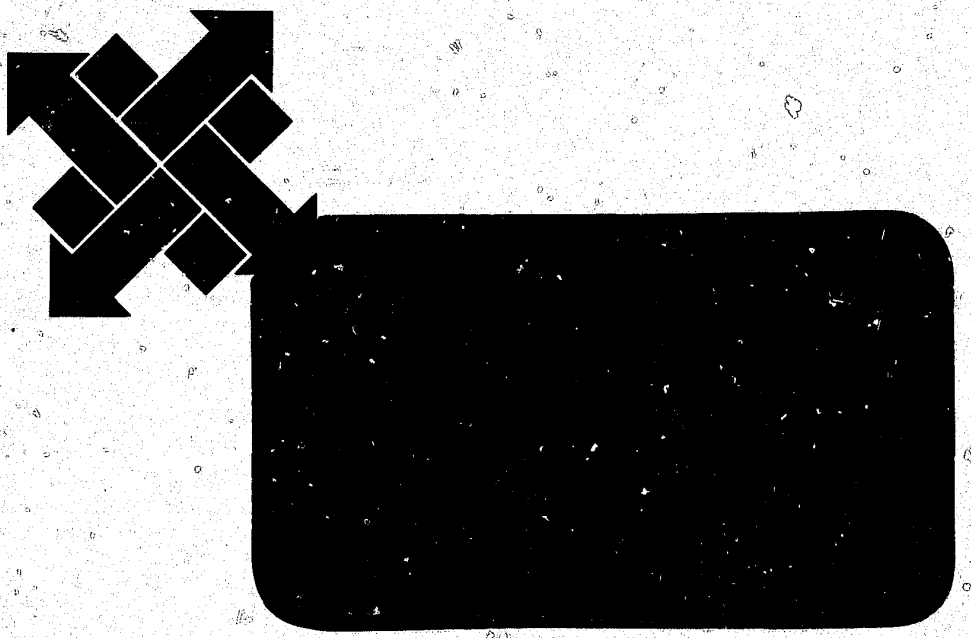
MATHTECH

The Technical Research
and Consulting Division of
Mathematica, Inc.



April 1980

DOJ-2052-KD-JC-R-12

DJ-N-78-12

In Response to:

Contract Number J-42669

FINAL REPORT:

A Study of Justice Impact Analysis

Technical Appendices

Submitted to:

The Office for Improvements in the
Administration of Justice
Department of Justice
Washington, D. C. 20530

By:

Jeanna F. Celeste Katherine E. Douglass
John M. Dawson

MATHTECH, Inc.
4630 Montgomery Avenue
Bethesda, Maryland 20014

(301) 657-1610

TABLE OF CONTENTS

APPENDIX A

DESCRIPTION OF METHODOLOGIES

A wide variety of methodologies are potentially applicable to studying the impact of governmental rule changes on the justice system. The usefulness of particular methods for particular impact studies depends upon such considerations as the nature of the proposed change, data availability, and other factors. Some of the methods discussed here have already been applied to problems of judicial impact assessment, and some have been used in other types of impact studies. Others have not yet been applied to impact assessment problems, but we suggest that they could be usefully adapted to this purpose.

1. Predicting Through Analogy

This is an approach which is indigenous to the policymakers. It is a nontechnical approach in which the policymaker takes over the actual mechanics of the prediction process, and may request a bare minimum of intervention by scientific and technical personnel.

While these analyses tend to be "soft", they are familiar and understandable to those who are responsible for making estimates of the effects of legislation and rule changes on the justice system.

An excellent example is provided in the testimony given by Paul Nejelski, Deputy Assistant Attorney General, Office of Improvements in the Administration of Justice before the Senate Committee on Veterans Affairs in August 1977. The Committee was holding hearings on S-364, which provided, among other things, that persons who are aggrieved or injured by an adverse decision by the Veterans Administration would be permitted to challenge such decisions in federal district court. Since Veterans Administration decisions are generally not subject to external appeal, this legislation would have resulted in a new subset of case filings in the federal justice system. While the Department of Justice took no position on the legislation at the time of the testimony, they as well as members of the Committee were interested in the impact of such legislation. Nejelski estimated this effect by treating appeals rates for similar claims against the Social Security Administration as an analogy. He stated that one could roughly anticipate 4,600 additional case filings per year, which amounted to a 3.4% increase in the average case load for each sitting judge. Since backlogs are typical, this would result either in additional delay in processing claims of all sorts, or an increase in system personnel costs.

This estimating procedure was simple and straightforward, and certainly provided a ball park estimation of the effect - one which should be clear and obvious to administrators and legislators who have responsibility for operating and financing the administration of justice.

2. Bureaucratic Delegation

One current approach is to rely upon permanent, in-house staff, who presumably qualify on the basis of relevant experience. There are two examples that we are aware of, in California and New Jersey.

The California Approach

The California Judicial Council employs an individual full-time whose job is judicial impact assessment. This individual has a background in public administration, particularly the court system in that State. More to the point, that individual was employed by Ralph Anderson and Associates and made analytical contributions to the study commissioned by the Judicial Council, reported in Guidelines for Determining the Impact of Legislation on the Courts (1974). As the title implies, the emphasis is on guidelines, and not on sophisticated mathematics. A summary of these guidelines, extracted from the Anderson report, is included here in Figure A-1.

The Anderson study sets out a series of steps to be used to formulate "Judicial Impact Reports", and places a premium on establishing a continuing procedure for a Judicial Impact Analysis Team. As recommended by the Guidelines, the Team, operating under the auspices of the Judicial Council, would consist of individuals with a broad governmental management background, and their approach would be a systematic, in-depth evaluation of individual pieces of legislation which are likely to have caseload impact, case disposition impact, and/or fiscal impact.

Figure A-1

FOUR-STEP PROCESS FOR DETERMINATION OF TOTAL IMPACT OF LEGISLATIVE PROPOSALS ON THE COURTS

Step One — READ THE BILL AND OBTAIN CERTAIN INFORMATION

- Is the latest version of the bill being analyzed?
- What does the bill provide?
- Does the bill make technical or substantive changes?
- What court(s) would be affected?
- When would the bill become operative?

Step Two — DETERMINE HOW THE BILL WILL AFFECT THE COURTS

- COURT PROCEDURE
- Will the bill add new or modify established procedures for bringing a person to trial?
- Will the bill add new or modify established procedures for conducting a trial?
- Will the bill add new or modify established procedures for post-trial sentencing and appeal?
- Will the jurisdiction of a particular level of court (e.g., municipal, superior) be changed?
- Will the jurisdiction of courts in general be changed (e.g., as a result of adding or removing matters from the court process)?
- Will the bill establish new or modify existing authority of judges?

- COURT ADMINISTRATION
- Will the bill affect the duties and/or responsibilities of court personnel?
- Will the bill authorize or require the hiring of additional court personnel?
- Will the bill require that certain court-related facilities shall be provided?
- Will the bill require certain records to be kept and/or furnished to others?
- Will the bill specify operating hours for the courts?
- Will the bill revise the organization of the courts?

- COURT FINANCING
- Will new sources of revenue be provided?
- Will existing sources of revenue be increased, decreased or eliminated?
- Will the allocation of existing revenue sources be changed?
- Will the present financing responsibility of the state or counties be changed?

Step Three — DETERMINE THE IMPACT OF THE BILL ON THE COURTS

- CASELOAD IMPACT
- Will the bill make access to the court easier or more difficult?
- Will the bill shift a matter from one court to another?
- Will the bill increase or restrict appeal possibilities?
- Will the bill expand or restrict matters presently subject to the court process?

- CASE DISPOSITION IMPACT
- Will the bill affect an element of the pre-trial process?
- Will the bill affect an element of the trial process?
- Will the bill affect an element of the post-trial process?
- Will the bill change the responsibility of the court, the judge, or non-judicial personnel?
- Will the bill increase or decrease court personnel and/or facilities?

- FISCAL IMPACT
- Will the bill require more or less personnel?
- Will the bill necessitate an increase or permit a decrease in services and supplies?
- Will the bill necessitate additional capital outlay?
- Will the bill change the amount of revenue available to operate the court, or the manner in which it is allocated?

Step Four — PREPARE A WRITTEN ANALYSIS

- JUDICIAL IMPACT REPORT—SUMMARY ANALYSIS
- Bill type, number and author
- Introduced
- Last amended
- Summary of the bill
- Summary of the effect of the bill on the courts
- Summary of the total impact of the bill on the courts

- JUDICIAL IMPACT REPORT—ANALYSIS
- Bill type, number and author
- Date introduced
- Date last amended
- General description of provisions
- Affect on the courts
- Analysis of total impact

The procedure involves four steps:

1) Read the bill for a thorough understanding of its provisions.

2) Determine generally how the bill would affect procedure, administration and/or financing of the courts.

3) Determine specifically the bill's caseload impact, case disposition impact, and/or fiscal impact.

4) Present analysis of total impact in written form.

The Anderson method creates a major role for relevant experience, and computer applications would derive from questions that arise in the course of a particular analysis. In other words, machine capabilities serve to enhance analysis that is based on experience, rather than creating rigid constraints as seems to be the case when they are used as the primary or only means of estimating judicial impact.

Further, it is reasonable to expect that the Judicial Impact Analysis Team, operating over an extended period of time would improve its estimates, based on the results of empirical evaluations of actual impacts. They are also likely to discover additional computer applications, but importantly these would derive from - and be valued precisely because of - the aid they provide in the actual preparation of judicial impact statements. In such circumstances, institutional support for more complex computer applications in response to felt needs is built into the process, while at the same time the outputs, the Judicial Impact Reports, are presented in terms which are acceptable to legislators and policymakers, who should be the chief beneficiaries.

The Anderson model is an impressive piece of work because the "Technology" is consistent with the perception of the problem held by relevant decisionmakers. This is not to say that successful implementation would automatically follow.

The key component is the Judicial Impact Analysis Team, and the success of the Anderson model depends upon selection of appropriate personnel and their performance over an extended period of time. The members of the Team must be selected on the basis of their broad range of governmental and judicial experience. They must also be individuals who are capable of integrating these experiences and working with one another toward a common objective. This raises questions of "group chemistry", which is highly unpredictable, and which could radically affect the quality of the Team performance.

A sufficient time period must also be provided for the members of the team to develop and improve both formal and informal procedures necessary to produce best estimates of judicial impact. Further, a feedback process must be designed so that impact analyses are reviewed and corrected once historical data on actual impact is available, though this could be done in relatively short order for postdictive impact estimates.

The Anderson model implies no less investment in time and money than would be required to develop a complex simulation model. In fact it would appear that personnel of the quality required to produce good

estimates of judicial impact might entail considerable cost, and a commitment on the part of the sponsor to provide a trial period of no less than two years.

3. The New Jersey Approach

In New Jersey, the Legislative Code of Ethics makes provision for any member of the State Senate to require that a "fiscal note" be attached to any proposed legislation that "if enacted, would increase or decrease State revenues or increase State expenditures or would require the appropriation of State funds not set forth in dollars" in the text of the bill. The requirement goes to the Executive Director of the Office of Fiscal Affairs. There are some types of legislation where a "fiscal note" is mandatory; otherwise, it is a matter of discretion resting with the members of the Senate.

The Fiscal Affairs director then, according to the rules, passes the request on to the Director of the Division of Budget and Accounting in the Department of the Treasury, where the actual work is done. The rules are totally mute on methods, procedures, form or content of the resulting "fiscal note." Figure A-2 shows an example of such a product, which goes back up the line to the Senate. It should be noted that in this example, the authors of the note give "no dollar estimate," but do predict that "extra staff would definitely be required" under the legislation considered.

Figure A-2

FISCAL NOTE TO

SENATE, No. 551

STATE OF NEW JERSEY

DATED: APRIL 25, 1978

Senate Bill No. 551 requires that one-half of all fees collected in the Law Division or Chancery Division of the Superior Court be returned by the State Treasurer to the treasurer of any county in which the fee was paid.

The Judiciary advises that if this legislation were enacted, it would create many problems and inequities.

It further advises it would be almost impossible to administer.

While no dollar estimate is given, the Judiciary states that with present volume running about 200,000 transactions per year, extra staff would definitely be required.

In compliance with written request received, there is hereby submitted a fiscal estimate for the above bill, pursuant to P. L. 1962, c. 27.

California and New Jersey should be distinguished in the sense that California proceeds on a set of guidelines, while New Jersey does not, and also that the latter State places the "trigger" for analysis within the legislature itself. (In this connection, it may be noteworthy that the U.S. Senate via its own rules has imposed on legislative sponsors a requirement to attach a paperwork impact statement to legislative proposals.)

Certainly, as part of this project is would be desirable to make contact with the California Judicial Council and the New Jersey Department of Treasury for details on actual methods developed by staff for conducting justice impact studies.

4. Environmental Impact Statement

An environmental impact statement (EIS) is a type of cost-benefit analysis that has received a good deal of attention in the context of the Alaskan pipeline, the supersonic transport, and in a number of nuclear reactor proposals.* It has also been used on occasion in court cases, such as Reserve Mining v. EPA on industrial pollution of water sources.** EIS is a requirement of the Environmental

---

* Fischhoff, B., "Cost Benefit Analysis and the Art of Motorcycle Maintenance," 8 Policy Sciences, pp. 177-202 (1977).

** 514 F. 2d 492 (8th Cir. 1975). See Thomas, William A., "Scientific and Judicial Treatment of Uncertainty," Proceedings of the Fourth Symposium on Statistics and the Environment (1976).

Policy Act of 1969, and is intended to evaluate the potential noneconomic impact on environmental quality associated with some proposed program or policy -- i.e. costs and benefits formulated in ecological terms. In furtherance of the Act, the Council on Environmental Quality developed a method for EIS production which was published by the Department of the Interior.* Before describing it, we should note that the CEQ procedure has been used extensively, and it is fair to say that the Legislature is now quite familiar with it.

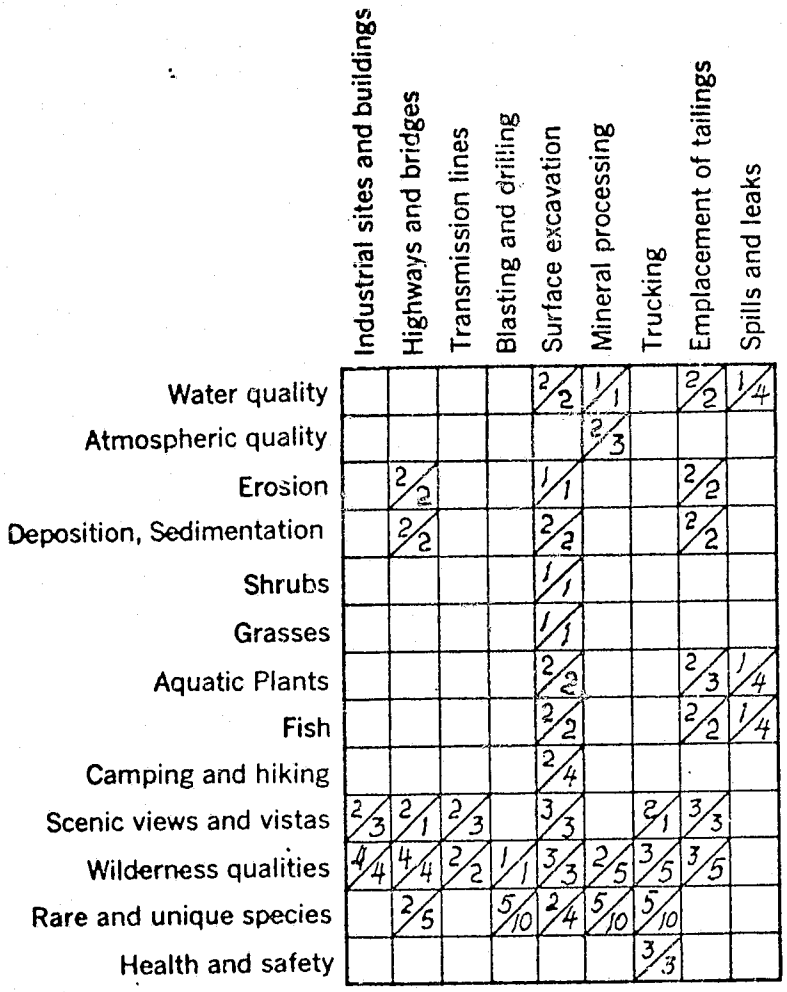
Under the CEQ technique, a matrix is developed in which the individual actions in a proposed program are first arrayed across the top of a table; down the side are the pertinent "existing characteristics and conditions of the environment." The table is filled in for each action by checking what aspects of the environment will be affected, in terms of (1) magnitude of the impact (which is to be an objective determination), and (2) importance (which is a subjective rating of how much the impact will matter, apart from magnitude). On each of these two points, the interaction of program and environment is rated on a scale running from 1 to 10, and may be either positive or negative. An example of such a matrix is shown in Figure A-3 below. It is taken from the Geological Survey Circular 645 in which the CEQ method is published, and is part of an actual EIS produced

---

* Leopold, L., et al., "A Procedure for Evaluating Environmental Impact," Geological Survey Circular 645 (1971).

Figure A-3

Actual Example of an EIS Matrix



for a proposed phosphate mining lease in California. It shows nine kinds of mineral extraction and processing activities that would be carried out under the lease, and thirteen aspects or uses of the environment that would be affected by the mining activities. For example, "trucking" is rated as having a mid-level (5) impact on "rare and unique species," in terms of magnitude, but the importance of it (the subjective element) is given the highest possible score (10). The term "importance," as used by CEQ may confound both subjective and objective elements, as well as considerations of total magnitude of impact, that some refinement or redefinition may be needed. Neither the CEQ procedures, nor the example we cite, encourages the analyst to develop row- and column-totals for overall evaluations; rather, the emphasis is on discussion and interpretation of the individual cell entries. The EIS concept has been criticized for failure to develop overall or "bottom line" evaluations; CEQ notes possible lack of comparability of ratings from one row or column of the matrix to another. We would want to explore ways of enhancing comparability, since the matrix approach naturally invites aggregation of ratings. The RFP acknowledges that an EIS is clearly dependent on the bias of the source of importance ratings, and the objective part -- the magnitude ratings -- may involve an expensive and time-consuming data gathering process.

CEQ's method is particularly attractive for two reasons: one, it is a technique that the Legislative Branch (and presumably many parts of the Executive Branch) is already comfortable with; and, two, it is a potential means of dealing directly with the issue of the quality of justice, which is one that is particularly difficult to analyze in economic terms. Other methods discussed in this proposal (e.g. Delphi) may be useful in improving on the subjective elements of the procedure. Whether data requirements would be a serious obstacle in the context of justice would have to be considered; we would expect that there must be some kinds of proposed laws or regulations where they would not.

5. Regression Methods

Regression models express the value of a dependent variable (the effect) as a mathematical function of one or more independent variables (the causes) and an error term - a random variable whose distribution is assumed to have certain characteristics. Given a set of sample values for the dependent variable and a particular set of independent variables, statistically optimal values can be found for the coefficients in the regression equation. The standard technique for choosing these optimal values is the least squares method. This technique involves finding the values of the coefficient which produce the smallest sum of the squared differences between the actual values of the dependent variable in the

sample and the "theoretical" values assigned by the regression equation. By comparing the minimum sums of squared differences attainable by using different independent variables, one can evaluate the utility of alternative independent variables as predictions of the dependent variable.

"District Court Caseload Forecasting: An Executive Summary," prepared by the Battelle Institute for the Federal Justice Center represents an example of the application of regression methods to the problem of caseloads in different sections of the justice system.

The report compares two different types of regression approaches: an auto-regressive model and an indicator model. Auto-regression is a technique for forecasting future values of a variable by identifying patterns in the past fluctuations of that variable (e.g. trends, cycles, etc.). The independent variables in an autogression equation are functions of the values of the dependent variable of specified previous points in time. By contrast, the indicator method uses variations in the values of <u>other</u> factors to predict variation in the dependent variable.

Both methods used twenty years of data (i.e. 20 individual data points) to predict future district caseloads for each of 42 different types of cases. An advisory committee of experts on the justice system was consulted in developing the list of potential independent variables or indicators. The initial list had to be modified to meet the requirements of data availability. A total list comprised over 150 different indicators.

Although the complete results are not reported in the Executive Summary, the examples which are presented and the general discussions suggest, that their efforts were fairly successful - according to the criterion of variance explained. That is, they were able to construct regression equations which generated theoretical values for the dependent variables which were very close to the actual values. In general they concluded that the indicator method was more useful than the autoregressive approach. There are some problematic aspects to the way these methods were applied, however, that make some of the results questionable or of lesser value.

The precision of the forecasts generated by autoregressive techniques depend heavily on the number of observations included in the analysis. In numerous instances, too few years of data were available to make the results useful. This problem might be overcome somewhat by using monthly instead of yearly data. However, the more time series data is disaggregated, the more complicated the pattern which the equation must capture (e.g. seasonal effects), and thus the more parameters needed to explain the same proportion of the variance.

There are a number of difficulties in accepting the conclusion that the indicator method predicts better than the autoregressive method. According to Johnston (Johnston, Econometric Methods, 2nd ed., McGraw-Hill, New York), if there is serial dependence in caseloads (i.e. if the caseload is related to time) then ordinary least squares methods (instead

of generalized least squares) overestimate the predictive ability of the indicator model and incorrectly estimate the variance explained by the autoregressive model (see Douglas A. Kibbs, Jr., "Problems of Statistical Estimation and Causal Inference in Time-Series Regression Models," Ch. 10 in Herbert L. Costner, ed., Sociological Methodology 1973-74, San Francisco, Jossey-Buss, 1974).

The authors also point out that the results of the two approaches are not directly comparable because the dependent variables used in the different analyses were somewhat different. While the dependent variable in the autoregression equations was caseload per year, the dependent variable in the indicator equations was actually the three-year moving median of caseload per year (i.e. for each year, the value for that year as well as the two years surrounding it were considered, and the median value for all three years was used as the caseload value for that particular year). The use of the three-year moving median is a smoothing technique which tends to mask the yearly fluctuation in the smoothed variable. To the extent that both the dependent variable (caseload) and the independent variable(s) are related to time, smoothing will tend to increase the variances explained. Since smoothing was not done in the autoregressive approach, it is not surprising that it does not perform as well.

While the Battelle group did find indications that accounting for most of the variance in many of the caseload categories under consideration,

confidence in the predictive power of these models is somewhat undermined by their theoretical weakness. Many of the indicators included in these models do not make intuitive or social scientific sense as causes of caseload variation. Because the variables to be included in each model were selected by the computer and not by the researchers or justice system experts, the most theoretically reasonable variables might be left out if others already explained most of the variance. The authors note that this problem is associated with the fact that many of the indicator variables were highly correlated over time. In general, the dependent variables as well as many of the independent variables tend to be highly related to time and this relationship results in a high correlation between independent and dependent variables, which need have no theoretical or causal significance.

While this might not be a problem if forecasting is the purpose of such analysis, it is a serious issue if the aim is to predict policy impacts. To pick an extreme example - using these techniques we are likely to find that the number of judges is a good predictor of caseload (because caseload increases over time and there is pressure to increase the number of judges over time). This does <u>not</u> mean however, that a policy decision which involves decreasing the number of judges will result in a decreased caseload, but perhaps only in an increased backlog.

The approach used in the Battelle report was primarily designed for forecasting and not for impact assessment. Modifications are clearly

needed if these techniques are to be used for predicting the effects of policy on administrative changes. The Battelle analysts are aware that they must take into account the possibility of such legislative changes or "surprise events" in making their forecasts. However, the focus of the present task is exactly reversed. Instead of putting the major emphasis on forecasting trends, but considering the possibility of "surprise events." We must attend primarily to the effects of particular legislative changes, the probability of which is considered quite high, while keeping in mind the overall trends in caseloads which would occur apart from this proposed change.

In order to correct the regression estimates in terms of the possibility of "surprise events" the Battelle groups asked experts to identify a set of potential surprise events (supreme count decisions, legislative actions, wars, etc.), to give individual estimates of the probability of each of the events, and to estimate their expected impact on caseload. In making use of the estimates of several experts there is always the problem of aggregating their responses into a single overall estimate. Aggregation is more problematical and less meaningful the more disagreement, or variance, there is among the individual estimates. The report states that while agreement was fairly great among the probability estimate, there was wide variation in the impact estimates in both degree and direction. No feedback procedures were used in the process; there are a variety of estimation procedures involving experts and using feedback mechanism

(discussed elsewhere) which might be used to achieve a more refined aggregate estimate than is obtained by simply using the median response, as was done in the Battelle project.

In the Battelle report, the expert estimates regarding the expected impacts of surprise events were used to adjust the regression forecasts and the adjusted values were compared to the unadjusted values. While this approach is a useful corrective device for forecasting purposes it is a rather ad hoc and unsystematic method for making impact assessments. Alternative approaches, designed specifically for impact assessment, should be explored that make more direct use of regression techniques and of the data which they employ. For example, rather than asking the experts to make direct predictions about the impact of the proposed change on the dependent variable itself - i.e. caseload, they might be asked to explore what <u>independent</u> variables might be affected by the proposed legislation - e.g. number of judges, proportion of cases requiring a jury, amount in controversy, etc. In some instances this task might be fairly straightforward - for example, it might only require a careful and knowledgeable reading of the bill. Once the relevant independent variables have been identified and estimates of their values have been made, then regression techniques can be used to derive predicted values for the dependent variable, based on the estimated (or known) values of the independent variables. Of course, the use of regression methods requires that data be available on both types of variables. However, the kind of data

needed is the same as that used by Battelle in their indicator based forecasting models. Undoubtedly, other studies of the justice system also exist which have analyzed data using regression methods. This approach to impact assessment is thus designed to build upon, as well as contribute to an existing body of data and social scientific findings about the justice system. In the process of carrying out a series of impact studies this body of knowledge can be continuously integrated and expanded, thus making the impact assessment process progressively easier and also more accurate.

6. Models of the Criminal Justice System

There are a number of computer models of the criminal justice system. With variations on the theme, the purpose of these models is to map the flow of offenders through the CJS. This is done by determining the probabilities at each branching point in the system from a base case file. For example, if a certain number of crimes of a certain type are committed, there is some probability in a given instance that the offender will be arrested. Then, of those arrested, some proportion will be referred to juvenile court, some will be given a summary hearing, and the remainder proceed to preliminary arraignment. This type of analysis continues along the various decision paths in the system until final disposition of the offender is effected; dismissal, acquittal, or if convicted, institutionalization or probation, finally culminating in release. At each stage, the flow of offenders is translated into data on workload and costs.

One of the first models of this sort was JUSSIM, developed by Carnegie Mellon University, which modeled the CJS as a linear steady state production process. To utilize the model, a base case file is created by the user who must classify types of crimes and their pattern of flow through the system. Then the operator, interacting with the model, may introduce changes in the caseload, or changes in system procedure and determine the effect of such changes on the flow of offenders through the CJS.

According to published reports, the JUSSIM model has been used in Allegheny County (Pittsburgh) and in California. It has also been sold to numerous other public and private organizations, but apparently has not been widely applied.

The modest rate of acceptability is due to a number of problems presented by the model. While based on very simple mathematical principles, it requires an extensive data set, which must be supplied by the user, in order to establish the base case file. Then to measure the effect of caseload or system changes requires a good deal of skill on the part of the operator who must estimate changes in system parameters (specifically branching ratios). Further, the model does not take into account feedback due to recidivism, a major system characteristic; it is unable to deal with queuing delays due to the common phenomenon of system saturation; and it is not able to cope with the effects of random events.

One direct offshoot of JUSSIM is PHILJIM, which was designed for the Philadelphia Planning Council and the Alaska State Department of Corrections. These models are similar to JUSSIM but incorporate the capability to handle case backlogs. Intended as a management tool to aid in policy decisions, data collection problems and inadequate institutional support have rendered these projects dormant.

JUSSIM II, also designed by Carnegie Mellon University, includes a feedback capability, based on a Markov transition model, to take account of recidivism. This second generation model also provides for projections beyond a single year. Its shortcomings, similar to JUSSIM, are attributable to its degree of simplification and the fixed characteristics of its parameters. It is a new model and it is not clear whether it will result in more widespread application than its predecessors.

The Dynamic Offender Tracking Simulation (DOTSIM), designed by the Public Safety System of Santa Barbara, California includes a provision for handling queuing delays and random processing of offenders. The data requirements are even more formidable than with JUSSIM: branching probabilities must be established as well as resource requirements at each stage.

DOTSIM was demonstrated using sample data, but not fully implemented. It has not been adopted in Ventura County, or by other State planning agencies which expressed initial interest. One reason for this may be the degree of expertise (considerably greater than with JUSSIM) required to implement and operate the simulation.

There are other models of this sort; however, their characteristics are similar to those outlined above. Reviewing these models, one is left with two impressions. First there is a radical trade-off between simplicity and effective performance. The JUSSIM models are simple, but their ability to deal with random events and subtle system changes is all but nil. More complex models, such as DOTSIM, are intended to provide a better, dynamic approximation of the real world, but require operators with considerable sophistication. This latter point suggests a second fundamental problem; a lack of fit between the technical requirements of the model (data and operation) and the requirements of legislative and judicial personnel who are expected to use them. While an experienced operator may become adept at formulating changes in base case data files and branching ratios, these considerations are not typically familiar to legislative and judicial policy planners. Individuals who confront policy responsibilities must be confident and combortable with the procedures used to estimate changes in resource requirements, or they will use other means.

This problem may result from the fact that computer models of this sort are necessarily formulated in a fashion which is consistent with machine and data requirements, rather than being derived from the requirements of policy planners. In any event, the limited number of documented applications suggests that those with policy responsibilities simply do not feel that the limited results generated by such models justify their costs.

7. Cost-Benefit Analysis

Cost-benefit analysis involves a five-step process of estimating the costs of a proposed program or policy: (1) identification of possible significant consequences; (2) estimation of the probability of each consequence; (3) estimation of the losses that would result from each such outcome, (4) the weighting of the losses by multiplying them by their probabilities, and (5) the summation of the weighted losses across all outcomes to obtain the overall expected loss that could be anticipated from that policy. The steps on the benefit side are the same, except that the focus is on what would be gained, rather than lost. Ultimately, expected losses are to be compared with expected gains. This process is a desirable concept since it forces policy makers to take a hard look at advantages and disadvantages in a formalized way that can contribute a scientific basis for decision. Another very desirable feature is that, in theory, it makes it possible to reach a "bottom line" that indicates which way the policy maker should go, from a scientific point of view.

Our view is that in adapting the cost-benefit approach to judicial impact assessment, the benefit side of the equation should be viewed in terms of reduction in costs, or of one type of costs relative to another. For example, if we find an alternative to some proposed policy with lower costs, the difference in costs is a potential "benefit" attributable to the alternative.

Cost measurement concepts and procedures must be tailored to the purposes of justice impact assessment. Certain fairly standard issues

must be addressed in so doing. Some of these are as follows: Should we cover both costs to the system itself and to the institutions and members of the public who are its users? Should capitol or developmental costs be "expensed" (i.e. counted in total against a single budget year) or amortized, and if amortized, over what period of time? Similarly, if a program would handle an immediate and heavy backlog of cases, should the associated costs be amortized? Can costs borne by different parts of the justice system, or by different people, or by a proposal and its alternatives, be measured in such a way as to permit comparisons or meaningful aggregations? Can the concept of nonmarket prices be applied in this context, and can the concept of quality indexes be used effectively to evaluate factors such as quality of justice?

The Box-Jenkins approach to forecasting will be evaluated for its potential as a tool for making cost projections into the future. In our judgment it is the best available method for treating time series where projections are to be made, particularly if there is seasonality or other forms of autocorrelation that must be accounted for. It does however, require that data be available for a considerable number of time periods, which will undoubtedly limit its utility in this context.

There are certain difficulties with the cost-benefit approach that could be expected in the area of judicial impact measurement. We certainly recognize the difficulty of assigning dollar amounts to certain types of losses;

for example, what is "justice," or a human life, worth? A common problem in cost-benefit analysis is that mere mortals are not always able to identify all possible significant consequences of some proposed course of action. This should be remedied by mixing into the analytical process people from both inside and outside of the justice system, to be sure the overall point of view is neither too narrow nor unrealistic. Also, the method can be criticized for its "bottom line" emphasis since the costs may be distributed unevenly with some parts of the system disproportionately impacted, relative to any compensation. This may be remedied through appropriate weightings, or ameliorated by highlighting disproportionate impacts along with the overall cost figure. In essence, we are saying that the concept of calculating expected losses merits serious consideration, with consideration given to whether difficulties such as these can be overcome.

8. Queuing Theory and Network Models

Queuing theory is a mathematical technique which can be used to estimate the changes in backlogs which might occur in various parts of the justice system as a consequence of proposed legislation. The queuing approach models the basic element of the justice system as a network which describes case flows. This network consists of nodes: functional offices, stages of pleadings, levels of dispositions, etc. - and arcs, which indicate the connections or paths between these decision points. Queuing networks describe each of the activities in a network as

a queuer served by one or more servers (i.e. judges, magistrates, clerk of the court, marshalls, etc.). Once the network is described, predictions of backlog and waiting time depend on the values of the following types of parameters:

(1) arrival rate - i.e. the number of cases which enter the system per month,

(2) capacity - the number of cases which can be handled simultaneously at each node, and

(3) processing time.

While capacity is fixed, both arrival rate and processing are treated as random variables, of known distribution. The assumption of randomness is a nice one, because in real systems neither arrival rate nor processing time are fixed - they fluctuate because of a whole variety of factors - the complexity of the particular case, for example.

Since arrival rate is a parameter of the system, queuing theory cannot be used to predict caseload. However, once estimates of caseload and processing time are made using other methods (regression, expert opinion, or any other procedure), queuing theory makes it possible to estimate the impact of rule changes on the average number of cases waiting in the queue, on the average time each case waits, and on the average time each case is in the system (processing time plus waiting time). The queuing model also makes it possible to explore the different effects of alternative proposals or of mechanism which might be used to remedy

some of the undesirable effects of an otherwise desirable legislative proposal. For example, suppose a bill is proposed which would "increase justice" by expanding the jurisdiction of the federal justice system or permit appeals on a broader range of cases. Such a bill would probably have the adverse effect of increasing caseload and/or processing time and therefore of increasing backlog. A queuing model could be used to explore, for example, how many additional judges would have to be added to reduce the backlog to its previous proportions.

Queuing theory also makes it possible to consider systematically whether the cost of proposals to decrease processing time or backlog in fact effectively reduce total costs. This capability is particularly useful in estimating the impact of proposals to create additional district and circuit court judgeships and to reform and improve administrative procedures. Specifically, decision makers must weigh the costs of expansion against the reduction in waiting time. Waiting time is costly to society, and these costs can often be measured or at least approximated. For instance, persons who sit in jail waiting for trial consume resources and may forego earnings as well. Attorneys, police, prosecutors, defendants and litigants in civil cases spend time waiting in court for their case to come to trial. In cases like these, a waiting time can be measured with relative ease. In other instances, measuring queue costs may be more difficult.

Nonetheless, the example in Table 1 shows how knowledge of these costs, together with knowledge of the caseload and processing rates, can be used to compare the total costs of the existing system with the total costs of, say, a proposed increase in the number of judges in a district court. Using hypothetical numbers, Table A-1 presupposes that 10 new cases arrive each day, and that the costs of waiting are $20.00 per case, The example further assumes that the existing courtroom costs are $300 per day and disposes of 12 cases each day. An additional two judges might raise courtroom costs to $500 per day but also increase the "service" rate to 20 cases per day. Using queuing theory, however, the table shows that the total costs of the expanded court exceed those of the present court. More generally, queuing theory can inform estimates of judicial impact by providing a framework for determining whether the costs of expansion are worth the benefits of speedier trials.

9. Delphi

In ancient Greece, one went to Delphi for guidance from the oracle, and when that guidance was obtained, one did not question its basis. In modern usage, the term refers to any process of synthesizing the views of diverse individuals on some subject on which they are denominated experts. When properly done, the results are fed back to the experts so that they may revise their views, which are then resynthesized. This process is to be continued until the participants reach a consensus.

Table A-1

Hypothetical Example

Cases arrive: 10 per day

Cost of waiting: $20 per case

	No New Judges	2 New Judges
Cost	$300/day	$500/day
Service rate	12/day	20/day
Expected no. cases in queue per day	5	1
Waiting costs per day	$100	$ 20
Courtroom costs per day	$300	$500
Total costs per day	$400	$520

While we have no data to support this, we suggest that there are two very common, serious defects in Delphi applications: (1) cutting the process short before a true consensus is reached, and (2) lack of amenability of the participants to any change in their views. Both of these are avoidable, by using the technique only where the necessary time and other resources are available to carry the process to fruition, and by making sure that persons chosen as participants understand what is expected and are willing to comply.

There are two problems in using Delphi that are inherent in the way the human mind works. One is the relative inability to visualize or predict extreme cases -- i.e. how very good or how very bad things can actually be.* If the extremes of the distribution of possible consequences of a policy are omitted, the estimation or prediction process is inherently less precise than it might appear to be. One possible remedy for this may be to increase the emphasis on having the participants gage their own level of certainty in their opinions. The other is that there is less precision in predicting output variables than input variables.** For example, we

---

* Lichtenstein, S., et al., "Calibration of Probabilities: The State of The Art," in Jungerman, J. and G. DeZeeaw, eds., Proceedings of the Fifth Conference on Subjective Probability, Utility, and Decision Making (forthcoming).

** Dawes, R. and B. Corrigan, "Linear Models in Decision Making," 81 Psychological Bulletin, p. 95-106 (1974).

would get less precision by asking experts to predict changes in caseload or costs. In the terminology of regression analysis, it is better to ask the expert to focus on the independent variables than the dependent variable, although the latter is probably what the policymaker normally asks the expert to address. This means the process can be improved when caseload or costs in the justice system are modeled, and we ask for predictions of how the bill or rulemaking in question will affect the various elements of the model, and then run those predictions through to see what change in caseload or costs is implied. Even in the absence of a detailed and sophisticated model, the experts can be used to good advantage by asking them to identify the predictors or independent variables, and then combine their estimates of them in a purely linear fashion.*

10. Bayesian Analysis

Bayesian analysis is founded on a formula for revising probability estimates by combining initial estimates with inferences about those probabilities which are based on data. The principal virtue of this method is that it allows the analyst to merge data from different sources; moreover, the initial estimates of the probabilities can be entirely subjective. It can be viewed as a mathematically valid means of updating

---

* Dawes, supra, n. 2.

or revising the analyst's or policymaker's original beliefs about the truth of a hypothesis, in light of subsequent findings. When the initial or prior estimates and the subsequent likelihood data are both provided, it is possible for anyone else to substitute their own "priors," combine them with the data and see what "posteriors" their own beliefs imply.

One practical application of Bayes' method in the context of justice impact assessment would be as a way of modifying the inferences drawn from data obtained by analogy to take account of perceived differences between the analyzing and the present case. The method of analysis was used in Mr. Nejelski's testimony on S. 364. In that case, data on appeals to the district courts from denials of Social Security benefits were applied to the volume of Veterans Administration's claim denials to estimate the number of appeals likely to be taken to district courts under S. 364, if it became law. To use Bayesian analysis, the range of possible caseloads, from zero to infinity, could be broken up into intervals. Expert opinion, if available, could then be used to estimate the probability of the caseload falling into each of the various intervals. These estimates would then be combined with the Social Security data.

One distinct advantage in a method that incorporates subjective "priors" is that it may be a means of incorporating into the predictive process two phenomena that are conceptually difficult: the "bulge phenomenon" (how much and how persistent) and the possible impact of Supreme Court rulings on the legislation or rulemaking in question.

11. Sensitivity Analysis

Sensitivity analysis means varying the parameters -- their values -- in a model to see whether that has any significant effect on the dependent variable. Parameters which, when increased or decreased in value, have little effect on the output are unimportant and can be disregarded or deleted from the model. Suppose that the effects of a legislative proposal are modeled by relating changes in case filings, number of magistrates and number of judges to changes in the number of case dispositions per year. Suppose that, using the model, raising or lowering the number of magistrates (with the number of judges held fixed) shows less than a 1% change in caseload; this would tell us that the legislation is not likely to create a requirement for more magistrates.

This approach might be used either to reduce concern over possible impact on certain parts of the justice system in a given case, or to simplify a model by eliminating unimportant parameters. In some cases this type of analysis may not be feasible or economical, particularly with very involved stochastic models. With simpler models, it may be relatively easy to do without extensive computerization.

12. Monte Carlo Simulation

Monte Carlo simulation is not new in the criminal justice field, though little appears to have been done with it on the civil side. A model is first constructed of the flow of cases through the judicial system,

e.g. a criminal case beginning at the arrest stage and proceeding along various possible branches to various kinds of final dispositions; the model is stochastic if the various branchings are probabilistic. Once heuristic probabilities are assigned to the various branches, an offender population of stated characteristics can be run repeatedly through the model. Thereby, we can observe the relative frequencies of, say, convictions, acquittals, appeals, etc. which can be expected if the model is correct. This repeated running of populations through the stochastic model, and building up of frequency distributions, is what is known as Monte Carlo simulation, or experimentation with the use of computers.

Often this kind of simulation is an enormous undertaking. But we would propose to investigate the possibility that for certain kinds of legislation of interest in the federal justice field, simple models could be formulated and programmed, and simulation trials run that would predict policy impacts on caseloads and costs, without a great deal of time and expense. Needless to say, this may not always be the method of choice, even when feasible.

13. Dialectical/Forensic

Conclusions or recommendations stemming from even the most objective methods of analysis are dependent on the validity of certain assumptions. Another way of putting this is that the analyst's bias is an unavoidable element in any analysis. One way of minimizing any

harmful consequences of such bias is to have the analyst report the assumptions along with the conclusions. Another approach, which could actually capitalize on bias, would be to have individuals of known and opposing bias do independent studies of the same question. Conceptually, this may be a way to find the boundaries on the range of possible consequences of some policy change which is contemplated. Bias may be institutional, rather than individual, of course. For some piece of legislation that is expected to have some impact on the judicial system, there may be some group very much in favor of it; if they were asked to predict impacts, they may naturally tend to operate on assumptions that would show minimal likelihood of significant adverse consequences. Groups identified with the judiciary itself might have very different assumptions, and rather different predictions.

