK,SPACE=(400,(100,100),RLSE),  
238.2 // DCB=(RECFM=FB,LRECL=80,BLKSIZE=400)  
239. //GO.SYSIN DD *
```

Once the new input file JDI1 and the new output file \$OPPFM.Y1986.NEWADMT1 are established, it may be desirable to make minor changes or corrections in JDI1 without establishing a new JDI file. To avoid creating this unwanted output file use the altered JCL shown below. Notice that the lines 238.1 and 238.2 have been deleted and that the DISP statement in 238 has been changed to (OLD,KEEP,DELETE).

```
234. //GO.FT11F001 DD DSN=WYL.OF.PRI.DATA(COMM),DISP=SHR  
235. //GO.FT12F001 DD DSN=WYL.OF.PRI.DATA(PFOR),DISP=SHR  
236. //GO.FT13F001 DD DSN=WYL.OF.PRI.DATA(JDI1),DISP=SHR  
237. //GO.FT14F001 DD DSN=WYL.OF.PRI.SURVIVE,DISP=SHR  
238. //GO.FT15F001 DD DSN=OPPFM.Y1986.NEWADMT1,DISP=(OLD,KEEP,DELETE)  
239. //GO.SYSIN DD *
```

Once the proper JCL is selected for the program LIB(NEWADMIT), it must be saved to retain the proper JCL. The command used here is: SAVE #NEWADMIT REP. Then it is necessary to run LIB(NEWADMIT) to generate the new output file \$OPPFM.Y1986.NEWADMT1. The command to run the program is: RUN UNN TER STD. The output from this will generate a new disc file. This file can be examined by using the command: USE \$OPPFM.Y1986.NEWADMT1. It is not advisable to print the entire file because it is over 3,400 lines long.

It is possible to obtain a report from the run of LIB(NEWADMIT). To obtain this report make sure that the Fortran switches on lines 26 and 27 of LIB(NEWADMIT) are set to 1. This report comes directly to the users interactive terminal and shows the number of new admissions to the prisons from the courts.

Next, insure that the proper JCL is used in LIB(PAROLEES). Failure to use the proper JCL in this program will cause the forecast model to produce erroneous results. Incorrect JCL will cause LIB(PAROLEES) to receive incorrect new admissions to prison data. In this example the correct JCL is as follows:

```
334. //GO.FT16F001 DD DSN=OPPFM.Y1986.BOARD1,DISP=(NEW,CATLG,DELETE),  
334.1 // UNIT=CDISK,DCB=(RECFM=FB,LRECL=80,BLKSIZE=400),  
334.2 // SPACE=(400,(100,100),RLSE)  
335. //GO.FT17F001 DD DSN=OPPFM.Y1986.COURT1,DISP=(NEW,CATLG,DELETE),  
335.1 // UNIT=CDISK,DCB=(RECFM=FB,LRECL=80,BLKSIZE=400),  
335.2 // SPACE=(400,(100,100),RLSE)  
336. //GO.FT11F001 DD DSN=OPPFM.Y1986.BASEPOP,DISP=SHR  
337. //GO.FT12F001 DD DSN=OPPFM.Y1986.NEWADMT1,DISP=SHR  
338. //GO.FT10F001 DD DSN=WYL.OF.PRI.SURVIVE,DISP=SHR  
339. //GO.SYSIN DD *
```

Notice in the JCL above for LIB(PAROLEES) that new files are created for the subpopulation output files \$OPPFM.Y1986.BOARD AND \$OPPFM.Y1986.COURT. The new output files can be recognized as BOARD1 and COURT1. In the situation where changes or corrections are made to the input data file JD11 but the subpopulation output file \$OPPFM.Y1986.NEWADMT1 is used it would be preferable to use the JCL shown below for LIB(PAROLEES).

```
334. //GO.FT16F001 DD DSN=OPPFM.Y1986.BOARD1,DISP=(OLD,KEEP,DELETE)  
335. //GO.FT17F001 DD DSN=OPPFM.Y1986.COURT1,DISP=(OLD,KEEP,DELETE)  
336. //GO.FT11F001 DD DSN=OPPFM.Y1986.BASEPOP,DISP=SHR  
337. //GO.FT12F001 DD DSN=OPPFM.Y1986.NEWADMT1,DISP=SHR  
338. //GO.FT10F001 DD DSN=WYL.OF.PRI.SURVIVE,DISP=SHR  
339. //GO.SYSIN DD *
```

Once the proper JCL is selected for the program LIB(PAROLEES), it must be saved to retain that JCL. Use the command: SAVE #PAROLEES REP. To generate the subpopulation output files for \$OPPFM.Y1986.BOARD1 and \$OPPFM.Y1986.COURT1, LIB(PAROLEES) must be run. Use the command: RUN UNN TER STD. The output from this program will generate two new disk files. No output is sent directly to the user's terminal. If the user desires to view the output the command to use is: USE \$OPPFM.Y1986.BOARD1 (or COURT1). It is not advisable to print the entire files because they are very large.

Finally to produce a forecast that represents the changes in the new JDI data input file insure that the proper JCL is used in LIB(WRITER). Failure to use the proper JCL in this program will cause the forecast model to produce erroneous results. The JCL that should be used to generate the correct forecast is as follows:

```
194. //GO.FT12F001 DD DSN=OPPFM.Y1986.BASEPOP,DISP=SHR  
195. //GO.FT13F001 DD DSN=OPPFM.Y1986.NEWADMT1,DISP=SHR  
196. //GO.FT14F001 DD DSN=OPPFM.Y1986.COURT1,DISP=SHR  
197. //GO.FT15F001 DD DSN=OPPFM.Y1986.BOARD1,DISP=SHR  
198. //GO.SYSIN DD *
```

LIB(WRITER) produces a report which is the forecast. The first section of this report is a monthly forecast for the entire forecast period by type of crime and sex. This report comes directly to the users interactive terminal.

CHANGING THE CONVICTION RATES

There are two major steps necessary for altering the conviction rates in the prison population forecast model. The first step is to determine what changes are desired in the conviction rate input data file -- WYL.OF.PRI.DATA(COMM). The second step is to make the necessary changes in the JCL in the affected programs to run a new forecast.

Step 1

Exhibit 2:5 shows the conviction rate input data file -- WYL.OF.PRI.DATA(COMM). It is a 64 line file with each two lines sequentially referring to a specific crime, sex, and age category. The first two columns of each two line set refer to one of the nine crime types. Be careful when reading the first two columns because the initial 0 is suppressed. That is, the 1 in the initial set of lines should be read as 01. Column three refers to the type of sex. Columns four and five represent the lower limit of the age group dealt with by each two line sets, and columns six and seven represent the upper limit of the age group dealt with by each two line set. The coding for the age limits are shown on page 27. The remainder of line one and line two of each two line set is a sequential list for the forecasted fiscal years of the rate per 1,000 "at risk" who are convicted of a specific felony.

Once the conviction rate data input file structure is understood, it is possible to proceed with altering the conviction rate input. The development for the original conviction rate input was aided by the review of the output from the program WYL.OF.PRI.LIB(HISTREPT). Once the alternative conviction rate values are selected the changes that are to be made in the conviction rate data input file are straight forward. For example, if it is believed that the conviction rates for drug offenders would be halved throughout the forecast period, all the user has to do is change the conviction rate values for the lines in WYL.OF.PRI.DATA(COMM) pertaining to drug offenders. For this example changes only need to be made in the sets lines beginning with the numbers 81 and 82. Exhibit 2:6 shows these changed values.

EXHIBIT 2:5 CONVICTION RATE INPUT DATA FILE -- WYL.OF.PRI.DATA(COMM)

1.	11	112	.029	.027	.026	.024	.023	.022	.021	.021	.021	.021	.021	.021	.021
2.			.021	.021	.021										
3.	12	112	.002	.002	.002	.002	.002	.002	.002	.002	.002	.002	.002	.002	.002
4.			.002	.002	.002										
5.	21	112	.040	.039	.038	.036	.035	.034	.033	.033	.033	.033	.033	.033	.033
6.			.033	.033	.033										
7.	22	112	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003
8.			.003	.003	.003										
9.	31	112	.108	.112	.116	.120	.120	.120	.120	.120	.120	.120	.120	.120	.120
10.			.120	.120	.120										
11.	32	112	.013	.013	.013	.013	.013	.013	.013	.013	.013	.013	.013	.013	.013
12.			.013	.013	.013										
13.	41	112	.460	.480	.500	.520	.540	.560	.580	.580	.580	.580	.580	.580	.580
14.			.580	.580	.580										
15.	42	112	.010	.010	.010	.010	.010	.010	.010	.010	.010	.010	.010	.010	.010
16.			.010	.010	.010										
17.	51	1 1	.163	.163	.163	.163	.163	.163	.163	.163	.163	.163	.163	.163	.163
18.			.163	.163	.163										
19.	51	2 4	.896	.956	1.016	1.076	1.136	1.196	1.196	1.196	1.196	1.196	1.196	1.196	1.196
20.			1.196	1.196	1.196										
21.	51	5 7	.592	.612	.632	.652	.672	.692	.692	.692	.692	.692	.692	.692	.692
22.			.692	.692	.692										
23.	51	8 9	.299	.319	.339	.359	.379	.379	.379	.379	.379	.379	.379	.379	.379
24.			.379	.379	.379										
25.	51	10 10	.201	.211	.221	.231	.241	.241	.241	.241	.241	.241	.241	.241	.241
26.			.241	.241	.241										
27.	51	11 12	.052	.052	.052	.052	.052	.052	.052	.052	.052	.052	.052	.052	.052
28.			.052	.052	.052										
29.	52	1 12	.023	.024	.025	.026	.027	.028	.029	.030	.030	.030	.030	.030	.030
30.			.030	.030	.030										
31.	61	1 1	.138	.147	.156	.165	.174	.184	.192	.201	.201	.201	.201	.201	.201
32.			.201	.201	.201										
33.	61	2 9	.602	.624	.647	.669	.691	.714	.737	.737	.737	.737	.737	.737	.737
34.			.737	.737	.737										
35.	61	10 11	.421	.436	.451	.466	.481	.496	.551	.551	.551	.551	.551	.551	.551
36.			.551	.551	.551										
37.	61	12 12	.276	.246	.255	.264	.274	.284	.293	.293	.293	.293	.293	.293	.293
38.			.293	.293	.293										
39.	62	1 2	.032	.032	.032	.032	.032	.032	.032	.032	.032	.032	.032	.032	.032
40.			.032	.032	.032										
41.	71	1 1	.830	.830	.830	.830	.830	.830	.830	.830	.830	.830	.830	.830	.830
42.			.830	.830	.830										
43.	71	2 4 10	.64610	.64610	.64610	.64610	.64610	.64610	.64610	.64610	.64610	.64610	.64610	.64610	.64610
44.			10	.64610	.64610	.646									
45.	71	5 7	5.040	5.040	5.040	5.040	5.040	5.040	5.040	5.040	5.040	5.040	5.040	5.040	5.040
46.			5.040	5.040	5.040										
47.	71	8 9	2.337	2.337	2.337	2.337	2.337	2.337	2.337	2.337	2.337	2.337	2.337	2.337	2.337
48.			2.337	2.337	2.337										
49.	71	10 10	1.375	1.375	1.375	1.375	1.375	1.375	1.375	1.375	1.375	1.375	1.375	1.375	1.375

EXHIBIT 2:5 CONTINUED

```

50.    1.375 1.375 1.375
51.    1.003 1.003 1.003 1.003 1.003 1.003 1.003 1.003 1.003 1.003 1.003
52.    1.003 1.003 1.003
53.    7111212 .560 .560 .560 .560 .560 .560 .560 .560 .560 .560 .560 .560
54.    .560 .560 .560 .560
55.    72 112 .481 .481 .481 .481 .481 .481 .481 .481 .481 .481 .481 .481
56.    .481 .481 .481
57.    81 112 .580 .620 .660 .700 .740 .780 .800 .800 .800 .800 .800 .800
58.    .800 .800 .800
59.    82 112 .150 .160 .170 .180 .180 .180 .180 .180 .180 .180 .180 .180
60.    .180 .180 .180
61.    91 112 .562 .562 .562 .562 .562 .562 .562 .562 .562 .562 .562 .562
62.    .562 .562 .562
63.    92 112 .080 .080 .080 .080 .080 .080 .080 .080 .080 .080 .080 .080
64.    .080 .080 .080

```

EXHIBIT 2:6 CHANGED CONVICTION RATES FOR DRUG OFFENDERS

```

55.    72 112 .481 .481 .481 .481 .481 .481 .481 .481 .481 .481 .481 .481
56.    .481 .481 .481
57.    81 112 .290 .310 .330 .350 .370 .390 .400 .400 .400 .400 .400 .400
58.    .400 .400 .400
59.    82 112 .075 .080 .085 .090 .090 .090 .090 .090 .090 .090 .090 .090
60.    .090 .090 .090
61.    91 112 .562 .562 .562 .562 .562 .562 .562 .562 .562 .562 .562 .562

```

Step 2

Once the changes are made in the conviction rate data input file the next step is to run a new forecast. This requires a number of program alterations. In this example no alterations are required in the Fortran programs. All changes are limited to job control language (JCL). The following is the sequence of the necessary alterations.

After the changes are made in the conviction rate input data file make sure the file is saved under a new name. Failure to do this will cause the new file to overwrite the original file. In renaming the file it is important to use a method which enhances good record keeping, such as the one suggested in the earlier section (see Exhibit 2:2). The WYLBR command used for saving the new conviction rate file is: SAVE DATA(COMM1).

Insure that LIB(NEWADMIT) reads the correct input and generates the correct output files. The JCL should appear as shown below for the initial run of the new conviction rate data. Notice that in line 234 that COMM1 is read which corresponds with the name of the new conviction rate file. Also notice that in line 238 that NEWADMT2 is used as the output file. Failure to advance the numbering of the output file will cause the original output file to be overwritten.

```

234. //GO.FT11F001 DD DSN=WYL.OF.PRI.DATA(COMM1),DISP=SHR
235. //GO.FT12F001 DD DSN=WYL.OF.PRI.DATA(PFOR),DISP=SHR
236. //GO.FT13F001 DD DSN=WYL.OF.PRI.DATA(JDI),DISP=SHR
237. //GO.FT14F001 DD DSN=WYL.OF.PRI.SURVIVE,DISP=SHR
238. //GO.FT15F001 DD DSN=OPPFM.Y1986.NEWADMT2,DISP=(NEW,CATLG,DELETE),
238.1 // UNIT=CDISK,SPACE=(400,(100,100),RLSE),
238.2 // DCB=(RECFM=FB,LRECL=80,BLKSIZE=400)
239. //GO.SYSIN DD *

```

Once the new input file COMM1 and the new output file \$OPPFM.Y1986.NEWADMT2 are established, it may be desirable to make minor changes or corrections in the COMM1 file without establishing a new COMM file. To avoid creating this unwanted output file use the altered JCL shown below. Notice that lines 238.1 and 238.2 have been deleted and that the DISP statement in 238 has been changed to (OLD,KEEP,DELETE).