Somewhat related to the dialectical approach would be one of assigning to different analysts the task of describing and quantifying the best or worst possible case -- i.e. to become an advocate for the likelihood of one extreme or the other. As in the dialectical case, the immediate objective would be to establish the limits on the range of possibilities. It would have the advantage, however, of a greater potential supply of suitable analysts. In either case, it would be desirable to develop some method of combining the results to get an estimate of the most likely outcome, although the limits themselves may be the most useful information.

APPENDIX B

DOCUMENTATION OF THE FEEDBACK EXPERIMENT ON THE RESULTS OF THE ABOLITION OF DIVERSITY JURISDICTION

As the last phase in the methodological development of the Justice Resource project, the feedback experiment concept was implemented in the study of the abolition of diversity jurisdiction. The technique of the feedback experiment was used to introduce the element of human behavioral adaptation to the computer simulation of the justice system. By eliciting the reactions of an expert panel to simulation results, human adaptation to change in the federal justice system can be accounted for.

The technique of a feedback experiment is useful in studying change in the justice system in the following ways: (1) as previously stated, a feedback experiment can add the dimension of human behavior to an otherwise mechanical simulation model; (2) feedback experiments can be used to test hypotheses about how the justice system would work under specific conditions, using the simulation model; and (3) feedback experiments can be used to generate behavioral rules or operating rules about the justice system, enhancing our knowledge of how that system functions.

The process of the feedback experiment is that of producing computer simulation results, asking feedback panel members to review it and suggest behavioral changes that specific individuals or groups in the justice system might make. Then the simulation is run with new inputs corresponding to those changes, asking panel members to review the results again, and repeating the process of resimulation and review until panelists are satisfied that no further changes should be made, or until the process breaks down. In this particular

study, the abolition of diversity jurisdiction, the initial simulation results compared the present condition of the justice system with its condition if all diversity jurisdiction cases were removed. Panelists then suggested behavioral modifications that might be made in response to the preabolition/postabolition difference. This served as the first round of the experiment, with subsequent rounds resulting from behavioral changes being incorporated into the simulation.

The Orientation Meeting

On February 25, 1980, an orientation meeting for the feedback panelists was conducted. In addition to reviewing the project and the subject of study (i.e., abolition of diversity jurisdiction), the panelists were given a brief description of the Justice Resource Model. The three most important topics in terms of the function of the panel were:

- the role of experts on the feedback panel,
- safeguards to minimize personal bias, and
- calibration.

- The Role of Experts

The members of a feedback panel of experts must understand how judges, government litigators, and private attorneys use their time and the kinds of decisions they make in handling cases. Consequently, the panel was made up of people who were likely to be able to predict how such individuals would react to a range of potential changes in the system. The three members of this panel were asked to assess how decision-making processes and time utilization would be affected by changes such as an increased volume of cases, or an increase in the amount of time case-processing events require. Ordinarily, a panel member would be expected to know the behavior of one of these types of human resources

particularly well, and would bring that perspective to bear in a simulation review. For example, the panel member representing district court judges was responsible for understanding and analyzing the behavior of judges. The two other panelists who took part in this experiment represented the U.S. Attorney's Office (both civil and criminal attorneys), and the private bar.

- Safeguards

Three device have been built into the procedure to help minimize personal bias, and to prevent any one panelist from engineering all the impact results.

(1) Jurisdictional limitation: A panel member is permitted to make changes only on those aspects of the data or the model that relate to his own expertise. He may, of course, take issue with the judgments of others. These disagreements form part of the record, and they may have contributed to changed decisions by the other panelists in later runs.

(2) A requirement for stating reasons: A panel member may feel that something in the model should be changed because the simulation shows some condtion that would trigger a behavioral modification. The panelist is required to state what that modification is, and the reasons for making it. Personal perspective is thereby exposed and made part of the record of the impact study. This also makes it easier for a person to do the work of a panelist. One can make a statement and support it with his own rationale.

(3) The striking of compromises: In the review proces, one panel member may want to make changes that conflict with the views of another panel member. For instance, in response to a rising backlog, the judge expert may want to see more dismissals on the merits; at the same time the attorney representative may feel that more cases should be brought to trial. These

changes come to bear on the same element of data, namely, the probability that a case will last all the way to trial. However, these changes would have opposite effects. Part of the panel function, therefore, is to reach compromises when this kind of conflict arose. This, in effect, simulates the real-life process by which attorneys and judges have to resolve differences as to how the justice system should operate.

- Calibration

Calibration was explained to the panel members as the means by which the project team obtained specific coefficients used to translate verbal responses into numerical computer inputs. Each panelist was given two lists of variables, one of output variables and one of input variables. (See pages B-31-34.) For each variable, a hypothetical number was listed as the figure currently in the system (either as input or output). Based on that number, panelists were asked to make judgments as to what amount of increase or decrease would represent "some" or an "immaterial" difference, a "moderate" difference, or a "significant" difference in that variable.

Once each panelist had responded with three levels for each variable, their responses were translated into coefficients. Then, during the feedback rounds, when a panelist suggested that he would make some level of change in a particular variable, his coefficient representing that level of change was multiplied by the current value for that variable. In this manner, the panelist's own ideas of what constituted levels of change were translated into computer inputs without the panelist having to think in numerical or percentage terms, although that was also permitted.

Pre/Post-change Results

Once the orientation meeting had been held and calibration values had been obtained for each member, the experiment was begun by producing a simulation run. The output consisted of statistics representing the current level of operation in the federal justice system. These statistics were labeled "Base Line" on the Record of Feedback Experiment Results (in Figure B-1 on page B-6. The "Post Change" column was produced by terminating subsequent filings of diversity jurisdiction cases. This second set of statistics were produced by allowing the simulation to run after the diversity jurisdiction cases were eliminated.

These results cannot be considered complete since the computer did not make any behavioral adaptations to this change. It is at this point that the feedback rounds began.

Round-by-round: Procedure

Each member of the expert panel was assigned a contact person from the project team at the orientation meeting. Appointments were scheduled between the panel members and their respective contact persons for each round.

The contact persons arrived at their respective expert's office and presented them with the "Record of Feedback Experiment Results." They first reviewed what information each output type provided. The panelists were then requested to examine the results produced in the pre and post-change simulations and to consider how the actor types they represented would react to the system changes.

Their opinions regarding the potential behavioral adaptations were recorded on "Adaptation Records" which were provided at the beginning of each round. Later in the experiment, some of the experts simply discussed their

FIGURE B-1. RECORD OF FEEDBACK EXPERIMENT RESULTS

Output Type	Base Line	Post Change	FEEDBACK RESULTS Round 1	Round 2	Round 3
Utilization (% Time on Case-Related Activities)					
Judge	63.2%	56.4%	56%	54.9%	63.5
Criminal Attorneys	71 %	72.4%	74%	59.4%	60.1
Civil Attorneys	65.5%	64.5%	61%	75.7%	71.1
Elapsed Time (Days)					
Federal Question	239	238	205	146.4	170.3
Diversity Jurisdiction	241.5	----	----	----	----
Criminal	94.8	92.4	72.5	63.1	64.6
Civil/U.S.	190.9	187.6	157.7	165.9	228.5
No. of Case Completions					
Federal Question	753	760	773	789	776
Diversity Jurisdiction	405	----	----	----	----
Criminal	328	365	362	308	301
Civil/U.S.	595	573	590	642	644
Average Daily Backlog (Cases)					
Courtroom Activities					
Judges	4.15	2.34	1.45	1.21	2.04
Criminal Attorneys	.77	.55	.40	.23	.25
Civil Attorneys	.51	.36	.21	.31	.42
Noncourtroom Activities					
Judges	1.8	.65	.62	.57	.96
Criminal Attorneys	2.9	3.02	2.59	.99	1.02
Civil Attorneys	2.33	1.91	1.22	3.87	4.75
Private Cases					
Judges	2.68	1.03	.62	.59	1.47

opinions while their contact persons took notes; after each meting the contact persons transcribed their notes onto the Adaptation Records for that round.

At the end of each set of meetings, all the contact persons met to discuss the behavioral adaptations suggested by the experts. "Translation" sheets were developed in the course of these later meetings. These sheets contained the list of behavioral adaptations proposed and the corresponding parametric changes which were made to operationalize the changes. (See pages B-46,52,58). Beginning with the second round, experts were provided with the translation sheets containing the list of behavioral adaptations from the previous round. They were permitted to study these sheets and to refer to them during the feedback round. This enabled the panel members to understand how the other actors were behaving and what measures each was undertaking in response to the changes in system outputs. This information should have aided the experts in their interpretation of new simulation results since changes in the outputs were caused by the adaptations introduced by system actors.

Upon reaching Round 3, two of the three experts found themselves confused by certain of the output results. In order to proceed with the experiment, a panel conference was scheduled to discuss the results. This is discussed in greater detail later in this Appendix.

The conference provided the first opportunity during the feedback experiment for panel members to discuss their intentions with one another, and to come up with compromises. The output results were examined and discussed jointly. The decision to end the experiment was arrived at during this conference and agreed to by all panel members.

Round-by-round: Results and Summary of Behavioral Adaptations

Outputs produced in each simulation run were of four main types. The first, utilization, provided information on the percentage of time system actors (in this case federal district judges, and assistant U.S. attorneys in criminal and civil divisions) spent on case-related activities.

The second output type was the elapsed time in working days that different types of cases took from the time they entered the system until their termination. Statistics were provided for Federal Question cases not involving the U.S. as a party, Diversity Jurisdiction cases, Federal Criminal, and Civil/U.S. cases.

The third type of output was the number of case completions, or case terminations. These outputs were given for each of the four case types mentioned above. The last type of output was called the average daily backlog. These statistics were broken down into subcategories of courtroom and noncourtroom activities for each actor type. The interpretation for this type of output was that the figures represented the number of cases awaiting service in the courtroom or in the actor's office at the start of each day. The courtrom activities included injunctions, trials, and other hearings (e.g., arraignments, sentencing hearings, motions hearings, etc.). Noncourtroom activities consisted of writing memoranda, holding conferences, conducting legal research, etc.

- Round 1 began with panelists examining the pre-change (baseline) and post-change outputs from the first computer simulations. The percent increases and decreases were calculated for each actor or case type within the four major categories (see Figure B-2, pages B-9). The behavioral adaptation records for all panel members on each round are available on pages B-42-46, 49-52, 55-57. To summarize, there were three main behavioral changes offered by the panelists

FIGURE B-2. SIMULATION RESULTS AT THE START OF ROUND 1

Output Type	Base Line	Post Change	Post Change vs. Baseline
Utilization (% Time on Case-Related Activities)			
Judge	63.2%	56.4%	11% decrease
Criminal Attorneys	71 %	72.4%	2% increase
Civil Attorneys	65.5%	64.5%	1.5% decrease
Elapsed Time (Days)			
Federal Question	239	238	0.5% decrease
Diversity Jurisdiction	241.5	---	
Criminal	94.8	92.4	2.5% decrease
Civil/U.S.	190.9	187.6	1.7% decrease
No. of Case Completions			
Federal Question	753	760	1.0% decrease
Diversity Jurisdiction	405	---	
Criminal	328	365	11.4% increase
Civil/U.S.	595	573	3.7% decrease
Average Daily Backlog (Cases)			
Courtroom Activities			
Judges	4.15	2.34	44% decrease
Criminal Attorneys	.77	.55	28% decrease
Civil Attorneys	.51	.36	25% decrease
Noncourtroom Activities			
Judges	1.8	.65	64% decrease
Criminal Attorneys	2.9	3.02	4% increase
Civil Attorneys	2.33	1.91	18% decrease
Private Cases			
Judges	2.68	1.03	62% decrease

in Round 1. The judge expert noted a significant redution in courtroom backlog once diversity jurisdiction cases had been eliminated. He, therefore, became a more aggressive manager by accelerating the scheduling of courtrom appearances and the completion of noncourtroom activities for all case types but most especially for criminal cases. He accelerated the cases on the premise that he wanted to insure compliance with the Speedy Trial Act for criminal cases and to give priority to the oldest civil cases (older than 6 months) in the system.

The judge predicted that the pressure he was applying to accelerate the civil cases would result in an increased tendency on the part of civil attorneys to settle cases out of court.

The panel member representing the U.S. attorneys took special notice of the reduction in the judges' courtroom queue. He took this reduction to indicate that there would be less rescheduling of cases ready for courtroom service. This alleviated the problem for attorneys of having to prepare cases a second time for a courtroom appearance. He expected the principal effect to lie with U.S. attorneys in their noncourtroom time prior to trial for civil/U.S. cases.

The representative for the private bar made several observations though none was implemented as a behavioral change to the computer model. The first observation related to his assumption that following the abolition of diversity jurisdiction, cases which would have been filed in federal courts would now be filed in the State courts. Thus, the private bar's workload may not be affected.

The second observation the private bar expert made was that the greater availability of judges might logically lead to more case filings. He predicted that any increase in private filings would be quite small since he believed that attorneys now file as many private cases as come to their attention.

The third observation made by the private bar panelist was that many attorneys handle both civil and criminal matters in federal courts. The increase in criminal case completions (from the pre-change to post-change condition) would cause attorneys to neglect their civil casework in favor of criminal cases. Given the existence of a specialized criminal bar, however, this change would be quite small.

- Round 2 began by having the experts study the translation sheet for Round 1 behavioral changes (page B-47) and the simulation outputs for Round 1 (pages B-12). Then they discussed any changes they noticed with their contact persons.

The next step involved having each expert react to the outputs and suggest any additional behavioral changes. In summary, the changes introduced in Round 2 included the judge's attempt to achieve a significant reduction of time in the time to dispose of private civil cases. He effected this change by giving these cases priority over public cases and by putting more pressure on the private bar to accelerate their scheduling of courtroom appearances and the completion of noncourtroom activities. The judge expert was also attempting, through these means, to increase the judge utilization rate to its previous level.

The U.S. Attorney panelist presumed there would be a morale problem among the criminal personnel due to the overwork caused by the substantial reduction in elapsed time for handling criminal cases. He, therefore, made the policy decision to assign some criminal cases to civil personnel, at least on a temporary basis.

The private bar predicted two opposing tendencies: (1) reduction in "junk" case filings due to the increased probability of having to go to court and the pressure to speed up case handling of the existing cases; and (2)

FIGURE B-3. SIMULATION RESULTS AT THE START OF ROUND 2

Output Type	Base Line	Post Change	Round 1	Round 1 vs. Post Change
Utilization (% Time on Case-Related Activities)				
Judge	63.2%	56.4%	56%	25% decrease (sig)
Criminal Attorneys	71 %	72.4%	74%	2.2% increase
Civil Attorneys	65.5%	64.5%	61%	5.4% decrease (sig)
Elapsed Time (Days)				
Federal Question	239	238	205	14% decrease (sig)
Diversity Jurisdiction	241.5	----	----	----
Criminal	94.8	92.4	72.5	22% decrease (sig)
Civil/U.S.	190.9	187.6	157.7	16% decrease (sig)
No. of Case Completions				
Federal Question	753	760	773	2% increase
Diversity Jurisdiction	405	----	----	----
Criminal	328	365	362	.7% increase
Civil/U.S.	595	573	590	3% increase
Average Daily Backlog (Cases)				
Courtroom Activities				
Judges	4.15	2.34	1.45	38% decrease (sig)
Criminal Attorneys	.77	.55	.40	27% decrease (sig)
Civil Attorneys	.51	.36	.21	42% decrease (sig)
Noncourtroom Activities				
Judges	1.8	.65	.62	39% decrease (sig)
Criminal Attorneys	2.9	3.02	2.59	14% decrease
Civil Attorneys	2.33	1.91	1.22	36% decrease (sig)
Private Cases				
Judges	2.68	1.03	.62	40% decrease (sig)

increase in filings due to the reduction in delay time. As the judge becomes a better manager there will be fewer reschedulings; thus, attorneys will spend less time on each case and will leave time to file new cases. These two opposing tendencies will cancel each other out so filings will not change.

- Round 3 started with the panel members examining the translation of Round 2 behavioral adaptations (pages B-53) and the simulation outputs for Round 2 (pages B-14). Panel members discussed the changes with their contact person. Two panelists became confused about one of the output statistics and raised questions about its interpretation. For the U.S. Attorney representative, his questions regarding the statistic were serious enough that he felt he could not participate in Round 3. The private bar expert also raised questions about the statistic's interpretation but felt sufficient confidence in the outputs as a whole that he was able to complete Round 3. When his contact person asked whether a meeting of the other panel members might be helpful to him in considering how to interpret the confusing statistic, he replied that it would be. The U.S. Attorney expert also wanted to meet with the other panel members to discuss the results.

Of the three panel members, the judge expert was least concerned about the significance of the statistic. When asked if he felt a meeting of the panelists was necessary, he replied that it was not but that he would be willing to meet if the other members found it important to do so.

The behavioral adaptations suggested for Round 3 included the following.

Given the drop in the judge utilization rate, the judge expert predicted that judges would become more deliberative: (1) spending more time on noncourtroom work for all case types, and (2) increasing the courtroom activity in private cases.

The expert on the private bar suggested that, given the pressure implied

FIGURE B-4. SIMULATION RESULTS AT THE START OF ROUND 3

Output Type	Base Line	Post Change	Round 1	Round 2	Round 2 vs. Round 1
Utilization (% Time on Case-Related Activities)					
Judge	63.2%	56.4%	56%	54.9%	2 % decrease
Criminal Attorneys	71 %	72.4%	74%	59.4%	25 % decrease
Civil Attorneys	65.5%	64.5%	61%	75.7%	19.4% increase
Elapsed Time (Days)					
Federal Question	239	238	205	146.4	40 % decrease
Diversity Jurisdiction	241.5	----	----	----	----
Criminal	94.8	92.4	72.5	63.1	14.9% decrease
Civil/U.S.	190.9	187.6	157.7	165.9	5 % increase
No. of Case Completions					
Federal Question	753	760	773	789	2.1% increase
Diversity Jurisdiction	405	----	----	----	----
Criminal	328	365	362	308	17.5% decrease
Civil/U.S.	595	573	590	642	8.1% increase
Average Daily Backlog (Cases)					
Courtroom Activities					
Judges	4.15	2.34	1.45	1.21	19.8% decrease
Criminal Attorneys	.77	.55	.40	.23	73.9% decrease
Civil Attorneys	.51	.36	.21	.31	32.3% increase
Noncourtroom Activities					
Judges	1.8	.65	.62	.57	8.8% decrease
Criminal Attorneys	2.9	3.02	2.59	.99	161.6% decrease
Civil Attorneys	2.33	1.91	1.22	3.87	68.5% increase
Private Cases					
Judges	2.68	1.03	.62	.59	5 % decrease

by the fast pace at which criminal cases were being processed, defense counsel would be more willing to negotiate more pleas. He stated that the dramatic increase in civil case completions show an unrealistic degree of cooperation by the private bar to the pressure being applied by the judge to speed up cases. The behavioral adaptations which he foresaw as being related to this situation were that private counsel would increase the time spent on federal question and civil/U.S. cases and that they would request more delays for civil/U.S. cases. The final prediction the private bar expert made was that the pressure to accelerate scheduling for civil cases would cause a greater willingness on the part of private counsel to settle civil cases out of court.

Panel Conference was the next round in the feedback experiment. All the panel members and the contact persons met to discuss the problems encountered during Round 3 and to examine the Round 3 outputs (page B-16).

The research team had prepared a document that summarized the behavioral changes for Rounds 1-3 (pages B-60) and a summary of feedback results for observations deriving from the first three rounds (pages B-61).

During the course of the meeting, panelists made a number of suggestions for ways to improve the feedback methodology including clearing up misunderstandings about the limits on their jurisdiction, requests for more detailed output information, etc. These suggestions will be discussed in the next section.

The panel agreed that the conference was a good end to the feedback experiment. No further rounds were undertaken.

Issues and Considerations

Several issues arose out of the experience of the feedback experiment conducted on the abolition of diversity jurisdiction. The three panel

Output Type	Base Line	Post Change	Round 1	Round 2	Round 3	Round 3 vs. Round 2
Utilization (% Time on Case-Related Activities)						
Judge	63.2%	56.4%	56%	54.9%	63.5	13.5% increase
Criminal Attorneys	71 %	72.4%	74%	59.4%	60.1	1.2% increase
Civil Attorneys	65.5%	64.5%	61%	75.7%	71.1	6.5% decrease
Elapsed Time (Days)						
Federal Question	239	238	205	146.4	170.3	14.0% increase
Diversity Jurisdiction	241.5	----	----	----	----	----
Criminal	94.8	92.4	72.5	63.1	64.6	2.0% increase
Civil/U.S.	190.9	187.6	157.7	165.9	228.5	27.4% increase
No. of Case Completions						
Federal Question	753	760	773	789	776	1.7% decrease
Diversity Jurisdiction	405	----	----	----	----	----
Criminal	328	365	362	308	301	2.3% decrease
Civil/U.S.	595	573	590	642	644	0.3% increase
Average Daily Backlog (Cases)						
Courtroom Activities						
Judges	4.15	2.34	1.45	1.21	2.04	40.7% increase
Criminal Attorneys	.77	.55	.40	.23	.25	8.0% increase
Civil Attorneys	.51	.36	.21	.31	.42	26.2% increase
Noncourtroom Activities						
Judges	1.8	.65	.62	.57	.96	40.6% increase
Criminal Attorneys	2.9	3.02	2.59	.99	1.02	2.7% increase
Civil Attorneys	2.33	1.91	1.22	3.87	4.75	18.5% increase
Private Cases						
Judges	2.68	1.03	.62	.59	1.47	59.9% increase

participants made a number of suggestions as to how the feedback methodology might be improved. The issues discussed at the panel conference (and during individual feedback rounds) are listed below.

1. Panel members felt that in order to be able to suggest behavioral adaptations they needed more detailed output information. The types of outputs that the panelists suggested would be helpful include:
   a) the disaggregation of non-courtroom and courtroom activities by case type and by particular activity OR the frequency of particular activities as they occur in different types of cases;
   b) case tracking information on criminal cases so that panel members can easily determine when cases are nearing deadlines imposed by the Speedy Trial Act (STA); cases in the model should be granted STA exemptions in the same proportions as they occur in the actual system;
   c) information on the length of time individual cases have been in the system so that cases can be prioritized by age;
   d) the disaggregation of cases listed under "completions" by type of termination (e.g., pleas, dismissals, etc.).
   e) the panelist representing the U.S. Attorneys suggested that the model needed to be able to simulate the "matter" workload. A good deal of time is expended by assistant U.S. attorneys working on matters that never become cases; they are disposed of before entering the courts. This work time should be counted separately from the case workload and a statistic

produced to reflect this effort.

2. Panel members felt that the role of the private bar was not well enough defined for that panelist to be able to make decisions. Suggestions for improving this role included:
   a) split the private bar role into plaintiff and defense roles;
   b) provide a profile of cases in the State court systems, since a large portion of the caseload of the private bar consists of State level cases.
3. There appeared to be some confusion among certain panel members as to what their areas of jurisdiction included. Some problems also arose in the translation of behavioral adaptations into parameter changes for the model. This was due to the research team's failure to obtain agreement on the part of multiple panel members when changes were suggested which affected more than one actor's jurisdiction.

It would be helpful, in future feedback panels, to develop lists defining the variables which each panelist has jurisdiction over and those which require agreement by two or more members.

While these suggestions are very helpful in continuing the methodological development, each should be considered in terms of how such changes would be implemented.

The request by panel members for more detail in the simulation outputs (1.a.) is very understandable in that the greater the level of detail available, the more specific one can be in suggesting behavioral changes. As they are currently generated, simulation outputs provide statistics representing the

average queue length for courtroom activities over a simulated period of time. The statistics are broken out by actor type for public cases (judge and U.S. attorneys) and private cases (judge alone). Average queue lengths are also produced by actor type for non-courtroom activities. The breakdown of courtroom and non-courtroom activities into particular events is feasible for assistant U.S. attorneys by general case type, i.e., civil or criminal. Data are available from the U.S. Department of Justice through their U.S. Attorney Case-Weighting Study. Comparable data for federal judges is not currently available. Published studies reporting the proportions of courtroom and non-courtroom activities are available from the Federal Judicial Center.* Breakdowns of particular activities by case type have not been published.

Panel members seemed not to find the average queue lengths for courtroom and non-courtroom activities particularly useful or interpretable without the additional level of detail requested. Perhaps simply a breakdown in the utilization rate into courtroom and non-courtroom activities would prove more helpful if the data cannot be disaggregated further.

The request for criminal case tracking information (see 1.b.) on pg. B-17) which would enable panel members to know when these cases are in danger of exceeding the Speedy Trial requirement is not available directly. In the criminal sequential model, once criminal defendants are arrested and not released prior to trial, a "clock" is set which keeps account of elapsed time. These cases are given priority handling to ensure their rapid movement through the system.

---

* Allocation of Resources to U.S. Attorneys' Offices: A Case-Weighting Study, INSLAW, 1979.

If they exceed the Speedy Trial time limit, they exit the system and are calculated as "Speedy Trial failures."

It would be fairly simple to implement a computerized means of testing for excludable delays to the Speedy Trial requirement. Cases which had failed to meet the time limit could be checked to see if an excludable delay had been granted; if not, they would exit the system as failures; if so, they could be returned to the resource queues to receive trial. Such a mechanism is not currently in place. However, the actual proportion of "failing" cases can be compared with the simulated number and a decision can be made as to the accuracy or inaccuracy of the current handling of these cases.

The requests made in 1.c. and 1.d. above, present conceptual problems for the Resource model. This is due to the random assignment of events for civil cases. It is not possible to determine the length of time cases take before reaching a particular processing stage, e.g., trial. This is because the trial may be scheduled any time during the life of a given case. It is most probable that the trial will occur near the end of a case but the order of events is quite flexible due to the random selection procedure. Thus, providing the age of cases would not necessarily reflect the reality of the situation. Similarly, the type of termination for individual cases is not readily determinable. This is related to the general nature of case profile assignments which only specify activities to be undertaken. Thus, cases which end after completing certain events may represent an early dismissal, a settlement arrangement, or some other type of termination. It is not clear exactly what type of termination has occurred.

The criminal sequential model, on the other hand, would have much less difficulty meeting these needs. Events are chosen probabilistically in this model so when a case is terminated by a dismissal it is recorded as a dismissal

at a particular processing stage.

The age of cases, in terms of elapsed time, is an output statistic for criminal cases just as it is for all the civil case types. The only priority given to criminal cases regarding their age is the monitoring of cases proceeding to trial under the Speedy Trial requirement. In order to make the age of cases available throughout their lives, extensive reprogramming work would be required. It does seem plausible that such information could be obtained from this sequential model.

A sequential model of the type used to process criminal cases has not proved itself to be a useful tool for handling civil cases. It is not likely that switching to a sequential modeling of civil caseflow would enhance the capability of a simulation model to make accurate impact predictions. Thus, even though more data may be obtainable regarding termination status and case age through this modeling technique, it is, overall, a less efficient way of modeling civil cases.

The request made in l.e. relating to calculation of the time expended by assistant U.S. attorneys on matters is modeled by having a workload of cases that consist only of very preliminary service events. An example of such a case might have an event schedule that consists of one or two non-courtroom activities by an assistant U.S. attorney, no judge service, one external delay event, and then termination. The non-courtroom events may represent phone calls, conferences, or other investigative tasks performed on a matter before an indictment or an information is prepared. The external delay event would probably represent the time spent by investigative agencies conducting background work on the matter. In the criminal sequential model, matters which are returned for additional investigative work or are held while other pending charges/court cases are investigated or disposed of are also modeled.

Obtaining statistics reflecting the work done on matters alone, would involve a considerable increase in computer processing time per simulation run. The computer would have to check the entire case profile each time it initiated an activity to determine whether or not it was matter-related or case-related. Any matter-related work would have to be totaled separately from case-related non-courtroom activities. This could be accomplished by modeling matter queues for the assistant U.S. attorneys and taking transaction information from them. New coding would have to be programmed into the model in order to be able to provide statistical information on resource utilization on the matter workload. While those efforts may accomplish the goal of providing this additional information it would be so at considerable expense.

The suggestions made in 2.a. that the panel role representing the private bar be divided into plaintiff and defense roles creates no particular problems. This is a methodological problem which should be handled in a way that facilitates the panel member's task of responding to the simulation results. If the separation of the private bar role into two parts makes participation on the feedback panel more straightforward, then future panels should be so constructed.

In order to fulfill the data request of 2.b. the National Center for State Courts should be contacted for information related to caseloads in the State courts. Private bar respondents should be given this information and be permitted to study it before responding to simulation results. Again, this represents a situation in which a methodological procedure can be easily altered to accommodate the participation of a panel member; it is our opinion that this feature should be incorporated into future feedback procedures.

The third issue raised (see #3., page B-18) must be handled by the research team conducting the feedback experiment. When behavioral adaptations

are suggested that have a bearing upon several actors, all panel members implicated in the change must be consulted and a compromise arrived at. The preparation of lists of variables over which each actor has jurisdiction and which he/she must discuss with other panelists should be of assistance during the actual feedback procedure.

The conclusion reached upon completing this feedback experiment was that it had shown itself to be a useful tool for incorporating subjective judgment into the computerized model. Several rounds were successfully completed eliciting opinions on behavioral adaptations for system actors and translating these into changes in model parameters. The suggestions that came from the expert panel were quite helpful, though some may be difficult to implement. Subsequent efforts aimed at utilizing the feedback procedure will clearly benefit from their incorporation.

The following pages are the actual record of the feedback experiment. The orientation document, adaptation records, and translation sheets are included.

JUSTICE IMPACT ANALYSIS:
AN ORIENTATION DOCUMENT

Introduction

We welcome you to a justice impact analysis. During this week, we will be concentrating on a quantitative impact study in which a computer simulation is used to analyze the impacts on the federal justice system resulting from the introduction of new legislation. You will be asked to examine simulation results and to make judgments as to the behavioral responses of system actors. Actors will include federal judges, assistant U.S. attorneys, and litigants.

This document will provide you with descriptions of a justice impact analysis, and the computer model used in the simulation. The document will tell you how your judgmental advice will be used in the analysis. In the orientation session, we will show you the simulation and how to make your adjustments to the factors in the computer model.

The Justice Impact Analysis

The question of how to make an estimate of the "impact" of new legislation on the justice system has been the subject of much discussion during recent years. Analyses have been considered by all three branches of government, and published examples of such analyses exist for various legislative, rulemaking, and procedural changes.

MATHTECH has been funded by the Office for Improvements in the Administration of Justice to develop methodologies for analyzing judicial impacts. Your participation is part of the last major developmental phase in our Justice Impact Analysis.

In the course of the project we have defined three major kinds of impact analyses:

(a) quick estimates of the major impacts of legislation, such as is often done now in a short time frame by in-house staff;

(b) systematic qualitative analyses of the provisions of legislation, on a section by section basis, to identify all the expected major effects; and

(c) quantitative analyses of expected effects, to show how great changes are likely to be, and to compute the interaction effects of those changes as they ripple through the justice system.

Our research project has concentrated on the second and third of these justice impact analyses -- the qualitative and quantitative. We have completed a qualitative analysis of the 1974 Juvenile Justice Amendments to see how well we might have forecast the results that occurred as a result of the passage

of that legislation. We have also done qualitative impact studies of the effects to be expected from the Small Business Judicial Access bill, and of possible legislative changes in diversity jurisdiction.

We have completed quantitative studies of the effects of the 1974 Juvenile Justice Act, and of the curtailment or abolition of diversity jurisdiction. Reports of these analyses have been provided to our sponsor.

Each of the three kinds of analyses has its advantages and disadvantages. The quick analyses have the advantage of fast results, but they run the risk of missing major effects, as well as any secondary effects.

Qualitative analyses have the advantage of providing a systematic comparison of the effects that can be expected from each of the proposed changes, and they can be produced in a relatively short time. The disadvantage of such analyses is that they typically cannot say by how much the system will change, nor can the complex interactions within the justice system be fully considered.

A quantitative analysis has the merit of using a computer simulation which details each of the events in the life cycle of a case, placed in the context of the full workload of a federal district court. It provides detailed summaries of what happens to the cases and the system, in terms of elapsed time, backlogs, delays, terminations, and the time demands placed on judges and attorneys. More importantly, the simulation can handle a level

of complexity in system interactions which the human mind cannot. There are two difficulties with quantitative analyses: (a) they are more time-consuming and expensive than the other methods, and (b) subjective judgments must be explicitly included. During this week, we will be conducting a feedback experiment. The primary purpose of this experiment is to add the dimension of human behavior to the simulation. The combination of feedback techniques with simulation is not without precedence. It has been used by other governmental agencies, e.g., the Department of Defense in estimating the tactical changes following the use of new weapons systems, and the Department of State in estimating the results of changes in disarmament on international relations. In industry, the methods have been used in the banking field, and in making long-range plans for major corporations.

The Role of Experts

The feedback panel is a systematic way of bringing out explicitly the subjective judgments of experts, and of finding consensus where that is possible. In this experiment, we will be treating you as feedback experts.

The members of this panel of experts must understand how judges, government litigators, and private attorneys use their time and the kinds of decisions they make in handling cases. Consequently, the panel is made up of people who are likely to be able to predict how such individuals would react to a range of potential changes in the system. They will be asked to assess how decision-making processes and time utilization will be affected by changes such as an increased volume of cases, or an increase in the amount of time case-processing events require. Ordinarily, a panel member would know the behavior of one of these types of human resources particularly well, and would bring that perspective to bear in a simulation review. For example, a judge on the panel would be responsible for understanding and analyzing the behavior of judges. It is important that one or more of the panelists represent the point of view of litigants: the decision to seek legal counsel, bring a lawsuit, how vigorously to defend, how long to persevere, and so on are important factors. Other points of view would also need to be represented, e.g., the private bar, the U.S. Attorney's Office, and so on.

The Computer Model of the Justice System

On our first day of the experiment, we will show you how the events in the justice system are represented in our computer model. Basically, we have represented the operation of a federal district court that has five judges and eleven assistant U.S. attorneys. Each simulation represents one work year, during which cases enter the system at approximately the same rate as they would in a medium-sized district court. Cases are divided into four classes: criminal, U.S. civil, federal question, and diversity jurisdiction cases. Each of the cases is assigned a profile of events, such as hearings, delays, injunctions, negotiations, etc. The profiles characterize actual cases in the federal justice system. They are selected from distributions of all possible case events for particular case types.

The data we are using have come from a variety of sources -- data tapes from the Administrative Office of the U.S. Courts, special studies of caseweights, other detailed studies, and some subjective estimates.

Our computer model has been "equilibrated," i.e., put into equilibrium, to reflect the current state of the federal justice system. Thus, computer results are reasonable with respect to published statistics.

After the model was equilibrated, it was tested to see whether the computer model would produce intuitively reasonable results when the inputs were changed. For example, when we removed a whole category of cases from the system (e.g., abolition

of diversity jurisdiction cases) one expected result was that judges would have more work time available. The model outputs reflected this change in a way that seemed logical (i.e., judge backlogs were reduced, judge utilization proportions decreased, etc.). However, the simulation results suggested additional questions which the computer model was not able to answer. To wit, if the abolition situation were to occur, the judges might be expected to change the way they handle the remaining cases. The simulation alone cannot determine how judges would alter their behavior.

This is the kind of question which we need your professional judgment on. We need to be able to tell the computer how to shift case-handling priorities, so that the results reflect some of the behavioral adaptations that might be expected from actors involved in the system. This can be accomplished by creating a process whereby expert opinion may be obtained for input to the simulation. The bulk of this week's activities will involve eliciting your reactions to the results of the model's operations and successively adjusting some of the model's components until a new equilibrium that <u>includes</u> human judgment is reached.

Each of you will represent one set of system actors: (1) judges (2) attorneys, or (3) litigants. You will each be asked how your actors' behavior would shift if the world changed the way our computer model says it would. These judgmental changes will be translated into computer instructions, and a new set of results will be computed.

This translation will be made by our staff, after we have "calibrated" your word definitions into computer coefficients. Calibration is the process of converting your subjective estimates into quantitative terms. That is, we will ask each expert to state a level of change in various factors that he/she would consider significant and then translate these statements into numerical terms for the computer.

You will be provided with the results of the computer calculations following the first simulation, and you will be asked two questions:

(1) Do the new results seem reasonable, and if not, why not?

(2) Given the new state of affairs, would you change your actors' behavior; and if so, how?

This information will be input to the computer for the second run of the simulation. The output of the second simulation will contain not only the results of the legislative changes but also the results of behavioral adaptations by all system actors to those changes. You will again be asked to examine these results and make judgments regarding their reasonableness. You will also be asked to suggest additional behavioral modifications for the actor type you represent. This process will be repeated until all experts are satisfied that the results reflect all impacts created by the legislative change. At this point, the simulation results give us a picture of legislative impacts with human adaptations to the change.

We have built in three devices to help minimize personal bias, and to prevent any one panelist from engineering the impact results.

(1) Jurisdictional limitation: A panel member is permitted to make changes only in those aspects of the data or the model that relate to his or her own expertise. For instance, the judge panelist may change only the judge data. This should prevent any one panelist from engineering the whole impact result. He may, of course, take issue with the judgments of others. These disagreements will form part of the record, and they may contribute to changed decisions by the other person in later runs. Also, a whole new run can be made reflecting the results if the behavioral preference of the critic replaced that of the responsible player.

(2) A requirement for stating reasons: A panel member may feel that something in the model should be changed because the simulation shows some condition that would trigger some behavioral modification. The panelist must state what that modification is, and the reasons for making it. Personal perspective will thereby be exposed and made part of the record of the impact study. This should, incidentally, make it easier for a person to do the work of a panelist.

(3) The striking of compromises: In the review process, one panel member may want to make changes that conflict with the views of another panel member. For instance, in response to a rising backlog, the judge expert may want to see more dismissals on the merits; at the same time the attorney representative may feel that more cases should be brought to trial. These changes

come to bear on the same element of data, namely, the probability that a case will last all the way to trial. However, these changes would have opposite effects. Part of the panel function, therefore, would be to reach compromises when this kind of conflict arises. This, in effect, simulates the real-life process by which attorneys and judges have to resolve differences as to how the justice system should operate.

Results of a Feedback Experiment

The results of a completed feedback experiment are:

- the quantitative impact analysis with human feedback; a description of the system outputs which reflect the modified behavior of the system actors following the legislative/rulemaking change, or management action, which has been the subject of analysis;
- a completed record of how the panel of experts interacted, both with each other and with the computer simulation, in the process of determining what the post-change outputs would be;
- a detailed documentation of conflicts which occurred between panel members during the experiment.

Diagram of the Justice Resource Computer Model

The computer model used in our justice impact analysis is represented in Figure 1. This diagram shows the stages of activity in the computer model, and the directions in which cases and resources flow. This is intended as a very brief overview of the model. A much more detailed explanation will be provided at the orientation meeting. The following is a key to the letter and number codes on the diagram:

- Model Inputs

  A. Filing rates: interarrival rate for cases

  B. Profile: frequencies of different case activities

     injunction

     trial (episodes)

     other courtroom appearances

     noncourtroom activities (judge)

     noncourtroom activities (attorney)

     external delay events

  C. External delay: duration of delay events

  D. Courtroom service: duration of courtroom events

     injunction

     trial (bench or jury)

     other courtroom appearances

  E. Noncourtroom service (judge): duration of noncourtroom events

  F. Noncourtroom service (attorney): duration of noncourtroom events

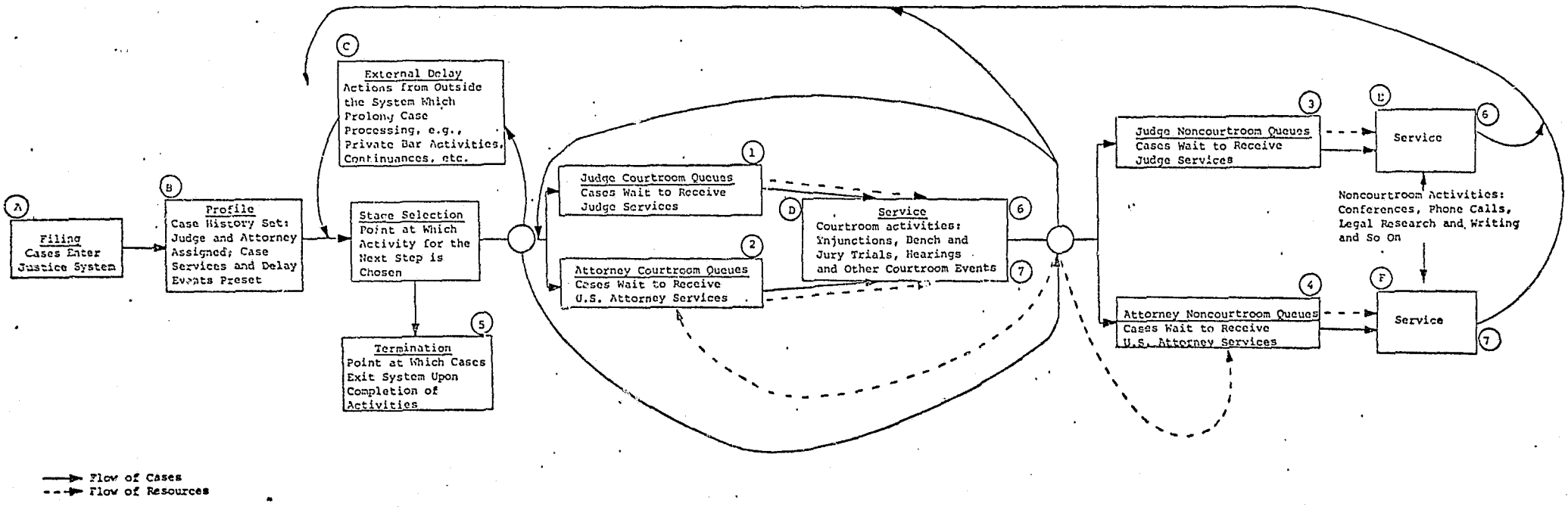


Figure 1

JUSTICE RESOURCE MODEL

Overview of Flow of Cases and Resources

- Model Outputs

1. Judge courtroom queues

   number of cases waiting

   time spent waiting (per case)

2. Attorney courtroom queues

   number of cases waiting

   time spent waiting (per case)

3. Judge noncourtroom queues

   number of cases waiting

   time spent waiting (per case)

4. Attorney noncourtroom queues

   number of cases waiting

   time spent waiting (per case)

5. Terminations

   number of case completions by case type

   total time in the system by case

6. Judge utilization

   amount of judge time spent on case-related activities

7. Attorney utilization

   amount of attorney time spent on case-related activities

PANELIST:
JUDGE

CALIBRATION RECORD

VARIABLES	Baseline (Hypothetical Data)	LEVELS OF CHANGE		
Output		Some	Moderate	Significant
Utilization	67%	±5%	±10%	±11%
Case completions per year	500 cases	±15	±25	±26
Elapsed time per case	300 work days	± 7	±20	±21
Backlog of cases awaiting service - courtroom	5 cases	±.5	± 1	± > 1
Backlog of cases awaiting service - noncourtroom	10 cases	± 1	± 2	± > 2
Input or Processing				
Probability of trial	6%	±.5	± 1	± > 1
Courtroom time for tried cases	3.5 days	±.5	± 1	± > 1
Noncourtroom time for tried cases (attorney)	15 days	± 1	± 3	± > 3
Courtroom time for cases that do not go to trial	25 days	±.5	± 1	± > 1
Noncourtroom time for cases that do not go to trial (attorney)	10 days	±.5	± 2	± > 2

PANELIST:
PRIVATE BAR

CALIBRATION RECORD

VARIABLES	Baseline (Hypothetical Data)	LEVELS OF CHANGE		
Output		Some	Moderate	Significant
Utilization	67%	±3%	±10%	>10%
Case completions per year	500 cases	±20	±40	>40
Elapsed time per case	300 work days	±10	±25	>25
Backlog of cases awaiting service - courtroom	5 cases	±<1	± 1	>1
Backlog of cases awaiting service - noncourtroom	10 cases	± 1	± 2	>2
Input or Processing				
Probability of trial	6%	±<1	± 1	>1
Courtroom time for tried cases	3.5 days	±.5	± 1	>1
Noncourtroom time for tried cases (attorney)	15 days	± 1	± 3	>3
Courtroom time for cases that do not go to trial	25 days	±.5	± 1	>1
Noncourtroom time for cases that do not go to trial (attorney)	10 days	± 1	± 2	>2

PANELIST:
U.S. ATTORNEY

POSITIVE

CALIBRATION RECORD

VARIABLES	Baseline (Hypothetical Data)	LEVELS OF CHANGE		
Output		Some	Moderate	Significant
Utilization	67%	70	72	77
Case completions per year	500 cases	525	550	575
Elapsed time per case	300 work days	325	350	400
Backlog of cases awaiting service - courtroom	5 cases	5.5	6	7
Backlog of cases awaiting service - noncourtroom	10 cases	11	13	15
Input or Processing				
Probability of trial	6%	7%	9%	10% or more
Courtroom time for tried cases	3.5 days	4.0	4.5	5
Noncourtroom time for tried cases (attorney)	15 days	17	20	23
Courtroom time for cases that do not go to trial	25 days	3.0	3.5	4 or more
Noncourtroom time for cases that do not go to trial (attorney)	10 days	11	12	13

PANELIST:

U.S. ATTORNEY

NEGATIVE

CALIBRATION RECORD

VARIABLES	Baseline (Hypothetical Data)	LEVELS OF CHANGE		
Output		Some	Moderate	Significant
Utilization	67%	66	64	60
Case completions per year	500 cases	475	450	425
Elapsed time per case	300 work days	290	275	250
Backlog of cases awaiting service - courtroom	5 cases	4	3	2
Backlog of cases awaiting service - noncourtroom	10 cases	9	7	5
Input or Processing				
Probability of trial	6%	5	4.5	4.0
Courtroom time for tried cases	3.5 days		3.0	2.5
Noncourtroom time for tried cases (attorney)	15 days	13	11	9
Courtroom time for cases that do not go to trial	25 days		2.0	1.5
Noncourtroom time for cases that do not go to trial (attorney)	10 days	9	8	7

ADAPTATION RECORD

Round # 1

Actor Type Judge

OPINION AS TO POTENTIAL ACTOR ADAPTATION	PREMISE
1. Spend 2/3 of additional time on courtroom activities. 1/3 on non-courtroom activities.	1. Backlog for courtroom activities needs to be reduced much more than does backlog for non-courtroom activities.
2. Give first courtroom priority to injunctions.	2. Need immediate attention.
3. Give courtroom priority to criminal cases that would otherwise be in danger of failure to comply with Speedy Trial Act requirements.	3. Failure to comply with STA will require dismissal of criminal cases.
4. Give next courtroom priority to oldest civil cases (older than 6 months).	4. Reduce civil case backlog.
5. Give next courtroom priority to other civil cases involving U.S. (public civil cases).	5. Public civil cases probably more important than private civil cases. Put pressure on civil cases older than 6 months - many will settle -- may increase my noncourtroom activities.
6. Give next courtroom priority to other civil cases not involving U.S. (private civil cases).	6. Less important than public civil cases.
7. Give next courtroom priority to other criminal cases.	7. No hurry, so long as disposition complies with STA.
8. Non-courtroom activity priorities: a) preparation for 2-7 above, in that order b) other activity relating to 2-7 above, in that order c) other activity	8. Non-courtroom activity should be in preparation for or related to courtroom activity before one engages in other types of non-courtroom activity.

ADAPTATION RECORD

Round # 1

Actor Type Private Bar

OPINION AS TO POTENTIAL ACTOR ADAPTATION	PREMISE
1. Impact on the private bar cannot be measured by looking only at the federal system.	1. Diversity cases will be taken out of the federal system, but presumably most of these cases will be filed in the state courts. Without data on the impact on the state systems of this influx of diversity cases, the impact on the private bar cannot be evaluated. Attorneys may simply spend the same time and resources in state courts.
2. The significant reduction in the backlog of judges (courtroom and noncourtroom) might result in more private case filings. Any increase, however, would be mitigated by the slightly smaller reductions in attorney backlogs.	2. The availability of judges would lead logically to more filings. This assumes that there are cases that are not now filed that could be -- perhaps an erroneous assumption given the many reasons attorneys file-- as a settlement tactic, on principle, etc., that are not related to a desire for courtroom treatment. If such an increase occurred, it would be small.
3. The high-moderate increase in the completion of criminal cases may cause a decline in civil filings.	3. Many attorneys handle, in federal courts, both civil and criminal matters. Increased criminal case completions will force these attorneys to neglect their civil matters in favor of criminal cases. Given the existence of a specialized criminal bar, however, this change may be small.

ADAPTATION RECORD

Round # 1

Actor Type Federal Attorney

OPINION AS TO POTENTIAL ACTOR ADAPTATION	PREMISE
1. Some reduction in preparation time for non-trial courtroom appearances in Civil/U.S. cases not subject to statutory priority.	1a. Change in judge non-courtroom queue is the only post-change result that would affect behavior. b. Good judge will over-schedule - i.e. too many cases set down for courtroom attention on a given day - on grounds that counsel will more often overestimate than under-estimate time required for an episode of courtroom service. c. Effect of over-scheduling is that often some case will take longer than expected and some other case will be "kicked over" - i.e. have to be rescheduled. d. "Kicking over" will be a frequent problem when the courtroom queue have four cases waiting (pre-change) but if it goes down to 2.34 (post-change), judge will most often be able to get through all cases scheduled. This means that this amount of reduction would eliminate the "kicking over" phenomenon. e. Consequence of having case kicked over is that counsel will have to prepare again for the courtroom activity that is re-scheduled. f. Implication of queue length reduction is some savings in non-courtroom preparation time - i.e., reduction in non-courtroom processing time.

ADAPTATION RECORD

Round # 1

Actor Type Federal Attorney (cont)

OPINION AS TO POTENTIAL ACTOR ADAPTATION	PREMISE
	g. As it affects Federal attorneys, this reduction would be in civil cases that presently receive low priority in a judge's courtroom queue - cases other than those with a statutory priority. h. More specifically, the alleviation in the kicking-over problem will be in the preparation time for non-trial episodes that are not usually disposed of quickly - e.g. hearing on motion to suppress evidence. (Sub-point here is tendency of judge, in taking cases from his queue, to favor those which will not take much time). i. How much the kick-over problem affects Federal counsel, versus private counsel, and hence, how much improvement there would be in preparation time depends on at least two factors which may vary among Federal districts: (a) How geographically wide-spread the private bar is - attorney travelling a long way may not have case kicked-over. (b) Whether judges treat Federal litigators the same as private bar, or regard their time as being less important. j. Additional point concerning filing note: Alleviation of kick-over problem would make small monetary claim cases more economically attractive to private bar - would take some that are now passed over. This is a moot point here, since as regards Federal court, those would mainly be diversity jurisdiction cases.

ADAPTATION RECORD

Round # 1

Actor Type Federal Attorney (cont)

OPINION AS TO POTENTIAL ACTOR ADAPTATION	PREMISE
	k. Point as to private bar: When a case has to be re-scheduled, this will sometimes mean that private counsel is delayed in clearing up some matter that would advance the case - i.e. would shift the case over to Federal counsel for next activity.

Translation - Round 1

Behavioral Change	Corresponding Parameter Change
1. Given significant reduction in courtroom backlog, with Diversity Jurisdiction cases eliminated, judge becomes more aggressive: accelerates scheduling of courtroom appearances and finishing noncourtroom work. This would affect all case types, but most especially criminal cases.	.79 x duration of external delay - criminal cases .86 x duration of external delay - Civil/U.S., and Federal Question 1.21 x probability to external delay branch - Criminal 1.14 x probability of external delay branch - Civil/U.S., Federal Question (puts external delay at the front, and causes case processing activities to occur in more rapid sequence)
2. Judge predicts that the pressure to accelerate #1 would result in an increased tendency to settle.	.79 x probability of trial - Criminal cases .86 x probability of trial - Civil/U.S. and Federal Question (more settlements = fewer trials)
3. Reduction in judge courtroom queue means less rescheduling of cases ready for courtroom service, alleviating the problem of having to prepare again, principally affecting Federal attorneys in Civil/U.S. cases prior to trial.	Number of episodes of noncourtroom service, Civil/U.S., is reduced from 7 to 6 on premise that one of two nontrial courtroom appearances is a rescheduled event.

CONTINUED

1 OF 4

Translation - Round 1

Behavioral Changes:

1. Given a significant reduction in courtroom backlog with Diversity Jurisdiction cases eliminated, judge becomes a more aggressive manager: accelerates the scheduling of courtroom appearances and the completion of noncourtroom work. This would affect all case types, but most especially criminal cases.

2. Judge predicts that the pressure to accelerate Civil cases in #1 would result in an increased tendency to settle.

3. Reduction in judge courtroom queue means less rescheduling of cases ready for courtroom service, alleviating the problem of having to prepare again, principally affecting Federal attorneys in Civil/U.S. cases prior to trial.

2

ADAPTATION RECORD

Round # 2

Actor Type Judge

OPINION AS TO POTENTIAL ACTOR ADAPTATION	PREMISE
1. Continue priorities with following changes:	
a) place private civil cases ahead of public civil cases for courtroom and non-courtroom activity.	1a. Shorten disposition time of private civil cases significantly.
b) delete the priority established in #7 in Round 1.	1b. Unnecessary.
2. Increase time spent on case-related activities to 75% by handling 1 more courtroom case per day and .4 non-courtroom case per day.	2. Effect very significant changes (upward) in average daily backlog of courtroom & non-courtroom activity and utilization time.

ADAPTATION RECORD

Round # 2

Actor Type Private Bar

OPINION AS TO POTENTIAL ACTOR ADAPTATION	PREMISE
1. Reduction in filings of all case types.	1a. "Junk" cases faced with reality of going to court, so fewer would be filed. b. Pressure of having to speed up handling existing cases will mean less time to spend on new cases.
2. Increase in filings of all case types.	2a. Tendency to file more cases given reduction in delay (if attorneys are turning away cases), meaning courts may be more attractive. b. If the judge becomes a better manager, and fewer cases are rescheduled, attorneys will spend less time on each case. This will leave time to file new cases.
3. Conclusion - These tendencies will cancel each other out and filings will not change.	3. (Reduction) change in elapsed time is not sufficient to make the use of courts attractive to potential litigants.

ADAPTATION RECORD

Round # 2

Actor Type Federal Attorney

OPINION AS TO POTENTIAL ACTOR ADAPTATION	PREMISE
1. USA would assign a moderate amount of routine criminal cases to AUSA's who normally handle civil cases.	1a. Reduction in average elapsed time in criminal cases from 92.4 to 72.5 days is highly important, as it implies major increase in the pressure under which AUSA's assigned to criminal cases must work; particularly significant since, by statute, judge cannot pressure AUSA on criminal case for first 30 of those days; more significant than the reduction (and consequent increase in AUSA pressure) in Civil/U.S. cases. b. Increase in AUSA/criminal pressure enough to create serious morale problem, erode quality of performance, and push prosecutor to breaking point; cannot tolerate any further reduction in elapsed time average for criminal cases. c. Absent some alleviation of pressure, can expect "cheaper pleas" to be accepted, and somewhat more plea bargaining generally, resulting in further degradation in morale and quality of performance. d. One specific effect of pressure at the level implied by such a reduction in elapsed time would be that AUSA's could not work on cases as a series of complete, meaningful tasks; would have to be doing something on all cases every day, juggling them.

ADAPTATION RECORD

Round # 2

Actor Type Federal Attorney (cont)

OPINION AS TO POTENTIAL ACTOR ADAPTATION	PREMISE
	e. One rationale alternative to "cheap pleas" is to assign some of the routine criminal work to civil/U.S. AUSA's. This would hopefully be temporary. Given 12 AUSA/criminal and 5 AUSA/civil personnel - and it is assumed no additional personnel can be added to the litigation itself - the ease of doing this would depend on whether some of those 5 are already familiar with criminal case processing; otherwise, might have to draw on the civil AUSA's who are experienced litigators. f. If processing time has been reduced in criminal cases in response to growing pressure to move cases along, we would expect to find, after this reassignment of criminal work, quality of performance improve with a concommitant increase in preparation and some decrease in courtroom time in tried cases (owing to improved preparation). (Note: in Round 1, the changes in Resource Model parameters did not have AUSA/criminal personnel cutting corners, hence no need to restore any time on cases) g. Critical assumption relative to (c) above: We are assuming that a policy already exists referring to as many cases as possible to the States, and diversion is used to maximum extent - hence, there is no fat that could be trimmed through reduction in overall criminal caseload.

Translation - Round 2

Behavioral Change	Corresponding Parameter Change
1. Achieve significant reduction of time to dispose of private cases by placing them ahead of public cases, for judge service, and by placing more pressure on private bar to accelerate scheduling of courtroom appearances and noncourtroom activities.	Change private/public priority branching ratio from .5 to 1.25 x .5 = .625 ...and make significant reduction in external delay time (in judge involved cases) in Federal Question cases by reducing frequency of external delay from 3 to 2.
2. Hopefully increase judge utilization rate by means of the behavioral change #1, above.	
3. Alleviate significant over-work and morale problem for AVSA/criminal personnel implied by the substantial reduction in elapsed time through a moderate (but hopefully temporary) policy of assigning some criminal cases to civil personnel.	Reassign one civil attorney to handle criminal cases.

Translation - Round 2

Behavioral Changes:

1. Achieve significant reduction of time to dispose of private cases by placing them ahead of public cases, for judge service, and by placing more pressure on private bar to accelerate scheduling of courtroom appearances and noncourtroom activities.

2. Increase judge utilization rate by means of the behavioral change in no. 1 above.

3. Alleviate significant overwork and morale problem for AUSA/criminal personnel implied by the substantial reduction in elapsed time in criminal cases through a moderate (but hopefully temporary) policy of assigning some criminal cases to civil personnel.

ADAPTATION RECORD

Round # 3

Actor Type Judge

OPINION AS TO POTENTIAL ACTOR ADAPTATION	PREMISE
1. Increase non-courtroom time spent on each case moderately. 2. Increase courtroom activity in private cases moderately.	1, 2. Increase judge utilization time.

ADAPTATION RECORD

Round # 3

Actor Type Private Bar

OPINION AS TO POTENTIAL ACTOR ADAPTATION	PREMISE
1. More plea bargaining in criminal cases.	1. Extra criminal U.S. Attorney, and decline in criminal elapsed time indicate extra pressure.
2. More time spent on civil/U.S. and federal question cases.	2. Increased civil and federal question completions and increased federal question elapsed time indicate less attention being paid to these cases.
3. More delays requested on civil/U.S. cases.	3. Increased pressure to complete civil cases.
4. More out of court settlements for civil/U.S. cases.	4. Increased pressure to complete civil cases.

Round 3 - U.S. Attorney unable to respond to outputs; wants to schedule a panel conference before proceeding.

Translation - Round 3

	Behavioral Changes:	Corresponding Parameter Changes:
1.	Given the drop in the judge utilization rate, judges will become more deliberative: (a) spending more time on noncourtroom work for all case types, and also (b) increasing the courtroom activity in private cases.	1. (a) Increase the duration of noncourtroom activities by 16%. (b) Increase the duration and frequency "other courtroom" appearances by 16% (change frequency from 2 to 3, and duration from 1.5 to 1.16).
2.	Given the pressure implied by the fast pace at which criminal cases are being processed, defense counsel will negotiate more pleas.	2. Reduce the probability of going to trial for criminal cases by 10%.
3.	The dramatic increase in civil case completions show an unrealistic degree of cooperation by the private bar to the pressure being applied by the judge to speed up cases: private counsel will increase the time spent on federal question and civil/U.S. cases and will ask for more delays on civil/U.S. cases.	3. Increase by 16% the duration of external delay for federal question and civil/U.S. cases, and increase by 16% the frequency of external delay episodes for civil/U.S. cases.
4.	The pressure to accelerate the scheduling for civil cases will cause a greater willingness on the part of private counsel to settle cases.	4. Decrease the probability of going to trial for civil/U.S. cases by 14%.

Translation - Round 3
Behavioral Changes

1. Given the drop in the judge utilization rate, judges will become more deliberative: (a) spending more time on noncourtroom work for all case types, and also (b) increasing the courtroom activity in private cases.

2. Given the pressure implied by the fast pace at which criminal cases are being processed, defense counsel will negotiate more pleas.

3. The dramatic increase in civil case completions show an unrealistic degree of cooperation by the private bar to the pressure being applied by the judge to speed up cases: private counsel will increase the time spent on federal question and civil/U.S. cases and will ask for more delays on civil/U.S. cases.

4. The pressure to accelerate the scheduling for civil cases will cause a greater willingness on the part of private counsel to settle cases.

SUMMARY OF BEHAVIORAL CHANGES

ROUNDS 1-3

1. Judge accelerates case scheduling
2. Increase in civil case settlements
3. Reduction in AUSA preparation time, civil/U.S. cases

1. Judge places priority on private cases
2. Assign some routine criminal cases to AUSA/civil

1. More judge service time on cases
2. Private defense counsel negotiate more pleas
3. Private counsel demand more time for civil cases
4. Private counsel more willing to settle

PANEL CONFERENCE

DIVERSITY JURISDICTION FEEDBACK EXPERIMENT

SUMMARY OF FEEDBACK RESULTS

ROUNDS 1-3

March 18, 1980

1. No increase in the rate of case filings.

2. Judges push to accelerate caseflow to increase their own utilization rate, but it does not increase unless more work is created (e.g., more service time per case).

3. There is some appearance of a downward trend in elapsed times relative to baseline levels.

APPENDIX C

THE Q-GERT NETWORK: A TECHNICAL DESCRIPTION

- Q-GERT Conventions
- Q-GERT Output
- Node-by-Node Description of the Resource Model
- Feasible Stage Selection for Each Criminal Case Decision Point
- Description of Files
- Description of Q-GERT Inputs
- Q-GERT Input Data Format
- Listing of Data Cards and FORTRAN Listing

Q-GERT Conventions

Q-GERT Conventions

Q-GERT is a network modeling vehicle and a computer analysis tool. GERT is an acronym for Graphical Evaluation and Review Technique. The Q is appended to indicate that queueing systems can be modeled in graphic form. A fundamental contribution of Q-GERT is its method for graphically modeling systems in a manner that permits direct computer analysis. The Q-GERT Analysis Program has been developed to provide this computer analysis.

Q-GERT satisfies the need for a network approach to the modeling of systems that involve procedural, risk and random elements. It provides industrial engineers, business analysts and operations researchers with a graphical vehicle for modeling, analysis and communication. It performs a function similar to that provided by circuit diagrams for electrical engineers, free body diagrams for mechanical and civil engineers, signal flow graphs and block diagrams for systems analysts and PERT/CPM networks for project managers. Q-GERT networks are models of systems that consist of activities, resources and queues. Q-GERT can be used in conjunction with project management, risk analysis and decision making.

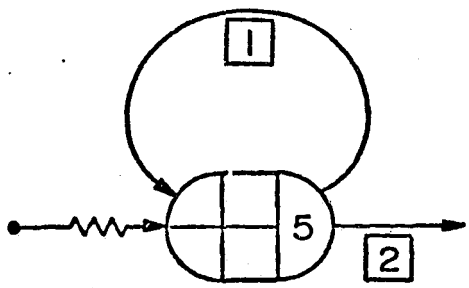
Basically, Q-GERT supports a systems approach to problem resolution consisting of four steps. First, a system is decomposed into its significant elements. Second, the elements are analyzed and described. Third, the elements are integrated in a network model of the system. Fourth, system performance is assessed through the evaluation of the network model.

The network model is comprised of nodes, which may represent entry points, exit points, decision points, or points at which changes are made to transactions flowing through the network. Nodes are connected by branches, or activities, which may represent the expenditure of time, or which may simply serve to connect nodes, without the passage of time.

Each nodes is assigned a unique number, which appears in the right-hand portion of the node. In addition values for attributes may be assigned within the node. The code for these values assignments are located in the central portion of the node. Activities may contain code indicating the probability of a transaction taking that path, the value of an attribute of transaction taking that path, or code for a time associated with that activity. Time assignments and value assignments may occur either directly through network coding or through additional FORTRAN programming, termed User Functions (UF).

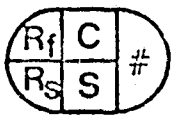
Node types used in the system include the following:

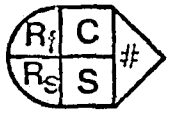
Source nodes: used to generate transactions and place them into the system. Source nodes are characterized by an incoming flow symbol and an arc that represents the generation of transactions into the system.



In this illustration, the node number of the source node is 5, 1 represents the [illegible]or the generation of transactions, and 2 is the arc connecting the source node with the rest of the network.

Regular nodes: used as decision points or points for value assignments to attributes. Regular nodes can be characterized by several different types of branching, or ways in which activities may be selected. Four types of branching used in regular nodes are represented by the following:

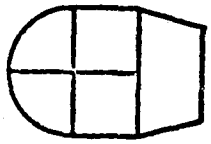




R_f is the number of incoming transactions required to release the node for the first time.
R_s is the number of incoming transactions required to release the node for all subsequent times.
C is the criterion for holding the attribute set at a node.
S is the statistics collection type or marking.
is the node number.

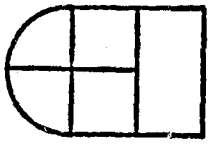
indicates deterministic branching from the node.

indicates probabilistic branching from the node.



Conditional, Take-First Branching

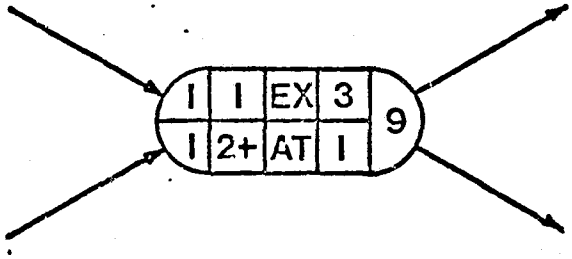
indicates conditional-take first branching from the node.



Conditional, Take-all Branching

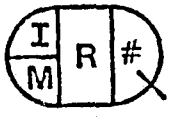
indicates conditional-take all branching from the node.

Coding for value assignments for attributes is illustrated below:



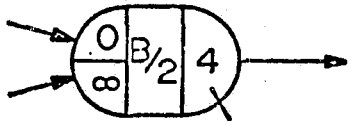
In this illustration, 1 EX 3 indicates that attribute 1 is to be assigned values sampled from an exponential distribution defined by parameter Set 3. 2+ AT 1 indicates that a value of 2 is to be added to the value of attribute 1.

Queue nodes: used as waiting points for transactions requiring resource services, or for resources requiring their counterparts before service can begin. Queue nodes generally take the following form:



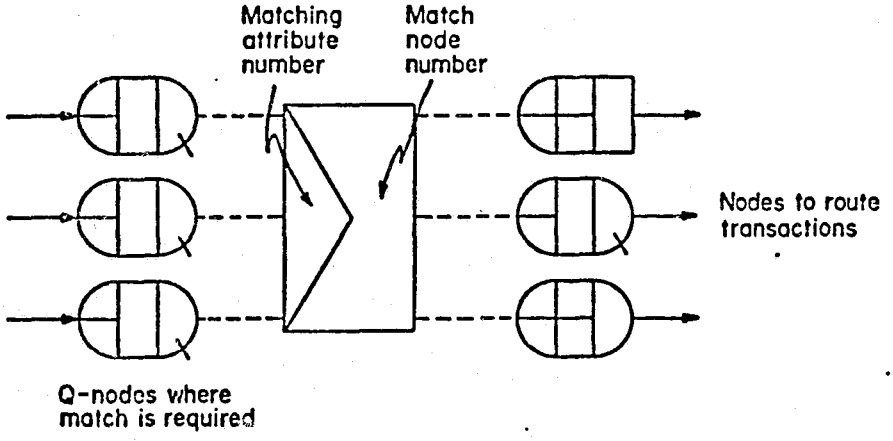
I is the initial number of transactions at the Q-node.
M is the maximum number of transactions permitted at the Q-node.

Ranking of transaction in the Queue nodes (R in the above illustrations may be based on the value of an attribute of the transactions in the queue, for example:



In this illustration, B/2 indicates that transactions are to be ordered on the basis of the biggest value of attribute 2. That is, the transaction with the biggest value of attribute 2 would be the first in the queue, and the transaction with the lowest value of attribute 2 would be the last in the queue.

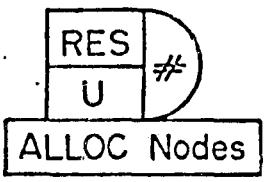
Match nodes: used to combine resources or parts of cases that must proceed together through the network. Match nodes are always associated with queue nodes, which are the points at which resources or cases wait for their complement.



Allocate nodes: used to link transactions with resources when both are ready for service activity. Allocate nodes are always associated with queue nodes, which holds accumulating transactions until the resource is ready to provide service. Allocate nodes are also associated with free nodes, which release resources from cases to which they were providing service and returns the resources to allocate nodes.

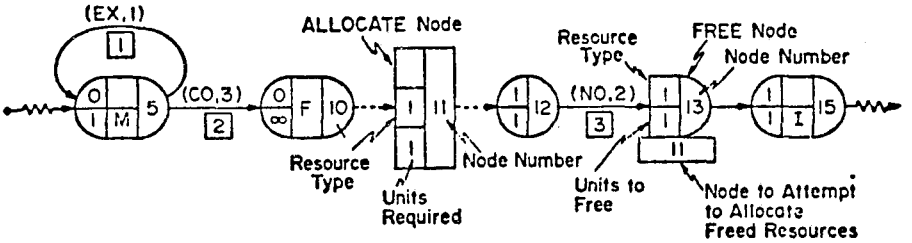
In the above illustration, allocate node 20 indicates that 2 resources of type 1 are to be allocated.

Free nodes: used to release resource from cases to which they were providing service and returns the resources to allocate nodes. The form of the free node is as follows:



RES represents the resource to be freed, U represents the number of units of that resource to be freed, and ALLOC NODES represents the allocate node(s) to which the resource will return.

A typical sequence of queue, allocate and free nodes is as follows:



In this illustration, transactions wait for service at queue node 10. The transactions are linked with one resource of type 1 at allocate node 11. Service is performed on activity 12, 13. One unit of resource type 1 is freed at free node 13, and the resource unit is returned to allocate node 11.

This brief summary of Q-GERT methods and conventions should serve as an introduction to the Resource Model. For more extensive information about Q-GERT modelling, the reader is referred to Modeling and Analysis Using Q-GERT Networks (Pritsker: 1979), from which all of the illustrations in this section were drawn.

Q-GERT Output

A. Description of format

The following material splices together the output of a computer simulation run using the Resource Model, and the relevant format descriptions from the Q-GERT manual.

```
**FINAL RESULTS FOR FIRST SIMULATION**

TOTAL ELAPSED TIME =     900.0000
```

** FINAL RESULTS FOR FIRST SIMULATION**
TOTAL ELAPSED TIME-total time in days for the first simulation run

NODE STATISTICS

NODE	LABEL	AVE.	STD.DEV.	NO OF OBS.	STAT TYPE
182	SPD-TRL		NO VALUES RECORDED		
73	FED-QUES		NO VALUES RECORDED		
72	DIV-JUR	84.8538	0.3242	11.	I
71	CRIMINAL	5.1920	5.1911	23.	I
70	CIVIL/US		NO VALUES RECORDED		

NODE STATISTICS—Headings for node statistics
NODE—sink or statistics node number
LABEL—eight character name associated with node
AVE.—the estimate of the mean time. The time could be a release time, a delay time or an interval of time (in this model it is an interval of time)
STD.DEV.—the standard deviation of the time
NO OF OBS.—number of observations obtained during the first simulation run for the statistical variable of interest
STAT TYPE—statistics type specified for the node by the user; for this output, "I". Interval statistics (I), relates to the transaction that releases the node. It records the interval of time from the marking of the transaction upon entering the network to the release time of the statistics node.

Q-GERT Output

	◆◆NUMBER IN Q-NODE◆◆					◆◆ WAITING TIME ◆◆ IN QUEUE
NODE	LABEL	AVE.	MIN.	MAX.	CURRENT NUMBER	AVERAGE
19	INJ-JDG	0.0	0.	0.	0	0.0
20	INJ-ATT	0.0	0.	0.	0	0.0
39	TDC-JDG	0.7691	0.	4.	2	0.2649
40	TDC-ATT	0.1262	0.	3.	0	0.0436
74	JDG1-CT	1.2227	0.	15.	0	0.5426
75	JDG2-CT	0.5622	0.	13.	2	0.3456
76	JDG3-CT	0.5689	0.	6.	0	0.3339
77	JDG4-CT	0.8048	0.	6.	0	0.4106
78	JDG5-CT	0.4003	0.	5.	0	0.2682
79	ATT1-CT	0.1676	0.	3.	0	0.4122
80	ATT2-CT	0.1328	0.	2.	1	0.4425
81	ATT3-CT	0.1186	0.	3.	0	0.4875
82	ATT4-CT	0.0862	0.	2.	0	0.2614
83	ATT5-CT	0.1187	0.	2.	0	0.3672
84	ATT6-CT	0.3760	0.	5.	1	0.7185
85	ATT7-CT	0.1270	0.	2.	0	0.4282
86	ATT8-CT	0.0573	0.	2.	0	0.1606
87	ATT9-CT	0.0535	0.	2.	0	0.1671
88	ATT10-CT	0.0636	0.	2.	0	0.2008
89	ATT11-CT	0.0482	0.	2.	0	0.1808
90	ATT12-CT	0.0376	0.	2.	0	0.1298
91	ATT13-CT	0.0413	0.	2.	0	0.1425
124	JDG1-NC	2.4103	0.	25.	3	1.1496
125	JDG2-NC	0.8687	0.	10.	1	0.4517
126	JDG3-NC	2.3687	0.	20.	0	1.0702
127	JDG4-NC	1.5577	0.	16.	0	0.7430
128	JDG5-NC	0.9505	0.	10.	0	0.4562
129	ATT1-NC	1.5342	0.	10.	1	1.7435
130	ATT2-NC	2.1154	0.	11.	0	2.6333
131	ATT3-NC	0.6070	0.	5.	0	0.9060
132	ATT4-NC	0.8383	0.	6.	0	1.0702
133	ATT5-NC	1.0438	0.	7.	2	1.3213
134	ATT6-NC	5.0384	0.	14.	3	4.4985
135	ATT7-NC	0.9718	0.	7.	0	1.2620
136	ATT8-NC	1.1588	0.	11.	2	0.7009
137	ATT9-NC	1.0424	0.	8.	1	0.5834
138	ATT10-NC	1.7876	0.	13.	0	1.0577
139	ATT11-NC	0.9557	0.	9.	0	0.5757
140	ATT12-NC	0.3297	0.	5.	0	0.2549
141	ATT13-NC	0.4505	0.	6.	0	0.2900
185	PPI-M-J1	0.0	0.	1.	0	0.0
199	PPI-M-J2	0.0	0.	1.	0	0.0
200	PPI-M-J3	0.0	0.	1.	0	0.0
201	PPI-M-J4	0.0	0.	1.	0	0.0
202	PPI-M-J5	0.0	0.	1.	0	0.0
191	PPI-J1	0.8305	0.	9.	0	0.6921
192	PPI-J2	0.4599	0.	10.	1	0.4824
193	PPI-J3	0.3542	0.	5.	0	0.3651
194	PPI-J4	0.6026	0.	6.	0	0.5333
195	PPI-J5	0.2719	0.	4.	0	0.2966

NUMBER IN Q-NODE—section of the report which provides information on Q-node statistics

NODE—the Q-node number for which statistics are to be printed

LABEL—a user supplied name associated with the Q-node

AVE.—the time weighted average number of transactions in the Q-node for the first simulation run

MIN.—the minimum number of transactions in the Q-node for the first simulation run

MAX.—the maximum number of transactions in the Q-node for the first simulation run

CURRENT NUMBER—the number of transactions in the Q-node at the end of the first simulation run

RESOURCE UTILIZATION

RESOURCE	LABEL	NOW IN USE	AVE. IN USE	MAX. IN USE	NOW AVAILABLE	AVE. AVAILABLE	MAX. AVAILABLE
1	JUDGE1	1	0.795	1	0	0.205	1
2	JUDGE2	1	0.665	1	0	0.335	1
3	JUDGE3	0	0.757	1	1	0.243	1
4	JUDGE4	0	0.752	1	1	0.248	1
5	JUDGE5	0	0.669	1	1	0.331	1
6	ATTY1	1	0.784	1	0	0.216	1
7	ATTY2	1	0.701	1	0	0.299	1
8	ATTY3	1	0.590	1	0	0.410	1
9	ATTY4	1	0.695	1	0	0.305	1
10	ATTY5	1	0.687	1	0	0.313	1
11	ATTY6	1	0.984	1	0	0.016	1
12	ATTY7	0	0.685	1	1	0.315	1
13	ATTY8	1	0.664	1	0	0.336	1
14	ATTY9	1	0.719	1	0	0.281	1
15	ATTY10	0	0.692	1	1	0.308	1
16	ATTY11	1	0.663	1	0	0.337	1
17	ATTY12	0	0.524	1	1	0.476	1
18	ATTY13	1	0.630	1	0	0.370	1

RESOURCE UTILIZATION—heading to indicate resource utilization section of the report

RESOURCE—the resource number

LABEL—the user supplied name associated with the resource type

NOW IN USE—the number of resource units in use at the end of the first simulation run

AVE. IN USE—the time weighted average number of resource units in use for the first simulation run

MAX. IN USE—the maximum number of resource units in use during the first simulation run

NOW AVAILABLE—the number of resource units available for use at the end of the first simulation run

AVE. AVAILABLE—the time weight average number of resource units available for use for the first simulation run

MAX. AVAILABLE—the maximum number of resource units available during the first simulation run

B. User outputs

In addition to the standard Q-GERT outputs for each simulation run, the current versions of the Resource and Criminal Models have output formats developed specifically for them. These outputs measure more precisely the types of information desired for JRE studies.

The first type of user statistic is resource utilization calculated as the time the resources actually spend working on cases. The standard Q-GERT utilization statistic is the amount of time resources spend working and the time they spend waiting in hold queues for other resources. The user statistic does not add in time spent waiting for other resources. Figure C-1 is computer output showing this user statistic for utilization.

The second type of user statistic is the number of cases realizing (reaching) various points in the Criminal Justice Sequential Model (see Figure C-2). The far left column names each node of interest, beginning with investigation, through incarceration (these points parallel the Criminal Justice Caseflow Model, Diagram II-I). Beginning with declination - 1, the following nodes represent sink nodes, or points at which cases exit the system. The sum of cases passing through those nodes represents the total criminal completions for the specified time period. The second column, labeled AVE, is the average amount of time a case takes to reach that node from the time the case enters the system. STD DEV is the standard deviation of the time, SD OF AVE is the standard deviation of the averages, and MINIMUM and MAXIMUM are the shortest and longest times of cases entering that node. OBS is the number of times cases passed through that node. This should not be confused with the number of cases passing through the node, because, in some places, it is possible for a case to pass through a node more than once (e.g., some cases may be investigated more than once).

The third user output is titled "Output Report" (Figure C-3). This report averages the standard Q-GERT statistics and user statistics and provides standard deviations and standard errors for each. Utilization is the average over resources and over runs for each resource type. Elapsed time provides the averages over runs for each case type, as does number of completions. Average waiting time is the average amount of time judges and attorneys spend waiting in the courtroom areas. Average queue length is the average number of cases in each type of queue over runs.

FIGURE C-1

User Statistics for Utilization

USER STATISTICS FOR TIME-PERSISTENT VARIABLES AT TIME 0.1500E+04 IN RUN 3

	MEAN	STD DEV	MINIMUM	MAXIMUM	TIME INTERVAL	CUR. VALUE
JUDGE1	0.6495E+00	0.4771E+00	0.0	0.1000E+01	0.1500E+04	0.0
JUDGE2	0.6368E+00	0.4809E+00	0.0	0.1000E+01	0.1500E+04	0.1000E+01
JUDGE3	0.6659E+00	0.4717E+00	0.0	0.1000E+01	0.1500E+04	0.0
JUDGE4	0.6386E+00	0.4804E+00	0.0	0.1000E+01	0.1500E+04	0.1000E+01
JUDGE5	0.6361E+00	0.4811E+00	0.0	0.1000E+01	0.1500E+04	0.0
ATT1	0.6302E+00	0.4827E+00	0.0	0.1000E+01	0.1500E+04	0.0
ATT2	0.6205E+00	0.4853E+00	0.0	0.1000E+01	0.1500E+04	0.1000E+01
ATT3	0.5770E+00	0.4940E+00	0.0	0.1000E+01	0.1500E+04	0.0
ATT4	0.6575E+00	0.4745E+00	0.0	0.1000E+01	0.1500E+04	0.1000E+01
ATT5	0.5725E+00	0.4947E+00	0.0	0.1000E+01	0.1500E+04	0.1000E+01
ATT6	0.6135E+00	0.4869E+00	0.0	0.1000E+01	0.1500E+04	0.0
ATT7	0.6231E+00	0.4846E+00	0.0	0.1000E+01	0.1500E+04	0.1000E+01
ATT8	0.2666E+00	0.4422E+00	0.0	0.1000E+01	0.1500E+04	0.0
ATT9	NO VALUES RECORDED					
ATT10	0.7481E+00	0.4341E+00	0.0	0.1000E+01	0.1500E+04	0.1000E+01
ATT11	0.7311E+00	0.4434E+00	0.0	0.1000E+01	0.1500E+04	0.1000E+01
ATT12	0.7113E+00	0.4531E+00	0.0	0.1000E+01	0.1500E+04	0.1000E+01
ATT13	0.7070E+00	0.4551E+00	0.0	0.1000E+01	0.1500E+04	0.1000E+01

FIGURE C-2

Observations in Criminal Sequential Model

USER STATISTICS FOR VARIABLES BASED ON OBSERVATION AT TIME 100.000 IN RUN 1

	AVE	STD DEV	SD OF AVE	MINIMUM	MAXIMUM	OBS
INVSTGTN	0.4086	1.0091	0.0730	0.0	7.5048	191
GRNDJURY			NO VALUES RECORDED			
INDTMNT			NO VALUES RECORDED			
ARRGNMNT	2.5451	2.8351	0.3413	0.1958	13.7086	69
INFRMTN	1.4054	1.2746	0.2289	0.1726	4.5379	31
I.C.PREP	2.7188	1.4653	0.3916	0.9250	6.0860	14
PLEABRGN	5.3095	3.0836	0.4318	0.7624	14.7841	51
RE-ARGN	8.2687	4.2530	1.4177	4.0807	17.8396	9
F.C.PREP	5.2124	2.9780	0.7019	1.8255	11.7204	18
BENCH	7.2605	3.5356	1.1785	4.3984	14.2214	9
JURY	9.8752	2.9277	0.9759	6.3634	15.9155	9
PRE-SENT	8.3670	6.0791	0.9862	0.2567	28.9855	38
SENTPREP	8.8805	6.1856	1.0034	0.5982	29.4330	38
SENTENC	10.1151	6.0802	0.9863	0.8928	30.1931	38
DECLIN-1	1.6367	1.5936	0.3656	0.3153	7.5951	19
STATE-CT	1.4947	1.3317	0.3055	0.2433	5.7590	19
NO BILL			NO VALUES RECORDED			
COMM-SER	1.9951	1.9240	0.5142	0.3593	5.9248	14
VOL-PROB	2.0788	2.3350	0.4263	0.3303	9.9249	30
DECLIN-2	5.3250	4.1382	1.3794	0.4238	13.8275	9
DECLIN-3	3.3365	1.0993	0.7773	2.5592	4.1139	2
AQUITTAL	15.3429	4.4039	1.9695	9.0711	20.5059	5
FINES	13.5145	5.8601	3.3833	9.8403	20.2726	3
APPEAL	13.9191	6.2852	3.6288	8.1267	20.6022	3
PROBATN	10.5401	5.1485	1.8203	5.6292	20.9711	8
MIXED-ST	11.8781	8.0509	3.2868	1.0424	20.9939	6
PAROLE	12.6905	4.7047	2.1040	8.7584	20.5298	5
SPLIT-ST	10.2196	6.4571	3.2285	1.5944	16.0006	4
INCARTN	18.4860	20.5025	14.4974	3.9886	32.9834	2

FIGURE C-3

OUTPUT REPORT

OUTPUT VARIABLE	MEAN	STD DEV	STD ERR
UTILIZATION			
JUDGE	0.34	0.0	0.0
ATTORNEY (CRIMINAL)	1.00	0.0	0.0
ATTORNEY (CIVIL)	0.46	0.0	0.0
ELAPSED TIME			
FEDERAL QUESTION	NO VALUES RECORDED		
DIV. JUR.	NO VALUES RECORDED		
CRIMINAL	16.68	0.0	0.0
CIVIL/U.S.	NO VALUES RECORDED		
NO. OF COMPLETIONS			
CIVIL/U.S.	0.0	0.0	0.0
CRIMINAL	9.50	13.44	9.50
DIV. JUR.	0.0	0.0	0.0
FEDERAL QUESTION	0.0	0.0	0.0
AVERAGE WAITING TIME			
TOC-JDG	0.05	0.02	0.02
TOC-ATT	0.06	0.07	0.05
AVERAGE QUEUE LENGTH			
JDG-CT	0.34	0.0	0.0
ATT-CT (CRIMINAL)	1.84	0.0	0.0
ATT-CT (CIVIL)	0.07	0.0	0.0
JDG-NC	0.40	0.0	0.0
ATT-NC (CRIMINAL)	29.27	0.0	0.0
ATT-NC (CIVIL)	0.35	0.0	0.0
PRI-J	0.13	0.0	0.0

Node-by-Node Description of the Resource Model

INITIALIZATION

NODE

41 CRIMINAL CASE GENERATION NODE
Activity,41,41: Generates cases at a rate sampled from an exponential distribution of parameter set 1 (EX,1)

42 CRIMINAL FRONT LOADING NODE
1 in 1: Assigns a number to each transaction as ATTRIB 1 beginning with 1 and incrementing by 1
Activity,42,42: Generates cases in 0 time up to the number desired: A1.EQ.__

43 CIVIL/U.S. CASE GENERATION NODE
Activity,43,43: Generates cases at a rate sampled from an exponential distribution of parameter set 2 (EX,2)

44 CIVIL/U.S. FRONT LOADING NODE
1 in 1: Assigns a number to each transaction as ATTRIB 1 beginning with 1 and incrementing by 1
Activity,42,42: Generates cases in 0 time up to the number desired: A1.EQ.__

45 FEDERAL QUESTION CASE GENERATION NODE
Activity,45,45: Generates cases at a rate sampled from an exponential distribution of parameter set 3

46 FEDERAL QUESTION FRONT LOADING NODE
1 in 1: Assigns a number to each transaction as ATTRIB 1 beginning with 1 and incrementing by 1
Activity,46,46: Generates cases in 0 time up to the number desired: A1.EQ.__

47 DIVERSITY JURISDICTION CASE GENERATION NODE
Activity,47,47: Generates cases at a rate sampled from an exponential distribution of parameter set 4

48 DIVERSITY JURISDICTION FRONT LOADING NODE
1 in 1: Assigns a number to each transaction as ATTRIB 1 beginning with 1 and incrementing by 1
Activity,48,48: Generates cases in 0 time up to the number desired: A1.EQ.__

NODE

150 2 UF 2: User Function 2 assigns a number to ATTRIB 2 (attorney number) by random sampling from all civil/U.S. attorneys. Probabilistic branching on judge vs. no judge for civil/U.S. cases.