```

234. //GO.FT11F001 DD DSN=WYL.OF.PRI.DATA(COMM1),DISP=SHR
235. //GO.FT12F001 DD DSN=WYL.OF.PRI.DATA(PFOR),DISP=SHR
236. //GO.FT13F001 DD DSN=WYL.OF.PRI.DATA(JDI),DISP=SHR
237. //GO.FT14F001 DD DSN=WYL.OF.PRI.SURVIVE,DISP=SHR
238. //GO.FT15F001 DD DSN=OPPFM.Y1986.NEWADMT2,DISP=(OLD,KEEP,DELETE),
239. //GO.SYSIN DD *

```

Once the proper JCL is selected for the program LIB(NEWADMIT), it must be saved to retain the proper JCL. The command used here is: SAVE #NEWADMIT REP. Then it is necessary to run LIB(NEWADMIT) to generate the new output file \$OPPFM.Y1986.NEWADMT2. The command to run the program is: RUN UNN TER STD. The output from this will generate a new disk file. This file can be examined by using the command: USE \$OPPFM.Y1986.NEWADMT2. It is not advisable to print the entire file because it is over 3,400 lines long.

It is possible to obtain a report from the run of LIB(NEWADMIT). To obtain this report make sure that the Fortran switches on lines 26 and 27 of LIB(NEWADMIT) are set to 1. This report comes directly to the users interactive terminal. This report shows the number of new admissions to the prisons from the courts.

Next, insure that the proper JCL is used in LIB(PAROLEES). Failure to use the proper JCL in this program will cause the forecast model to produce erroneous results. Incorrect JCL will cause LIB(PAROLEES) to receive incorrect new admissions to prison data. For this example the correct JCL is as follows:

```

334. //GO.FT16F001 DD DSN=OPPFM.Y1986.BOARD2,DISP=(NEW,CATLG,DELETE)
334.1 // UNIT=CDISK,DCB=(RECFM=FB,LRECL=80,BLKSIZE=400),
334.2 // SPACE=(400,(100,100),RLSE)
335. //GO.FT17F001 DD DSN=OPPFM.Y1986.COURT2,DISP=(NEW,CATLG,DELETE)
335.1 // UNIT=CDISK,DCB=(RECFM=FB,LRECL=80,BLKSIZE=400),
335.2 // SPACE=(400,(100,100),RLSE)
336. //GO.FT11F001 DD DSN=OPPFM.Y1986.BASEPOP,DISP=SHR
337. //GO.FT12F001 DD DSN=OPPFM.Y1986.NEWADMT2,DISP=SHR
338. //GO.FT10F001 DD DSN=WYL.OF.PRI:SURVIVE,DISP=SHR
339. //GO.SYSIN DD *

```

Notice in the JCL above for LIB(PAROLEES) that new files are created for the subpopulation output files \$OPPFM.Y1986.BOARD AND \$OPPFM.Y1986.COURT. The new output files can be recognized as BOARD2 and COURT2. In the situation where changes or corrections are made to the input data file COMM1 but the subpopulation output file \$OPPFM.Y1986.NEWADMT2 is used it would be preferable to use the JCL shown below for LIB(PAROLEES).

```

334. //GO.FT16F001 DD DSN=OPPFM.Y1986.BOARD2,DISP=(OLD,KEEP,DELETE)
335. //GO.FT17F001 DD DSN=OPPFM.Y1986.COURT2,DISP=(OLD,KEEP,DELETE)
336. //GO.FT11F001 DD DSN=OPPFM.Y1986.BASEPOP,DISP=SHR
337. //GO.FT12F001 DD DSN=OPPFM.Y1986.NEWADMT2,DISP=SHR
338. //GO.FT10F001 DD DSN=WYL.OF.PRI.SURVIVE,DISP=SHR
339. //GO.SYSIN DD *

```

Once the proper JCL is selected for the program LIB(PAROLEES), it must be saved to retain that JCL. Use the command: SAVE #PAROLEES REP. To generate the subpopulation output files for \$OPPFM.Y1986.BOARD2 and \$OPPFM.Y1986.COURT2, LIB(PAROLEES) must be run. Use the command: RUN UNN TER STD. The output from this program will generate two new disk files. No output is sent directly to the user's terminal. If the user desires to view the output the command to use is: USE \$OPPFM.Y1986.BOARD2 (or COURT2). It is not advisable to print the entire files because they are very large.

Finally to produce a forecast that represents the changes in the new conviction rate input data file insure that the proper JCL is used in LIB(WRITER). Failure to use the proper JCL in this program will cause the forecast model to produce erroneous results. The JCL that should be used to generate the correct forecast is as follows:

```

194. //GO.FT12F001 DD DSN=OPPFM.Y1986.BASEPOP,DISP=SHR
195. //GO.FT13F001 DD DSN=OPPFM.Y1986.NEWADMT2,DISP=SHR
196. //GO.FT14F001 DD DSN=OPPFM.Y1986.COURT2,DISP=SHR
197. //GO.FT15F001 DD DSN=OPPFM.Y1986.BOARD2,DISP=SHR
198. //GO.SYSIN DD *

```

LIB(WRITER) produces a report which is the forecast. The first section of this report is a monthly forecast for the entire forecast period by type of crime and sex. This report comes directly to the users interactive terminal.

CHANGING THE LENGTH OF STAY PATTERNS

- There are two major steps necessary for altering the length of stay pattern for the prison population forecast model. The first step is to determine what changes are desired in the length of stay patterns data input file -- WYL.OF.PRI.SURVIVE. The second step is to make the necessary changes in the JCL in the affected programs to run a new forecast.

Step 1

Exhibit 2:7 shows the length of stay data file -- WYL.OF.PRI.SURVIVE. It is a 179 line file which shows the declining percentage of persons remaining in prison over time by crime and sex. The length of stay for each sex and crime category is recorded in a block of eight lines. Each line has a maximum of 24 fields 5 spaces wide. Each of these fields represents the percentage remaining in prison on any given month after cohort of sex by crime prisoners enter prisons. For instance if 100 male robbery offenders entered prison during 1983, 100 percent would still be remaining in prison for eleven months. During the twelfth month 99 percent of this group would remain in prison. During the thirteenth month there would be no change, but then in the fourteenth month 98 percent of this group would remain in prison. As time progresses a smaller percentage of a group that entered at one time would remain in prison. After the full 180 months of the forecast 1.4 percent of the group of prisoners would still remain in prison. In this data file $1.000 = 100$ percent.

Once the length of stay data file is understood, it is possible to proceed with altering the length of stay input. Once the alternative length of stay pattern is selected, it is a straight forward process to make changes in SURVIVE. For instance, say that it is believed that a new sentencing law will increase the length of stay for first time male robbery offenders by about six. It is also assumed that the rate of decline for the percentage remaining stays similar to the original decline pattern. All the user has to do in this case is enter the new values in place of the old values. For this example changes only need to be made in lines 73 and 74. Exhibit 2:8 shows these changed values.

72.
 73. 1.0001.0001.0001.0001.0001.0001.0001.0001.0000.9910.9880.9790.9760.9720.9650.9500.9340.9150.9030.8870.8790.846
 74. 0.8180.8040.7870.7660.7450.7260.7140.6690.6430.6030.5840.5150.4940.4700.4590.4280.4140.4090.3950.3780.3760.3660.3590.345
 75. 0.3380.3260.3220.3070.2960.2720.2580.2460.2460.2290.2220.2100.1960.1890.1770.1630.1580.1540.1470.1440.1440.1350.1320.125
 76. 0.1230.1130.1130.1040.0990.0970.0920.0870.0870.0870.0850.0830.0800.0760.0760.0760.0760.0760.0760.0760.0760.0760.0760.071
 77. 0.0710.0690.0690.0690.0690.0660.0610.0570.0570.0570.0520.0520.0520.0500.0500.0500.0500.0500.0500.0500.0500.045
 78. 0.0450.0450.0450.0430.0430.0400.0400.0400.0350.0330.0330.0330.0310.0310.0310.0310.0310.0310.0310.0310.0310.028
 79. 0.0280.0280.0280.0240.0240.0210.0210.0210.0210.0210.0210.0210.0210.0190.0190.0190.0190.0190.0190.0190.0190.0190.0190.019
 80. 0.0190.0170.0170.0170.0170.0140.0140.0140.0140.0140.0140.0140.0140.0140.0140.0140.0140.0140.0140.0140.0140.0140.0
 81. Robbery Male
 82. 1.0001.0001.0001.0001.0001.0001.0001.0001.0001.0001.0000.9620.9230.8850.8850.8850.8850.8460.8080.808
 83. 0.7310.6920.6920.6920.6540.6150.5770.5000.4620.4230.4230.3850.3460.3080.3080.2690.2690.2690.2310.2310.1920.1920.192
 84. 0.1920.1920.1920.1920.1920.1540.1540.1540.1540.1150.0770.0770.0770.0770.0770.0770.0380.0380.0380.0 0.0 0.0 0.0 0.0
 85. 0.0
 86. 0.0
 87. 0.0
 88. 0.0
 89. 0.0
 90.
 91. 1.0001.0001.0001.0001.0001.0001.0001.0001.0001.0000.9940.9910.9880.9850.9850.9820.9720.9540.9360.9080.8990.8800.856
 92. 0.8310.8250.8040.7870.7660.7450.7240.6930.6630.6230.5740.5550.5280.5210.4940.4790.4450.4260.4110.3990.3870.3770.3680.3620.334
 93. 0.3190.3040.2910.2730.2640.2450.2330.2210.2180.2150.2060.1780.1690.1630.1630.1500.1500.1380.1350.1290.1260.1170.1170.110
 94. 0.1040.1010.0980.0890.0860.0860.0580.0580.0580.0580.0580.0580.0580.0580.0550.0550.0520.0520.0520.0520.0490.0490.040
 95. 0.0400.0400.0400.0400.0400.0400.0340.0340.0340.0340.0340.0340.0340.0340.0340.0340.0340.0310.0310.0310.0280.0280.0280.025
 96. 0.025
 97. 0.0250.0250.0250.0250.0250.0250.0250.0250.0250.0250.0250.0250.0250.0250.0250.0250.0250.0250.0210.0210.0180.0180.0180.0180.018
 98. 0.0180.0180.0180.0180.0150.0
 99.
 100. Assault Male
 101. 1.0001.0001.0001.0001.0001.0001.0001.0001.0000.9440.9440.9440.9440.9440.9440.8890.8890.8890.8890.8890.8330.6670.6670.611
 102. 0.5560.5000.5000.3890.3890.3890.3890.2220.2220.2220.1110.1110.1110.1110.1110.1110.1110.1110.1110.1110.0560.0560.0560.0560.056
 103. 0.0560.0560.0
 104. Female
 105. 0.0
 106. 0.0
 107. 0.0
 108.

109.	1.0000.9990.9990.9990.9990.9830.9720.9480.9190.8940.8480.7990.7580.7090.6350.6000.5460.5070.4380.3990.3580.3330.268
110.	0.2440.2110.2030.1780.1740.1510.1460.1190.1150.1020.0990.0880.0870.0820.0810.0700.0700.0640.0630.0600.0600.0560.0540.044
111.	0.0430.0410.0410.0390.0390.0370.0370.0350.0350.0350.0350.0310.0310.0300.0300.0300.0290.0280.0270.0270.0270.0270.027
112.	0.0270.0270.0270.0270.0270.0270.0270.0230.0230.0230.0220.0220.0210.0210.0210.0210.0200.0200.0200.0190.0190.018
113.	0.0170.0170.0170.0160.0160.0160.0160.0150.0150.0150.0150.0130.0130.0120.0120.0120.0120.0120.0120.0120.0120.0120.012
114.	0.0120.0120.0120.0100.0100.0100.0100.0100.0100.0080.0080.0080.0080.0070.0070.0070.0070.0060.0060.0060.0060.006
115.	0.0060.0060.0060.0060.0060.0060.0050.0050.0050.0050.0050.0050.0050.0050.0050.0030.0020.0020.0020.0020.0020.002
116.	0.0020.0020.0020.0020.0020.0020.0020.0020.0020.0020.0020.0010.0 0.0
117.	
118.	1.0001.0001.0001.0001.0000.9800.9600.9000.8600.7600.6800.6000.4800.4200.3400.2800.2400.2000.1400.1200.1200.100
119.	0.0600.0600.0400.0400.0400.0400.0200.0200.0200.0200.0200.0200.0200.0200.0200.0200.0200.0200.0200.0200.020
120.	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
121.	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
122.	Female 0.0
123.	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
124.	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
125.	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
126.	
127.	1.0001.0001.0001.0000.9770.9540.9430.9200.8740.8160.7820.7240.6550.6210.5750.5170.5170.4830.4250.3790.3220.2760.207
128.	0.1840.1610.1150.1150.1030.0920.0800.0460.0340.0340.0230.0230.0230.0110.0 0.0 0.0 0.0 0.0 0.0 0.0
129.	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
130.	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
131.	Male 0.0
132.	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
133.	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
134.	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
135.	
136.	1.0001.0001.0001.0001.0000.9440.8890.8330.7780.6670.5560.5000.4440.4440.4440.3890.3330.3330.2780.2780.2220.2220.222
137.	0.1670.1670.1670.1670.1670.1110.1110.1110.1110.1110.0560.0560.0560.0560.0560.0 0.0 0.0 0.0 0.0 0.0 0.0
138.	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
139.	Female 0.0
140.	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
141.	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
142.	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
143.	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
144.	

EXHIBIT 2:8 CHANGED LENGTH OF STAY VALUES

Step 2

Once the changes are made in the length of stay data file the next step is to run a new forecast. This requires a number of program alterations. In this example no alterations are required in the Fortran programs. All changes are limited to job control language (JCL). The following is the sequence of the necessary alterations.

After the changes are made in the length of stay data input file make sure that file is saved under a new name. Failure to do this will cause the new file to overwrite the original file. In renaming the file it is important to use a method which enhances good record keeping, such as the one suggested in the earlier section (see Exhibit 2:2). The WYLBUR command used for saving the new length of stay file is SAVE SURVIVE1.

Insure that LIB(NEWADMIT) reads the correct input and generates the correct output file. The JCL should appear as shown below for the initial run of the new length of stay data. Notice that in line 237 that SURVIVE1 is read which corresponds with the name of the new length of stay file. Also notice that in line 238 that NEWADMT3 is used as the output file. Failure to advance the numbering of the output file will cause the original output file or the output files from other alterations to be overwritten.

```
234. //GO.FT11F001 DD DSN=WYL.OF.PRI.DATA(COMM),DISP=SHR  
235. //GO.FT12F001 DD DSN=WYL.OF.PRI.DATA(PFOR),DISP=SHR  
236. //GO.FT13F001 DD DSN=WYL.OF.PRI.DATA(JDI),DISP=SHR  
237. //GO.FT14F001 DD DSN=WYL.OF.PRI.SURVIVE1,DISP=SHR  
238. //GO.FT15F001 DD DSN=OPPFM.Y1986.NEWADMT3,DISP=(NEW,CATLG,DELETE),  
238.1 // UNIT=CDISK,SPACE=(400,(100,100),RLSE),  
238.2 // DCB=(RECFM=FB,LRECL=80,BLKSIZE=400)  
239. //GO.SYSIN DD * 107
```

Once the new input file SURVIVE1 and the new output file \$OPPFM.Y1986.NEWADMT3 are established, it may be desirable to make minor changes or corrections in the SURVIVE1 file without establishing a new SURVIVE file. To avoid creating this unwanted output file use the altered JCL shown below. Notice that lines 238.1 and 238.2 have been deleted and that the DISP statement in 238 has been changed to (OLD,KEEP,DELETE).