152 2 CO 1: A constant value of 1 is assigned to ATTRIB 2 (attorney number) as an indentifier for Federal Question cases. Probabilistic branching on judge vs. no judge for Federal Question cases.

154 2 CO 2: A constant value of 2 is assigned to ATTRIB 2 (attorney number) as an identifier for Diversity Jurisdiction cases. Probabilistic branching on judge vs. no judge for Diversity Jurisdiction.

49 11 UF 57: Test for speedy trial; track time from arraignment Branch to 182 on All = 0 speedy trial completions.

52 3 UF 3: User Function 3 assigns a number to ATTRIB 3 (judge number) by random sampling from all judges.
4 UF 4: User Function 4 assigns number to:
ATTRIB 4: Frequency of external delay, sampled from a distribution for civil/U.S. cases (Parameter Set 21)
ATTRIB 5: Frequency of injunction activities sampled from a distribution for civil/U.S. cases (Parameter Set 22)
ATTRIB 7: Frequency of other courtroom activities, sampled from a distribution for civil/U.S. cases (Parameter Set 23)
ATTRIB 8: Frequency of judge noncourtroom activities, sampled from a distribution for civil/U.S. cases (Parameter Set 24)
ATTRIB 9: Frequency of attorney noncourtroom activities sampled from a distribution for civil/U.S. cases (Parameter Set 25).

NODE

53 3 UF 3: User Function 3 assigns a number to ATTRIB 3 (judge number) by random sampling from all judges.
4 UF 4: User Function 4 assigns numbers to:
ATTRIB 4: Frequency of external delay, sampled from a distribution for Federal Question cases (Parameter Set 7)
ATTRIB 5: Frequency of injunction activities, sampled from a distribution for Federal Question cases (Parameter Set 8)
ATTRIB 7: Frequency of other courtroom activities, sampled from a distribution for Federal Question cases (Parameter Set 9)
ATTRIB 8: Frequency of judge noncourtroom activities, sampled from a distribution for Federal Question cases (Parameter Set 10)

54 3 UF 3: User Function 3 assigns a number to ATTRIB 3 (judge number) by random sampling from all judges.
4 UF 4: User Function 4 assigns numbers to:
ATTRIB 4: Frequency of external delay, sampled from a distribution for diversity jurisdiction cases (Parameter Set 67)
ATTRIB 5: Frequency of injunction activities, sampled from a distribution for diversity jurisdiction cases (Parameter Set 12)
ATTRIB 7: Frequency of other courtroom activities, sampled from a distribution for diversity jurisdiction cases (Parameter Set 13)
ATTRIB 8: Frequency of judge noncourtroom activities, sampled from a distribution for diversity jurisdiction cases (Parameter Set 14)

55 11 UF 29: User Function 29 assigns a number to ATTRIB 11 (routing attribute):
1 represents trial
0 represents no trial
Based on probability of trial vs. no trial for each case type.

56 11 UF 30: User Function 30 assigns a number to ATTRIB 11 (routing attribute):
1 represents bench trial
2 represents jury trial
Based on probability of bench vs. jury trial for each case type.

57 6 CO 0: Assigns a constant value of 0 to ATTRIB 6 (trial attribute), for cases with no trial.

58 6 CO 1.1: Assigns a constant value of 1.1 to ATTRIB 6 (trial attribute), for cases with bench trial.

59 6 CO 1.2: Assigns a constant value of 1.2 to ATTRIB 6 (trial attribute), for cases with jury trial.

NODE

151 4 UF 33: User Function 33 assigns a number to:
ATTRIB 4: Frequency of external delay sampled from a distribution for civil/U.S. cases with no judge (Parameter Set 62)
ATTRIB 3,5,6,7: All set to 0 (judge number, frequency of injunction, trial, frequency of other court activities).

153 4 UF 32: User Function 32 assigns a number to:
ATTRIB 4: Frequency of external delay, sampled from a distribution for Federal Question cases with no judge (Parameter Set 61)
ATTRIB 3,5,6,7,8,9: All set to 0 (judge number, frequency of injunction, trial, frequency of other court activities, frequency of judge noncourtroom activities, frequency of attorney noncourtroom activity).

155 4 UF 31: User Function 31 assigns a number to:
ATTRIB 4: Frequency of external delay sampled from a distribution for diversity jurisdiction cases with no judge (Parameter Set 60)
ATTRIB 3,5,6,7,8,9: All set to 0 (judge number, frequency of injunction, trial, frequency of other court activities, frequency of judge noncourtroom activities, frequency of attorney noncourtroom activities).

60 1 UF 35: User Function 35 assigns a number to ATTRIB 1 (case identifier) that is unique to each case.

STATE SELECTION

NODE

50 11 UF 5: User Function 5 assigns a number to ATTRIB 11 (routing attribute)
1 = case not completed (ATTRIB 4,5,6,7,8, or 9 = 0)
2 = case completed (ATTRIB 4,5,6,7,8 and 9 = 0)
Return to network if this is a criminal case.

62 Completed case branches on value of ATTRIB 2
(attorney number or case type)
ATTRIB 2 $\geq$ 6 $\leq$ 13: Civil/U.S.
ATTRIB 2 = 2: Federal Question
ATTRIB 2 = 1: Diversity Jurisdiction

70 Civil/U.S. case statistics node
Interval statistics collected.

71 Criminal case statistics node
Interval statistics collected.

72 Diversity Jurisdiction statistics node
Interval statistics collected.

73 Federal Question statistics node
Interval statistics collected.

161 11 UF 34: Tests on value of ATTRIB 4 for all except criminal cases.
Noncompleted case branches on value of ATTRIB 4
(frequency of external delay)
ATTRIB 4 = 0: no remaining external delay
ATTRIB 4 $\geq$ 0: external delay remains

162 11 UF 49: User Function 49 tests on probability of external delay for all case types
Cases with remaining external delay branch probabilistically to:
select external delay stage or
route to node 61 to select from all possible stages

61 Stage selector node
11 UF 6: User Function 6 randomly selects a value for ATTRIB 11 (routing attribute) from the following values:

64 = injunction activity
65 = other court activity
66 = bench trial activity
67 = jury trial activity
68 = judge noncourtroom activity
69 = attorney noncourtroom activity
63 = external delay activity
Branch to Node 71 for criminal completions on All = 71
If the case is criminal, next stage is selected based on criminal flow
Branch to node 71 for criminal completions on All = 71.

NODE

63 External delay selection node
10 UF 50: User Function 50 sets queue ranking for external delays
4 UF 43: Decrements ATTRIB 4 (frequency of external delays) by one

64 Injunction selection node
10 UF 51: User Function 51 sets queue ranking for injunction.

65 Other court selection node
10 UF 52: User Function 52 sets queue ranking for other courtroom

66 Bench trial selection node
10 UF 53: User Function 53 sets queue rankings for trial
6 UF 7: User Function 7 sets the number of bench trial episodes by sampling from frequency distributions:
Card 15: frequency of bench trial episodes for criminal cases
Card 31: frequency of bench trial episodes for civil/U.S. cases
Card 43: frequency of bench trial episodes for federal question cases.
Card 52: frequency of bench trial episodes for diversity jurisdiction cases
User Function 7 also adds a constant value of 1000 (bench trial marker to the frequency that was sampled)

67 Jury trial selection node
10 UF 53: User Function 53 sets queue ranking for trial
6 UF 8: User Function 8 sets the number of jury trial episodes by sampling from frequency distributions:
Card 16: frequency of jury trial episodes for criminal cases
Card 32: frequency of jury trial episodes for civil/U.S. cases
Card 44: frequency of jury trial episodes for federal question cases
Card 53: frequency of jury trial episodes for diversity jurisdiction cases
User Function 8 also adds a constant value of 2000 (jury trial marker) to the frequency that was sampled

COURTROOM AREA

NODE

51 Branches to private case node (196) judge queues (74-79) and attorney queues (79-91,224) based on value of Attribute 3 (judge number) and Attribute 2 (attorney number)
ATTRIB 3 = 1 through 6 branch to appropriate judge queue (74-79)
ATTRIB 2 = 1,2 branch to private case queue (196)
ATTRIB 2 = 7 through 19 branch to appropriate attorney queue (79-91,224)

196 Private case node
Branches on value of Atrribute 10 (priority attribute)
ATTRIB 10 = 7,3,5 (trial in progress,other court, trial)
Branch to node 198
ATTRIB 10 ≠ 7,3,5 (injunction) branch to node 197

197 Private injunction clones node
Removes private injunction clones from the system

198 Branches to queue nodes (191-195,221) based on value of Attribute 3
ATTRIB 3 = 1 branch to queue node 191
ATTRIB 3 = 2 branch to queue node 192
ATTRIB 3 = 3 branch to queue node 193
ATTRIB 3 = 4 branch to queue node 194
ATTRIB 3 = 5 branch to queue node 195
ATTRIB 3 = 6 branch to queue node 221

191 Queue node for private case clones with Attribute 3 (judge number) = 1

192 Queue node for private case clones with Attribute 3 (judge number) = 2

193 Queue node for private case clones with Attribute 3 (judge number) = 3

194 Queue node for private case clones with Attribute 3 (judge number) = 4

195 Queue node for private case clones with Attribute 3 (judge number) = 5

221 Queue node for private case clones with Attribute 3 (judge number) = 6

74 Queue node for all cases at a courtroom stage (injunction, other court, bench trial, jury trial) with Attribute 3 (judge number) = 1
B/10: cases ordered within queue based on biggest value of Attribute 10 (priority attribute) (see Table __, Case Attributes)

NODE

75 Queue node for all cases at a courtroom stage (injunction, other court, bench trial, jury trial) with Attribute 3 (judge number) = 2
B/10: cases ordered within queue based on biggest value of Attribute 10 (priority attribute).

77 Queue node for all cases at a courtroom stage (injunction, other court, bench trial, jury trial) with Attribute 3 (judge number) = 4
B/10: cases ordered within queue based on biggest value of Attribute 10 (priority attribute).

78 Queue node for all cases at a courtroom stage (injunction, other court, bench trial, jury trial) with Attribute 3 (judge number) = 5
B/10: cases ordered within queue based on biggest value of Attribute 10 (priority attribute).

79 Queue node for all cases at a courtroom stage (injunction, other court, bench trial, jury trial) with Attribute 3 (judge number) = 6
B/10: cases ordered within queue based on biggest value of Attribute 10 (priority attribute).

80 Queue node for all cases at a courtroom stage (injunction, other court, bench trial, jury trial) with Attribute 2 (attorney number) = 7
B/10: cases ordered within queue based on biggest value of Attribute 10 (priority attribute).

81 Queue node for all cases at a courtroom stage (injunction, other court, bench trial, jury trial) with Attribute 2 (attorney number) = 8
B/10: cases ordered within queue based on biggest value of Attribute 10 (priority attribute).

82 Queue node for all cases at a courtroom stage (injunction, other court, bench trial, jury trial) with Attribute 2 (attorney number) = 9
B/10: cases ordered within queue based on biggest value of Attribute 10 (priority attribute).

83 Queue node for all cases at a courtroom stage (injunction, other court, bench trial, jury trial) with Attribute 2 (attorney number) = 10
B/10: cases ordered within queue based on biggest value of Attribute 10 (priority attribute).

84 Queue node for all cases at a courtroom stage (injunction, other court, bench trial, jury trial) with Attribute 2 (attorney number) = 11
B/10: cases ordered within queue based on biggest value of Attribute 10 (priority attribute).

85 Queue node for all cases at a courtroom stage (injunction, other court, bench trial, jury trial) with Attribute 2 (attorney number) = 12
B/10: cases ordered within queue based on biggest value of Attribute 10 (priority attribute).

NODE

86 Queue node for all cases at a courtroom stage (injunction, other court, bench trial, jury trial) with Attribute 2 (attorney number) = 13
B/10: cases ordered within queue based on biggest value of Attribute 10 (priority attribute).

87 Queue node for all cases at a courtroom stage (injunction, other court, bench trial, jury trial) with Attribute 2 (attorney number) = 14
B/10: cases ordered within queue based on biggest value of Attribute 10 (priority attribute).

88 Queue node for all cases at a courtroom stage (injunction, other court, bench trial, jury trial) with Attribute 2 (attorney number) = 15
B/10: cases ordered within queue based on biggest value of Attribute 10 (priority attribute).

89 Queue node for all cases at a courtroom stage (injunction, other court, bench trial, jury trial) with Attribute 2 (attorney number) = 16
B/10: cases ordered within queue based on biggest value of Attribute 10 (priority attribute).

90 Queue node for all cases at a courtroom stage (injunction, other court, bench trial, jury trial) with Attribute 2 (attorney number) = 17
B/10: cases ordered within queue based on biggest value of Attribute 10 (priority attribute).

91 Queue node for all cases at a courtroom stage (injunction, other court, bench trial, jury trial) with Attribute 2 (attorney number) = 18
B/10: cases ordered within queue based on biggest value of Attribute 10 (priority attribute).

224 Queue node for all cases at a courtroom stage (injunction, other court, bench trial, jury trial) with Attribute 2 (attorney number) = 19
B/10: cases ordered within queue based on biggest value of Attribute 10 (priority attribute).

1 Allocate node for resource 1 (judge 1), indicates 1 of that resource to be allocated

2 Allocate node for resource 2 (judge 2), indicates 1 of that resource to be allocated

3 Allocate node for resource 3 (judge 3), indicates 1 of that resource to be allocated

4 Allocate node for resource 4 (judge 4), indicates 1 of that resource to be allocated

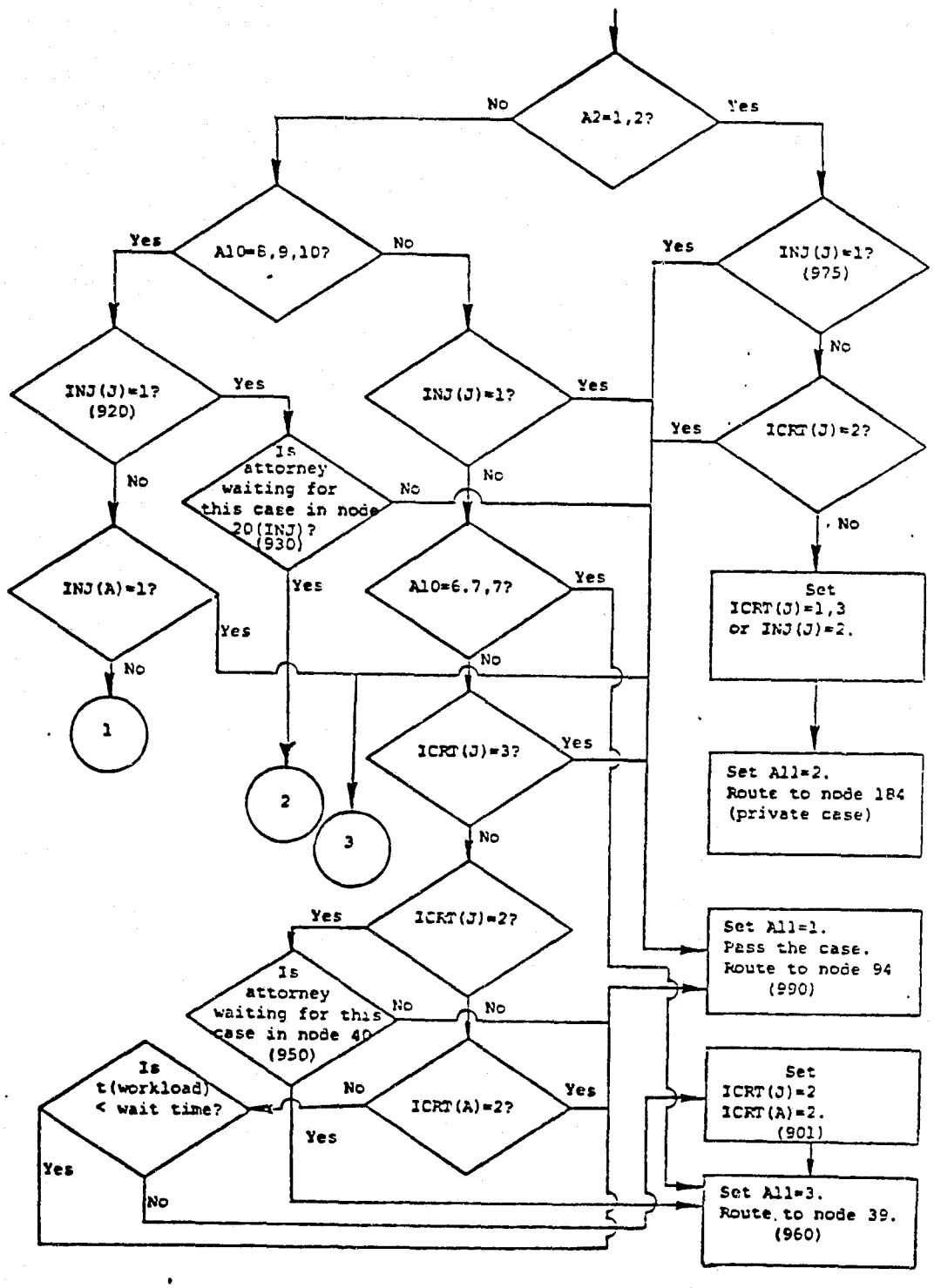
5 Allocate node for resource 5 (judge 5), indicates 1 of that resource to be allocated

6 Allocate node for resource 6 (judge 6), indicates 1 of that resource to be allocated

7 Allocate node for resource 7 (attorney 1), indicates 1 of that resource to be allocated

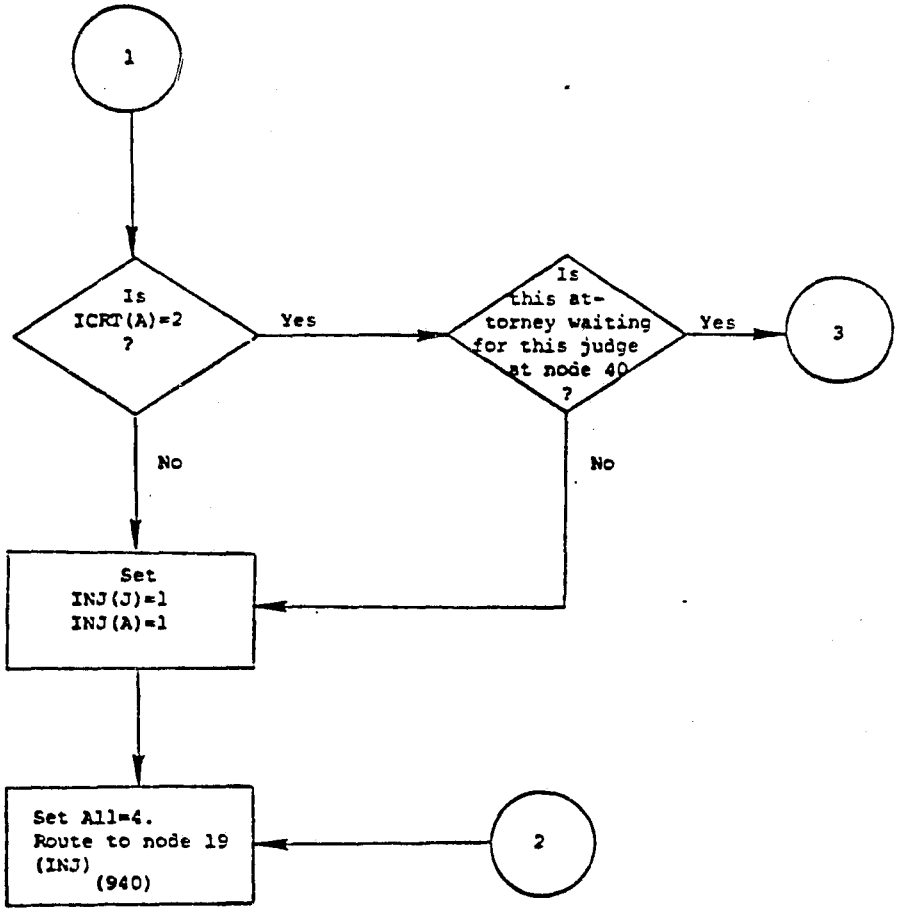
NODE	
8	Allocate node for resource 8 (attorney 2), indicates 1 of that resource to be allocated
9	Allocate node for resource 9 (attorney 3), indicates 1 of that resource to be allocated
10	Allocate node for resource 10 (attorney 4), indicates 1 of that resource to be allocated
11	Allocate node for resource 11 (attorney 5), indicates 1 of that resource to be allocated
12	Allocate node for resource 12 (attorney 6), indicates 1 of that resource to be allocated
13	Allocate node for resource 13 (attorney 7), indicates 1 of that resource to be allocated
14	Allocate node for resource 14 (attorney 8), indicates 1 of that resource to be allocated
15	Allocate node for resource 15 (attorney 9), indicates 1 of that resource to be allocated
16	Allocate node for resource 16 (attorney 10), indicates 1 of that resource to be allocated
17	Allocate node for resource 17 (attorney 11), indicates 1 of that resource to be allocated
18	Allocate node for resource 18 (attorney 12), indicates 1 of that resource to be allocated
225	Allocate node for resource 19 (attorney 13), indicates 1 of that resource to be allocated
92	Judge route node 11 UF 9: User Function 9 follows judge route node logic (see chart) to place value in Attribute 11 (routing attribute): ATTRIB 11 = 1 route judge resource and case to node 94 (pass the case) ATTRIB 11 = 2 route judge resource and case to node 184 (private case) ATTRIB 11 = 3 route resource and case to node 39 (trial or other court judge hold queue) ATTRIB 11 = 4 route judge resource and case to node 19 (injunction judge hold queue)
96	Sends attorney resource and case to node 93

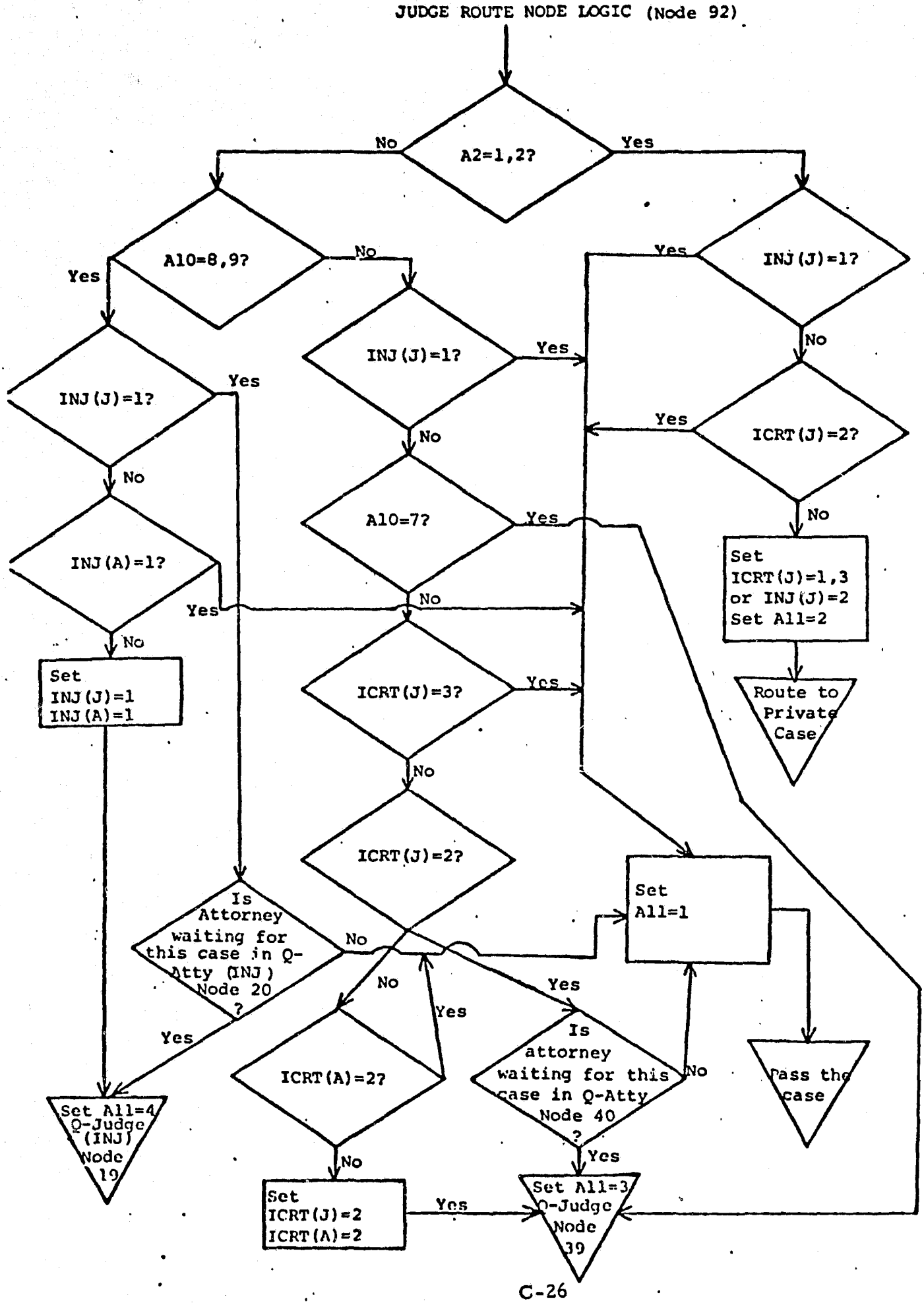
Figure C-4



Judge Route Node Logic (UF 9 at Node 92).

Figure C-4 (cont'd.)




JUDGE ROUTE NODE LOGIC (Node 92)
A2=1,2?
No
Yes
A10=8,9?
Yes
No
INJ(J)=1?
Yes
No
INJ(A)=1?
Yes
No
Set
INJ(J)=1
INJ(A)=1
INJ(J)=1?
Yes
No
A10=7?
Yes
No
ICRT(J)=3?
Yes
No
ICRT(J)=2?
INJ(J)=1?
Yes
No
ICRT(J)=2?
Yes
No
Set
ICRT(J)=1,3
or INJ(J)=2
Set A11=2
Route to
Private
Case
Is
Attorney
waiting for
this case in Q-
Atty (INJ)
Node 20
?
No
Yes
Set A11=4
Q-Judge
(INJ)
Node
19
ICRT(A)=2?
No
Yes
Set
ICRT(J)=2
ICRT(A)=2
No
Set
A11=1
Yes
Is
attorney
waiting for this
case in Q-Atty
Node 40
?
No
Yes
Set A11=3
Q-Judge
Node
39
Pass the
case

NODE

93 Attorney route node
11 UF 10: User Function 10 follows attorney route node logic (see chart) to place value in Attribute 11 (routing attribute):
ATTRIB 11 = 1 Route attorney resource and case to node 95 (pass the case)
ATTRIB 11 = 3 Route attorney resource and case to node 40 (trial or other court attorney hold queue)
ATTRIB 11 = 4 Route attorney resource and case to node 20 (injunction attorney hold queue)

184 Private case node: Branches on value of Attribute 10 (priority attribute)
ATTRIB 10 - 8,9 Send judge resource and case to node 101 (injunction or injunction pending)
If ATTRIB 10 ≠ 8,9 Branch on value of Attribute 3 (judge number)
ATTRIB 3 = 1 Send judge resource and case to queue node 185 (private queue for judge 1)
ATTRIB 3 = 2 Send judge resource and case to queue node 199 (private queue for judge 2)
ATTRIB 3 = 3 Send judge resource and case to queue node 200 (private queue for judge 3)
ATTRIB 3 = 4 Send judge resource and case to queue node 201 (private queue for judge 4)
ATTRIB 3 = 5 Send judge resource and case to queue node 202 (private queue for judge 5)
ATTRIB 3 = 6 Send judge resource and case to queue node 222 (private queue for judge 6)

185 Queue node for judge resource and case with Attribute 3 (judge number) = 1

199 Queue node for judge resource and case with Attribute 3 (judge number) = 2

200 Queue node for judge resource and case with Attribute 3 (judge number) = 3

201 Queue node for judge resource and case with Attribute 3 (judge number) = 4

202 Queue node for judge resource and case with Attribute 3 (judge number) = 5

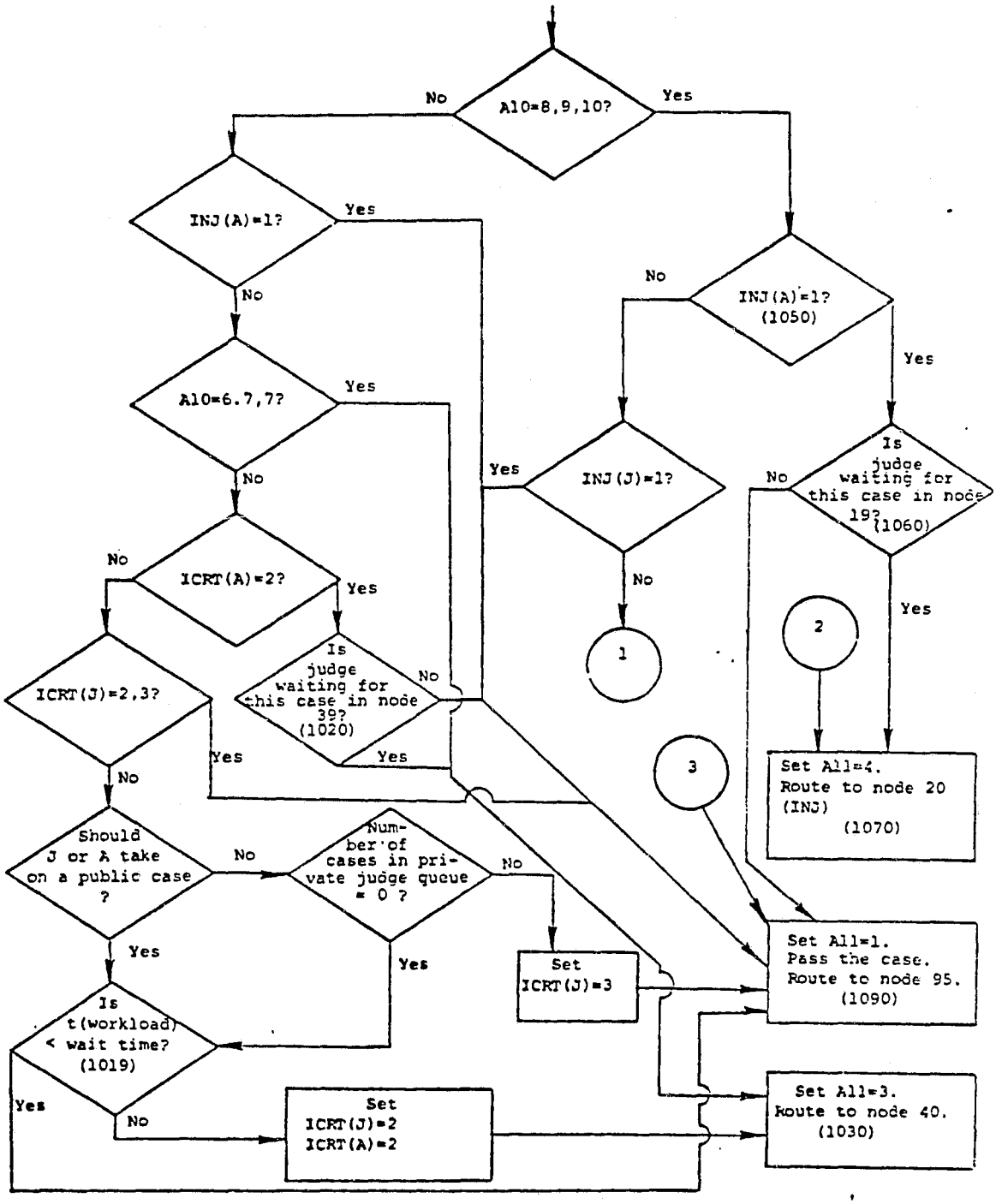
222 Queue node for judge resource and case with Attribute 3 (judge number) = 6

186 Match node for private case clone from queue node 191 and judge resource and case from queue node 185. Indicates that case and clone are to be matched on value of Attribute 1 (case identifier)

187 Match node for private case clone from queue node 199. Indicates that case and clone are to be matched on value of Attribute 1 (case identifier)

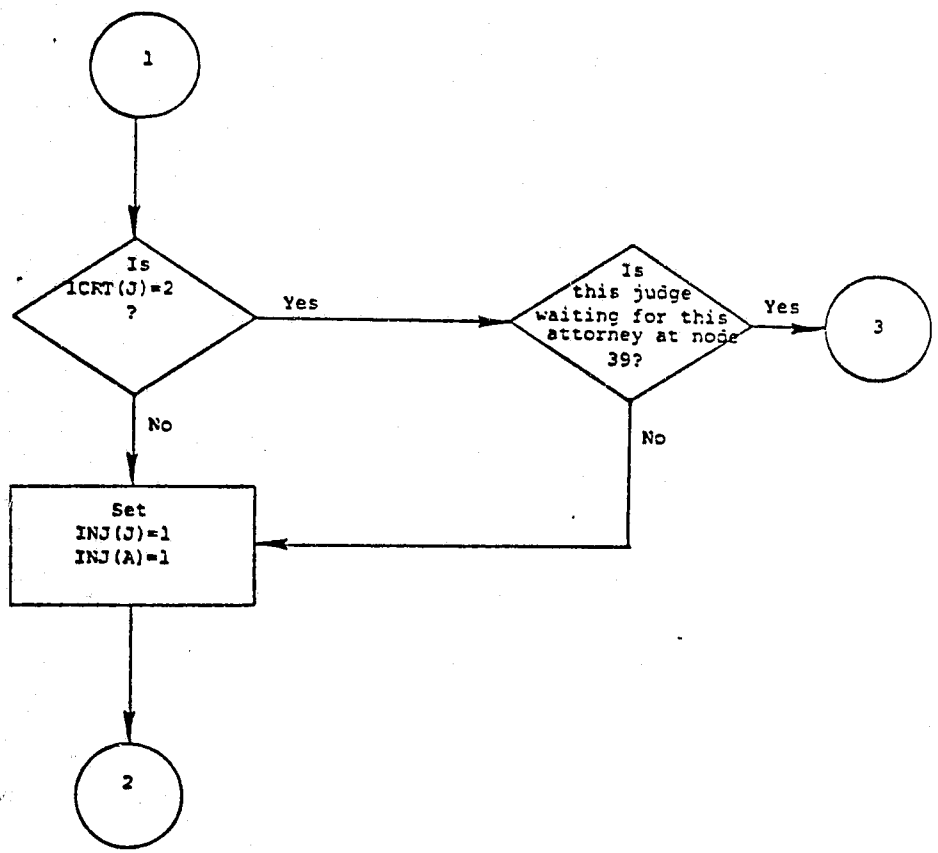
NODE	
188	Match node for private case clone from queue node 193 and judge resource and case from queue node 200. Indicates that case and clone are to be matched on value of attribute 1 (case identifier)
189	Match node for private case clone from queue node 194 and judge resource and case from queue node 201. Indicates that case and clone are to be matched on value of Attribute 1 (case identifier)
190	Match node for private case clone from queue node 195 and judge resource and case from queue node 202. Indicates that case and clone are to be matched on value of Attribute 1 (case identifier)
223	Match node for private case clone from queue node 222 and judge resource and case from queue node 221. Indicates that case and clone are to be matched on value of Attribute 1 (case identifier)
183	Combines cases and clones that were matched at nodes 186-190, 223. Indicates that 2 transactions (a case and its clone) are required for the first release and each subsequent release of this node, and that the attributes of the case that is released will be those of the case or clone that had the biggest value of Attribute 10 (priority attribute)

Figure C-5

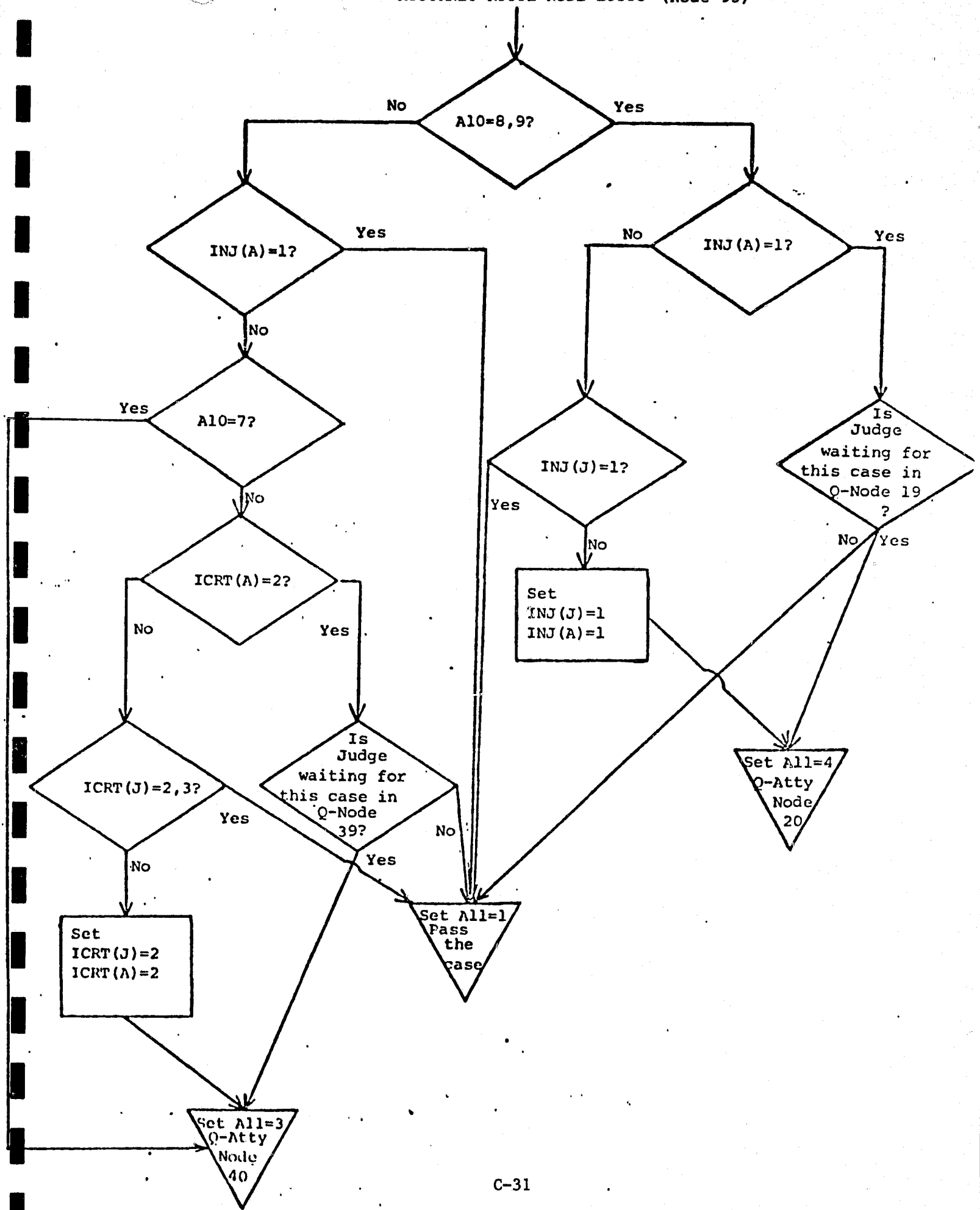


Attorney Route Node Logic (UF 10 at Node 93).