```
234. //GO.FT11F001 DD DSN=WYL.OF.PRI.DATA(COMM),DISP=SHR  
235. //GO.FT12F001 DD DSN=WYL.OF.PRI.DATA(PFOR),DISP=SHR  
236. //GO.FT13F001 DD DSN=WYL.OF.PRI.DATA(JDI),DISP=SHR  
237. //GO.FT14F001 DD DSN=WYL.OF.PRI.SURVIVE1,DISP=SHR  
238. //GO.FT15F001 DD DSN=OPPFM.Y1986.NEWADMT3,DISP=(OLD,KEEP,DELETE),  
239. //GO.SYSIN DD *
```

Once the proper JCL is selected for the program LIB(NEWADMIT), it must be saved to retain the proper JCL. The command used here is: SAVE #NEWADMIT REP. Then it is necessary to run LIB(NEWADMIT) to generate the new output file \$OPPFM.Y1986.NEWADMT3. The command to run the program is: RUN UNN TER STD. The output from this will generate a new disk file. This file can be examined by using the command: USE \$OPPFM.Y1986.NEWADMT3. It is not advisable to print the entire file because it is over 3,400 lines long.

Next, insure that the proper JCL is used in LIB(PAROLEES). Failure to use the proper JCL in this program will cause the forecast model to produce erroneous results. Incorrect JCL will cause LIB(PAROLEES) to receive incorrect new admissions to prison data. In this example the correct JCL is as follows:

```
334. //GO.FT16F001 DD DSN=OPPFM.Y1986.BOARD3,DISP=(NEW,CATLG,DELETE)  
334.1 // UNIT=CDISK,DCB=(RECFM=FB,LRECL=80,BLKSIZE=400),  
334.2 // SPACE=(400(100,100),RLSE)  
335. //GO.FT17F001 DD DSN=OPPFM.Y1986.COURT3,DISP=(NEW,CATLG,DELETE)  
335.1 // UNIT=CDISK,DCB=(RECFM=FB,LRECL=80,BLKSIZE=400),  
335.2 // SPACE=(400(100,100),RLSE)  
336. //GO.FT11F001 DD DSN=OPPFM.Y1986.BASEPOP,DISP=SHR  
337. //GO.FT12F001 DD DSN=OPPFM.Y1986.NEWADMT3,DISP=SHR  
338. //GO.FT10F001 DD DSN=WYL.OF.PRI.SURVIVE1,DISP=SHR  
339. //GO.SYSIN DD *
```

Notice in the JCL above for LIB(PAROLEES) that new files are created for the subpopulation output files \$OPPFM.Y1986.BOARD and \$OPPFM.Y1986.COURT. The new output files can be recognized as BOARD3 AND COURT3. In the situation where changes or corrections are made to the input data file SURVIVE1 but the subpopulation output file \$OPPFM.Y1986.NEWADMT3 is used it would be preferable to use the JCL shown below for LIB(PAROLEES).

```
334. //GO.FT16F001 DD DSN=OPPFM.Y1986.BOARD3,DISP=(OLD,KEEP,DELETE)  
335. //GO.FT17F001 DD DSN=OPPFM.Y1986.COURT3,DISP=(OLD,KEEP,DELETE)  
336. //GO.FT11F001 DD DSN=OPPFM.Y1986.BASEPOP,DISP=SHR  
337. //GO.FT12F001 DD DSN=OPPFM.Y1986.NEWADMT3,DISP=SHR  
338. //GO.FT10F001 DD DSN=WYL.OF.PRI.SURVIVE1,DISP=SHR
```

Once the proper JCL is selected for the program LIB(PAROLEES), it must be saved to retain that JCL. Use the command: SAVE #PAROLEES REP. To generate the subpopulation output files for \$OPPFM.Y1986.BOARD3 and \$OPPFM.Y1986.COURT3, LIB(PAROLEES) must be run. Use the command: RUN UNN TER STD. The output from this program will generate two new disk files. No output is sent directly to user's terminal. If the user desires to view the output the command to use is: USE \$OPPFM.Y1986.BOARD3 (or COURT3). It is not advisable to print the entire file because each of them is very large.

Finally, to produce a forecast that represents the changes in the new length of stay data insure that the proper JCL is used in LIB(WRITER). Failure to use the proper JCL in this program will cause the forecast most to produce erroneous results. The JCL that should be used to generate the correct forecast is as follows:

```
194. //GO.FT12F001 DD DSN=OPPFM.Y1986.BASEPOP,DISP=SHR  
195. //GO.FT13F001 DD DSN=OPPFM.Y1986.NEWADMT3,DISP=SHR  
196. //GO.FT14F001 DD DSN=OPPFM.Y1986.COURT3,DISP=SHR  
197. //GO.FT15F001 DD DSN=OPPFM.Y1986.BOARD3,DISP=SHR  
198. //GO.SYSIN DD *
```

LIB(WRITER) produces a forematted report which is the forecast. The first section of this report is a monthly forecast for the entire forecast period by type of crime and sex. This report comes directly to the users interactive terminal.

CHANGING THE EXISTING PRISON POPULATION

There are three major steps necessary for altering the existing prison population input. The first step is to determine what the changes are in the updated prison population; that is data file -- WYL.OF.PRI.EXISTPOP must be updated. Second, appropriate changes in the program WYL.OF.PRI.LIB(BASEPOP). And third, make the necessary changes in the JCL in the affected programs.

Step 1

WYL.OF.PRI.EXISTPOP is the input data file that provides the information processed by the program WYL.OF.PRI.LIB(BASEPOP). The record layout for this data file can be found in part 1 of this document. When updating this file it is important to maintain the same record structure. The thing that will change with each update that effects the program is the number of cases. Presently, this file is updated on an annual basis. Data for this update is provided by the Department of Corrections.

Step 2

Once WYL.OF.PRI.EXISTPOP is updated a number of changes should be made in the program WYL.OF.PRI.LIB(BASEPOP). The first change that must be made is a simple alteration in the Fortran section of the program, which pertains to the change in the number of persons in the WYL.OF.PRI.EXISTPOP data file. To make this change locate line 19 in the program WYL.OF.PRI.LIB(BASEPOP) and alter the second parameter. The original value here is 4720.

The second change that may be needed for an updated run of WYL.OF.PRI.LIB(BASEPOP) is an update of the condensed release schedule used for persons in the basepopulation who do not have minimum terms assigned. This release matrix can be found between lines 105 and 122 of WYL.OF.PRI.LIB(BASEPOP). The documentation on "The Base Population" in part 1 of this document should be reviewed before changing this matrix. Changes in the matrix are simply made by entering a new release pattern in place of the old release

pattern. It is very important to maintain the established structure of the matrix. Failure to use the established structure for this matrix will cause the program to fail or to produce erroneous results.

The third change needed for running an updated version of WYL.OF.PRI.LIB (BASEPOP) is the update of the release matrix for those in the prison base population who are categorized as backlogged offenders. The number of offenders in this category will vary from update to update, however the structure of the release matrix will remain the same. This release matrix is located between lines 123 through 162. The documentation on "The Base Population" in part 1 of this document should be reviewed before changing this matrix. Changes in this matrix are made by updating the number of proposed releases in each of the cells in the matrix. Although the values in the matrix will change, it is very important to maintain the established structure of the matrix. Failure to use the established structure of this matrix will cause the program to fail or to produce erroneous results.

Step 3

Once the changes are made in the data file WYL.OF.PRI.EXISTPOP and the program WYL.OF.PRI.LIB(BASEPOP), the next step is to run a new forecast. This requires a number of program alterations. In this step no alterations are required in the Fortran programs. All changes are limited to job control language (JCL). The following is the sequence of the necessary alterations.

After the proper changes have been made in the program WYL.OF.PRI.LIB (BASEPOP), insure that the correct input files are being read and the correct output files are being generated. The JCL for WYL.OF.PRI.LIB (BASEPOP) should appear as follows for the initial run with the updated WYL.OF.PRI.EXISTPOP. Notice that the file being read in is WYL.OF.PRI.EXISTPOP1. Renaming the file from EXISTPOP to EXISTPOP1 insures that the original input data file will not be overwritten. Also notice in line 103 that the output file has been renamed \$OPPFM.Y1986.BASEPOP1. Failure to advance the numbering of the output file will cause the original output file to be overwritten.