Figure C-5 (cont'd.)



ATTORNEY ROUTE NODE LOGIC (Node 93)



PRIVATE CASE

NODE

101 Branches on value of Attribute 10 (priority attribute):
ATTRIB 10 = 3 Other courtroom, send to node 102
ATTRIB 10 = 4 Other courtroom pending, send to node 102
ATTRIB 10 = 8 Injunction, send to node 103
ATTRIB 10 = 9 Injunction pending, send to node 103
ATTRIB 10 = 5 Trial, send to node 104
ATTRIB 10 = 6 Trial pending, send to node 104
ATTRIB 10 = 7 Trial in progress, send to node 104

102 Activity 102, 105 UF, 23 User Function 23 samples from time distributions:
Card 45: other courtroom time for Federal Question cases
Card 54: other courtroom time for Diversity Jurisdiction cases
11 UF 40: User Function 40 collects utilization statistics on judge's busy time

103 Activity 103,106 UF,24 User Function 24 samples from time distributions:
Card 42: injunction time for Federal Question cases
Card 43: injunction time for Diversity Jurisdiction cases
11 UF 40: User Function 40 collects utilization statistics on judge's busy time

104 Activity 104,107 UF,25 User Function 25 samples from time distributions:
Card 43: bench trial time for Federal Question cases
Card 52: bench trial time for Diversity Jurisdiction cases
Card 44: jury trial time for Federal Question cases
Card 53: jury trial time for Diversity Jurisdiction cases
11 UF 40: User Function 40 collects utilization statistics on judge's busy time

105 7- CO 1: Attribute 7 (frequency of other courtroom activity) decremented by a constant value of 1
11 UF 41: User Function 41 collects utilization statistics on judge's idle time
11 CO 6: ATTRIB 11 (routing attribute) set to constant value of 6

106 5- CO 1: Attribute 5 (frequency of injunction) decremented by a constant value of 1
11 UF 41: User Function 41 collects utilization statistics on judge's idle time

108 11 UF 14: Set INJ(J) = 0 (injunction signal of judge = no injunction)
If INJ(J) = 2 (injunction signal of judge was = private injunction)

NODE

107 6- CO 1: Attribute 6 (trial attribute) decremented by a constant value of 1
Activity 107,110: ATTRIB 6 (trial attribute) = 1000 bench trial complete
Activity 107,110: ATTRIB 6 (trial attribute) = 2000 jury trial complete
11 UF 41: User Function 41 collects utilization statistics on judge's idle time

110 11 UF 15: set ICRT(J) = 0 (courtroom signal of judge = no court activity
11 CO 2: Attribute 11 (routing attribute) = 2
6 CO 0: Attribute 6 (trial attribute) set to a constant value of 0 (trial completed)
Case sent to both node 50 and node 156

109 10 CO 7: Attribute 10 (priority attribute) set to a constant value of 7 (trial in progress)
11 CO 1: Attribute 11 (routing attribute) set to a constant value of 1
Case sent to both node 51 and node 156

PASSED CASE (JUDGE)

NODE

94 10 UF 11 User Function 11 assigns a higher value to Attribute 10 (priority attribute)
If ATTRIB 10 was = 8,9 set ATTRIB 10 = 9
If ATTRIB 10 was = 7 set ATTRIB 10 = 7
If ATTRIB 10 was = 6,5 set ATTRIB 10 = 6,6
If ATTRIB 10 was = 6,3 set ATTRIB 10 = 6,4
If ATTRIB 10 was = 3,4 set ATTRIB 10 = 4

146 Free node for Judge resources
Indicates that 1 resource of Attribute 3 (judge number) is to be freed, first to return to appropriate allocate node 1-6 (courtroom), then to appropriate allocate node 21-26 (noncourtroom)
Branches on value of Attribute 3 (judge number):
ATTRIB 3 = 1 send case to queue node 74
(CO,d) adds delay of constant value, d, to case time
ATTRIB 3 = 2 send case to queue node 75
(CO,d) adds delay of constant value, d, to case time
ATTRIB 3 = 3 send case to queue node 76
(CO,d) adds delay of constant value, d, to case time
ATTRIB 3 = 4 send case to queue node 77
(CO,d) adds delay of constant value, d, to case time
ATTRIB 3 = 5 send case to queue node 78
(CO,d) adds delay of constant value, d, to case time
ATTRIB 3 = 6 send case to queue node 79
(CO,d) adds delay of constant value, d, to case time

PASSED CASE (ATTORNEY)

NODE

95 10 UF 12 User Function 12 assigns a higher value to Attribute 10 (priority attribute)
If ATTRIB 10 was = 8,9 set ATTRIB 10 = 9
If ATTRIB 10 was = 7 set ATTRIB 10 = 7
If ATTRIB 10 was = 6.5 set ATTRIB 10 = 6.6
If ATTRIB 10 was = 6.3 set ATTRIB 10 = 6.4
If ATTRIB 10 was = 5,6 set ATTRIB 10 = 6
If ATTRIB 10 was = 3,4 set ATTRIB 10 = 4

147 Free node for attorney resources
Indicates that 1 resource of Attribute 2 (attorney number) is to be freed, first to return to appropriate allocate node 7-18,225 then to appropriate allocate node 27-38 (noncourtroom)
Branches on value of Attribute 2 (attorney number):
ATTRIB 2 = 7 send case to queue node 80
(CO,d) adds delay of constant value, d, to case time
ATTRIB 2 = 8 send case to queue node 81
(CO,d) adds delay of constant value, d, to case time
ATTRIB 2 = 9 send case to queue node 82
(CO,d) adds delay of constant value, d, to case time
ATTRIB 2 = 10 send case to queue node 83
(CO,d) adds delay of constant value, d, to case time
ATTRIB 2 = 11 send case to queue node 84
(CO,d) adds delay of constant value, d, to case time
ATTRIB 2 = 12 send case to queue node 85
(CO,d) adds delay of constant value, d, to case time
ATTRIB 2 = 13 send case to queue node 86
(CO,d) adds delay of constant value, d, to case time
ATTRIB 2 = 14 send case to queue node 87
(CO,d) adds delay of constant value, d, to case time
ATTRIB 2 = 15 send case to queue node 88
(CO,d) adds delay of constant value, d, to case time
ATTRIB 2 = 16 send case to queue node 89
(CO,d) adds delay of constant value, d, to case time
ATTRIB 2 = 17 send case to queue node 90
(CO,d) adds delay of constant value, d, to case time
ATTRIB 2 = 18 send case to queue node 91
(CO,d) adds delay of constant value, d, to case time
ATTRIB 2 = 19 send case to queue node 224
(CO,d) adds delay of constant value, d, to case time

INJUNCTION

NODE

19 Judge injunction hold queue node

20 Attorney injunction hold queue node

97 Match node for attorney and judge resources with cases
Indicates resource and case to be matched on value of Attribute 1 (case identifier)

98 Combines case judges and attorneys that were matched at node 97
Indicates that 2 transactions (judge and attorney) are required for the first release of this node, and that the attributes of the case that is released will be there of the transaction that had the biggest value of Attribute 10 (priority attribute)
11 UF 36: User Function 36 collects utilization statistics on judge and attorney idle time
Activity 98,99 UF,22 User Function 22 samples from time distributions:
Card 14: injunction time for criminal cases
Card 30: injunction time for civil/U.S. cases

99 5 UF 44: User Function 44 decrements ATTRIB 5 (frequency of injunction) by 1, unless a criminal case
11 UF 13: User Function 13 sets:
INJ(J) = 0 (injunction signal of judge = no injunction)
INJ(A) = 0 (injunction signal of attorney = no injunction)
11 UF 37: User Function 37 collects utilization statistics on judge and attorney idle time

100 Free node for judge resources
Indicates that 1 resource of Attribute 3 (judge number) is to be freed, to return to appropriate allocate node 1-6 (courtroom).

PUBLIC TRIAL AND OTHER COURT

NODE

39 Judge trial and other court hold queue node

40 Attorney trial and other court hold queue node

113 Match node for attorney and judge resources with cases.
Indicates resource and case to be matched on value of Attribute 1 (case identifier)

114 11 UF 16: User Function 16 sets:
ICRT(J) = 0 (courtroom signal of judge = no courtroom appearance)
ICRT(A) = 0 (courtroom signal of attorney = no courtroom appearance)
If ATTRIB 10 = 3,4,6.3,6.4 (priority attribute = other court or other court pending)
Activity 114,115 UF,26 User Function 26 samples from time distributions:
Card 15: bench trial time for criminal cases
Card 31: bench trial time for civil/U.S. cases
Card 16: jury trial time for criminal cases
Card 32: jury trial time for civil/U.S. cases
Card 17-20: other courtroom time for criminal cases
Card 33: other courtroom time for civil/U.S. cases
11 UF 36: User Function 36 collects utilization statistics on judge and attorney busy time

115 11 UF 17: User Function 17 decrements Attribute 6 (trial attribute) by a value of 1 if Attribute 10 (priority attribute) = 5,6,7 (trial, trial pending, or trial in progress)
Branches on value of Attribute 10 (priority attribute)
ATTRIB 10 = 3,4 (other courtroom or other courtroom pending), send to node 116
ATTRIB 10 ≠ 3,4 Branch on value of Attribute 6 (trial attribute)
ATTRIB 6 = 1000 Bench trial complete, send to node 118
ATTRIB 6 = 2000 Jury trial complete, send to node 118
ATTRIB 6 ≠ 1000, 2000 Trial in progress, send to node 117
11 UF 37: User Function 37 collects utilization statistics on judge and attorney idle time

116 7 UF 45: User Function 45 decrements ATTRIB 7 (frequency of other court) decremented by 1 unless a criminal case
11 CO 3: Attribute 11 (routing attribute) set to a constant value of 3
Case and resources sent to node 156
Case also sent to node 50

118 11 UF 18: User Function 18 sets:
ICRT(J) = 0 (judge courtroom signal = no courtroom appearance)
ICRT(A) = 0 (attorney courtroom signal = no courtroom appearance)
11 CO 5: Attribute 11 (routing attribute) set to a constant value of 5
6 UF 46: User Function 46 sets ATTRIB 6 (trial attribute) to a value of 0, unless a criminal case
Case and resources sent to node 156
Case also sent to node 50

NODE

117 10 UF 56: User Function 56 sets queue ranking for a trial in progress
11 CO 4: Attribute 11 (routing attribute) set to constant value of 4
Case and resources sent to node 156
Case also sent to node 51

FREEING OF RESOURCES

NODE

156 11 UF 19: User Function 19 sets:
ATTRIB 11 = - ATTRIB 11 (routing attribute)
If INJ(J) = 1 (injunction pending)
Branches on value of Attribute 11:
ATTRIB 11 < 0 (injunction): send to node 157
ATTRIB 11 = 2 (private case complete): send to node 158
ATTRIB 11 = 5 (public trial complete): send to node 158
ATTRIB 11 < 5 (other court or public/private trial in progress): send to node 159

158 Branch on probability of internal delay for judge
p (.0001) send to node 160
p (.9999) send to node 148

160 11 CO 0: Attribute 11 (routing attribute) set to constant value of 0
Activity 160,157 UF, 59 User Function 59 sets duration of internal delay for judge (all cases from node 160 take this branch)
Activity 160,163 ATTRIB 2 $\geq$ 7 cases with Attribute 2 $\geq$ 7 (attorney numbers greater than or equal to 7) (public cases) sent to node 163

148 11 UF 64: User Function 64 frees judge according to allocation table
Branches on value of ATTRIB 11 = 1,5 send to node 157
Branches on value of ATTRIB 11 = -1, -5 send to node 159
11 UF 66: User Function 66 frees judge according to resource allocation table
Branches on value of ATTRIB 11 = 1,3 send to node 157
Branches on value of ATTRIB 11 = -1, -3 send to node 159

157 Free node for judge resources
Indicates that 1 resource of Attribute 3 (judge number) is to be freed. Case sent to node 111

159 Branches on value of Attribute 3 (judge number)
ATTRIB 3 = 1 Resources with cases with judge number 1
ATTRIB 3 = 2 Resources with cases with judge number 2
ATTRIB 3 = 3 Resources with cases with judge number 3
ATTRIB 3 = 4 Resources with cases with judge number 4
ATTRIB 3 = 5 Resources with cases with judge number 5
ATTRIB 3 = 6 Resources with cases with judge number 6

119 Free node for judge resource 1
Indicates 1 resource of that number to be freed, first to allocate node 2 (noncourtroom), then to allocate node 1 (courtroom)

120 Free node for judge resource 2
Indicates 1 resource of that number to be freed, first to allocate node 22 (noncourtroom), then to allocate node 2 (courtroom)

NODE

121 Free node for judge resource 3
Indicates 1 resource of that number to be freed, first to allocate node 23 (noncourtroom), then to allocate node 3 (courtroom)

122 Free node for judge resource 4
Indicates 1 resource of that number to be freed, first to allocate node 24 (noncourtroom), then to allocate node 4 (courtroom)

149 11 UF 66: User Function 66 frees judge according to resource allocation table
Branches of value of ATTRIB 11 = 1,3 send to node 157
ATTRIB 11 = -1, -3 send to node 159

123 Free node for judge resource 5
Indicates 1 resource of that number to be freed, first to allocate node 24 (noncourtroom), then to allocate node 5 (courtroom)

231 Free node for judge resource 6
Indicates 1 resource of that number to be freed, first to allocate node 26 (noncourtroom), then to allocate node 6 (courtroom)

111 Branches on value of Attribute 11 (routing attribute)
ATTRIB 11 = -6 send to node 42
ATTRIB 11 = -2 send to node 112
ATTRIB 11 = -1 send to node 112
ATTRIB 11 = 0 send to node 112
ATTRIB 11 = 1 send to node 112
ATTRIB 11 = 2 send to node 112
ATTRIB 11 > 2 send to node 163

112 Node to sink private case clones used to free judge resources

163 11 UF 20: User Function 20 sets Attribute 3 (used as routing attribute at this node) based on value of Attribute 11:
ATTRIB 11 - 5,0,5 set ATTRIB 3 = 6 (public trial complete)
Sets INJ(A) = 1 (attorney injunction signal = injunction pending)
if INJ(J) = 1 (if judge injunction signal = injunction pending)
Branching on:
ATTRIB 11 = 1 (routing attribute = injunction) send to node 181
ATTRIB 3 = 7 (routing attribute = public trial complete) send to node 181
ATTRIB 11 $\neq$ 1, ATTRIB 3 $\neq$ 7 (other court or continued public trial) send to node 229)

229 11 UF 67 User Function 67 frees attorney according to allocation table. Branches on value of ATTRIB 11 = 1 send to node 181
ATTRIB II = 0 send to node 167

164 Branch on probability of internal delay for attorney
p. .0001 send to node 181
p. .9999 send to node 228
Activity 164,181:
UF 60 sets attorney internal delay time

NODE

228 11 UF65 User Function 65 frees the attorney following end of trial according to allocation table.
Branches on value of ATTRIB 11 = 1 send to node 181
ATTRIB 11 = 0 send to node 167

181 Free node for attorney resources
Indicates that 1 resource of Attribute 2 (attorney number) is to be freed.

167 Branches on value of Attribute 2 (attorney number)
ATTRIB 2 = 79 send to node 168
ATTRIB 2 = 7 send to node 169
ATTRIB 2 = 8 send to node 170
ATTRIB 2 = 9 send to node 171
ATTRIB 2 = 10 send to node 172
ATTRIB 2 = 11 send to node 173
ATTRIB 2 = 12 send to node 174
ATTRIB 2 = 13 send to node 175
ATTRIB 2 = 14 send to node 176
ATTRIB 2 = 15 send to node 177
ATTRIB 2 = 16 send to node 178
ATTRIB 2 = 17 send to node 179
ATTRIB 2 = 18 send to node 180

168 Free node for attorney resource 19
Indicates 1 resource of that number to be freed, first to allocate node 227 (noncourtroom), then to allocate node 225 (courtroom)

169 Free node for attorney resource 7
Indicates 1 resource of that number to be freed, first to allocate node 27 (noncourtroom), then to allocate node 7 (courtroom)

170 Free node for attorney resource 8
Indicates 1 resource of that number to be freed, first to allocate node 28 (noncourtroom), then to allocate node 8 (courtroom)

171 Free node for attorney resource 9
Indicates 1 resource of that number to be freed, first to allocate node 29 (noncourtroom), then to allocate node 9 (courtroom)

172 Free node for attorney resource 10
Indicates 1 resource of that number to be freed, first to allocate node 30 (noncourtroom), then to allocate node 10 (courtroom)

173 Free node for attorney resource 11
Indicates 1 resource of that number to be freed, first to allocate node 31 (noncourtroom), then to allocate node 11 (courtroom)

174 Free node for attorney resource 12
Indicates 1 resource of that number to be freed, first to allocate node 31 (noncourtroom), then to allocate node 11 (courtroom)

NODE

175 Free node for attorney resource 13
Indicates 1 resource of that number to be freed, first to allocate node 33 (noncourtroom), then to allocate node 13 (courtroom)

176 Free node for attorney resource 14
Indicates 1 resource of that number to be freed, first to allocate node 34 (noncourtroom), then to allocate node 14 (courtroom)

177 Free node for attorney resource 15
Indicates 1 resource of that number to be freed, first to allocate node 35 (noncourtroom), then to allocate node 15 (courtroom)

178 Free node for attorney resource 16
Indicates 1 resource of that number to be freed, first to allocate node 36 (noncourtroom), then to allocate node 16 (courtroom)

179 Free node for attorney resource 17
Indicates 1 resource of that number to be freed, first to allocate node 37 (noncourtroom), then to allocate node 17 (courtroom)

NONCOURTROOM

NODE

68 Judge noncourtroom branching node 10 UF 54
Branches on value of Attribute 3 (judge number)
ATTRIB 3 = 1 send to queue node 124
ATTRIB 3 = 2 send to queue node 125
ATTRIB 3 = 3 send to queue node 126
ATTRIB 3 = 4 send to queue node 127
ATTRIB 3 = 5 send to queue node 128
ATTRIB 3 = 6 send to queue node 129

69 Attorney noncourtroom branching node
10 CO 1: Assigns a constant value of 2 to Attribute 10
(priority attribute)
ATTRIB 2 = 7 send to queue node 130
ATTRIB 2 = 8 send to queue node 131
ATTRIB 2 = 9 send to queue node 132
ATTRIB 2 = 10 send to queue node 133
ATTRIB 2 = 11 send to queue node 134
ATTRIB 2 = 12 send to queue node 135
ATTRIB 2 = 13 send to queue node 136
ATTRIB 2 = 14 send to queue node 137
ATTRIB 2 = 15 send to queue node 138
ATTRIB 2 = 16 send to queue node 139
ATTRIB 2 = 17 send to queue node 140
ATTRIB 2 = 18 send to queue node 141
ATTRIB 2 = 19 send to queue node 226

124 Queue node for all cases at noncourtroom stage with Attribute 3 (judge number) = 1

125 Queue node for all cases at noncourtroom stage with Attribute 3 (judge number) = 2

126 Queue node for all cases at noncourtroom stage with Attribute 3 (judge number) = 3

127 Queue node for all cases at noncourtroom stage with Attribute 3 (judge number) = 4

128 Queue node for all cases at noncourtroom stage with Attribute 3 (judge number) = 5

129 Queue node for all cases at noncourtroom stage with Attribute 3 (judge number) = 6

130 Queue node for all cases at noncourtroom stage with Attribute 2 (attorney number) = 7

NODE	
131	Queue node for all cases at noncourtroom stage with Attribute 2 (attorney number) = 8
132	Queue node for all cases at noncourtroom stage with Attribute 2 (attorney number) = 9
133	Queue node for all cases at noncourtroom stage with Attribute 2 (attorney number) = 10
134	Queue node for all cases at noncourtroom stage with Attribute 2 (attorney number) = 11
135	Queue node for all cases at noncourtroom stage with Attribute 2 (attorney number) = 12
136	Queue node for all cases at noncourtroom stage with Attribute 2 (attorney number) = 13
137	Queue node for all cases at noncourtroom stage with Attribute 2 (attorney number) = 14
138	Queue node for all cases at noncourtroom stage with Attribute 2 (attorney number) = 15
139	Queue node for all cases at noncourtroom stage with Attribute 2 (attorney number) = 16
140	Queue node for all cases at noncourtroom stage with Attribute 2 (attorney number) = 17
141	Queue node for all cases at noncourtroom stage with Attribute 2 (attorney number) = 18
226	Queue node for all cases at noncourtroom stage with Attribute 2 (attorney number) = 19
21	Allocate node for resource 1 (judge 1) Indicates 1 of that resource to be allocated
22	Allocate node for resource 2 (judge 2) Indicates 1 of that resource to be allocated
23	Allocate node for resource 3 (judge 3) Indicates 1 of that resource to be allocated
24	Allocate node for resource 4 (judge 4) Indicates 1 of that resource to be allocated
25	Allocate node for resource 5 (judge 5) Indicates 1 of that resource to be allocated

NODE	
26	Allocate node for resource 6 (judge 6) Indicates 1 of that resource to be allocated
27	Allocate node for resource 7 (attorney 1) Indicates 1 of that resource to be allocated
28	Allocate node for resource 8 (attorney 2) Indicates 1 of that resource to be allocated
29	Allocate node for resource 9 (attorney 3) Indicates 1 of that resource to be allocated
30	Allocate node for resource 10 (attorney 4) Indicates 1 of that resource to be allocated
31	Allocate node for resource 11 (attorney 5) Indicates 1 of that resource to be allocated
32	Allocate node for resource 11 (attorney 6) Indicates 1 of that resource to be allocated
33	Allocate node for resource 12 (attorney 7) Indicates 1 of that resource to be allocated
34	Allocate node for resource 13 (attorney 8) Indicates 1 of that resource to be allocated
35	Allocate node for resource 14 (attorney 9) Indicates 1 of that resource to be allocated
36	Allocate node for resource 15 (attorney 10) Indicates 1 of that resource to be allocated
37	Allocate node for resource 16 (attorney 11) Indicates 1 of that resource to be allocated
38	Allocate node for resource 17 (attorney 12) Indicates 1 of that resource to be allocated
227	Allocate node for resource 18 (attorney 13) Indicates 1 of that resource to be allocated
142	Activity 142,144 UF,27 User Function 27 sets noncourtroom judge time by sampling from distributions: Card 21: noncourtroom judge time for Criminal cases Card 34: noncourtroom judge time for Civil/U.S. cases Card 46: noncourtroom judge time for Federal Question cases Card 55: noncourtroom judge time for Diversity Jurisdiction cases 11 UF 40 User Function 40 collects utlization statistics on judge busy time

NODE

144 8 UF 47 User Function 47 decrements ATTRIB 8 by 1, unless a criminal case
11 UF 41 User Function 41 collects utilization statistics or judge idle time
11 UF 62 User Function 62 frees judge according to allocation table
Branches on value of ATTRIB 11 = 1,0

165 Free node for judge resources
Indicates 1 resource of Attribute 3 (judge number) is to be freed

143 Activity 143,145 UF,28 User Function 28 sets noncourtroom attorney time by sampling from distributions:
Parameter Set 58: noncourtroom attorney time for Criminal cases
Parameter Set 59: noncourtroom attorney time for Civil/U.S. cases
11 UF 38: User Function 38 collects utilization statistics on attorney busy time

145 9 UF 48 User Function 48 decrements ATTRIB 8 by 1, unless a criminal case
11 UF 39 User Function 39 collects utilization statistics on attorney idle time
11 UF 63 User Function 63 frees the attorney according to allocation table

166 Free node for attorney resources
Indicates resource of attribute 2 (attorney number) is to be freed

The structure of attributes, arrays, and parameter sets can be more clearly presented in tabular form. The following pages, originally prepared by Dr. Ken Musselman and Mr. Robert Hannan, of Pritsker and Associates, Inc., detail the format of the attributes, arrays, and parameter sets used in the Diversity Jurisdiction resource model.

CASE ATTRIBUTES

Each case in this model is uniquely identified by a set of attributes. These attributes are used to distinguish the case from other cases, determine its direction of flow, and assist in data collection and analysis. A description of these attributes is presented below. The functions performed by each attribute are listed in capital letters. A message's location in the network determines which of the attribute's functions is currently being performed.

Attribute Number	Description
1	A. Generation counter B. Match attribute (Case Identifier)
2	Attorney number 1 Private case (Federal Question) 2 Private case (Diversity Jurisdiction) 7-19 Public case (Criminal or Civil/U.S.)
3	A. Judge number 0 No judge involvement 1-6 Judge involvement B. Routing attribute at node 163 to free attorney
4	A. Frequency of external delay B. Negative value of the time when a case begins "STT" day clock for speedy trials
5	Frequency of an injunction
6	A. Trial index 0 No trial 1ABC Bench trial with ABC episodes 2XYZ Jury trial with XYZ episodes B. Last stage completed in Criminal case flow
7	Frequency of other courtroom activity

Attribute Number	Description
8	Frequency of noncourtroom activity (judge)
9	Frequency of noncourtroom activity (attorney)
10	Queue ranking HIGHER ORDER 10 Speedy case - injunction 9 Injunction pending 8 Injunction 7 Trial in progress 6.7 Speedy case - trial in progress 6.6 Speedy case - trial pending 6.5 Speedy case - trial 6.4 Speedy case - other courtroom pending 6.3 Speedy case - other courtroom 6.2 Speedy case - noncourtroom (judge) 6.1 Speedy case - noncourtroom (attorney) 6.05 Speedy case - external delay 6 Trial pending 5 Trial 4 Other courtroom pending 3 Other courtroom 2 Noncourtroom (judge) 1 Noncourtroom (attorney) 0 External delay
11	A. Routing attribute B. Dummy attribute

PARAMETER SET DESCRIPTIONS

This section describes the function of each parameter set as well as its distribution type.

DESCRIPTION	PARAMETER SET NUMBER
Interarrival Times (Exponential Distributions)	
Criminal case	1
Civil/U.S. case	2
Federal Question case	3
Diversity Jurisdiction case	4
Judge/Attorney Assignment (At Time Zero)	
Attorney Number, Criminal	70
Attorney Number, Civil/U.S.	71
Judge Number	72

DESCRIPTION		PARAMETER SET NUMBER	
Activity Type	Case Type Criminal	Episodes*	Duration*
Injunctive Action		--	38
Trial			
Bench		28	48
Jury		32	49
Other Courtroom			
Grand jury		18	52
Indictment		--	16
Arraignment		--	63
Rearraignment Hearings		--	6
Sentencing		--	5
Noncourtroom - Judge			
Pre-sentencing investigation		--	56
Noncourtroom - Attorney			
Investigation		--	58
Information		--	20
Initial Case Prepartion		--	65
Plea Bargaining Negotiations		19	66
Rearraignment Hearings		--	6
Final Case Preparation		--	68
Preparation for Sentencing		--	69
External Delay		--	36

*Triangular Distributions

DESCRIPTION		PARAMETER SET NUMBER	
Activity Type	Case Type	Episodes*	Duration*
	Civil/U.S.		
Injunctive Action		22	39
Trial			
Bench		29	50
Jury		33	51
Other Courtroom		23	53
Noncourtroom - Judge		24	57
Noncourtroom - Attorney		--	59
Judge Involvement		25	--
No Judge Involvement		64	--
External Delay		--	37
Judge Involvement		21	--
No Judge Involvement		62	--
	Federal Question		
Injunctive Action		8	42
Trial			
Bench		26	44
Jury		30	45
Other Courtroom		9	40
Noncourtroom - Judge		10	54
External Delay		--	34
Judge Involvement		7	--
No Judge Involvement		61	--
	Diversity Jurisdiction		
Injunctive Action		12	43
Trial			
Bench		27	46
Jury		31	47
Other Courtroom		13	41
Noncourtroom - Judge		14	55
External Delay		--	35
Judge Involvement		67	--
No Judge Involvement		60	--

*Triangular Distributions

USER-WRITTEN SUBPROGRAMS

In the Justice Resource Model it was necessary to supplement the network with FORTRAN support subprograms. These subprograms, which include UI, UF, UO, FUS, NSTG, DVRSN, NEXTA, NACT, and CHNG, are designed to accommodate nonstandard routing logic as well as user-specified input and output. The function of each of these subprograms is outlined below.

Subroutine UI

Before each analysis run, the Q-GERT Analysis Program calls subroutine UI to allow the user to initialize user-defined program variables, output user specified information, and create special initial conditions. Specific to this model, subroutine UI:

- Reads user input specifications
- Resets specific network parameters
- Echos user input specifications
- Changes values of those parameter sets sampling from a triangular distribution

Function UF

The function subprogram UF(N) contains FORTRAN programming inserts that are required to model special features of the Justice Resource Model. It is called by the Q-GERT

Analysis Program each time function type UF is encountered. The argument N is the UF number prescribed by the modeler to differentiate from among the various calls to UF. A description of the programming code associated with each UF number is given below.

	UF Number	Description
	1	UF = attorney number (Criminal).
	2	UF = attorney number (Civil/U.S.).
	3	UF = judge number.
Judge Involvement	4	UF = frequency of external delay, A4. Also set are: A5, frequency of injunction (given there is an injunction), A7, frequency of other courtroom activity (≥ 1), A8, frequency of noncourtroom activity (judge), and A9, frequency of noncourtroom activity (attorney).
	5	Return if this is a Criminal case. If not, UF = 1, if any of A4, A5, A6, A7, A8, or A9 > 0 (case has not been completed). UF = 0, otherwise (case has been completed).
	6	UF routes case into a randomly selected stage. If this is a Criminal case, the next stage is selected based on the flowchart of a Criminal case.
	7	UF = number of trial (bench) episodes.
	8	UF = number of trial (jury) episodes.
	9	UF routes case, with judge, based on judge route node logic.
	10	UF routes case, with attorney, based on attorney route node logic.
	11	UF increases priority of passed over case if A10 = 3, 5, 6.3, 6.5, or 8.
	12	Same as UF 11.

UF Number	Description
13	UF sets INJ(J) = 0 and INJ(A) = 0.
14	UF sets INJ(J) = 0, if INJ(J) = 2. (If INJ(J) = 1, return.)
15	UF sets ICRT(J) = 0.
16	UF sets ICRT(J) = 0 and ICRT(A) = 0, if A10 = 3, 4, 6.3, or 6.4.
17	UF sets A6 = A6 - 1 if A10 = 5, 6, 6.5, 6.6, 6.7, or 7.
18	UF sets ICRT(J) = 0 and ICRT(A) = 0.
19	UF routes case for freeing the judge based on injunction status and case type.
20	UF routes case for freeing the attorney based on injunction status and case type.
21	UF sets duration of external delay.
22	UF sets duration of injunction (Criminal or Civil/ U.S.).
23	UF sets duration of a private other courtroom service (Federal Question or Diversity Jurisdiction).
24	UF sets duration of a private injunction (Federal Question or Diversity Jurisdiction).
25	UF sets the duration of a private trial (bench or jury) (Federal Question of Diversity Jurisdiction).
26	UF sets the duration of a trial (bench or jury) or an other courtroom service (Criminal or Civil/ U.S.).
27	UF sets the duration of the judge's noncourtroom service.
28	UF sets the duration of the attorney's noncourtroom service.
29	UF sets trial/nontrial routing attribute, All.

	UF Number	Description
	30	UF sets trial bench/jury routing attribute, A11.
No Judge Involvement	31	UF sets frequency of external delay, A4 ($\geq$ 1) for Diversity Jurisdiction case with no judge. Also, frequencies represented by A3, A5, A6, A7, A8, and A9 are set = 0.
	32	UF sets frequency of external delay, A4 ($\geq$ 1), for Federal Question case with no judge. Also, frequencies represented by A3, A5, A6, A7, A8, and A9 are set = 0.
	33	UF sets frequency of external delay, A4 ($>$ 1) for Civil/U.S. case with no judge. Also, frequencies represented by A3, A5, A6, A7, and A8 are set = 0, and A9 is randomly set to be $>$ 0.
	34	UF = 0, if A4 = 0 or if it is a Criminal case. Otherwise, UF = 1.
	35	UF assigns a unique number to each transaction (beginning with 1).
	36	UF collects utilization statistics on both the judge and attorney (busy)
	37	UF collects utilization statistics on both the judge and attorney (idle).
	38	UF collects utilization statistics on just the attorney (busy).
	39	UF collects utilization statistics on just the attorney (idle).
	40	UF collects utilization statistics on just the judge (busy).
	41	UF collects utilization statistics on just the judge (idle).
	42	UF clears user statistics array.
	43	UF decrements A4 by 1, unless it is a Criminal case.
	44	UF decrements A5 by 1, unless it is a Criminal case.

UF Number	Description
45	UF decrements A7 by 1, unless it is a Criminal case.
46	UF sets A6 to zero, unless it is a Criminal case, in which case A6 is set equal to itself.
47	UF decrements A8 by 1, unless it is a Criminal case.
48	UF decrements A9 by 1, unless it is a Criminal case.
49	With a given probability for each case type (not including Criminal), UF routes the case to external delay.
50	UF sets the queue ranking for external delay.
51	UF sets the queue ranking for an injunction.
52	UF sets the queue ranking for other courtroom.
53	UF sets the queue ranking a trial.
54	UF sets the queue ranking for noncourtroom (J).
55	UF sets the queue ranking for noncourtroom (A).
56	UF sets the queue ranking for a trial in progress.
57	UF tests whether or not this is the beginning of a speedy trial. If so, the time since arraignment is tested against the speedy trial time threshold. UF = 1.0 if within time limit; otherwise, UF = 0.0.
58	UF initiates intercurrent changes, if any one threshold is passed.
59	UF sets ST(I) according to judge's internal delay.
60	UF sets ST(I) according to attorney's internal delay.
61	NA
62	UF frees the judge following a noncourtroom activity according to the resource allocation table.
63	UF frees the attorney following a noncourtroom activity according to the resource allocation table.

UF Number	Description
64	UF frees the judge following an end of trial activity according to the resource allocation table.
65	UF frees the attorney following an end of trial activity according to the resource allocation table.
66	UF frees the judge following a trial episode or other courtroom activity according to the resource allocation table.
67	UF frees the attorney following a trial episode or other courtroom activity according to the resource allocation table.

Subroutine UO

After each analysis run, the Q-GERT Analysis Program calls subroutine UO to collect, print and reinitialize (for the next run) user-collected statistics.

Subroutine FUS

At the end of the simulation, the Q-GERT Analysis Program calls subroutine FUS to calculate and print pertinent user-defined statistics.

Function NSTG

This routine selects one of the possible branches following a decision point in the Criminal case structure.

Subroutine DVRSN

This routine determines the outcome of a diversion for which there are three possibilities: the selection of one of two possible sinks (which represents a successful diversion)

or the selection of an unsuccessful diversion (which results in the eventual return to the point where the diversion was initiated in the Criminal case flow).

Function NEXTA

This routine selects the next stage for a case in the Criminal case structure. The stage selected by this routine is either a Criminal case sink or a Criminal activity.

Function NACT

This routine handles three functions in the Criminal case structure. The first function is to return the appropriate user function value so that the next activity in the Criminal case flow may be initiated; the second function is to set the appropriate attributes of the current case; the final function is to generate the occurrence of injunctions and external delays in the case.

Subroutine CHNG

This routine makes the appropriate parameter changes when an intercurrent change is found to be necessary. This is done by reading the parameter set number and the corresponding values for the change. Once the values are read, the appropriate arrays are filled.

RANDOM NUMBER STREAMS

This section defines the random number streams used in the execution of the Justice Resource Model. The seed values associated with these streams are given in the Q-GERT echo check.

Stream Number	Subject of Random Number Generation
1	Criminal case
2	Civil/U.S. case
3	Federal Question case
4	Diversity Jurisdiction case
5	A. Stage selection
	B. Probability of checking private case at node 92
6	Judge selection

DEFINITION OF A SIMULATION TIME UNIT

One unit of simulation time is equivalent to one working day (8 hours). A further breakdown of this relationship is presented in Table 5.

Table 5. Simulation/Actual Equivalence Time Table.

Simulation Time	Actual Time
1.00000	1 day
0.12500	1 hour
0.09375	45 minutes
0.06250	30 minutes
0.03125	15 minutes
0.02083	10 minutes
0.01042	5 minutes

GLOSSARY OF USER-DEFINED PROGRAM VARIABLES

This glossary contains significant program variable definitions used within the user-written subprograms of the Justice Resource Model. Those variables standard to the Q-GERT Analysis Program are excluded from this list.

Program Variable	Definition
BAIL	Probability of bail if detained
BETAJ	Beta factor for judge
BETAR	Beta factor for attorney (Criminal)
BETAV	Beta factor for attorney (Civil/U.S.)
CDA	Delay duration for a case passed by an attorney
CDJ	Delay duration for a case passed by a judge
CSTAT(I)	Judge allocation index 1 - judge I sent to courtroom queue 0 - judge I sent to noncourtroom queue
DIA	Duration of internal delay for an attorney
DIJ	Duration of internal delay for a judge
IACOL(I)	User COLCT number for the collection of interval statistics on the start of stage I for a case
IATTR(I)	$\leq$ 0 - Activity I is a single episode activity > 0 - Attribute where the number of episodes is stored for activity I
IC	Attorney number or case type

Program Variable	Definition
ICA	Attorney number
ICJ	Judge number
ICRT(I)	Courtroom status array for resource I 0 - Free for assignment 1 - Other courtroom activity (judge only) 2 - Trial (bench/jury) or other courtroom activity 3 - Trial (bench/jury) (judge only); judge reserved for a private case
IDRTN(I)	Diversion return stage array - defined for first seven decision points < 0 - If return point for the diversion initiated at decision point I is a decision point > 0 - If return point for the diversion initiated at decision point I is an activity
IECHO	Variable to suppress user echo check 1 - Suppress 0 - Otherwise
IEPSD(I)	≤ 0 - Activity I is a single episode activity > 0 - Activity I requires multiple episodes. Parameter set IEPSD(I) gives parameters for generation
INJ(I)	Injunction status array for resource I 0 - No injunction 1 - Injunction pending or in progress 2 - Injunction in progress (judge only)
ISCOL(I)	User COLCT number for the collection of interval statistics on criminal case disposition sinks
KATH	Transaction counter
M2	Attorney number
M3	Judge number
NACR	Number of attorneys (Criminal)
NACV	Number of attorneys (Civil/U.S.)

Program Variable	Definition
NBRNCH(I)	Number of possible branches emanating from decision point I
NCNGN	> 0 - Number of parameter sets to be changed < 0 - Last user data card
NCSAR	Suppression index after an attorney's (Criminal) noncourtroom activity 1 - Suppress ICRT and INJ test 0 - Otherwise
NCSAV	Suppression index after an attorney's (Civil/U.S.) noncourtroom activity 1 - Suppress ICRT and INJ test 0 - Otherwise
NCSJ	Suppression index after a judge's noncourtroom activity 1 - Suppress ICRT and INJ test 0 - Otherwise
NEXTS(I,J)	Stage J follows decision point I (J=1,2,...,NBRNCH(I)) < 0 - Decision point next > 0 - Activity next > 205 - Sink next = 0 - Error 550
NFOLW(I)	> 0 - Activity I followed by activity given by the value of NFOLW(I) < 0 - Activity I followed by decision point given by NFOLW(I) = 0 - Error 550
NJ	Number of judges
NOCSJ	Suppression index after a judge's other courtroom activity 1 - Suppress ICRT test 0 - Otherwise
NOCSR	Suppression index after an attorney's (Criminal) other courtroom activity 1 - Suppress ICRT test 0 - Otherwise
NOCSV	Suppression index after an attorney's (Civil/U.S.) other courtroom activity 1 - Suppress ICRT test 0 - Otherwise

Program Variable	Definition
NQC1	Number of cases in resource's courtroom (public) queue
NQC2	Number of cases in resource's courtroom (private) queue (judge only)
NQNC	Number of cases in resource's noncourtroom queue
PCEXD(I)	Probability that an external delay will occur prior to the start of stage I
PCINJ(I)	Probability that an injunction will occur prior to the start of stage I
PMDTR(I)	Probability of an external delay prior to trial given that I external delays have already occurred (PMDTR(5) = PROB|I $\geq$ 5)
PNEXT(I,J)	Probability of branching to stage J from decision point I
PPC	Probability against having this judge and attorney take on a public case
RLSE	Probability of release
RUMIN	Minimum time-integrated number of resources used of a specific type
SPEED(I)	Value assigned to attribute 10 when activity I is scheduled for a case requiring a speedy trial
ST(I)	Time to end of service activity for resource I
STT	Speedy trial time threshold
UFA(I)	User function value used to route the current transaction so that activity I may be initiated
WORK	Workload of a judge or an attorney (WORK = number of cases in noncourtroom queue + (beta)(number of cases in courtroom queue))
WTIM	Calculated waiting time that a resource is willing to wait

Program Variable	Definition
WTMNJ	Minimum waiting time for a judge
WTMNR	Minimum waiting time for an attorney (Criminal)
WTMNV	Minimum waiting time for an attorney (Civil/U.S.)
WTMXJ	Maximum waiting time for a judge
WTMXR	Maximum waiting time for an attorney (Criminal)
WTMXV	Maximum waiting time for an attorney (Civil/U.S.)

USER-SPECIFIED PROGRAM ERROR MESSAGES

This section augments Appendix 2 of Reference 1 with those errors which relate specifically to the Justice Resource Model.

Error Code	Location	Condition
333	UF4	Frequency of other courtroom services is 0 for Federal Question case. See parameter set 9.
334	UF4	Frequency of other courtroom services is 0 for Diversity Jurisdiction case. See parameter set 13.
336	UF4	Frequency of other courtroom services is 0 for Civil/U.S. case. See parameter set 23.
337	UF22	Public case has impossible attorney number assigned to it.
338	UF23	Private case has impossible case type assigned to it.
339	UF24	Private case has impossible case type assigned to it.
340	UF25	Private case has impossible case type assigned to it.
341	UF28	J/A case has impossible attorney number assigned to it.
342	UF26	Injunction is being handled as a trial B/J or an other courtroom activity.
343	UF26	Noncourtroom J/A or an external delay is being handled as a trial B/J or an other courtroom activity.

Error Code	Location	Condition
344	UF26	Other courtroom activity has impossible attorney number assigned to it.
345	UF26	Trial B/J has impossible attorney number assigned to it.
346	UF31	Frequency of external delay is less than 1 for Diversity Jurisdiction case with no judge. See parameter set 60.
347	UF32	Frequency of external delay is less than 1 for Federal Question case with no judge. See parameter set 61.
348	UF33	Frequency of external delay is less than 1 for Civil/U.S. case with no judge. See parameter set 62.
350	UF36	Attorney statistics are being kept on a private case.
351	UF36	Judge statistics are being kept on a case involving no judge service.
352	UF37	Attorney statistics are being kept on a private case.
353	UF37	Judge statistics are being kept on a case involving no judge service.
354	UF38	Attorney statistics are being kept on a private case.
355	UF39	Attorney statistics are being kept on a private case
356	UF40	Judge statistics are being kept on a case involving no judge service.
357	UF41	Judge statistics are being kept on a case involving no judge service.
358	UF4	Criminal case is being assigned attributes.
359	UF29	Criminal case is being tested for trial.
360	UF30	Criminal case is being tested for B/J trial.

Error Code	Location	Condition
361	UF26	Other courtroom (Criminal case) activity number (i.e., A6) is infeasible.
362	UF28	Noncourtroom-attorney (Criminal case) activity number (i.e., A6) is infeasible.
363	UF49	Probability of external delay for a Criminal case is being tested at node 162.
550	NEXTA	Invalid branch selected from a decision point.
551	NEXTA	Invalid branch selected from diversion.
601	UI	Number of judges greater than 6.
602	UI	Number of attorneys greater than 13.
603	UI	Maximum waiting time for a judge is less than minimum waiting time.
604	UI	Maximum waiting time for an attorney (Criminal) is less than minimum waiting time.
605	UI	Maximum waiting time for an attorney (Civil/U.S.) is less than minimum waiting time.
606	UI	First activity emanating from node 203 does not end at node 205 (intercurrent change-first test for thresholds).
607	UI	Activity emanating from node 205 does not end at node 205 (subsequent tests for intercurrent change thresholds).
608	UI	Incorrect activity number for a delay duration for a case passed by a judge.
609	UI	Second activity emanating from node 146 not found.
610	UI	Incorrect activity number for delay duration for a case passed by a judge.
611	UI	Incorrect activity number for delay duration for a case passed by an attorney.

Error Code	Location	Condition
612	UI	Second activity emanating from node 147 not found.
613	UI	Incorrect activity number for delay duration for a case passed by an attorney.
614	UI	Incorrect activity number for second activity emanating from node 150.
615	UI	Incorrect activity number for first activity emanating from node 150.
616	UI	Incorrect activity number for both activities emanating from node 150.
617	UI	Incorrect activity number for second activity emanating from node 152.
618	UI	Incorrect activity number for first activity emanating from node 152.
619	UI	Incorrect activity numbers for both activities emanating from node 152.
620	UI	Incorrect activity number for second activity emanating from node 154.
621	UI	Incorrect activity number for first activity emanating from node 154.
622	UI	Incorrect activity numbers for both activities emanating from node 154.
623	UI	Incorrect activity number for second activity emanating from node 158.
624	UI	Incorrect activity number for first activity emanating from node 158.
625	UI	Incorrect activity numbers for both activities emanating from node 158.
626	UI	Incorrect activity number for second activity emanating from node 164.
627	UI	Incorrect activity number for first activity emanating from node 164.

Error Code	Location	Condition
628	UI	Incorrect activity numbers for both activities emanating from node 164.
629	UI	Incorrect end node for statistics clearing activity.
630	CHNG	Negative value read for the number of parameter sets to be changed. Probable cause--a second intercurrent change has occurred.
631	CHNG	Negative value read for parameter set number. Intercurrent change data input error.
632	CHNG	Negative value read for parameter 1. Intercurrent change data input error.
633	UI	Activity starting at node 62 and ending at node 71 not found.

Feasible Stage Selection for Each Criminal Case

Decision Point

Table C-1. Feasible Stage Selection for Each Criminal Case Decision Point.

D.P.[1]	NBRNCH	D.P. INDEX	NEXT STAGE	NEXTS (I,J)	BRANCH DESCRIPTION
1	5	1	DP2	-2	Declination/reinvestigation decision
		2	DP3	-3	Grand Jury/Information
		3	DP8	-8	Diversion (Community Service/Probation)
		4	A4	4	Arrest and Arraignment
		5	S2	207	Referral to State Court
2	2	1	A1	1	Reinvestigation
		2	S1	206	Declination
3	4	1	DP8	-8	Diversion (Community Service/Probation)
		2	A2	2	Grand Jury
		3	A4	4	Arrest and Arraignment
		4	A5	5	Information
4	4	1	DP8	-8	Diversion (Community Service/Probation)
		2	A3	3	Indictment
		3	A4	4	Arrest and Arraignment
		4	S3	208	No Bill
5	2	1	DP8	-8	Diversion (Community Service/Probation)
		2	A4	4	Arrest and Arraignment
6	2	1	DP8	-8	Diversion (Community Service/Probation)
		2	A4	4	Arrest and Arraignment
7	2	1	DP8	-8	Diversion (Community Service/Probation)
		2	DP11	-11	Declination/Enter Plea
8	2	1	DP9	-9	Community Service
		2	DP10	-10	Voluntary Probation
9	2	1	IDRTN(I)	100	Unsuccessful Diversion
		2	S4	209	Successful Diversion via Community Service
10	2	1	IDRTN(I)	100	Unsuccessful Diversion
			S5	210	Successful Diversion Via Voluntary Probation
11	3	1	S6	211	Declination
		2	DP13	-13	Case Preparation/Plea Bargain (Not Guilty Plea)
		3	A12	12	Preparation for Sentencing (Guilty Plea)

[1]Decision Point

Table C-1. Continued.

D.P.[1]	NBRNCH	D.P. INDEX	NEXT STAGE	NEXTS (I,J)	BRANCH DESCRIPTION
12	2	1	NA	0	
		2	NA	0	
13	2	1	A6	6	Initial Case Preparation
		2	A7	7	Plea Bargaining Negotiations
14	2	1	S7	212	Declination
		2	A7	7	Plea Bargain Negotiations
15	2	1	NA	0	
		2	NA	0	
16	2	1	A8	8	Successful Plea Bargain (Rearraignment)
		2	A9	9	Final Case Preparation (No Plea Bargain)
17	2	1	A10	10	Bench Trial
		2	A11	11	Jury Trial
18	2	1	A12	12	Conviction (Preparation for Sentencing)
		2	S8	213	Acquittal or Dismissal
19	6	1	DP20	-20	Probation/Rearrest
		2	DP21	-21	Mixed Sentence/Rearrest
		3	DP22	-22	Split Sentence/Parole
		4	DP23	-23	Incarceration/Parole
		5	S9	214	Fines
		6	S10	215	Appeal
20	2	1	A4	4	Rearrest and Arraignment
		2	S11	216	Probation
21	2	1	A4	4	Rearrest and Arraignment
		2	S12	217	Mixed Sentence
22	2	1	DP24	-24	Parole/Rearrest
		2	S14	219	Split Sentence
23	2	1	DP24	-24	Parole/Rearrest
		2	S15	220	Incarceration
24	2	1	A4	4	Rearrest and Arraignment
		2	S13	218	Parole

Description of Files

In order to operate the Q-GERT program on the Justice Data Center's CMS system, a brief outline of file structure and input format is necessary. The Resource Model program utilizes the following files:

- USERDJ SCRAT D — Input cards for Resource and Criminal Model. The following pages present the format for input cards. The Q-GERT cards define the structure of the network, while the "Sample Input Cards" are the parameters to be changed by the user.

- BGERTM FORTRAN D
DATINB FORTRAN D
BGERTZ FORTRAN D — Main Q-GERT program, divided into three parts. These files have been made part of the A1.PROGLIB on the OS system. The original files exist in packed form on disk.

- BJUSER FORTRAN A — User FORTRAN inserts for Resource and Criminal Model. This file is also part of the A1.PROGLIB on the OS system. The original file exists on disk.

- DOJRE PRICE A — JCL cards for submitting the Resource Model to the batch system under CMS. The input card file is inserted after the FILEDEF statements.

Description of Q-GERT Inputs

CONTINUED

2 OF 4

SECTION DESCRIPTION	CARD NAMES
Criminal Case Structure	--
Echo Check (Suppress Flag)	IECHO
Criminal Case Structure (User Defined)	PCINJ PCEXD PROB UDP 1 - UDP 24
Simulation Parameters	SIM PAR
System Parameters	Card 1 - Card 12
Criminal Parameter Sets	Card 13 - Card 28
Civil/U.S. Parameter Sets	Card 29 - Card 40
Federal Question Parameter Sets	Card 41 - Card 49
Diversity Jurisdiction Parameter Sets	Card 50 - Card 58
Incurrent Changes	IC 1 - IC 3
Parameter Changes	PARCHG 1 - PARCHG 3
End of User Data	NEG

Card Name	Description
	** SYSTEM PARAMETERS **
Card 1	Number of units of each resource type available
Card 2	Beta parameters associated with each each resource type
Card 3	Amount of time a particular resource is willing to wait for another resource
Card 4	Suppression indicators to prevent certain tests from being made prior to freeing various resource types
Card 5	Speedy trial time threshold
Card 6	Delay durations
Card 7	Probability of no judge involvement for a given case type
Card 8	Probability of internal delay for a judge or attorney following completion of a trial
Card 9	Probability of an external delay stage given that at least one more episode of this stage remains
Card 10	Probability of an injunction occurring in the life of a particular case type
Card 11	Probability of trial occurring in the life of a particular case type
Card 12	Probability of having a judge and attorney accept a public case

Card Name	Description
	** CRIMINAL PARAMETER SETS **
Card 13	Criminal interarrival time parameters
Card 14	Criminal injunction duration parameters
Card 15	Criminal bench trial duration and episode parameters
Card 16	Criminal jury trial duration and episode parameters
Card 17	Criminal grand jury (other courtroom) duration and episode parameters
Card 18	Criminal indictment (other courtroom) duration parameters
Card 19	Criminal arraignment (other courtroom) duration parameters
Card 19A	Criminal rearraignment hearings (other courtroom) duration parameters
Card 20	Criminal sentencing (other courtroom) duration parameters
Card 21	Criminal pre-sentencing investigation (noncourtroom-judge) duration parameters
Card 22	Criminal investigation (noncourtroom-attorney) duration parameters
Card 23	Criminal information (noncourtroom-attorney) duration parameters
Card 24	Criminal initial case preparation (noncourtroom-attorney) duration parameters
Card 25	Criminal plea bargaining negotiations (noncourtroom-attorney) duration and episode parameters
Card 26	Criminal final case preparation (noncourtroom-attorney) duration parameters

Card Name	Description
Card 27	Criminal preparation for sentencing (noncourtroom-attorney) duration parameters
Card 28	Criminal external delay duration parameters
	** CIVIL/U.S. PARAMETER SETS **
Card 29	Civil/U.S. interarrival time parameters
Card 30	Civil/U.S. injunction duration and episode parameters
Card 31	Civil/U.S. bench trial duration and episode parameters
Card 32	Civil/U.S. jury trial duration and episode parameters
Card 33	Civil/U.S. other courtroom duration and episode parameters
Card 34	Civil/U.S. noncourtroom (judge) duration and episode parameters
Card 35	Civil/U.S. noncourtroom (attorney/judge involvement) episode parameters
Card 36	Civil/U.S. noncourtroom (attorney/no judge involvement) episode parameters
Card 37	Civil/U.S. noncourtroom (attorney) duration parameters
Card 38	Civil/U.S. external delay (judge involvement) episode parameters
Card 39	Civil/U.S. external delay (no judge involvement) episode parameters
Card 40	Civil/U.S. external delay duration parameters

Card Name	Description
	** FEDERAL QUESTION PARAMETER SETS **
Card 41	Federal Question interarrival time parameters
Card 42	Federal Question injunction duration and episode parameters
Card 43	Federal Question bench trial duration and episode parameters
Card 44	Federal Question jury trial duration and episode parameters
Card 45	Federal Question other courtroom duration and episode parameters
Card 46	Federal Question noncourtroom (judge) duration and episode parameters
Card 47	Federal Question (judge involvement) external delay episode parameters
Card 48	Federal Question (no judge involvement) external delay episode parameters
Card 49	Federal Question external delay duration parameters
	** DIVERSITY JURISDICTION PARAMETER SETS **
Card 50	Diversity Jurisdiction interarrival time parameters
Card 51	Diversity Jurisdiction injunction duration and episode parameters
Card 52	Diversity Jurisdiction bench trial duration and episode parameters
Card 53	Diversity Jurisdiction jury trial duration and episode parameters
Card 54	Diversity Jurisdiction other courtroom duration and episode parameters

Card Name	Description
Card 55	Diversity Jurisdiction noncourtroom (judge) duration and episode parameters
Card 56	Diversity Jurisdiction (judge involvement) external delay episode parameters
Card 57	Diversity Jurisdiction (no judge involvement) external delay episode parameters
Card 58	Diversity Jurisdiction external delay duration parameters
	** INTERCURRENT CHANGES **
IC1	Intercurrent changes testing times
IC2	Intercurrent changes threshold values
IC3	Test indices for intercurrent changes
	** PARAMETER CHANGES **
PARCHG 1	Number of parameter sets changed
PARCHG 2	Parameter set number
PARCHG 3	Parameter values
	** END OF USER DATA **
NEG	End of user data

Q-GERT Input Data Format

Q-GERT INPUT DATA FORMAT

1. GEN - general project information

Field Number	Description	Value	Default	Editing	Associated Errors
1	Card type	GEN	(Required)	= 'GEN'	8101
2	Analyst name	Alpha field (up 12 significant characters)	12 blanks	If present, first character must be alphabetic (only first 12 characters are processed)	102
3	Project name or number	Alpha field	12 blanks	(see previous field)	103
4	Month	Integer	1	Integer between 0 and 12	104
5	Day	Integer	1	Integer between 0 and 31	105
6	Year	Integer	2001	Integer between 1970 and 2001	106
7	Number of STAtistics nodes	Integer	0	Integer between 0 and maximum number of nodes	107
8	Number of SINk nodes	Integer	0	Integer between 0 and maximum number of nodes	108
9	Number of SINk node releases to end a run	Integer	value in Field 8	Integer	109
10	Time to end one run of the network	Real	1.E20	Positive real	110
11	Number of runs of the network	Integer	1	Positive integer	111
12	Indicator for output reports in addition to the final summary report	First Run, Each Run, Cumulative & Each Run, Summary Only	First	= 'F' or 'E' or 'C' or 'S'	112
13	Time from which statistics will be kept on each run	Real	0	Non-negative real	113
14	Maximum number of attributes with each transaction flowing through the network	Integer	0	Non-negative integer	114
15	Run number for beginning of event tracing	Integer	0→no tracing	Integer between 0 and value of Field 11	115
16	Run number for ending of event tracing (this run will be traced)	Integer	Value of Field 15	Integer between value of Field 15 and value of Field 11	116
17	Run number for beginning of nodal tracing	Integer	0→no tracing	Integer between 0 and value in Field 11	115
18	Run number for ending of nodal trace (this run is traced)	Integer	Value in Field 17	Integer between value in Field 17 and value in Field 11	116
19	Indicator that only input cards with errors are to be listed	Errors only All cards	All input cards listed	= 'E'	119
20	Execution option	E1 — No execution E2 — No execution if any input discrepancies E3 — No execution if fatal input discrepancy	E3	= 'E1', 'E2', 'E3', or 'E4' (E4 — Echo suppressed)	120
21	Largest node number defined by user. (Specify only when including subnetworks.)	Integer	MXNOD	Integer	
22	Largest activity number defined by user. (Specify only when including subnetworks).	Integer	MXNPO	Integer	

2. *REG-reg*ular node description or *SOU-sou*rce node description

Field Number	Description	Value	Default	Editing	Associated Errors
1	Card type	*REG* or *SOU*	(Required)	= 'REG' or 'SOU'	8000
2	Node number	Integer	(Required)	Integer between 1 and maximum number of nodes	8002
3	Initial number of incoming transactions to release the node.	Integer	1 if *REG* 0 if *SOU*	Non-negative integer (0 if and only if *SOU*)	8003
4	Subsequent number of incoming transactions to release the node (after the first release)	Integer (to specify infinite, use default)	Infinite	Positive integer	8003
5	Output characteristics of node	*P*robabilistic *D*eterministic *F*irst (conditional, take first) *A*ll (conditional, take all)	Deterministic	= 'P', 'D', 'F', or 'A'	205
6	Indicator that this node is to mark	*M*ark	M if SOU No M if REG = 'M'		206
7	Criterion for associating an attribute set with a transaction passing through a node/	Hold the attribute set of the transaction arriving *F*irst *L*ast or hold attribute set of the transaction with the *S*mallest value in a given attribute *B*iggest value in a given attribute	*L*ast = 'F', 'L', 'S', or 'B'		207
	If *S*mall or *B*ig specified, the number of the attribute to be used or 'M' for mark time	Integer or 'M'	*M*ark Time	Integer between 1 and maximum number of attributes specified for a transaction or 'M'	7207

3. *SIN* - *sink* node description or *STA* - *statistics* node description

Field Number	Description	Value	Default	Editing	Associated Errors
1	Card type	SIN or STA	(Required)	= *'SIN' or 'STA'*	8000
2	Node number/Label for output identification	Integer/8 characters	(Required)/ Blanks	Integer between 1 and maximum number of nodes	8002
3	Initial number of incoming transactions to release the node	Integer	1	Positive integer	8003
4	Subsequent number of incoming transactions to release the node (after the first release)	Integer (to specify infinite, use default)	Infinite	Positive integer	8003
5	Output characteristics of node	*P*robabilistic *D*eterministic *F*irst (conditional, take *first)* *A*ll (conditional, take all)	*D*eterministic	= 'P', 'D', 'F', or 'A'	205
6	Statistical quantities to be collected	*F*irst (time of first release) *A*ll (time of all releases) *B*etween (time between *releases)* *I*nterval (time interval from *most recent marking of transaction to release of this node)* *D*elay (delay from first arriving *transaction until the node is released)*	*F*irst	= 'F', 'A', 'B', 'I', or 'D'	306
7	The upper limit of the first cell for the histogram to be obtained for this node. The first cell of the histogram will contain the number of times the statistic of interest at this node had a value less than or equal to the value given in this field.	Real or 'N'	N → no reporting of statistics	Real or 'N'	
8	The width of each cell of the histogram. Each histogram contains 20 cells. The last cell will contain the number of times the statistic of interest at this node had a value greater than the upper limit of the first cell (Field 7) plus 18 x cell width (Field 8).	Real or 'N'	N → no reporting of statistics	Positive real or 'N'	
9	Criterion for associating an attribute set with a transaction passing through a node /	Hold the attribute set of the transaction arriving *F*irst *L*ast or hold attribute set of the transaction with the *S*mallest value in a given attribute *B*iggest value in a given attribute	*L*ast	= 'F', 'L', 'S', or 'B'	206
	If Small or Big specified, the number of the attribute to be used or 'M' for mark time	Integer or *M*ark Time	*M*ark Time	Integer between 1 and maximum number of attributes specified for a transaction or 'M'	7207

4. *QUE* - queue node description

Field Number	Description	Value	Default	Editing	Associated Errors
1	Card type	QUE	(Required)	= 'QUE'	8000
2	Node number/Label for output identification	Integer /8 characters	(Required)/ Blanks	Integer between 1 and maximum number of nodes	8002
3	Initial number in queue	Integer	0	Non-negative integer	403
4	Maximum number permitted in queue	Integer (to specify infinite, use default)	Infinite	Non-negative integer	404
5	Output characteristics of node	*D*eterministic *P*robabilistic	*D*eterministic	= 'P' or 'D'	205
6	Ranking procedure for Q-node/	*F*IFO-first in-first out *L*IFO-last in-first out *S*mall value first (based on attribute value) *B*ig value first (based on attribute value)	*FIFO*	= 'F', 'L', 'S', or 'B'	406
	For Q-nodes ranked by *S*mall or *B*ig, the number of the attribute on which the ranking is based	*Integer or* *M*ark Time	*M*ark Time	Integer between 1 and maximum number of attributes or 'M'	7207
7	Balking or blocking information	*B*locking or Integer = node number to which balkers are sent	Balkers are lost to system	= 'B' or integer between 1 and maximum number of nodes	407 8407 8408 8409
8	The upper limit of the first cell for the histogram to be obtained for this node.	Real or 'N'	N → no reporting of statistics	Real or 'N'	
9	The width of each cell of the histogram. Each histogram contains 20 cells.	Real or 'N'	N → no reporting of statistics	Positive Real or 'N'	
10-31	Selector nodes or the MATCH node on output side of Q-node (if any) (but not if a service activity emanates from the Q-node) When more than one S-node is specified, the order of appearance in these fields determines the priority given to the associated S-nodes.	Integer	No S-node or MATCH node node on output side of Q-node	Integer between 1 and maximum number of nodes	8410 8411

6. *MAT* - *mat*ch node description

Field Number	Description	Value	Default	Editing	Associated Errors
1	Card Type	*MAT*	(Required)	= 'MAT'	8000
2	Node Number	Integer	(Required)	Integer between 1 and maximum number of nodes	8002
3	Matching attribute Number or M for mark time	Integer or *M*ark Time	*M*ark Time	Integer between 1 and maximum number of attributes for the simulation or 'M'	7207
4	Q-nodes containing transactions to be matched by this match node (up to 5 Q-nodes are allowed)/	Integer		at least 2 Q-nodes associated with the Match node	8604
	Node number to which a matched transaction from Q-node is to be routed	Integer	No routing		
5-8	Repeats of Field 4. At least 1 repeat required and at most 4 repeats allowed.				8605

10. *ACT* - Activity description

Field Number	Description	Value	Default	Editing	Associated Errors
1	Card Type	ACT	(Required)	= 'ACT'	8000
2	Start node	Integer	(Required)	Number of an existing node	9002
3	End node	Integer	(Required)	Number of an existing node (not an assembly node)	9003
4	Distribution or function type	2 character ID chosen from list of distribution types (Table A1)	*CO*	= 2 character ID from Table A1	1004
5	Parameter set number or value of constant	Integer or Real	0.0		1005
6	Activity number/	Integer	System-assigned	Integer between 0 and maximum number of activity numbers	1006 9006 9105
	Label for server identification	8 characters	Blank		
7	The number of servers represented by this branch	Integer	1	Non-negative integer	1007 9007
8 or	Probability (only applicable if start node has 'P' branching or start node is a SELector using RFS rule)	Real number between 0. and 1. or attribute number where probability is stored	0.5	Real number between 0. and 1. or non-negative integer	1008 9008
8	Order of testing conditions (only applicable if start node has 'F' branching* or start node is a SELector using POR rule**)	Non-negative number (integer or real)	0 (= conditions tested in order of input	Non-negative number	9008
9	Condition code (only applicable if start node has 'F' or 'A' branching)	See Condition Codes List***	Start node released (Ni.R).		1009 9009 9010 9011

* For each activity emanating from a start node with F (conditional, take first) output, an order value should be specified. When the start node is released, conditions on associated branches will be tested in ascending order (low values first) based on this value.

** The "preferred order" for selection from free servers is ascending order (low value first) based on this value.

*** Condition codes allowed are:

T.*R*.V	Time .*R*. Value
T.*R*.Ak	Time .*R*. Attribute k
Aj.*R*.V	Attribute j.*R*.Value
Aj.*R*.Ak	Attribute j.*R*.Attribute k

where *R*=(LT;LE;EQ;NE;GT; or GE)

Ni.R	Node i Released
Ni.N	Node i Not Released
NAj.R	Node Aj Released
NAj.N	Node Aj Not Released

9. *PAR* - parameter set description

Field Number	Description	Value	Default	Editing	Associated Errors
1	Card type	PAR	(Required)	= 'PAR'	8000
2	Parameter set number	Integer	(Required)	Integer between 1 and maximum number of parameter sets	8902
3	Parameter 1	Real	0.	Real	903
4	Parameter 2	Real	-10^{20}	Real	903
5	Parameter 3	Real	10^{20}	Real	903
6	Parameter 4	Real	0.	Real	903
7	Random Number Stream	Integer	MXSTR=10	Integer	903

A sample is obtained from a distribution such that if a sample is less than the minimum value, the sample value is given the minimum value. Similarly, if the sample is greater than the maximum value, the sample value is assigned the maximum value. This is not sampling from a truncated distribution but sampling from a distribution with a given probability of obtaining the minimum and maximum values.

The parameters required to sample from the distributions are described below. The parameter values for the lognormal (LO), triangular (TR), beta (BE), gamma (GA), and beta PERT (BP) are modified to simplify random sampling. Thus, parameter sets for these distributions must not be used for any other distributions, i.e., a parameter set for a lognormal distribution must only be used for sampling from a lognormal distribution.

For COnstants, no PAR card is used. The value of the constant is taken as the value given to parameter set specification.

For NOrmal, LOgnormal, BEta, and GAmma distributions

Parameter 1 The mean value
Parameter 2 The minimum value
Parameter 3 The maximum value
Parameter 4 The standard deviation

For UNiform distribution

Parameter 1 Not used
Parameter 2 The minimum value
Parameter 3 The maximum value
Parameter 4 Not used

For EXponential distribution

Parameter 1 The mean value
Parameter 2 The minimum value
Parameter 3 The maximum value
Parameter 4 Not used

For ERlang distribution

Parameter 1 The mean time for the Erlang variable divided by the value given to Parameter 4
Parameter 2 The minimum value
Parameter 3 The maximum value
Parameter 4 The number of exponential deviates to be included in the sample obtained from the Erlang distribution

For POisson distribution

Parameter 1 The mean minus the minimum value
Parameter 2 The minimum value
Parameter 3 The maximum value
Parameter 4 Not used

Care is required when using the *PO*isson since it is not usually used to represent an interval of time. The interpretation of the mean should be the mean number of time units per time period.

For BP and TRiangular distribution

Parameter 1 The most likely value m
Parameter 2 The optimistic value a
Parameter 3 The pessimistic value b
Parameter 4 Not used

8. *VAS* • value assignments to attributes of transactions

Field Number	Description	Value	Default	Editing	Associated Errors
1	Card type	VAS	(Required)	= 'VAS'	8000
2	Node number at which assignment is to be made	Integer	(Required)	Integer between 1 and maximum number of nodes	8802 8812
3	Number of the attribute to which the assignment is to be made	Integer	1	Integer between 1 and maximum number of attributes	8803
4	Distribution or function type for the assignment	2 character ID chosen from list of distribution types (Table A1)	*CO*	= 2 character ID from Table A1	804
5	Parameter set number for the assignment	Integer or Real	0.0	Integer or Real	805
6-26	(Repeat Fields 3, 4, and 5 to specify up to 7 additional assignments. Use only 1 *VAS* input card for each node at which assignments take place)				806 8807

25. *RES* - resource type definition

Field Number	Description	Value	Default	Editing	Associated Errors
1	Card Type	RES	(Required)	= 'RES'	8000
2	Resource Number/	Integer	(Required)	Nonnegative integer ≤ MXRES	8002
	Label	8 characters	Blanks		
3	Number of units of this resource type available	Integer	1	Positive Integer	
4–13	Resource ALLOCATE nodes to be polled when resource is freed	Integer	No ALLOCATE nodes associated with resource definition	Integer between 1 and maximum number of nodes	

26. *ALL* - allocate node description

Field Number	Description	Value	Default	Editing	Associated Errors
1	Card type	ALL	(Required)	= 'ALL'	8000
2	Node number	Integer	(Required)	Integer between 1 and maximum number of nodes	8002
3	Queue selection rule	3 character ID from list of queue selection rules (Table A1)	POR	= 3 character ID from Table A1	503
4	Resource number	Integer	1	Integer between 1 and max. number of resources	
5	Resource units required by waiting transactions at associated Q-nodes	Integer	1		
6	Q-node in which transaction is waiting for resources/	Integer	(At least 1 required)	Integer between 1 and maximum number of nodes	
	Node number to which transaction is to be routed when resources are allocated	Integer	No routing	Integer between 1 and maximum number of nodes	
7–16	(Repeats of Field 6)				

27. *FRE - free* node description

Field Number	Description	Value	Default	Editing	Associated Errors
1	Card type	FRE	(Required)	= 'FRE'	8000
2	Node number	Integer	(Required)	Integer between 1 and max. number of nodes	8002
3	Output characteristics	P, D, F, A	D	= 'P', 'D', 'F', or 'A'	
4	Resource number	Integer or Ak where k is an attribute number	1		
5	Resource units to be freed	Integer or Ak where k is attribute number	1		
6–15	ALLOCATE nodes in the order to be polled to allocate freed resource units	Integer	Use ALLOC list given in RES card for resource number	List of ALLOC nodes concatenated to list provided unless a negative value is given after list	

11. *MOD* - node *modification* information (required only if network contains nodes to be modified)

Field Number	Description	Value	Default	Editing	Associated Errors
1	Card type	*MOD*	(Required)	= 'MOD'	8099
2	Activity number	Integer	(Required)	Integer between 1 and maximum number of activities	9102
3	*Node to be replaced* (number of node to be replaced when the activity given in Field 2 is completed)	Integer	(Required)	Number of existing node	9103
4	*Replacement node* (number of node to be inserted into the network in place of the specified node in the preceding field when the activity in Field 2 is completed)	Integer	(Required)	Number of existing node not equal to value in Field 3	1104 9103
5-24	(If multiple replacements are to occur upon completion of activity prescribed by Field 2, then Fields 3 and 4 should be repeated for each additional replacement. The limit of replacements is 11.				1105 9105

13. *FIN* - *finish* of all networks

Field Number	Description	Value	Default	Editing	Associated Errors
1	Card type	*FIN*	(A blank card may be used in lieu of *FIN* card)	Blank card or = 'FIN'	1301 8000