```
102. //GO.FT12F001 DD DSN=WYL.OF.PRI.EXISTPOP1,DISP=SHR  
103. //GO.FT13F001 DD DSN=OPPFM.Y1986.BASEPOP1,DISP=(NEW,CATLG,DELETE),  
103.1 // UNIT=CDISK,SPACE=(400(100,100),RLSE),  
103.2 // DCB=(RECFM=FB,LRECL=80,BLKSIZE=400)  
104. //GO.SYSIN DD *
```

Once the new input file EXISTPOP1 and the new output file \$OPPFM.Y1986.BASEPOP1 are established, it may be desirable to make minor changes or corrections in the EXISTPOP1 file or with the program WYL.OF.PRI.LIB(BASEPOP) without changing the name of the output file. Avoid creating the unwanted output files use the altered JCL shown below. Notice that the lines 103.1 and 103.2 have been deleted and that the DISP statement in 238 has been changed to (OLD,KEEP,DELETE).

```
102. //GO.FT12F001 DD DSN=WYL.OF.PRI.EXISTPOP1,DISP=SHR  
103. //GO.FT13F001 DD DSN=OPPFM.Y1986.BASEPOP1,DISP=(OLD,KEEP,DELETE)  
104. //GO.SYSIN DD *
```

Once the proper JCL is selected for the program LIB(BASEPOP), it must be saved to retain the proper JCL. The command used here is: SAVE #BASEPOP REP. Then it is necessary to run LIB(BASEPOP) to generate the new output file \$OPPFM.Y1986.BASEPOP1. It is possible to review this output file but it is not generally advisable to print the entire file because it is very large.

Next, insure that the proper JCL is used in LIB(PAROLEES). Failure to use the proper JCL in this program will cause the forecast model to produce erroneous results. Incorrect JCL will cause LIB(PAROLEES) to receive incorrect base population data. For this example the correct JCL is as follows.

```
334. //GO.FT16F001 DD DSN=OPPFM.Y1986.BOARD4,DISP=(NEW,CATLG,DELETE),  
334.1 // UNIT=CDISK,SPACE=(400(100,100),RLSE),  
334.2 // DCB=(RECFM=FB,LRECL=80,BLKSIZE=400)  
335. //GO.FT17F001 DD DSN=OPPFM.Y1986.COURT4,DISP=(NEW,CATLG,DELETE),  
335.1 // UNIT=CDISK,SPACE=(400(100,100),RLSE),  
335.2 // DCB=(RECFM=FB,LRECL=80,BLKSIZE=400)  
336. //GO.FT11F001 DD DSN=OPPFM.Y1986.BASEPOP1,DISP=SHR  
337. //GO.FT12F001 DD DSN=OPPFM.Y1986.NEADMT,DISP=SHR  
338. //GO.FT10F001 DD DSN=WYL.OF.PRI.SURVIVE,DISP=SHR  
339. //GO.SYSIN DD *
```

Notice in the JCL above for LIB(PAROLEES) that new files are created for the subpopulation output files \$OPPFM.Y1986.BOARD and \$OPPFM.Y1986.COURT. The new output files can be recognized as BOARD 4 and COURT4. In the situation where changes or corrections are made to data file EXISTPOP1 or the program LIB(BASEPOP) but the subpopulation output file \$OPPFM.Y1986.BASEPOP1 is used it would be preferable to use the JCL shown below for LIB(PAROLEES).

```
334. //GO.FT16F001 DD DSN=OPPFM.Y1986.BOARD4,DISP=(OLD,KEEP,DELETE)  
335. //GO.FT17F001 DD DSN=OPPFM.Y1986.COURT4,DISP=(OLD,KEEP,DELETE)  
336. //GO.FT11F001 DD DSN=OPPFM.Y1986.BASEPOP1,DISP=SHR  
337. //GO.FT12F001 DD DSN=OPPFM.Y1986.NEADMT,DISP=SHR  
338. //GO.FT10F001 DD DSN=WYL.OF.PRI.SURVIVE,DISP=SHR  
339. //GO.SYSIN DD *
```

Once the proper JCL is selected for the program LIB(PAROLEES), it must be saved to retain that JCL. Use the command: SAVE #PAROLEES REP. To generate the subpopulation output files for \$OPPFM.Y1986.BOARD4 and \$OPPFM.Y1986.COURT4. LIB(PAROLEES) must be run. Use the command: RUN UNTER STD. The output from this program will generate two new disk files. No output is sent directly to the user's terminal. If the user desires to view the output the command to sue is: USE \$OPPFM.Y1986.BOARD4 (or COURT4). It is not advisable to print the entire files because they are very large.

Finally to produce a forecast that represents the changes in the new conviction rate input data file insure that the proper JCL is used in LIB(WRITER). Failure to use the proper JCL in this program will cause the forecast model to produce erroneous results. The JCL that should be used to generate the correct forecast is as follows:

```
194. //GO.FT12F001 DD DSN=OPPFM.Y1986.BASEPOP1,DISP=SHR  
195. //GO.FT13F001 DD DSN=OPPFM.Y1986.NEADMT,DISP=SHR  
196. //GO.FT14F001 DD DSN=OPPFM.Y1986.COURT4,DISP=SHR  
197. //GO.FT15F001 DD DSN=OPPFM.Y1986.BOARD4,DISP=SHR  
198. //GO.SYSIN DD *
```

LIB(WRITER) produces a report which is the forecast. The first section of this report is a monthly forecast for the entire forecast period by type of crime and sex. This report comes directly to the users interactive terminal.

CHANGING THE STATE POPULATION

There are two major steps necessary for altering the states population in the prison population forecast model. The first step is to ascertain what the most recent state population is. Periodic updates for the state's population are produced by the Office of Financial Management Division of Forecasting and Estimations. The second step is to make the necessary changes in the JCL in the affected programs to run a new forecast.

Step 1

The state's population forecast is generated independent of the prison population forecast. The output from the OFM state population forecast that is used for input for the prison population forecast is a single year twenty year forecast for each sex and for single year age groups. The detail available in the state population forecast is more than sufficient for any alterations that might be needed for the prison population forecast. Check with OFM to determine the latest update for the forecasted Washington State population. Presently there are two population forecast stored. -- WYL.OF.PRI.DATA(PFOR) and WYL.OF.PRI.DATA(PFOR1).

Step 2

Once the latest update for the state's population forecast is identified the next step is to run a new forecast. This requires a number of program alterations. In this example no alterations are required in the Fortran programs. All changes are limited to job control language (JCL). The following is the sequence of the necessary alterations.

Insure that the program LIB(NEWADMIT) reads the correct input and generates the correct output files. The JCL should appear as shown below for the initial run of the new conviction rate data. Notice that in line 235 that PFOR1 is read which corresponds with the name of the new conviction rate file. Also notice that in line 238 that NEWADMT4 is used as the output file. Failure to advance the numbering of the output file will cause another output file to be overwritten.

```
234. //GO.FT11F001 DD DSN=WYL.OF.PRI.DATA(COMM),DISP=SHR  
235. //GO.FT12F001 DD DSN=WYL.OF.PRI.DATA(PFOR1),DISP=SHR  
236. //GO.FT13F001 DD DSN=WYL.OF.PRI.DATA(JDI),DISP=SHR  
237. //GO.FT14F001 DD DSN=WYL.OF.PRI.SURVIVE,DISP=SHR  
238. //GO.FT15F001 DD DSN=OPPFM.Y1986.NEWADMT4,DISP=(NEW,CATLG,DELETE),  
238.1 // UNIT=CDISK,SPACE=(400,(100,100),RLSE),  
238.2 // DCB=(RECFM=FB,LRECL=80,BLKSIZE=400)  
239. //GO.SYSIN DD *
```

Once the new input file PFOR1 and the new output file \$OPPFM.Y1986.NEWADMT4 are established, it may be desirable to make minor changes or corrections in the PFOR1 file without establishing a new PFOR file. To avoid creating this unwanted output file use the altered JCL shown below. Notice that lines 235.1 and 235.2 have been deleted and that the DISP statement in 238 has been changed to (OLD,KEEP,DELETE).