Listing of Data Cards and FORTRAN Listing

INPUT CARDS: RESOURCE MODEL

```
GEN,PRITSKER,MATHTECH,7,1,1979,5,0, ,100.,1,E,0.,11,,,,,E,E4*
PAR,1,.8695,.00001,1000.,,1*
PAR,2,.5119,.00001,1000.,,2*
PAR,3,.3963,.00001,1000.,,3*
PAR,4,.7595,.00001,1000.,,4*
PAR,5,,14.,19.,,1*
PAR,6,,1.,6.,,1*
PAR,7,3.5,3.,4.,,3*
PAR,8,1.5,1.,2.,,3*
PAR,9,2.5,2.,3.,,3*
PAR,10,2.5,2.,3.,,3*
PAR,12,1.5,1.,2.,,4*
PAR,13,2.5,2.,3.,,4*
PAR,14,3.5,3.,4.,,4*
PAR,16,3.5,3.,4.,1*
PAR,18,3.5,3.,4.,,1*
PAR,19,1.5,1.,2.,,1*
PAR,20,10.5,10.,11.,,1*
PAR,21,4.5,4.,5.,,2*
PAR,22,1.5,1.,2.,,2*
PAR,23,2.5,2.,3.,,2*
PAR,24,2.5,2.,3.,,2*
PAR,25,7.5,7.,8.,,2*
PAR,26,3.5,3.,4.,,3*
PAR,27,2.5,2.,3.,,4*
PAR,28,2.5,2.,3.,,1*
PAR,29,3.5,3.,4.,,2*
PAR,30,4.5,4.,5.,,3*
PAR,31,4.5,4.,5.,,4*
PAR,32,3.5,3.,4.,,1*
PAR,33,3.5,3.,4.,,2*
PAR,34,100.,99.,101.,,3*
PAR,35,85.,84.,86.,,4*
PAR,36,20.,19.,21.,,1*
PAR,37,55.,54.,56.,,2*
PAR,38,.0001,.00001,.001,,1*
PAR,39,.0125,.01,.1,,2*
PAR,40,.1875,.18,.195,,3*
PAR,41,.1875,.18,.195,,4*
PAR,42,.0125,.01,.02,,3*
PAR,43,.025,.02,.03,,4*
PAR,44,.5,.45,.56,,3*
PAR,45,.4375,.43,.445,,3*
PAR,46,.5,.45,.55,,4*
PAR,47,.4375,.43,.445,,4*
PAR,48,.5,.45,.55,,1*
PAR,49,.5,.45,.55,,1*
PAR,50,.375,.37,.38,,2*
PAR,51,.5,.45,.55,,2*
PAR,52,.1875,.18,.195,,1*
PAR,53,.125,.12,.13,,2*
PAR,54,.125,.12,.13,,3*
PAR,55,.125,.12,.13,,4*
PAR,56,.0625,.06,.065,,1*
PAR,57,.0625,.06,.065,,2*
PAR,58,.375,.37,.38,,1*
PAR,59,.3125,.31,.315,,2*
PAR,60,1.5,1.,2.,,4*
PAR,61,1.5,1.,2.,,3*
PAR,62,2.5,2.,3.,,2*
PAR,63,1.5,1.,2.,,1*
PAR,64,3.5,3.,4.,,2*
```

```
PAR,65,5.5,1.,6.,,1*
PAR,66,,6,13,,1*
PAR,67,4.5,4.,5.,,4*
PAR,68,,,,,1*
PAR,69,,,,,1*
PAR,70,,6,13,,1*
PAR,71,,15,20,,2*
PAR,72,,1,6,,6*
*QUEUE NODES*
QUE,19/INJ-JDG,,,D,(10)97*              INJUNCTION: JUDGE IS WAITING FOR ATTORNEY
QUE,20/INJ-ATT,,,D,(10)97*              INJUNCTION: ATTORNEY IS WAITING FOR JUDGE
QUE,39/TOC-JDG,,,D,(10)113*             TRIAL B/J OR O.C. JUDGE IS WAITING FOR AT
QUE,40/TOC-ATT,,,D,(10)113*             TRIAL B/J OR O.C. ATTORNEY IS WAITING FOR
QUE,74/JDG1-CT,,,D,B/10,(10)1*          COURTROOM CASE QUEUE FOR JUDGE 1.
QUE,75/JDG2-CT,,,D,B/10,(10)2*                                         2.
QUE,76/JDG3-CT,,,D,B/10,(10)3*                                         3.
QUE,77/JDG4-CT,,,D,B/10,(10)4*                                         4.
QUE,78/JDG5-CT,,,D,B/10,(10)5*                                         5.
QUE,79/JDG6-CT,,,D,B/10,(10)6*
QUE,80/ATT1-CT,,,D,B/10,(10)7*
QUE,81/ATT2-CT,,,D,B/10,(10)8*
QUE,82/ATT3-CT,,,D,B/10,(10)9*
QUE,83/ATT4-CT,,,D,B/10,(10)10*
QUE,84/ATT5-CT,,,D,B/10,(10)11*                                        6.
QUE,85/ATT6-CT,,,D,B/10,(10)12*
QUE,86/ATT7-CT,,,D,B/10,(10)13*
QUE,87/ATT8-CT,,,D,B/10,(10)14*
QUE,88/ATT9-CT,,,D,B/10,(10)15*
QUE,89/ATT10-CT,,,D,B/10,(10)16*
QUE,90/ATT11-CT,,,D,B/10,(10)17*
QUE,91/ATT12-CT,,,D,B/10,(10)18*
QUE,124/JDG1-NC,,,D,(10)21*             NON-COURTROOM CASE QUEUE FOR JUDGE 1.
QUE,125/JDG2-NC,,,D,(10)22*                                            2.
QUE,126/JDG3-NC,,,D,(10)23*                                            3.
QUE,127/JDG4-NC,,,D,(10)24*                                            4.
QUE,128/JDG5-NC,,,D,(10)25*                                            5.
QUE,129/JDG6-NC,,,D,(10)26*
QUE,130/ATT1-NC,,,D,(10)27*
QUE,131/ATT2-NC,,,D,(10)28*
QUE,132/ATT3-NC,,,D,(10)29*
QUE,133/ATT4-NC,,,D,(10)30*
QUE,134/ATT5-NC,,,D,(10)31*
QUE,135/ATT6-NC,,,D,(10)32*
QUE,136/ATT7-NC,,,D,(10)33*
QUE,137/ATT8-NC,,,D,(10)34*
QUE,138/ATT9-NC,,,D,(10)35*
QUE,139/ATT10-NC,,,D,(10)36*
QUE,140/ATT11-NC,,,D,(10)37*
QUE,141/ATT12-NC,,,D,(10)38*
QUE,185/PRI-M-J1,(10)186*
QUE,199/PRI-M-J2,(10)187*
QUE,200/PRI-M-J3,(10)188*
QUE,201/PRI-M-J4,(10)189*
QUE,202/PRI-M-J5,(10)190*
QUE,191/PRI-J1,(10)186*
QUE,192/PRI-J2,(10)187*
QUE,193/PRI-J3,(10)188*
QUE,194/PRI-J4,(10)189*
QUE,195/PRI-J5,(10)190*
QUE,221/PRI-J6,(10)223*
QUE,222/PRI-M-J6,(10)223*
QUE,224/ATT13-CT,,,D,B/10,(10)225*
QUE,226/ATT13-NC,,,D,(10)227*
*RESOURCE NODES*
RES,1/JUDGE1,1,1,21*
RES,2/JUDGE2,1,2,22*
```

```
RES,3/JUDGE3,1,3,23*
RES,4/JUDGE4,1,4,24*
RES,5/JUDGE5,1,5,25*
RES,6/JUDGE6,1,6,26*
RES,7/ATTY1,1,7,27*
RES,8/ATTY2,1,8,28*
RES,9/ATTY3,1,9,29*
RES,10/ATTY4,1,10,30*
RES,11/ATTY5,1,11,31*
RES,12/ATTY6,1,12,32*
RES,13/ATTY7,1,13,33*
RES,14/ATTY8,1,14,34*
RES,15/ATTY9,1,15,35*
RES,16/ATTY10,1,16,36*
RES,17/ATTY11,1,17,37*
RES,18/ATTY12,1,18,38*
RES,19/ATTY13,1,225,227*
*ALLOCATE NODES*
ALL,1,,1,1,74/92*                    COURTROOM: JUDGE 1 HANDLES THE CASE.
ALL,2,,2,1,75/92*                               2
ALL,3,,3,1,76/92*                               3
ALL,4,,4,1,77/92*                               4
ALL,5,,5,1,78/92*                               5
ALL,6,,6,1,79/92*
ALL,7,,7,1,80/96*
ALL,8,,8,1,81/96*
ALL,9,,9,1,82/96*
ALL,10,,10,1,83/96*
ALL,11,,11,1,84/96*
ALL,12,,12,1,85/96*
ALL,13,,13,1,86/96*
ALL,14,,14,1,87/96*
ALL,15,,15,1,88/96*
ALL,16,,16,1,89/96*
ALL,17,,17,1,90/96*
ALL,18,,18,1,91/96*
ALL,21,,1,1,124/142*                 NON-COURTROOM: JUDGE 1 HANDLES THE CASE.
ALL,22,,2,1,125/142*                                2
ALL,23,,3,1,126/142*                                3
ALL,24,,4,1,127/142*                                4
ALL,25,,5,1,128/142*                                5
ALL,26,,6,1,129/142*
ALL,27,,7,1,130/143*
ALL,28,,8,1,131/143*
ALL,29,,9,1,132/143*
ALL,30,,10,1,133/143*
ALL,31,,11,1,134/143*
ALL,32,,12,1,135/143*
ALL,33,,13,1,136/143*
ALL,34,,14,1,137/143*
ALL,35,,15,1,138/143*
ALL,36,,16,1,139/143*
ALL,37,,17,1,140/143*
ALL,38,,18,1,141/143*
ALL,225,,19,1,224/96*
ALL,227,,19,1,226/143*
*FREE NODES*
FRE,100,,A3,1*                       FREE JUDGE CT/NC AFTER INJUNCTION.
FRE,119,,1,1,21,1*                   FREE JUDGE 1 NC/CT AFTER COURTROOM CASE.
FRE,120,,2,1,22,2*                             2
FRE,121,,3,1,23,3*                             3
FRE,122,,4,1,24,4*                             4
FRE,123,,5,1,25,5*                             5
FRE,146,F,A3,1*                      FREE JUDGE CT/NC AFTER PASSING COURTROOM
FRE,147,F,A2,1*                      FREE ATTORNEY CT/NC AFTER PASSING COURTRO
FRE,157,,A3,1*                       FREE JUDGE CT/NC TO HANDLE AN INJUNCTION.
FRE,165,,A3,1*                       FREE JUDGE CT/NC AFTER NON-COURTROOM CASE
FRE,166,,A2,1*                       FREE ATTORNEY CT/NC AFTER NON-COURTROOM C
```

```
FRE,168,,19,1,227,225*
FRE,169,,7,1,27,7*
FRE,170,,8,1,28,8*
FRE,171,,9,1,29,9*
FRE,172,,10,1,30,10*
FRE,173,,11,1,31,11*
FRE,174,,12,1,32,12*
FRE,175,,13,1,33,13*
FRE,176,,14,1,34,14*
FRE,177,,15,1,35,15*
FRE,178,,16,1,36,16*
FRE,179,,17,1,37,17*
FRE,180,,18,1,38,18*
FRE,181,,A2,1*                          FREE ATTORNEY CT/NC TO HANDLE AN INJUNCTI
FRE,231,,6,1,26,6*
*MATCH NODES*
MAT,113,1,39/49,40*                   MATCH ATTORNEY AND JUDGE FOR A TRIAL
MAT,97,1,19/98,20*                      MATCH ATTORNEY AND JUDGE FOR AN INJUNCTIO
MAT,186,1,185/183,191/183*
MAT,187,1,199/183,192/183*
MAT,188,1,200/183,193/183*
MAT,189,1,201/183,194/183*
MAT,190,1,202/183,195/183*
MAT,223,1,221/183,222/183*
*STATISTICS NODES*
STA,70/CIVIL/US,1,1,,I,150.,150.,*              RECORD STATISTICS FOR CIVIL
STA,71/CRIMINAL,1,1,,I,150.,150.,*                                    CRI
STA,72/DIV-JUR,1,1,,I,150.,150.,*                                     DIVERSIT
STA,73/FED-QUES,1,1,,I,150.,150.,*                                    FEDERAL
STA,182/SPD-TRL,1,1,D,I*
*SOURCE NODES*
SOU,41,,1,D*                            CIVIL/U.S. CASE GENERATION
SOU,42,,1,A*                            CIVIL/U.S. CASE FRONT END LOADER
SOU,43,,1,D*                            CRIMINAL CASE GENERATION
SOU,44,,1,A*                            CRIMINAL CASE FRONT END LOADER
SOU,45,,1,D*                            DIVERSITY JURISDICTION GENERATION
SOU,46,,1,A*                            DIVERSITY JURISDICTION FRONT END LOADER
SOU,47,,1,D*                            FEDERAL QUESTION GENERATION
SOU,48,,1,A*                            FEDERAL QUESTION FRONT END LOADER
SOU,203,,1,D*
*REGULAR NODES*
REG,49,1,1,F*
REG,50,1,1,F*
REG,51,1,1,A*
REG,52,1,1,D*                           SET JUDGE # AND FREQUENCIES: CIVIL/U.S.
REG,53,1,1,D*                           SET JUDGE # AND FREQUENCIES: FEDERAL QUES
REG,54,1,1,D*                           SET JUDGE # AND FREQUENCIES: DIVERSITY JU
REG,55,1,1,F*                           SET TRIAL/NON-TRIAL ATTRIBUTE.
REG,56,1,1,F*
REG,57,1,1,D*
REG,58,1,1,D*
REG,59,1,1,D*
REG,60,1,1,D*
REG,61,1,1,F*                           DECIDE WHICH STAGE THE CASE WILL ENTER.
REG,62,1,1,F*                           ROUTE FINISHED CASE FOR PROPER STATISTICS
REG,63,1,1,D*                           EXTERNAL DELAY
REG,64,1,1,D*                           INJUNCTION
REG,65,1,1,D*                           OTHER COURT (O.C.)
REG,66,1,1,D*                           TRIAL BENCH
REG,67,1,1,D*                           TRIAL JURY
REG,68,1,1,F*                           NON-COURTROOM: JUDGE
REG,69,1,1,F*                           NON-COURTROOM: ATTORNEY
REG,92,1,1,F*                           JUDGE ROUTES THE CASE.
REG,93,1,1,F*                           ATTORNEY ROUTES THE CASE.
REG,94,1,1,D*                           PASSED CASE'S PRIORITY IS INCREASED: JUDG
REG,95,1,1,D*                           PASSED CASE'S PRIORITY IS INCREASED: ATTO
```

```
REG,96,1,1,D*
REG,98,1,1,D*                    INJUNCTION HANDLED BY JUDGE AND ATTORNEY.
REG,99,1,1,D*                          INJUNCTION IS FINISHED BY JUDGE AND ATTOR
REG,101,1,1,F*                         ROUTE JUDGE ONLY CASE.
REG,102,1,1,D*                         OTHER COURT BY JUDGE ONLY.
REG,103,1,1,D*                         INJUNCTION BY JUDGE ONLY.
REG,104,1,1,D*                         TRIAL BY JUDGE ONLY.
REG,105,1,1,D*                         DECREMENT OTHER COURT FREQUENCY: JUDGE ON
REG,106,1,1,D*                         DECREMENT INJUNCTION FREQUENCY: JUDGE ONL
REG,107,1,1,F*                         DECREMENT TRIAL FREQUENCY: JUDGE ONLY.
REG,108,1,1,D*
REG,109,1,1,D*
REG,110,1,1,D*
REG,111,1,1,F*
REG,112,1,1*                           REMOVE JUDGE ONLY TRANSACTIONS FROM THE N
REG,114,1,1,D*                           TRIAL OR OTHER COURT CASE: JUDGE AN
REG,115,1,1,F*
REG,116,1,1,D*                         DECREMENT OTHER COURT FREQUENCY: JUDGE AN
REG,117,1,1,D*                         SET TRIAL IN PROGRESS ATTRIBUTE: JUDGE AN
REG,118,1,1,D*                         TRIAL COMPLETE: JUDGE AND ATTORNEY.
REG,142,1,1,D*                         NON-COURTROOM: JUDGE
REG,143,1,1,D*                         NON-COURTROOM: ATTORNEY
REG,144,1,1,A*                         DECREMENT NON-COURTROOM FREQUENCY: JUDGE.
REG,145,1,1,A*                         DECREMENT NON-COURTROOM FREQUENCY: ATTORN
REG,148,1,1,F*
REG,149,1,1,F*
REG,150,1,1,P*                         SET ATTORNEY # FOR CIVIL/U.S. CASES.
REG,151,1,1,D*
REG,152,1,1,P*                         SET ATTORNEY # FOR FEDERAL QUESTIONS CASE
REG,153,1,1,D*
REG,154,1,1,P*                         SET ATTORNEY # FOR DIVERSITY JURISDICTION
REG,155,1,1,D*
REG,156,1,1,F*                         CHECK INJUNCTION STATUS FOR JUDGE.
REG,158,1,1,P*
REG,159,1,1,F*
REG,160,1,1,A*
REG,161,1,1,F*
REG,162,1,1,F*
REG,163,1,1,F*                         CHECK INJUNCTION STATUS FOR ATTORNEY.
REG,164,1,1,P*                         DELAY FOR ATTORNEY DECISION MADE.
REG,167,1,1,F*
REG,183,2,2,D,,8/10*
REG,184,1,1,F*
REG,196,1,1,F*
REG,197,1,1,D*
REG,198,1,1,F*
REG,204,1,1,D*
REG,205,1,1,F*
REG,228,1,1,F*
REG,229,1,1,F*
REG,230,1,1,D*
*VALUE ASSIGNMENT CARDS*
VAS,41,2,UF,1,3,UF,3*
VAS,42,1,IN,1,2,UF,1,3,UF,3*
VAS,44,1,IN,1*
VAS,46,1,IN,1*
VAS,48,1,IN,1*
VAS,49,11,UF,57*
VAS,50,11,UF,5*
VAS,52,3,UF,3,4,UF,4*
VAS,53,3,UF,3,4,UF,4*
VAS,54,3,UF,3,4,UF,4*
VAS,55,11,UF,29*
VAS,56,11,UF,30*
```

```
VAS,57,6,CO,0.*
VAS,58,6,CO,1.1*
VAS,59,6,CO,1.2*
VAS,60,1,UF,35*
VAS,61,11,UF,6*
VAS,63,10,UF,50,4,UF,43*
VAS,64,10,UF,51*
VAS,65,10,UF,52*
VAS,66,10,UF,53,6,UF,7*
VAS,67,10,UF,53,6,UF,8*
VAS,68,10,UF,54*
VAS,69,10,UF,55*
VAS,92,11,UF,9*
VAS,93,11,UF,10*
VAS,94,10,UF,11*
VAS,95,10,UF,12*
VAS,98,11,UF,36*
VAS,99,5,UF,44,11,UF,13,11,UF,37*
VAS,102,11,UF,40*
VAS,103,11,UF,40*
VAS,104,11,UF,40*
VAS,105,7-,CO,1.,11,UF,41,11,CO,6*
VAS,106,11,UF,41,5-,CO,1.*
VAS,107,6-,CO,1.,11,UF,41*
VAS,108,11,UF,14*
VAS,109,10,CO,7.,11,CO,1.*
VAS,110,11,UF,15,11,CO,2,6,CO,0*
VAS,114,11,UF,16,11,UF,36*
VAS,115,11,UF,37,11,UF,17*
VAS,116,7,UF,45,11,CO,3.*
VAS,117,10,UF,56,11,CO,4.*
VAS,118,11,UF,18,11,CO,5.,6,UF,46*
VAS,142,11,UF,40*
VAS,143,11,UF,38*
VAS,144,8,UF,47,11,UF,41,11,UF,62*
VAS,145,9,UF,48,11,UF,39,11,UF,63*
VAS,148,11,UF,64*
VAS,149,11,UF,65*
VAS,150,2,UF,2*
VAS,151,4,UF,33*
VAS,152,2,CO,1.*
VAS,153,4,UF,32*
VAS,154,2,CO,2.*
VAS,155,4,UF,31*
VAS,156,11,UF,19*
VAS,160,11,CO,0.*
VAS,161,11,UF,34*
VAS,162,11,UF,49*
VAS,163,11,UF,20*
VAS,182,11,UF,18,11,CO,7.*
VAS,204,11,UF,42*
VAS,228,11,UF,65*
VAS,229,11,UF,67*
VAS,205,11,UF,58*
*ACTIVITY CARDS*
ACT,41,41,EX,1*
ACT,41,60*
ACT,42,42,(9)A1.LE.1*
ACT,42,60*
ACT,43,43,EX,2*
ACT,43,150*
ACT,44,44,(9)A1.LE.1*
ACT,44,150*
ACT,45,45,EX,3*
ACT,45,152*
ACT,46,46,(9)A1.LE.1*
ACT,45,152*
```

```
ACT,47,47,EX,4*
ACT,47,154*
ACT,48,48,(9)A1.LE.1*
ACT,48,154*
ACT,49,114,(9)A11.EQ.1*
ACT,49,182,(9)A11.EQ.0*
ACT,50,62,(9)A11.EQ.0*
ACT,50,161,(9)A11.EQ.1*
ACT,51,74,(9)A3.EQ.1*                  COURTROOM CASE SENT TO JUDGE 1.
ACT,51,75,(9)A3.EQ.2*                                              2.
ACT,51,76,(9)A3.EQ.3*                                              3.
ACT,51,77,(9)A3.EQ.4*                                              4.
ACT,51,78,(9)A3.EQ.5*                                              5.
ACT,51,79,(9)A3.EQ.6*
ACT,51,80,(9)A2.EQ.7*
ACT,51,81,(9)A2.EQ.8*
ACT,51,82,(9)A2.EQ.9*
ACT,51,83,(9)A2.EQ.10*
ACT,51,84,(9)A2.EQ.11*
ACT,51,85,(9)A2.EQ.12*
ACT,51,86,(9)A2.EQ.13*
ACT,51,87,(9)A2.EQ.14*
ACT,51,88,(9)A2.EQ.15*
ACT,51,89,(9)A2.EQ.16*
ACT,51,90,(9)A2.EQ.17*
ACT,51,91,(9)A2.EQ.18*
ACT,51,224,(9)A2.EQ.19*
ACT,51,196,(9)A2.EQ.1*
ACT,51,196,(9)A2.EQ.2*
ACT,52,55*
ACT,53,55*
ACT,54,55*
ACT,55,56,(9)A11.EQ.1*                  THE CASE IS A TRIAL.
ACT,55,57,(9)A11.EQ.0*                  THE CASE IS NON-TRIAL.
ACT,56,58,(9)A11.EQ.1*
ACT,56,59,(9)A11.EQ.2*
ACT,57,60*
ACT,58,60*
ACT,59,60*
ACT,60,50*
ACT,61,64,(9)A11,EQ.64*                 STAGE IS AN INJUNCTION.
ACT,61,65,(9)A11.EQ.65*                 STAGE IS OTHER COURT (O.C.).
ACT,61,66,(9)A11.EQ.66*                 STAGE IS TRIAL BENCH.
ACT,61,67,(9)A11.EQ.67*                 STAGE IS TRIAL JURY.
ACT,61,68,(9)A11.EQ.68*                 STAGE IS NON-COURTROOM (JUDGE).
ACT,61,69,(9)A11.EQ.69*                 STAGE IS NON-COURTROOM (ATTORNEY).
ACT,61,63,(9)A11.EQ.63*                 STAGE IS EXTERNAL DELAY (REQUIRED).
ACT,61,71,(9)A11.EQ.71*
ACT,62,70,(6)34,(9)A2.GE.14.*
ACT,62,72,(9)A2.GE.2*                                  DIVERSITY JURISDICTI
ACT,62,73,(9)A2.GE.1*                                  FEDERAL QUESTIONS CA
ACT,63,50,UF,21*                        STAGE = EXTERNAL DELAY
ACT,64,51*                              STAGE = INJUNCTON
ACT,65,51*                              STAGE = OTHER COURT
ACT,66,51*                              STAGE = TRIAL BENCH
ACT,67,51*                              STAGE = TRIAL JURY
ACT,68,124,(9)A3.EQ.1*                  NON-COURTROOM CASE SENT TO JUDGE 1.
ACT,68,125,(9)A3.EQ.2*                                                   2.
ACT,68,126,(9)A3.EQ.3*                                                   3.
ACT,68,127,(9)A3.EQ.4*                                                   4.
ACT,68,128,(9)A3.EQ.5*                                                   5.
ACT,68,129,(9)A3.EQ.6*
ACT,69,130,(9)A2.EQ.7*
ACT,69,131,(9)A2.EQ.8*
ACT,69,132,(9)A2.EQ.9*
ACT,69,133,(9)A2.EQ.10*
```

```
ACT,69,134,(9)A2.EQ.11*
ACT,69,135,(9)A2.EQ.12*
ACT,69,136,(9)A2.EQ.13*
ACT,69,137,(9)A2.EQ.14*
ACT,69,138,(9)A2.EQ.15*
ACT,69,139,(9)A2.EQ.16*
ACT,69,140,(9)A2.EQ.17*
ACT,69,141,(9)A2.EQ.18*
ACT,69,226,(9)A2.EQ.19*
ACT,92,74,(9)A11.EQ.1*          JUDGE: PASS THE CASE.
ACT,92,184,(9)A11.EQ.2*
ACT,92,39,(9)A11.EQ.3*          JUDGE: TRIAL B/J, AND O.C.
ACT,92,19,(9)A11.EQ.4*          JUDGE (COURTROOM): INJUNCTION
ACT,93,20,(9)A11.EQ.4*          ATTORNEY (COURTROOM): INJUNCTION
ACT,93,40,(9)A11.EQ.3*          ATTORNEY (COURTROOM): TRIAL B/J OR
ACT,93,95,(9)A11.EQ.1*          ATTORNEY (COURTROOM): PASS THE CASE
ACT,94,146*                     FREE THE JUDGE AND PASS THE CASE.
ACT,95,147*                     FREE THE ATTORNEY AND PASS THE CASE.
ACT,96,93*
ACT,98,99,UF,22*                INJUNCTION DURATION: JUDGE/ATTORNEY.
ACT,99,100*                     FREE JUDGE AFTER JUDGE/ATTORNEY INJUNCTIO
ACT,100,166*                    FREE ATTORNEY AFTER JUDGE/ATTORNEY INJUNC
ACT,101,102,(9)A10.EQ.3*        JUDGE (PRIVATE) O.C.
ACT,101,102,(9)A10.EQ.4*
ACT,101,103,(9)A10.EQ.8*        JUDGE (PRIVATE) INJUNCTION.
ACT,101,103,(9)A10.EQ.9*
ACT,101,104,(9)A10.EQ.5*        JUDGE (PRIVATE) TRIAL B/B.
ACT,101,104,(9)A10.EQ.6*
ACT,101,104,(9)A10.EQ.7*
ACT,102,105,UF,23*              DURATION JUDGE (PRIVATE) O.C.
ACT,103,106,UF,24*                                       INJUNCTION.
ACT,104,107,UF,25*                                       TRIAL B/J.
ACT,105,156*                    FREE JUDGE AFTER PRIVATE O.C.
ACT,106,108*
ACT,107,110,(9)A6.EQ.1000*      TRIAL IS FINISHED.
ACT,107,110,(9)A6.EQ.2000*      TRIAL IS FINISHED.
ACT,107,109*
ACT,108,165*                    FREE JUDGE AFTER PRIVATE INJUNCTION.
ACT,109,51*                     RETURN CASE FOR THE NEXT TRIAL EPISODE.
ACT,109,156*                    FREE JUDGE AFTER PRIVATE TRIAL B/J.
ACT,110,50*                     RETURN CASE FOR NEXT STAGE.
ACT,110,156*                    FREE JUDGE AFTER PRIVATE TRIAL B/J.
ACT,111,112,(9)A11.EQ.-6*
ACT,111,112,(9)A11.EQ.-2*       DO NOT FREE ATTORNEY FOR PRIVATE CASES.
ACT,111,112,(9)A11.EQ.-1*
ACT,111,112,(9)A11.EQ.0*
ACT,111,112,(9)A11.EQ.1*
ACT,111,112,(9)A11.EQ.2*
ACT,111,163*                    FREE ATTORNEY.
ACT,114,115,UF,26*              DURATION OF TRIAL B/J AND O.C. J/A CT.
ACT,115,116,(9)A10.EQ.3*
ACT,115,116,(9)A10.EQ.4*
ACT,115,116,(9)A10.EQ.9.*
ACT,115,118,(9)A6.EQ.1000*
ACT,115,118,(9)A6.EQ.2000*
ACT,115,117*
ACT,116,50*
ACT,116,156*
ACT,117,51*                     RETURN CASE FOR THE NEXT TRIAL EPISODE.
ACT,117,156*                    FREE JUDGE AND ATTORNEY.
ACT,118,50*                     RETURN CASE FOR THE NEXT STAGE.
ACT,118,156*                    FREE JUDGE AND ATTORNEY.
ACT,119,111*
ACT,120,111*
ACT,121,111*
ACT,122,111*
```

```
ACT,123,111*
ACT,142,144,UF,27*                    DURATION FOR NON-COURTROOM CASE: JUDGE.
ACT,143,145,UF,28*                    DURATION FOR NON-COURTROOM CASE: ATTORNEY
ACT,144,165,(9)A11.EQ.1*                       FREE JUDGE.
ACT,144,159,(9)A11.EQ.0*
ACT,144,50,(9)A11.EQ.0*
ACT,145,166,(9)A11.EQ.1*                       FREE ATTORNEY.
ACT,145,50,(9)A11.EQ.0*
ACT,145,167,(9)A11.EQ.0*
ACT,146,74,CO,.7,4,(9)A3.EQ.1*         JUDGE 1: RETURN PASSED/DELAYED CASE.
ACT,146,75,CO,.7,5,(9)A3.EQ.2*               2
ACT,146,76,CO,.7,6,(9)A3.EQ.3*               3
ACT,146,77,CO,.7,7,(9)A3.EQ.4*               4
ACT,146,78,CO,.7,8,(9)A3.EQ.5*               5
ACT,146,79,CO,.7,9,(9)A3.EQ.6*
ACT,147,80,CO,.7,10,(9)A2.EQ.7*
ACT,147,81,CO,.7,11,(9)A2.EQ.8*
ACT,147,82,CO,.7,12,(9)A2.EQ.9*
ACT,147,83,CO,.7,13,(9)A2.EQ.10*
ACT,147,84,CO,.7,14,(9)A2.EQ.11*
ACT,147,85,CO,.7,15,(9)A2.EQ.12*
ACT,147,86,CO,.7,16,(9)A2.EQ.13*
ACT,147,87,CO,.7,17,(9)A2.EQ.14*
ACT,147,88,CO,.7,18,(9)A2.EQ.15*
ACT,147,89,CO,.7,19,(9)A2.EQ.16*
ACT,147,90,CO,.7,20,(9)A2.EQ.17*
ACT,147,91,CO,.7,21,(9)A2.EQ.18*
ACT,147,224,CO,.7,22,(9)A2.EQ.19*
ACT,148,157,(9)A11.EQ.5*
ACT,148,157,(9)A11.EQ.1*
ACT,148,159,(9)A11.EQ.-5*
ACT,148,159,(9)A11.EQ.-1*
ACT,149,157,(9)A11.EQ.3*
ACT,149,157,(9)A11.EQ.1*
ACT,149,159,(9)A11.EQ.-3*
ACT,149,159,(9)A11.EQ.-1*
ACT,150,151,(6)25,(8).39*                CIVIL/U.S. CASE: NO JUDGE REQUIRED.
ACT,150,52,(6)26,(8).61*
ACT,151,60*
ACT,152,153,(6)27,(8).32*                FEDERAL QUESTIONS CASE: NO JUDGE RE
ACT,152,53,(6)28,(8).68*
ACT,153,60*
ACT,154,155,(6)29,(8).40*                DIVERSITY JURISDICTION CASE: NO JUD
ACT,154,54,(6)30,(8).60*
ACT,155,60*
ACT,156,157,(9)A11.LT.0*              JUDGE IS REQUIRED FOR INJUNCTION.
ACT,156,158,(9)A11.EQ.2*              JUDGE IS FINISHED WITH PRIVATE CASE.
ACT,156,158,(9)A11.EQ.5*              JUDGE IS FINISHED WITH PUBLIC CASE.
ACT,156,149,*                 JUDGE IS IN THE MIDDLE OF A CASE.
ACT,157,111*
ACT,158,160,(6)31,(8).0001*                DELAY FOR JUDGE AFTER FINISHING A
ACT,158,148,(6)32,(8).9999*
ACT,159,119,(9)A3.EQ.1*               FREE JUDGE 1.
ACT,159,120,(9)A3.EQ.2*                          2.
ACT,159,121,(9)A3.EQ.3*                          3.
ACT,159,122,(9)A3.EQ.4*                          4.
ACT,159,123,(9)A3.EQ.5*                          5.
ACT,159,231,(9)A3.EQ.6*
ACT,160,157,UF,59,23*
ACT,160,163,(9)A2.GE.7*
ACT,161,162,(9)A11.EQ.1.*
ACT,161,61,(9)A11.EQ.0*
ACT,162,61,(9)A11.EQ.0*
ACT,162,63,(9)A11.EQ.1*
ACT,163,181,(9)A11.EQ.1*              ATTORNEY IS REQUIRED FOR AN INJUNCTION.
ACT,163,164,(9)A3.EQ.7*               ATTORNEY IS FINISHED WITH A CASE.
ACT,163,229*                          ATTORNEY IS IN THE MIDDLE OF A CASE.
```

```
ACT,164,181,UF,60,24,(8).0001*
ACT,164,228,CO,0.,33,(8).9999*
ACT,165,50*
ACT,166,50*
ACT,167,168,(9)A2.EQ.19*
ACT,167,169,(9)A2.EQ.7*
ACT,167,170,(9)A2.EQ.8*
ACT,167,171,(9)A2.EQ.9*
ACT,167,172,(9)A2.EQ.10*
ACT,167,173,(9)A2.EQ.11*
ACT,167,174,(9)A2.EQ.12*
ACT,167,175,(9)A2.EQ.13*
ACT,167,176,(9)A2.EQ.14*
ACT,167,177,(9)A2.EQ.15*
ACT,167,178,(9)A2.EQ.16*
ACT,167,179,(9)A2.EQ.17*
ACT,167,180,(9)A2.EQ.18*
ACT,182,156*
ACT,183,101*
ACT,184,101,(9)A10.EQ.8.*
ACT,184,101,(9)A10.EQ.9.*
ACT,184,185,(9)A3.EQ.1*
ACT,184,199,(9)A3.EQ.2*
ACT,184,200,(9)A3.EQ.3*
ACT,184,201,(9)A3.EQ.4*
ACT,184,202,(9)A3.EQ.5*
ACT,184,222,(9)A3.EQ.6*
ACT,196,198,(9)A10.EQ.7*
ACT,196,198,(9)A10.EQ.3*
ACT,196,198,(9)A10.EQ.5*
ACT,196,197*
ACT,198,191,(9)A3.EQ.1*
ACT,198,192,(9)A3.EQ.2*
ACT,198,193,(9)A3.EQ.3*
ACT,198,194,(9)A3.EQ.4*
ACT,198,195,(9)A3.EQ.5*
ACT,198,221,(9)A3.EQ.6*
ACT,203,204,CO,0.,2*
ACT,228,181,(9)A11.EQ.1.*
ACT,228,167,(9)A11.EQ.0.*
ACT,229,181,(9)A11.EQ.1*
ACT,229,167,(9)A11.EQ.0*
ACT,203,205,CO,600.,1*
ACT,205,205,CO,0.,3,(9)A11.EQ.1*
ACT,205,230,CO,0.,(9)A11.EQ.0*
ACT,231,111*
COL,1/INVSTGTN*
COL,2/GRNDJURY*
COL,3/INDTMNT*
COL,4/ARRGNMNT*
COL,5/INFRMTN*
COL,6/I.C.PREP*
COL,7/PLEABRGN*
COL,8/RE-ARGN*
COL,9/F.C.PREP*
COL,10/BENCH*
COL,11/JURY*
COL,12/PRE-SENT*
COL,13/SENTPREP*
COL,14/SENTENC*
COL,15/DECLIN-1*
COL,16/STATE-CT*
COL,17/NO BILL*
COL,18/COMM-SERV*
COL,19/VOL-PROB*
```

```
COL,20/DECLIN-2*
COL,21/DECLIN-3*
COL,22/AQUITTAL*
COL,23/FINES*
COL,24/APPEAL*
COL,25/PROBATN*
COL,26/MIXED-ST*
COL,27/PAROLE*
COL,28/SPLIT-ST*
COL,29/INCARTN*
TIM,1/JUDGE1,0.,2/JUDGE2,0.,3/JUDGE3,0.,4/JUDGE4,0.,5/JUDGE5,0.,6/JUDGE6,0.*
TIM,7/ATT1,0.,8/ATT2,0.,9/ATT3,0.,10/ATT4,0.,11/ATT5,0.,12/ATT6,0.,13/ATT7,0.*
TIM,14/ATT8,0.,15/ATT9,0.,16/ATT10,0.,17/ATT11,0.,18/ATT12,0.,19/ATT13,0.*
FIN*
**********
* SAMPLE *
*  DATA  *
* INPUT  *
**********
* NFOLW *    1   2   3   4   5   6   7   8   9  10  11  12  13  14
            -1  -4  -5  -7  -6 -14 -16  12 -17 -18 -18  13  14 -19
* UFA *      1   2   3   4   5   6   7   8   9  10  11  12  13  14
           69. 65. 65. 65. 69. 69. 69. 65. 69. 66. 67. 68. 69. 65.
* IEPSD *    1   2   3   4   5   6   7   8   9  10  11  12  13  14
            0  18   0   0   0   0  19   0   0   0   0   0   0   0
* IATTR *    1   2   3   4   5   6   7   8   9  10  11  12  13  14
            0   7   0   0   0   0   9   0   0   0   0   0   0   0
* NBRNCH *                      1 1 1 1 1 1 1 1 1 2 2 2 2 2
*          1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
           5 2 4 4 2 2 2 2 2 2 3 2 2 3 2 2 2 2 6 2 2 2 2 2
* NEXTS *
* DP 1 *      1    2    3    4    5
            -2   -3   -8    4  207
* DP 2 *      1    2
            1  206
* DP 3 *      1    2    3    4
            -8    2    4    5
* DP 4 *      1    2    3    4
            -8    3    4  208
* DP 5 *      1    2
            -8    4
* DP 6 *      1    2
            -8    4
* DP 7 *      1    2
            -8  -11
* DP 8 *      1    2
            -9  -10
* DP 9 *      1    2
           100  209
* DP 10 *     1    2
           100  210
* DP 11 *     1    2    3
           211  -13   12
* DP 12 *     1    2
            0    0
* DP 13 *     1    2
            6    7
* DP 14 *     1    2    3
           212    7    9
* DP 15 *     1    2
            0    0
* DP 16 *     1    2
            8    9
* DP 17 *     1    2
           10   11
```

```
* DP 18 *      1     2
             12   213
* DP 19 *      1     2     3     4     5     6
            -20   -21   -22   -23   214   215
* DP 20 *      1     2
              4   216
* DP 21 *      1     2
              4   217
* DP 22 *      1     2
            -24   219
* DP 23 *      1     2
            -24   220
* DP 24 *      1     2
              4   218
* IDRTN *      1     2     3     4     5     6     7
             -3     0     4     4     4     4   -11
* SPEED *     1     2     3     4     5     6     7     8     9    10    11    12    13    14
           6.1   6.3   6.3   6.3   6.1   6.1   6.1   6.3   6.1   6.5   6.5   6.2   6.1   6.3
* IECHO  *     3
              1
* PCINJ *      1     2     3     4     5     6     7     8     9    10    11    12    13    14
             00    00    00    00    00    00    00    00    00    00    00    00    00    00
* PCEXD *      1     2     3     4     5     6     7     8     9    10    11    12    13    14
             00    60    00    00    00    00  .075  .075   .10    20    20  .025  .025    00
* PROB *       3     4     1     2     3     4     5
             70    1.    20    35    45    55    00
* PNEXT *
*********
* UDP 1  *     1     2     3     4     5
             25    25    02    28    20
* UDP 2  *     1     2
             65    35
* UDP 3  *     1     2     3     4
             05    30    20    45
* UDP 4  *     1     2     3     4
             02    70    00    28
* UDP 5  *     1     2
             08    92
* UDP 6  *     1     2
             08    92
* UDP 7  *     1     2
             05    95
* UDP 8  *     1     2
             75    25
* UDP 9  *     1     2
             35    65
* UDP 10 *     1     2
             35    65
* UDP 11 *     1     2     3
             30    60    10
* UDP 12 *     1     2
             50    50
* UDP 13 *     1     2
             50    50
* UDP 14 *     1     2     3
             15    70    15
* UDP 15 *     1     2
             50    50
* UDP 16 *     1     2
             80    20
* UDP 17 *     1     2
             70    30
* UDP 18 *     1     2
             07    93
* UDP 19 *     1     2     3     4     5     6
             40    10    10    30    10    00
```

```
* UDP 20 *   1    2
           25   75
* UDP 21 *   1    2
           20   80
* UDP 22 *   1    2
           15   85
* UDP 23 *   1    2
           15   85
* UDP 24 *   1    2
           28   82
* SIM PAR*   3    4    5
         1199.1500.    2
* SYSTEM *
* CARD 1 *   3    4    5
            5    7    5
* CARD 2 *   3    4    5
          1.0  1.0  1.0
* CARD 3 *   3    4    5    6    7    8
         .0312 .125.0312 .125.0312 .032
* CARD 4 *   3    4    5    6    7    8
            0    0    0    0    0    0
* CARD 5 *   3
           30.
* CARD 6 *   3    4    5    6
           .7  .71 .625 5.75
* CARD 7 *   3    4    5
           .39  .32  .40
* CARD 8 *   3    4
         .0001.0001
* CARD 9 *   3    4    5
           .5   .5   .5
* CARD 10*   3    4    5
           .00  .00  .00
* CARD 11*   3    4    5    6    7    8
           .04 .897 .074 .733  .12 .376
* CARD 12*   3
           .5
*CRIMINAL*
* CARD 13*   3    4    5    6
         .8695.00011000.
* CARD 14*   3    4    5    6
          .001.0001 .010
* CARD 15*   3    4    5    6    7    8    9   10
          1.5   1.   9.     .2188.0625 .500
* CARD 16*   3    4    5    6    7    8    9   10
          3.5   1.  26.       .375.0625 .500
* CARD 17*   3    4    5    6    7    8    9   10
          1.5   1.  27.       .075.0625  .50
* CARD 18*   3    4    5    6
          .001.0001 .010
* CARD 19*   3    4    5    6
         .1975.18753.813
* CARD19A*   3    4    5    6
         .1250.062519.00
* CARD 20*   3    4    5    6
         .0655.0625 .625
* CARD 21*   3    4    5    6
           10.  3.0  22.
* CARD 22*   3    4    5    6
          .125.0625   8.
* CARD 23*   3    4    5    6
          .0655.0625 3.50
* CARD 24*   3    4    5    6
          .0655.0625   4.
* CARD 25*   3    4    5    6    7    8    9   10
          1.5   1.   4.       .125.0625 .250
* CARD 26*   3    4    5    6
          .075.0625  10.
```

```
* CARD 27*    3     4     5     6
          .0635  .06 .125
* CARD 28*    3     4     5     6
          20.75 4.75  40.
*CIVIL/US*
* CARD 29*    3     4     5     6
          .5119.00011000.
* CARD 30*    3     4     5     6     7     8     9    10
           1.5   1.    2.      .0125 .01   .1
* CARD 31*    3     4     5     6     7     8     9    10
           3.5   3.    4.        .375 .37  .38
* CARD 32*    3     4     5     6     7     8     9    10
           3.5   3.    4.          .5 .45  .55
* CARD 33*    3     4     5     6     7     8     9    10
           2.5   2.    3.        .125 .12  .13
* CARD 34*    3     4     5     6     7     8     9    10
           2.5   2.    3.       .0625 .06 .065
* CARD 35*    3     4     5     6
           7.5   7.    8.
* CARD 36*    3     4     5     6
           3.5   3.    4.
* CARD 37*    3     4     5     6
          .3125  .31 .315
* CARD 38*    3     4     5     6
           1.5   1.    2.
* CARD 39*    3     4     5     6
           1.5   1.    2.
* CARD 40*    3     4     5     6
           15.   14.   16.
*FED QUES*
* CARD 41*    3     4     5     6
          .3963.00011000.
* CARD 42*    3     4     5     6     7     8     9    10
           1.5   1.    2.      .0125 .01   .02
* CARD 43*    3     4     5     6     7     8     9    10.
           3.5   3.    4.          .5 .45  .55
* CARD 44*    3     4     5     6     7     8     9    10
           4.5   4.    5.       .4375 .43 .445
* CARD 45*    3     4     5     6     7     8     9    10
           2.5   2.    3.       .1875 .18 .195
* CARD 46*    3     4     5     6     7     8     9    10
           2.5   2.    3.        .125 .12  .13
* CARD 47*    3     4     5     6
           2.5   2.    3.
* CARD 48*    3     4     5     6
           2.5   2.    3.
* CARD 49*    3     4     5     6
           30.   25.   35.
*DIV JURS*
* CARD 50*    3     4     5     6
          .7595.00011000.
* CARD 51*    3     4     5     6     7     8     9    10
           1.5   1.    2.        .025 .02  .03
* CARD 52*    3     4     5     6     7     8     9    10
           2.5   2.    3.          .5 .45  .55
* CARD 53*    3     4     5     6     7     8     9    10
           4.5   4.    5.       .4375 .43 .445
* CARD 54*    3     4     5     6     7     8     9    10
           2.5   2.    3.       .1875 .18 .195
* CARD 55*    3     4     5     6     7     8     9    10
           3.5   3.    4.        .125 .12  .13
* CARD 56*    3     4     5     6
          10.5  10.   11.
* CARD 57*    3     4     5     6
           4.5   4.    5.
* CARD 58*    3     4     5     6
           53.   52.   55.
*INT CHNG*
*  IC 1  *    3     4
           50.   25.
*  IC 2  *    1     2     3     4     5     6     7     8     9
          100.  100.  100.  100.  100.  100.  100.  100.  100.
*  IC 3  *    1     2     3     4     5     6     7     8     9
           0     0     0     0     0     0     0     0     0
*PARCHG 1*    3
             0
*PARCHG 2*    3
            58
*PARCHG 3*    1     2     3     4
            10.   9.   15.
             0
            58
            10.   9.   15.
* NEG    *    3
            -99
```