```
234. //GO.FT11F001 DD DSN=WYL.OF.PRI.DATA(COMM),DISP=SHR  
235. //GO.FT12F001 DD DSN=WYL.OF.PRI.DATA(PFOR1),DISP=SHR  
236. //GO.FT13F001 DD DSN=WYL.OF.PRI.DATA(JDI),DISP=SHR  
237. //GO.FT14F001 DD DSN=WYL.OF.PRI.SURVIVE,DISP=SHR  
238. //GO.FT15F001 DD DSN=OPPFM.Y1986.NEWADMT4,DISP=(OLD,KEEP,DELETE)  
239. //GO.SYSIN DD *
```

Once the proper JCL is selected for the program LIB(NEWADMIT), it must be saved to retain the proper JCL. The command used here is: SAVE #NEWADMIT REP. Then it is necessary to run LIB(NEWADMIT) to generate the new output file \$OPPFM.Y1986.NEWADMT4. The command to run the program is: RUN UNTER STD. The output from this will generate a new disk file. This file can be examined by using the command: USE \$OPPFM.Y1986.NEWADMT4. It is not advisable to print the entire file because it is over 3,400 lines long.

It is possible to obtain a report from the run of LIB(NEWADMIT). To obtain this report make sure that the Fortran switches on lines 26 and 27 of LIB(NEWADMIT) are set to 1. This report comes directly to the users interactive terminal. This report shows the number of new admissions to the prisons from the courts.

Next, insure that the proper JCL is used in LIB(PAROLEES). Failure to use the proper JCL in this program will cause the forecast model to produce erroneous results. Incorrect JCL will cause LIB(PAROLEES) to receive incorrect new admissions to prison data. For this example the correct JCL is as follows:

```
334. //GO.FT16F001 DD DSN=OPPFM.Y1986.BOARD5,DISP=(NEW,CATLG,DELETE),  
334.1 // UNIT=CDISK,DCB=(RECFM=FB,LRECL=80,BLKSIZE=400),  
334.2 // SPACE=(400(100,100),RLSE)  
335. //GO.FT17F001 DD DSN=OPPFM.Y1986.COURT5,DISP=(NEW,CATLG,DELETE),  
335.1 // UNIT=CDISK,DCB=(RECFM=FB,LRECL=80,BLKSIZE=400),  
335.2 // SPACE=(400(100,100),RLSE)  
336. //GO.FT11F001 DD DSN=OPPFM.Y1986.BASEPOP,DISP=SHR  
337. //GO.FT12F001 DD DSN=OPPFM.Y1986.NEWADMT4,DISP=SHR  
338. //GO.FT10F001 DD DSN=WYL.OF.PRI.SURVIVE,DISP=SHR  
339. //GO:SYSIN DD *
```

Notice in the JCL above for LIB(PAROLEES) that new files are created for the subpopulation output files \$OPPFM.Y1986.BOARD and \$OPPFM.Y1986.COURT. The new output files can be recognized as BOARD5 and COURT5. In the situation where changes or corrections are made to the input data file COMM1 but the subpopulation output file \$OPPFM.Y1986.NEWADMT4 is used it would be preferable to use the JCL shown below for LIB(PAROLEES).

```
334. //GO.FT16F001 DD DSN=OPPFM.Y1986.BOARD5,DISP=(OLD,KEEP,DELETE)  
335. //GO.FT17F001 DD DSN=OPPFM.Y1986.COURT5,DISP=(OLD,KEEP,DELETE)  
336. //GO.FT11F001 DD DSN=OPPFM.Y1986.BASEPOP,DISP=SHR  
337. //GO.FT12F001 DD DSN=OPPFM.Y1986.NEWADMT4,DISP=SHR  
338. //GO.FT10F001 DD DSN=WYL.OF.PRI.SURVIVE,DISP=SHR  
339. //GO:SYSIN DD *
```

Once the proper JCL is selected for the program LIB(PAROLEES), it must be saved to retain that JCL. Use the command: SAVE #PAROLEES REP. To generate the subpopulation output files for \$OPPFM.Y1986.BOARD5 and \$OPPFM.Y1986.COURT5, LIB(PAROLEES) must be run. Use the command: RUN UNN TER STD. The output from this program will cause the forecast model to produce erroneous results. The JCL that should be used to generate the correct forecast is as follows:

```
194. //GO.FT12F001 DD DSN=OPPFM.Y1986.BASEPOP,DISP=SHR  
195. //GO.FT13F001 DD DSN=OPPFM.Y1986.NEWADMT4,DISP=SHR  
196. //GO.FT14F001 DD DSN=OPPFM.Y1986.COURT5,DISP=SHR  
197. //GO.FT15F001 DD DSN=OPPFM.Y1986.BOARD5,DISP=SHR  
198. //GO:SYSIN DD *
```

LIB(WRITER) produces a report which is the forecast. The first section of this report is a monthly forecast for the entire forecast period by type of crime and sex. This report comes directly to the users interactive terminal.

CHANGING THE AGE GROUPINGS

Two programs in the prison population forecasting model produce age specific output -- WYL.OF.PRI.LIB(HISREPT) and WYL.OF.PRI.LIB(NEWADMIT). The variability of the age specific output is only limited by the number of combinations possible with the twelve specific age groups. By altering the age group combinations the analyst is able to examine various relationships between different age structures and the different crime and sex categories.

The actual age group combinations used in each of the programs are read into the program from internal data sets. In WYL.OF.PRI.LIB(HISREPT) the age structure data is located between lines 405 and 426. Labels for report writing follow in lines 427 to 492. In WYL.OF.PRI.LIB(NEWADMIT) the age structure data is located between lines 268 and 385. The labels for report writing are located between lines 286 and 339. For illustration purposes, the method for altering the age structure data will be explained using the program WYL.OF.PRI.LIB(HISREPT).

The age structure data set within WYL.OF.PRI.LIB(HISREPT) is shown below in Exhibit 2:9. Following, in Exhibit 2:10, is the listing of the labels for report writing.

EXHIBIT 2:9 WYL.OF.PRI.LIB(HISREPT)'S AGE STRUCTURE DATA

405. 01104 1 1 21112121313
 406. 01204 1 1 21112121313
 407. 21 4 1 1 21112121313
 408. 22 4 1 1 21112121313
 409. 31 4 1 1 21112121313
 410. 32 4 1 1 21112121313
 411. 41 5 1 1 2 8 91112121313
 412. 42 4 1 1 21112121313
 413. 51 8 1 1 2 4 5 7 8 91010111112121313
 414. 52 4 1 1 21112121313
 415. 61 8 1 1 2 4 5 8 9 91010111112121313
 416. 62 4 1 1 21112121313
 417. 71 8 1 1 2 4 5 7 8 9101112121313
 418. 72 7 1 1 2 4 5 7 8 91010111112121313
 419. 81 8 1 1 2 5 6 8 9 91010111112121313
 420. 82 4 1 1 21112121313
 421. 91 4 1 1 21112121313
 422. 92 4 1 1 21112121313
 423. 101 4 1 1 21112121313
 424. 102 4 1 1 21112121313
 425. 11113 1 1 2 2 3 3 4 4 5 5 6 6 7 7 8 8 9 91010111112121313
 426. 11213 1 1 2 2 3 3 4 4 5 5 6 6 7 7 8 8 9 91010111112121313

EXHIBIT 2:10 WYL.OF.PRI.LIB(HISREPT) AGE LABELS

427. 11 4LESS THAN 18 18-39 40 AND OVER TOTAL GROUP 5 GROUP 6
 428. GROUP 7 GROUP 8 GROUP 9 GROUP 10 GROUP 11 GROUP 12
 429. GROUP 13
 430. 12 4LESS THAN 18 18-39 40 AND OVER TOTAL GROUP 5 GROUP 6
 431. GROUP 7 GROUP 8 GROUP 9 GROUP 10 GROUP 11 GROUP 12
 432. GROUP 13
 433. 21 4LESS THAN 18 18-39 40 AND OVER TOTAL GROUP 5 GROUP 6
 434. GROUP 7 GROUP 8 GROUP 9 GROUP 10 GROUP 11 GROUP 12
 435. GROUP 13
 436. 22 4LESS THAN 18 18-39 40 AND OVER TOTAL GROUP 5 GROUP 6
 437. GROUP 7 GROUP 8 GROUP 9 GROUP 10 GROUP 11 GROUP 12
 438. GROUP 13
 439. 31 4LESS THAN 18 18-39 40 AND OVER TOTAL GROUP 5 GROUP 6
 440. GROUP 7 GROUP 8 GROUP 9 GROUP 10 GROUP 11 GROUP 12
 441. GROUP 13
 442. 32 4LESS THAN 18 18-39 40 AND OVER TOTAL GROUP 5 GROUP 6
 443. GROUP 7 GROUP 8 GROUP 9 GROUP 10 GROUP 11 GROUP 12
 444. GROUP 13
 445. 41 5LESS THAN 18 18-24 25-39 40 AND OVER TOTAL GROUP 6
 446. GROUP 7 GROUP 8 GROUP 9 GROUP 10 GROUP 11 GROUP 12
 447. GROUP 13
 448. 42 4LESS THAN 18 18-39 40 AND OVER TOTAL GROUP 5 GROUP 6
 449. GROUP 7 GROUP 8 GROUP 9 GROUP 10 GROUP 11 GROUP 12
 450. GROUP 13
 451. 51 8LESS THAN 18 18-20 21-23 24-29 30-34 35-39
 452. 40 AND OVER TOTAL GROUP 9 GROUP 10 GROUP 11 GROUP 12
 453. GROUP 13
 454. 52 4LESS THAN 18 18-39 40 AND OVER TOTAL GROUP 5 GROUP 6
 455. GROUP 7 GROUP 8 GROUP 9 GROUP 10 GROUP 11 GROUP 12
 456. GROUP 13
 457. 61 8LESS THAN 18 18-20 21-24 25-29 30-34 35-39
 458. 40 AND OVER TOTAL GROUP 9 GROUP 10 GROUP 11 GROUP 12
 459. GROUP 13
 460. 62 4LESS THAN 18 18-39 40 AND OVER TOTAL GROUP 5 GROUP 6
 461. GROUP 7 GROUP 8 GROUP 9 GROUP 10 GROUP 11 GROUP 12
 462. GROUP 13
 463. 71 8LESS THAN 18 18-20 21-23 24-29 30-34 35-39
 464. 40 AND OVER TOTAL GROUP 9 GROUP 10 GROUP 11 GROUP 12
 465. GROUP 13

EXHIBIT 2:10 (cont.)

466.	72	7LESS THAN 18	18-20	21-23	24-29	30-39	40 AND OVER
467.		TOTAL	GROUP 8	GROUP 9	GROUP 10	GROUP 11	GROUP 12
468.		GROUP 13					
469.	B1	8LESS THAN 18	18-21	22-24	25-29	30-34	35-39
470.	40	AND OVER	TOTAL	GROUP 9	GROUP 10	GROUP 11	GROUP 12
471.		GROUP 13					
472.	82	4LESS THAN 18	18-39	40 AND OVER	TOTAL	GROUP 5	GROUP 6
473.		GROUP 7	GROUP 8	GROUP 9	GROUP 10	GROUP 11	GROUP 12
474.		GROUP 13					
475.	91	4LESS THAN 18	18-39	40 AND OVER	TOTAL	GROUP 5	GROUP 6
476.		GROUP 7	GROUP 8	GROUP 9	GROUP 10	GROUP 11	GROUP 12
477.		GROUP 13					
478.	92	4LESS THAN 18	18-39	40 AND OVER	TOTAL	GROUP 5	GROUP 6
479.		GROUP 7	GROUP 8	GROUP 9	GROUP 10	GROUP 11	GROUP 12
480.		GROUP 13					
481.	101	4LESS THAN 18	18-39	40 AND OVER	TOTAL	GROUP 5	GROUP 6
482.		GROUP 7	GROUP 8	GROUP 9	GROUP 10	GROUP 11	GROUP 12
483.		GROUP 13					
484.	102	4LESS THAN 18	18-39	40 AND OVER	TOTAL	GROUP 5	GROUP 6
485.		GROUP 7	GROUP 8	GROUP 9	GROUP 10	GROUP 11	GROUP 12
486.		GROUP 13					
487.	11113	LESS THAN 18	18	19	20	21	22
488.			23	24	25-29	30-34	35-39
489.		TOTAL					
490.	11213	LESS THAN 18	18	19	20	21	22
491.			23	24	25-29	30-34	35-39
492.	TOTAL						

Each row of the age structure data set (Exhibit 2:9) represents a specific crime and sex subgroup. The first two columns in each row refer to the type of crime. The code for the types of crime are: 01 murder 1, 02 murder 2, 03 manslaughter, 04 sex crimes, 05 robbery, 06 assault, 07 property crimes, 08 drug offenses, 09 other felonies, 10 crimes not reported, and 11 all crimes. The third column in each row refer to the type of sex. 1 equals males and 2 equals females. The fourth column represents the number of age subgroups used for that specific crime and sex subgroup. For instance in line 405 of WYL.OF.PRI.LIB(HISREPT) the 04 in the fourth and fifth column inform the analyst that the numbers following to the right set the limits for four separate age subgroups. The remainder of each line is a series of two space fields. The first of these fields represents the lower limit of the youngest age group. The second of these fields represents the upper limit of the youngest age groups. The third field represents the lower limit of next older age group, and the fourth field represents the upper limit of the next older age group. This pattern is followed until lower and upper limits of each age group are established. It is not necessary that the full line be filled in with numbers, because the program will not read beyond the number of age groups specified in columns four and five.

The code for the age groups used in WYL.OF.PRI.LIB(HISREPT) and WYL.OF.PRI.LIB(NEWADMIT) is as follows:

1	16 to 17	7	23
2	18	8	24
3	19	9	25 to 29
4	20	10	30 to 34
5	21	11	35 to 39
6	22	12	40 and over
13	All ages		

To illustrate the age structure data file layout line 405 of this file is interpreted below.

405. 01104 1 1 21112121313

The initial 01 refers to the type of crime -- murder 1. The 1 in the third column refers to males. The 04 in the fourth and fifth columns indicates the number of age groups to follow. Then taking the columns four spaces at a time the lower and upper limits of the age groups can be described. In columns 6 through 9 a 11 is recorded. This means that the lower limit is 1 and the upper limit is 1; the age group referred to here is 16 17 year olds.

In columns 10 through 13 a 211 is printed. This means the lower limit is 2 and the upper limit is 11; the age group referred to here is 18 to 39 year olds. In columns 14 through 17 the age group referred to is those 40 and over, and in columns 18 through 21 the total for all ages are referred.

The key to changing the age groups for any specific crime and age category is to insure that columns four and five represent the number of age subdivisions desired. Then one needs only to list to the right as described above the lower and upper limits for each of the desired age groups. Notice that it is permissible to use the same number for both the lower and upper limit. In fact doing so for each age group will provide maximum age detail, because each age group is used. Lines 425 and 426 provide such an example.

Finally, it is important to make the appropriate changes in the labels for the changed age groups. To make this change all that has to be done is identify the labels that need to be changed by comparing the first five spaces of the line to be changed with the first five spaces of the lines in the label file. For instance, if one wanted to change the fourth line in the age structure data set, which is initiated with the numbers 02204, the report labels for this crime sex group -- murder 2 females -- can be changed by locating the line between the lines 427 and 492 that begins with

02204. The correct line is line 436. Once located one needs only to replace the desired label with the related group. Once the proper line is located the first thing to check is the initial fourth and fifth columns. This number should coincide with the number of age groups desired. Then all one has to do is to place the desired label with the appropriate group.

INCORRECT

FICHE COUNT:

ONLY 2 FICHE

INSTEAD OF

3

END