FORTRAN Listing

```
      SUBROUTINE UI                                                     BJU00010
      COMMON /NODAL/ ID,IM,IMM,LSINK(250),MFA,MFE(250),MFEB(250),MX,    BJU00020
     1MXX,NDCH(250,2),NDPT(250),NN,NOQ,NSIGN(250),NTYPE(250),LABLN      BJU00030
     2(120,2)                                                           BJU00040
      COMMON /FILES/ NSET(3500),NNVNT(20000),MFEE,MFAE,MMID,MLEE,JJPTR, BJU00050
     1JJPAC,EEVTI                                                       BJU00060
      DIMENSION QSET(3500),EEVNT(20000)                                 BJU00070
      EQUIVALENCE (NSET(1),QSET(1)), (NNVNT(1),EEVNT(1))                BJU00080
      COMMON /MXDIM/ MXABA,MXCEL,MXNOD,MXNPO,MXPAR,MXQUE,MXSOU,MXSTA,MXTBJU00090
     1RS,MXVAS,MAXDS,MXNS2,MXNTR,MXSER,MXSTR,RMXVA,MXEVT                BJU00100
      COMMON /STRAC/ KTRAC,NPRNT3, NNPTS,KTRCE,KTRCS,NTBTR(50)          BJU00110
      COMMON /GENL/ IFIN,IFRST,ISMRY,ITRAC,LIST80,MON,NAME(12),NCRDR,NDABJU00120
     *Y,NNM,NPRNT,NPROJ(12),NSORC(20),NTRCS,NTRCE,NSRC,NYR,TTFIN        BJU00130
      COMMON /UCOM1/ ICRT(19),INJ(19),KFLAG(6),KATH                     BJU00140
      COMMON /QVAR/ NDE,NFTBU(250),NREL(250),NRELP(250),NREL2(250),     BJU00150
     *NRUN,NRUNS,NTC(250),PARAM(100,4),TBEG,TNOW                        BJU00160
      COMMON/CRMNL/NFOLW(15),UFA(15),IEPSD(15),IATTR(15),NBRNCH(25),    BJU00170
     *            NEXTS(25,6),PNEXT(25,6),IDRTN(7),PCINJ(15),PCEXD(15),BJU00180
     *            IACOL(15),ISCOL(15),SPEED(15),RLSE,BAIL,PMDTR(5)      BJU00190
      COMMON/CMNLP/NJ,NACR,NACV,BETAJ,BETAR,BETAV,WTMNJ,WTMXJ,WTMNR,WTNXBJU00200
     1R,WTMNV,WTMXV,NOCSJ,NOCSR,NOCSV,NCSJ,NCSAR,NCSAV,STT,CDJ,CDA,DIJ,DBJU00210
     2IA,PC,PF,PD,PJD,PAD,PEDC,PEDF,PEDD,PIV,PIF,PID,PTV,PBTV,PTF,PBTF,PBJU00220
     3TD,PBTD,PPC,T(9),IQT(9),U(19),HOLD(4,2),ST(19),CSTAT(6)           BJU00230
      COMMON /TRANS/ DESCR(63000),KNOD,MFAD,NDPTR,NDSTR(1300)           BJU00240
      DIMENSION XDSTR(1200),NESCR(63000)                                BJU00250
      EQUIVALENCE (NESCR(1),DESCR(1)), (XDSTR(1),NDSTR(1))              BJU00260
      INTEGER STAR                                                      BJU00270
      DATA STAR/1H*/                                                    BJU00280
      DIMENSION ICOM(4),NA(3)                                           BJU00290
      KATH=0                                                            BJU00300
      DO 1 I=1,19                                                       BJU00310
    1 ST(I)=0.0                                                         BJU00320
      DO 2 I=1,6                                                        BJU00330
    2 CSTAT(I)=0.0                                                      BJU00340
      DO 3 I = 1,19                                                     BJU00350
      ICRT(I)=0                                                         BJU00360
    3 INJ(I)=0                                                          BJU00370
      DO 4 I=1,6                                                        BJU00380
    4 KFLAG(I)=0                                                        BJU00390
      IF(NRUN.GT.1) GO TO 2500                                          BJU00400
      DO 5 I=1,19                                                       BJU00410
    5 U(I)=0.0                                                          BJU00420
      DO 6 I=1,4                                                        BJU00430
      DO 6 J=1,2                                                        BJU00440
    6 HOLD(I,J)=0.0                                                     BJU00450
C                                                                       BJU00460
C     READ DATA TO DEFINE CRIMINAL CASE STRUCTURE                       BJU00470
C                                                                       BJU00480
   10 READ(5,110)(ICOM(I),I=1,4),(NFOLW(J),J=1,14)                      BJU00490
  110 FORMAT(A1,3A3,14I4)                                               BJU00500
      IF(ICOM(1).EQ.STAR) GO TO 10                                      BJU00510
   15 READ(5,115)(ICOM(I),I=1,4),(UFA(J),J=1,14)                        BJU00520
  115 FORMAT(A1,3A3,14F4.1)                                             BJU00530
      IF(ICOM(1).EQ.STAR)GO TO 15                                       BJU00540
   20 READ(5,110)(ICOM(I),I=1,4),(IEPSD(J),J=1,14)                      BJU00550
      IF(ICOM(1).EQ.STAR)GO TO 20                                       BJU00560
   25 READ(5,110)(ICOM(I),I=1,4),(IATTR(J),J=1,14)                      BJU00570
      IF(ICOM(1).EQ.STAR)GO TO 25                                       BJU00580
   30 READ(5,130)(ICOM(I),I=1,4),(NBRNCH(J),J=1,24)                     BJU00590
  130 FORMAT(A1,3A3,24I2)                                               BJU00600
      IF(ICOM(1).EQ.STAR)GO TO 30                                       BJU00610
      DO 40 I=1,24                                                      BJU00620
      NB=NBRNCH(I)                                                      BJU00630
   35 READ(5,135)(ICOM(K),K=1,4),(NEXTS(I,J),J=1,NB)                    BJU00640
  135 FORMAT(A1,3A3,6I5)                                                BJU00650
      IF(ICOM(1).EQ.STAR)GO TO 35                                       BJU00660
   40 CONTINUE                                                          BJU00670
   45 READ(5,145)(ICOM(I),I=1,4),(IDRTN(J),J=1,7)                       BJU00680
  145 FORMAT(A1,3A3,7I5)                                                BJU00690
      IF(ICOM(1).EQ.STAR)GO TO 45                                       BJU00700
   50 READ(5,150)(ICOM(I),I=1,4),(SPEED(J),J=1,14)                      BJU00710
  150 FORMAT(A1,3A3,14F4.1)                                             BJU00720
      IF(ICOM(1).EQ.STAR)GO TO 50                                       BJU00730
```

```
C                                                                       BJU00740
C     BEGIN USER DATA INPUT - FIRST READ ECHO CHECK PARAMETER           BJU00750
C                                                                       BJU00760
   99 READ(5,200)(ICOM(I),I=1,4),IECHO                                  BJU00770
  200 FORMAT(A1,3A3,I5)                                                 BJU00780
      IF(ICOM(1).EQ.STAR)GO TO 99                                       BJU00790
C                                                                       BJU00800
C     BEGIN CRIMINAL CASE INPUT - CASE STRUCTURE                        BJU00810
C                                                                       BJU00820
      IF(IECHO.EQ.1)WRITE(6,300)                                        BJU00830
 300  FORMAT(1H1,5H*****,5X,26HUSER ECHO CHECK SUPPRESSED,5X,5H*****)   BJU00840
   65 READ(5,165)(ICOM(I),I=1,4),(PCINJ(J),J=1,14)                      BJU00850
  165 FORMAT(A1,3A3,14F5.2)                                             BJU00860
      IF(ICOM(1).EQ.STAR)GO TO 65                                       BJU00870
   70 READ(5,165)(ICOM(I),I=1,4),(PCEXD(J),J=1,14)                      BJU00880
      IF(ICOM(1).EQ.STAR)GO TO 70                                       BJU00890
   75 READ(5,175)(ICOM(I),I=1,4),RLSE,BAIL,(PMDTR(I),I=1,5)             BJU00900
  175 FORMAT(A1,3A3,7F5.2)                                              BJU00910
      IF(ICOM(1).EQ.STAR)GO TO 75                                       BJU00920
C                                                                       BJU00930
C     DEFINE PROBABILITIES FOR DECISION POINTS                          BJU00940
C                                                                       BJU00950
      DO 90 I=1,24                                                      BJU00960
      NB=NBRNCH(I)                                                      BJU00970
   80 READ(5,180)(ICOM(K),K=1,4),(PNEXT(I,J),J=1,NB)                    BJU00980
  180 FORMAT(A1,3A3,6F5.2)                                              BJU00990
      IF(ICOM(1).EQ.STAR)GO TO 80                                       BJU01000
   90 CONTINUE                                                          BJU01010
C                                                                       BJU01020
C     READ SIMULATION PARAMETERS                                        BJU01030
C                                                                       BJU01040
  260 READ(5,360)(ICOM(I),I=1,4),TBEG,TTFIN,NRUNS                       BJU01050
  360 FORMAT(A1,3A3,2F5.2,I5)                                           BJU01060
      IF(ICOM(1).EQ.STAR)GO TO 260                                      BJU01070
C                                                                       BJU01080
C     SET UP USER STATISTICS CLEARING ACTIVITY                          BJU01090
C                                                                       BJU01100
      IF(TBEG.LE.0.) GO TO 3600                                         BJU01110
      EEVTI=TBEG                                                        BJU01120
      JJPAC=-1-MXNOD                                                    BJU01130
      CALL SEVNT                                                        BJU01140
 3600 CONTINUE                                                          BJU01150
      NEXT=MFE(203)                                                     BJU01160
      NDMOD=NSET(NEXT+1)                                                BJU01170
      IF(NDMOD.EQ.204)GO TO 261                                         BJU01180
      NEXT=NSET(NEXT)                                                   BJU01190
      NDMOD=NSET(NEXT+1)                                                BJU01200
      IF(NDMOD.NE.204)CALL ERROR(629)                                   BJU01210
  261 QSET(NEXT+2)=TBEG                                                 BJU01220
C                                                                       BJU01230
C     BEGIN SYSTEM PARAMETERS - INPUT                                   BJU01240
C                                                                       BJU01250
  201 READ(5,301)(ICOM(I),I=1,4),NJ,NACR,NACV                           BJU01260
  301 FORMAT(A1,3A3,3I5)                                                BJU01270
      IF(ICOM(1).EQ.STAR)GO TO 201                                      BJU01280
      IF(NJ.GT.6)CALL ERROR(601)                                        BJU01290
      NTOT=NACR+NACV                                                    BJU01300
      IF(NTOT.GT.13)CALL ERROR(602)                                     BJU01310
      PARAM(70,1)=0.                                                    BJU01320
      PARAM(70,2)=7.                                                    BJU01330
      PARAM(70,3)=7+NACR                                                BJU01340
      PARAM(70,4)=0.                                                    BJU01350
      PARAM(71,1)=0.                                                    BJU01360
      PARAM(71,2)=20-NACV                                               BJU01370
      PARAM(71,3)=20.                                                   BJU01380
      PARAM(71,4)=0.                                                    BJU01390
      PARAM(72,1)=0.                                                    BJU01400
      PARAM(72,2)=1.                                                    BJU01410
      PARAM(72,3)=NJ+1                                                  BJU01420
      PARAM(72,4)=0.                                                    BJU01430
  202 READ(5,302)(ICOM(I),I=1,4),BETAJ,BETAR,BETAV                      BJU01440
  302 FORMAT(A1,3A3,3F5.2)                                              BJU01450
      IF(ICOM(1).EQ.STAR)GO TO 202                                      BJU01460
  203 READ(5,303)(ICOM(I),I=1,4),WTMNJ,WTMXJ,WTMNR,WTMXR,WTMNV,WTMXV    BJU01470
  303 FORMAT(A1,3A3,6F5.2)                                              BJU01480
```

```
      IF(ICOM(1).EQ.STAR)GO TO 203                                          BJU01490
      IF(WTMXJ.LT.WTMNJ)CALL ERROR(603)                                     BJU01500
      IF(WTMXR.LT.WTMNR)CALL ERROR(604)                                     BJU01510
      IF(WTMXV.LT.WTMNV)CALL ERROR(605)                                     BJU01520
  204 READ(5,304)(ICOM(I),I=1,4),NOCSJ,NOCSR,NOCSV,NCSJ,NCSAR,NCSAV        BJU01530
  304 FORMAT(A1,3A3,6I5)                                                    BJU01540
      IF(ICOM(1).EQ.STAR)GO TO 204                                          BJU01550
  205 READ(5,305)(ICOM(I),I=1,4),STT                                        BJU01560
  305 FORMAT(A1,3A3,F5.2)                                                   BJU01570
      IF(ICOM(1).EQ.STAR)GO TO 205                                          BJU01580
  206 READ(5,306)(ICOM(I),I=1,4),CDJ,CDA,DIJ,DIA                            BJU01590
  306 FORMAT(A1,3A3,4F5.2)                                                  BJU01600
      IF(ICOM(1).EQ.STAR)GO TO 206                                          BJU01610
  207 READ(5,307)(ICOM(I),I=1,4),PC,PF,PD                                   BJU01620
  307 FORMAT(A1,3A3,3F5.2)                                                  BJU01630
      IF(ICOM(1).EQ.STAR)GO TO 207                                          BJU01640
  208 READ(5,308)(ICOM(I),I=1,4),PJD,PAD                                    BJU01650
  308 FORMAT(A1,3A3,2F5.2)                                                  BJU01660
      IF(ICOM(1).EQ.STAR)GO TO 208                                          BJU01670
  209 READ(5,309)(ICOM(I),I=1,4),PEDC,PEDF,PEDD                             BJU01680
  309 FORMAT(A1,3A3,3F5.2)                                                  BJU01690
      IF(ICOM(1).EQ.STAR)GO TO 209                                          BJU01700
  210 READ(5,310)(ICOM(I),I=1,4),PIV,PIF,PID                                BJU01710
  310 FORMAT(A1,3A3,3F5.2)                                                  BJU01720
      IF(ICOM(1).EQ.STAR)GO TO 210                                          BJU01730
  211 READ(5,311)(ICOM(I),I=1,4),PTV,PBTV,PTF,PBTF,PTD,PBTD                 BJU01740
  311 FORMAT(A1,3A3,6F5.2)                                                  BJU01750
      IF(ICOM(1).EQ.STAR)GO TO 211                                          BJU01760
  212 READ(5,312)(ICOM(I),I=1,4),PPC                                        BJU01770
  312 FORMAT(A1,3A3,F5.2)                                                   BJU01780
      IF(ICOM(1).EQ.STAR)GO TO 212                                          BJU01790
C                                                                           BJU01800
C     BEGIN CRIMINAL PARAMETERS - INPUT                                     BJU01810
C                                                                           BJU01820
  213 READ(5,313)(ICOM(I),I=1,4),(PARAM(1,J),J=1,4)                         BJU01830
  313 FORMAT(A1,3A3,4F5.2)                                                  BJU01840
      IF(ICOM(1).EQ.STAR)GO TO 213                                          BJU01850
  214 READ(5,314)(ICOM(I),I=1,4),(PARAM(38,J),J=1,4)                        BJU01860
  314 FORMAT(A1,3A3,4F5.2)                                                  BJU01870
      IF(ICOM(1).EQ.STAR)GO TO 214                                          BJU01880
  215 READ(5,315)(ICOM(I),I=1,4),(PARAM(28,J),J=1,4),(PARAM(48,K),K=1,4)    BJU01890
  315 FORMAT(A1,3A3,8F5.2)                                                  BJU01900
      IF(ICOM(1).EQ.STAR)GO TO 215                                          BJU01910
  216 READ(5,316)(ICOM(I),I=1,4),(PARAM(32,J),J=1,4),(PARAM(49,K),K=1,4)    BJU01920
  316 FORMAT(A1,3A3,8F5.2)                                                  BJU01930
      IF(ICOM(1).EQ.STAR)GO TO 216                                          BJU01940
  217 READ(5,317)(ICOM(I),I=1,4),(PARAM(18,J),J=1,4),(PARAM(52,K),K=1,4)    BJU01950
  317 FORMAT(A1,3A3,8F5.2)                                                  BJU01960
      IF(ICOM(1).EQ.STAR)GO TO 217                                          BJU01970
  218 READ(5,318)(ICOM(I),I=1,4),(PARAM(16,J),J=1,4)                        BJU01980
  318 FORMAT(A1,3A3,4F5.2)                                                  BJU01990
      IF(ICOM(1).EQ.STAR)GO TO 218                                          BJU02000
  219 READ(5,319)(ICOM(I),I=1,4),(PARAM(63,J),J=1,4)                        BJU02010
  319 FORMAT(A1,3A3,4F5.2)                                                  BJU02020
      IF(ICOM(1).EQ.STAR)GO TO 219                                          BJU02030
  221 READ(5,321)(ICOM(I),I=1,4),(PARAM(5,J),J=1,4)                         BJU02040
  321 FORMAT(A1,3A3,4F5.2)                                                  BJU02050
      IF(ICOM(1).EQ.STAR)GO TO 221                                          BJU02060
  220 READ(5,320)(ICOM(I),I=1,4),(PARAM(6,J),J=1,4)                         BJU02070
  320 FORMAT(A1,3A3,4F5.2)                                                  BJU02080
      IF(ICOM(1).EQ.STAR) GO TO 220                                         BJU02090
  222 READ(5,322)(ICOM(I),I=1,4),(PARAM(56,J),J=1,4)                        BJU02100
  322 FORMAT(A1,3A3,4F5.2)                                                  BJU02110
      IF(ICOM(1).EQ.STAR)GO TO 222                                          BJU02120
  223 READ(5,323)(ICOM(I),I=1,4),(PARAM(58,J),J=1,4)                        BJU02130
  323 FORMAT(A1,3A3,4F5.2)                                                  BJU02140
      IF(ICOM(1).EQ.STAR)GO TO 223                                          BJU02150
  224 READ(5,324)(ICOM(I),I=1,4),(PARAM(20,J),J=1,4)                        BJU02160
  324 FORMAT(A1,3A3,4F5.2)                                                  BJU02170
      IF(ICOM(1).EQ.STAR)GO TO 224                                          BJU02180
  225 READ(5,325)(ICOM(I),I=1,4),(PARAM(65,J),J=1,4)                        BJU02190
  325 FORMAT(A1,3A3,4F5.2)                                                  BJU02200
      IF(ICOM(1).EQ.STAR)GO TO 225                                          BJU02210
  226 READ(5,326)(ICOM(I),I=1,4),(PARAM(19,J),J=1,4),(PARAM(66,K),K=1,4)    BJU02220
  326 FORMAT(A1,3A3,8F5.2)                                                  BJU02230
```

```
      IF(ICOM(1).EQ.STAR)GO TO 226                                          BJU02240
  227 READ(5,327)(ICOM(I),I=1,4),(PARAM(68,J),J=1,4)                        BJU02250
  327 FORMAT(A1,3A3,4F5.2)                                                  BJU02260
      IF(ICOM(1).EQ.STAR)GO TO 227                                          BJU02270
  228 READ(5,328)(ICOM(I),I=1,4),(PARAM(69,J),J=1,4)                        BJU02280
  328 FORMAT(A1,3A3,4F5.2)                                                  BJU02290
      IF(ICOM(1).EQ.STAR)GO TO 228                                          BJU02300
  229 READ(5,329)(ICOM(I),I=1,4),(PARAM(36,J),J=1,4)                        BJU02310
  329 FORMAT(A1,3A3,4F5.2)                                                  BJU02320
      IF(ICOM(1).EQ.STAR)GO TO 229                                          BJU02330
C                                                                           BJU02340
C     BEGIN CIVIL PARMETERS - INPUT                                         BJU02350
C                                                                           BJU02360
  230 READ(5,330)(ICOM(I),I=1,4),(PARAM(2,J),J=1,4)                         BJU02370
  330 FORMAT(A1,3A3,4F5.2)                                                  BJU02380
      IF(ICOM(1).EQ.STAR)GO TO 230                                          BJU02390
  231 READ(5,331)(ICOM(I),I=1,4),(PARAM(22,J),J=1,4),(PARAM(39,K),K=1,4)BJU02400
  331 FORMAT(A1,3A3,8F5.2)                                                  BJU02410
      IF(ICOM(1).EQ.STAR)GO TO 231                                          BJU02420
  232 READ(5,332)(ICOM(I),I=1,4),(PARAM(29,J),J=1,4),(PARAM(50,K),K=1,4)BJU02430
  332 FORMAT(A1,3A3,8F5.2)                                                  BJU02440
      IF(ICOM(1).EQ.STAR)GO TO 232                                          BJU02450
  233 READ(5,333)(ICOM(I),I=1,4),(PARAM(33,J),J=1,4),(PARAM(51,K),K=1,4)BJU02460
  333 FORMAT(A1,3A3,8F5.2)                                                  BJU02470
      IF(ICOM(1).EQ.STAR)GO TO 233                                          BJU02480
  234 READ(5,334)(ICOM(I),I=1,4),(PARAM(23,J),J=1,4),(PARAM(53,K),K=1,4)BJU02490
  334 FORMAT(A1,3A3,8F5.2)                                                  BJU02500
      IF(ICOM(1).EQ.STAR)GO TO 234                                          BJU02510
  235 READ(5,335)(ICOM(I),I=1,4),(PARAM(24,J),J=1,4),(PARAM(57,K),K=1,4)BJU02520
  335 FORMAT(A1,3A3,8F5.2)                                                  BJU02530
      IF(ICOM(1).EQ.STAR)GO TO 235                                          BJU02540
  236 READ(5,336)(ICOM(I),I=1,4),(PARAM(25,J),J=1,4)                        BJU02550
  336 FORMAT(A1,3A3,4F5.2)                                                  BJU02560
      IF(ICOM(1).EQ.STAR)GO TO 236                                          BJU02570
  237 READ(5,337)(ICOM(I),I=1,4),(PARAM(64,J),J=1,4)                        BJU02580
  337 FORMAT(A1,3A3,4F5.2)                                                  BJU02590
      IF(ICOM(1).EQ.STAR)GO TO 237                                          BJU02600
  238 READ(5,338)(ICOM(I),I=1,4),(PARAM(59,J),J=1,4)                        BJU02610
  338 FORMAT(A1,3A3,4F5.2)                                                  BJU02620
      IF(ICOM(1).EQ.STAR)GO TO 238                                          BJU02630
  239 READ(5,339)(ICOM(I),I=1,4),(PARAM(21,J),J=1,4)                        BJU02640
  339 FORMAT(A1,3A3,4F5.2)                                                  BJU02650
      IF(ICOM(1).EQ.STAR)GO TO 239                                          BJU02660
  240 READ(5,340)(ICOM(I),I=1,4),(PARAM(62,J),J=1,4)                        BJU02670
  340 FORMAT(A1,3A3,4F5.2)                                                  BJU02680
      IF(ICOM(1).EQ.STAR)GO TO 240                                          BJU02690
  241 READ(5,341)(ICOM(I),I=1,4),(PARAM(37,J),J=1,4)                        BJU02700
  341 FORMAT(A1,3A3,4F5.2)                                                  BJU02710
      IF(ICOM(1).EQ.STAR)GO TO 241                                          BJU02720
C                                                                           BJU02730
C     BEGIN FEDERAL QUESTION PARAMETERS - INPUT                             BJU02740
C                                                                           BJU02750
  242 READ(5,342)(ICOM(I),I=1,4),(PARAM(3,J),J=1,4)                         BJU02760
  342 FORMAT(A1,3A3,4F5.2)                                                  BJU02770
      IF(ICOM(1).EQ.STAR)GO TO 242                                          BJU02780
  243 READ(5,343)(ICOM(I),I=1,4),(PARAM(8,J),J=1,4),(PARAM(42,K),K=1,4) BJU02790
  343 FORMAT(A1,3A3,8F5.2)                                                  BJU02800
      IF(ICOM(1).EQ.STAR)GO TO 243                                          BJU02810
  244 READ(5,344)(ICOM(I),I=1,4),(PARAM(26,J),J=1,4),(PARAM(44,K),K=1,4)BJU02820
  344 FORMAT(A1,3A3,8F5.2)                                                  BJU02830
      IF(ICOM(1).EQ.STAR)GO TO 244                                          BJU02840
  245 READ(5,345)(ICOM(I),I=1,4),(PARAM(30,J),J=1,4),(PARAM(45,K),K=1,4)BJU02850
  345 FORMAT(A1,3A3,8F5.2)                                                  BJU02860
      IF(ICOM(1).EQ.STAR)GO TO 245                                          BJU02870
  246 READ(5,346)(ICOM(I),I=1,4),(PARAM(9,J),J=1,4),(PARAM(40,K),K=1,4) BJU02880
  346 FORMAT(A1,3A3,8F5.2)                                                  BJU02890
      IF(ICOM(1).EQ.STAR)GO TO 246                                          BJU02900
  247 READ(5,347)(ICOM(I),I=1,4),(PARAM(10,J),J=1,4),(PARAM(54,K),K=1,4)BJU02910
  347 FORMAT(A1,3A3,8F5.2)                                                  BJU02920
      IF(ICOM(1).EQ.STAR)GO TO 247                                          BJU02930
  248 READ(5,348)(ICOM(I),I=1,4),(PARAM(7,J),J=1,4)                         BJU02940
  348 FORMAT(A1,3A3,4F5.2)                                                  BJU02950
      IF(ICOM(1).EQ.STAR)GO TO 248                                          BJU02960
```

```
  249 READ(5,349)(ICOM(I),I=1,4),(PARAM(61,J),J=1,4)                    BJU02970
  349 FORMAT(A1,3A3,4F5.2)                                              BJU02980
      IF(ICOM(1).EQ.STAR)GO TO 249                                      BJU02990
  250 READ(5,350)(ICOM(I),I=1,4),(PARAM(34,J),J=1,4)                    BJU03000
  350 FORMAT(A1,3A3,4F5.2)                                              BJU03010
      IF(ICOM(1).EQ.STAR)GO TO 250                                      BJU03020
C                                                                       BJU03030
C     BEGIN DIVERSITY JURISDICTION PARAMETERS - INPUT                   BJU03040
C                                                                       BJU03050
  251 READ(5,351)(ICOM(I),I=1,4),(PARAM(4,J),J=1,4)                     BJU03060
  351 FORMAT(A1,3A3,4F5.2)                                              BJU03070
      IF(ICOM(1).EQ.STAR)GO TO 251                                      BJU03080
  252 READ(5,352)(ICOM(I),I=1,4),(PARAM(12,J),J=1,4),(PARAM(43,K),K=1,4)BJU03090
  352 FORMAT(A1,3A3,8F5.2)                                              BJU03100
      IF(ICOM(1).EQ.STAR)GO TO 252                                      BJU03110
  253 READ(5,353)(ICOM(I),I=1,4),(PARAM(27,J),J=1,4),(PARAM(46,K),K=1,4)BJU03120
  353 FORMAT(A1,3A3,8F5.2)                                              BJU03130
      IF(ICOM(1).EQ.STAR)GO TO 253                                      BJU03140
  254 READ(5,354)(ICOM(I),I=1,4),(PARAM(31,J),J=1,4),(PARAM(47,K),K=1,4)BJU03150
  354 FORMAT(A1,3A3,8F5.2)                                              BJU03160
      IF(ICOM(1).EQ.STAR)GO TO 254                                      BJU03170
  255 READ(5,355)(ICOM(I),I=1,4),(PARAM(13,J),J=1,4),(PARAM(41,K),K=1,4)BJU03180
  355 FORMAT(A1,3A3,8F5.2)                                              BJU03190
      IF(ICOM(1).EQ.STAR)GO TO 255                                      BJU03200
  256 READ(5,356)(ICOM(I),I=1,4),(PARAM(14,J),J=1,4),(PARAM(55,K),K=1,4)BJU03210
  356 FORMAT(A1,3A3,8F5.2)                                              BJU03220
      IF(ICOM(1).EQ.STAR)GO TO 256                                      BJU03230
  257 READ(5,357)(ICOM(I),I=1,4),(PARAM(67,J),J=1,4)                    BJU03240
  357 FORMAT(A1,3A3,4F5.2)                                              BJU03250
      IF(ICOM(1).EQ.STAR)GO TO 257                                      BJU03260
  258 READ(5,358)(ICOM(I),I=1,4),(PARAM(60,J),J=1,4)                    BJU03270
  358 FORMAT(A1,3A3,4F5.2)                                              BJU03280
      IF(ICOM(1).EQ.STAR)GO TO 258                                      BJU03290
  259 READ(5,359)(ICOM(I),I=1,4),(PARAM(35,J),J=1,4)                    BJU03300
  359 FORMAT(A1,3A3,4F5.2)                                              BJU03310
      IF(ICOM(1).EQ.STAR)GO TO 259                                      BJU03320
C                                                                       BJU03330
C     READ INTERCURRENT CHANGE PARAMETERS AND SET UP ACTIVITY DURATIONS BJU03340
C                                                                       BJU03350
  263 READ(5,363)(ICOM(I),I=1,4),TFIC,TSIC                              BJU03360
  363 FORMAT(A1,3A3,2F5.2)                                              BJU03370
      IF(ICOM(1).EQ.STAR)GO TO 263                                      BJU03380
C                                                                       BJU03390
C     ENTER DURATIONS INTO NETWORK                                      BJU03400
C                                                                       BJU03410
      NEXT=MFE(203)                                                     BJU03420
      NXTND=NSET(NEXT+1)                                                BJU03430
      IF(NXTND.EQ.205)GO TO 264                                         BJU03440
      NEXT=NSET(NEXT)                                                   BJU03450
      NXTND=NSET(NEXT+1)                                                BJU03460
      IF(NXTND.NE.205)CALL ERROR(606)                                   BJU03470
  264 QSET(NEXT+2)=TFIC                                                 BJU03480
      NEXT=MFE(205)                                                     BJU03490
      NXTND=NSET(NEXT+1)                                                BJU03500
      IF(NXTND.NE.205)CALL ERROR(607)                                   BJU03510
      QSET(NEXT+2)=TSIC                                                 BJU03520
C                                                                       BJU03530
C     READ IN REMAINING INTERCURRENT CHANGE PARAMETERS                  BJU03540
C                                                                       BJU03550
  265 READ(5,365)(ICOM(I),I=1,4),(T(J),J=1,9)                           BJU03560
  365 FORMAT(A1,3A3,9F5.2)                                              BJU03570
      IF(ICOM(1).EQ.STAR)GO TO 265                                      BJU03580
  266 READ(5,366)(ICOM(I),I=1,4),(IQT(J),J=1,9)                         BJU03590
  366 FORMAT(A1,3A3,9I5)                                                BJU03600
      IF(ICOM(1).EQ.STAR)GO TO 266                                      BJU03610
C                                                                       BJU03620
C     ECHO DATA INPUT                                                   BJU03630
C                                                                       BJU03640
      IF(IECHO.EQ.1)GO TO 1000                                          BJU03650
C                                                                       BJU03660
C     BEGIN CRIMINAL ECHO - CASE STRUCTURE                              BJU03670
C                                                                       BJU03680
```

```
      WRITE(6,500)                                                      BJU03690
  500 FORMAT(1H1,///30X,23HCRIMINAL CASE STRUCTURE/29X,25(1H-))         BJU03700
      WRITE(6,502)                                                      BJU03710
  502 FORMAT(//)                                                        BJU03720
      WRITE(6,503)                                                      BJU03730
  503 FORMAT(5X,60(1H-))                                                BJU03740
      WRITE(6,504)                                                      BJU03750
  504 FORMAT(26X,4HNEXT,8X,10HINJUNCTION,3X,14HEXTERNAL DELAY/9X,8HACTIVBJU03760
     1ITY,8X,5HSTAGE,7X,11HPROBABILITY,4X,11HPROBABILITY)               BJU03770
      WRITE(6,503)                                                      BJU03780
      DO 505 I=1,14                                                     BJU03790
      WRITE(6,506)I,NFOLW(I),PCINJ(I),PCEXD(I)                          BJU03800
      WRITE(6,503)                                                      BJU03810
  505 CONTINUE                                                          BJU03820
  506 FORMAT(/11X,I3,12X,I3,11X,F5.3,10X,F5.3)                          BJU03830
      WRITE(6,507)                                                      BJU03840
  507 FORMAT(///2X,63(1H-)/2X,8HDECISION,25X,6HBRANCH/3X,5HPOINT,7X,1H1,BJU03850
     *8X,1H2,8X,1H3,8X,1H4,8X,1H5,8X,1H6/2X,8(1H-),6(2X,7(1H-)))        BJU03860
      DO 508 I=1,24                                                     BJU03870
      NB=NBRNCH(I)                                                      BJU03880
      WRITE(6,509)I,(NEXTS(I,J),J=1,NB)                                 BJU03890
      WRITE(6,510)(PNEXT(I,J),J=1,NB)                                   BJU03900
      WRITE(6,514)                                                      BJU03910
  508 CONTINUE                                                          BJU03920
  509 FORMAT(5X,I2,1X,6(6X,I3))                                         BJU03930
  510 FORMAT(4X,4HPROB,1X,6(4X,F5.3))                                   BJU03940
  514 FORMAT(2X,63(1H-))                                                BJU03950
C                                                                       BJU03960
C     BEGIN SIMULATION PARAMETER ECHO                                   BJU03970
C                                                                       BJU03980
      WRITE(6,5001)                                                     BJU03990
 5001 FORMAT(1H1,///31X,21HSIMULATION PARAMETERS/30X,23(1H-))           BJU04000
      WRITE(6,501)TBEG                                                  BJU04010
  501 FORMAT(//10X,23HTIME STATISTICS CLEARED,21(1H-),F6.2)             BJU04020
      WRITE(6,5021)TTFIN                                                BJU04030
 5021 FORMAT(/10X,21HSIMULATION RUN LENGTH,23(1H-),F6.2)                BJU04040
      WRITE(6,5031)NRUNS                                                BJU04050
 5031 FORMAT(/10X,22HNUMBER OF REPLICATIONS,22(1H-),F6.2)               BJU04060
C                                                                       BJU04070
C     BEGIN SYSTEM PARAMETERS - ECHO                                    BJU04080
C                                                                       BJU04090
      WRITE(6,400)                                                      BJU04100
  400 FORMAT(1H1,///31X,17HSYSTEM PARAMETERS/30X,19(1H-))               BJU04110
      WRITE(6,401)NJ                                                    BJU04120
  401 FORMAT(//10X,16HNUMBER OF JUDGES,28(1H-),I6)                      BJU04130
      WRITE(6,402)BETAJ                                                 BJU04140
  402 FORMAT(/10X,22HBETA FACTOR FOR JUDGES,22(1H-),F6.2)               BJU04150
      WRITE(6,403)WTMNJ                                                 BJU04160
  403 FORMAT(/10X,20HMINIMUM WAITING TIME/10X,23HASSOCIATED WITH A JUDGEBJU04170
     1,21(1H-),F6.2)                                                    BJU04180
      WRITE(6,404)WTMXJ                                                 BJU04190
  404 FORMAT(/10X,20HMAXIMUM WAITING TIME/10X,23HASSOCIATED WITH A JUDGEBJU04200
     1,21(1H-),F6.2)                                                    BJU04210
      WRITE(6,405)NOCSJ                                                 BJU04220
  405 FORMAT(/10X,24HSUPPRESS JUDGE ICRT TEST/10X,32H(AFTER OTHER COURTRBJU04230
     1OOM ACTIVITY),12(1H-),I6)                                         BJU04240
      WRITE(6,406)NCSJ                                                  BJU04250
  406 FORMAT(/10X,33HSUPPRESS JUDGE ICRT AND INJ TESTS/10X,30H(AFTER NONBJU04260
     1-COURTROOM ACTIVITY),14(1H-),I6)                                  BJU04270
      WRITE(6,407)CDJ                                                   BJU04280
  407 FORMAT(/10X,28HDURATION OF DELAY FOR A CASE/10X,17HPASSED BY A JUDBJU04290
     1GE,27(1H-),F6.2)                                                  BJU04300
      WRITE(6,408)CDA                                                   BJU04310
  408 FORMAT(/10X,28HDURATION OF DELAY FOR A CASE/10X,21HPASSED BY AN ATBJU04320
     1TORNEY,23(1H-),F6.2)                                              BJU04330
      WRITE(6,409)DIJ                                                   BJU04340
  409 FORMAT(/10X,37HDURATION OF AN INTERNAL DELAY (JUDGE),7(1H-),F6.2) BJU04350
      WRITE(6,410)DIA                                                   BJU04360
  410 FORMAT(/10X,40HDURATION OF AN INTERNAL DELAY (ATTORNEY),4(1H-),F6.BJU04370
     12)                                                                BJU04380
      WRITE(6,411)PJD                                                   BJU04390
  411 FORMAT(/10X,32HPROBABILITY OF AN INTERNAL DELAY/10X,34HFOLLOWING TBJU04400
```

```
     1RIAL COMPLETION (JUDGE),10(1H-),F6.2)                              BJU04410
      WRITE(6,412)PAD                                                    BJU04420
  412 FORMAT(/10X,32HPROBABILITY OF AN INTERNAL DELAY/10X,37HFOLLOWING TBJU04430
     1RIAL COMPLETION (ATTORNEY),7(1H-),F6.2)                            BJU04440
      WRITE(6,447)PPC                                                    BJU04450
  447 FORMAT(/10X,35HPROBABILITY THAT JUDGE AND ATTORNEY/10X,44HACCEPT ABJU04460
C                                                                        BJU04470
C     BEGIN CRIMINAL PARAMETER ECHO                                      BJU04480
C                                                                        BJU04490
     1 PUBLIC CASE (GIVEN BOTH AVAILABLE)-,F6.2)                         BJU04500
      WRITE(6,413)                                                       BJU04510
  413 FORMAT(1H1,///30X,19HCRIMINAL PARAMETERS/29X,21(1H-))              BJU04520
      WRITE(6,414)NACR                                                   BJU04530
  414 FORMAT(//10X,19HNUMBER OF ATTORNEYS,25(1H-),I6)                    BJU04540
      WRITE(6,415)BETAR                                                  BJU04550
  415 FORMAT(/10X,25HBETA FACTOR FOR ATTORNEYS,19(1H-),F6.2)             BJU04560
      WRITE(6,416)WTMNR                                                  BJU04570
  416 FORMAT(/10X,33HMINIMUM WAITING TIME FOR ATTORNEY,11(1H-),F6.2)     BJU04580
      WRITE(6,417)WTMXR                                                  BJU04590
  417 FORMAT(/10X,33HMAXIMUM WAITING TIME FOR ATTORNEY,11(1H-),F6.2)     BJU04600
      WRITE(6,418)NOCSR                                                  BJU04610
  418 FORMAT(/10X,27HSUPPRESS ATTORNEY ICRT TEST/10X,32H(AFTER OTHER COUBJU04620
     1RTROOM ACTIVITY),12(1H-),I6)                                       BJU04630
      WRITE(6,419)NCSAR                                                  BJU04640
  419 FORMAT(/10X,35HSUPPRESS ATTORNEY ICRT AND INJ TEST/10X,30H(AFTER NBJU04650
     1ON-COURTROOM ACTIVITY),14(1H-),I6)                                 BJU04660
      WRITE(6,420)STT                                                    BJU04670
  420 FORMAT(/10X,37HMAXIMUM TIME DURATION ALLOWED BETWEEN/10X,38HTRIAL BJU04680
     1AND ARRAIGNMENT IN SPEEDY TRIALS,6(1H-),F6.2)                      BJU04690
      WRITE(6,465)RLSE                                                   BJU04700
  465 FORMAT(/10X,22HPROBABILITY OF RELEASE,22(1H-),F6.2)                BJU04710
      WRITE(6,466)BAIL                                                   BJU04720
  466 FORMAT(/10X,19HPROBABILITY OF BAIL,25(1H-),F6.2)                   BJU04730
      WRITE(6,421)                                                       BJU04740
  421 FORMAT(/10X,50HCRIMINAL CASE INTERARRIVAL DISTRIBUTION PARAMETERS)BJU04750
      DO 423 I=1,4                                                       BJU04760
      WRITE(6,422)I,PARAM(1,I)                                           BJU04770
  422 FORMAT(/10X,9HPARAMETER,I2,33(1H-),F7.2)                           BJU04780
  423 CONTINUE                                                           BJU04790
      WRITE(6,424)                                                       BJU04800
  424 FORMAT(///3X,8HACTIVITY,10X,19HDURATION PARAMETERS,12X,18HEPISODE BJU04810
     1PARAMETERS/2X,11HDESCRIPTION,5X,1H1,7X,1H2,7X,1H3,7X,1H4,7X,1H1,7XBJU04820
     2,1H2,7X,1H3,7X,1H4/1X,13(1H-),8(2X,6(1H-)))                        BJU04830
      WRITE(6,425)(PARAM(38,J),J=1,4)                                    BJU04840
  425 FORMAT(/1X,10HINJUNCTION,3X,8(2X,F6.2))                            BJU04850
      WRITE(6,426)(PARAM(48,J),J=1,4),(PARAM(28,K),K=1,4)                BJU04860
  426 FORMAT(/1X,11HBENCH TRIAL,2X,8(2X,F6.2))                           BJU04870
      WRITE(6,427)(PARAM(49,J),J=1,4),(PARAM(32,K),K=1,4)                BJU04880
  427 FORMAT(/1X,10HJURY TRIAL,3X,8(2X,F6.2))                            BJU04890
      WRITE(6,428)(PARAM(52,J),J=1,4),(PARAM(18,K),K=1,4)                BJU04900
  428 FORMAT(/1X,10HGRAND JURY,3X,8(2X,F6.2))                            BJU04910
      WRITE(6,429)(PARAM(16,J),J=1,4)                                    BJU04920
  429 FORMAT(/1X,10HINDICTMENT,3X,4(2X,F6.2))                            BJU04930
      WRITE(6,430)(PARAM(63,J),J=1,4)                                    BJU04940
  430 FORMAT(/1X,11HARRAIGNMENT,2X,4(2X,F6.2))                           BJU04950
      WRITE(6,431)(PARAM(6,J),J=1,4)                                     BJU04960
  431 FORMAT(/1X,13HREARRAIGNMENT,4(2X,F6.2))                            BJU04970
      WRITE(6,432)(PARAM(5,J),J=1,4)                                     BJU04980
  432 FORMAT(/1X,10HSENTENCING,3X,4(2X,F6.2))                            BJU04990
      WRITE(6,433)(PARAM(56,J),J=1,4)                                    BJU05000
  433 FORMAT(/1X,12HPRE-SENT (J),1X,4(2X,F6.2))                          BJU05010
      WRITE(6,434)(PARAM(58,J),J=1,4)                                    BJU05020
  434 FORMAT(/1X,13HINVESTIGATION,4(2X,F6.2))                            BJU05030
      WRITE(6,435)(PARAM(20,J),J=1,4)                                    BJU05040
  435 FORMAT(/1X,11HINFORMATION,2X,4(2X,F6.2))                           BJU05050
      WRITE(6,436)(PARAM(65,J),J=1,4)                                    BJU05060
  436 FORMAT(/1X,13HINTL CSE PREP,4(2X,F6.2))                            BJU05070
      WRITE(6,437)(PARAM(66,J),J=1,4),(PARAM(19,K),K=1,4)                BJU05080
  437 FORMAT(/1X,12HPLEA BARGAIN,1X,8(2X,F6.2))                          BJU05090
      WRITE(6,438)(PARAM(68,J),J=1,4)                                    BJU05100
  438 FORMAT(/1X,12HFNL CSE PREP,1X,4(2X,F6.2))                          BJU05110
      WRITE(6,439)(PARAM(69,J),J=1,4)                                    BJU05120
```

```
  439 FORMAT(/1X,12HPRE-SENT (A),1X,4(2X,F6.2))                          BJU05130
      WRITE(6,440)(PARAM(36,J),J=1,4)                                    BJU05140
  440 FORMAT(/1X,9HEXT DELAY,4X,4(2X,F6.2))                              BJU05150
C                                                                        BJU05160
C     BEGIN CIVIL / US ECHO                                              BJU05170
C                                                                        BJU05180
      WRITE(6,441)                                                       BJU05190
  441 FORMAT(1H1,///29X,21HCIVIL / US PARAMETERS/28X,23(1H-))             BJU05200
      WRITE(6,414)NACV                                                   BJU05210
      WRITE(6,415)BETAV                                                  BJU05220
      WRITE(6,416)WTMNV                                                  BJU05230
      WRITE(6,417)WTMXV                                                  BJU05240
      WRITE(6,418)NOCSV                                                  BJU05250
      WRITE(6,419)NCSAV                                                  BJU05260
      WRITE(6,442)PC                                                     BJU05270
  442 FORMAT(/10X,23HPROBABILITY OF NO JUDGE,21(1H-),F6.2)               BJU05280
      WRITE(6,443)PEDC                                                   BJU05290
  443 FORMAT(/10X,25HPROBABILITY THAT EXTERNAL/10X,28HDELAY IS NEXT STAGBJU05300
     1E SELECTED,16(1H-),F6.2)                                           BJU05310
      WRITE(6,444)PIV                                                    BJU05320
  444 FORMAT(/10X,28HPROBABILITY OF AN INJUNCTION,16(1H-),F6.2)          BJU05330
      WRITE(6,445)PTV                                                    BJU05340
  445 FORMAT(/10X,22HPROBABILITY OF A TRIAL,22(1H-),F6.2)                BJU05350
      WRITE(6,446)PBTV                                                   BJU05360
  446 FORMAT(/10X,22HPROBABILITY OF A BENCH/10X,31HTRIAL (GIVEN THAT TRIBJU05370
     1AL OCCURS),13(1H-),F6.2)                                           BJU05380
      WRITE(6,448)                                                       BJU05390
  448 FORMAT(/10X,52HCIVIL / US CASE INTERARRIVAL DISTRIBUTION PARAMETERBJU05400
     1S)                                                                 BJU05410
      DO 449 I=1,4                                                       BJU05420
      WRITE(6,422)I,PARAM(2,I)                                           BJU05430
  449 CONTINUE                                                           BJU05440
      WRITE(6,424)                                                       BJU05450
      WRITE(6,425)(PARAM(39,J),J=1,4),(PARAM(22,K),K=1,4)                BJU05460
      WRITE(6,426)(PARAM(50,J),J=1,4),(PARAM(29,K),K=1,4)                BJU05470
      WRITE(6,427)(PARAM(51,J),J=1,4),(PARAM(33,K),K=1,4)                BJU05480
      WRITE(6,450)(PARAM(53,J),J=1,4),(PARAM(23,K),K=1,4)                BJU05490
  450 FORMAT(/1X,11HOTHER COURT,2X,8(2X,F6.2))                           BJU05500
      WRITE(6,451)(PARAM(57,J),J=1,4),(PARAM(24,K),K=1,4)                BJU05510
  451 FORMAT(/1X,11HNONCORT (J),2X,8(2X,F6.2))                           BJU05520
      WRITE(6,452)(PARAM(25,J),J=1,4)                                    BJU05530
  452 FORMAT(/1X,13HNONCORT (A/J),32X,4(2X,F6.2))                        BJU05540
      WRITE(6,453)(PARAM(64,J),J=1,4)                                    BJU05550
  453 FORMAT(/1X,13HNONCORT(A/NJ),32X,4(2X,F6.2))                        BJU05560
      WRITE(6,454)(PARAM(59,J),J=1,4)                                    BJU05570
  454 FORMAT(/1X,11HNONCORT (A),2X,4(2X,F6.2))                           BJU05580
      WRITE(6,455)(PARAM(21,J),J=1,4)                                    BJU05590
  455 FORMAT(/1X,13HEXT DELAY (J),32X,4(2X,F6.2))                        BJU05600
      WRITE(6,456)(PARAM(62,J),J=1,4)                                    BJU05610
  456 FORMAT(/1X,13HEXT DELAY(NJ),32X,4(2X,F6.2))                        BJU05620
      WRITE(6,457)(PARAM(37,J),J=1,4)                                    BJU05630
  457 FORMAT(/1X,9HEXT DELAY,4X,4(2X,F6.2))                              BJU05640
C                                                                        BJU05650
C     BEGIN FEDERAL QUESTION ECHO                                        BJU05660
C                                                                        BJU05670
      WRITE(6,458)                                                       BJU05680
  458 FORMAT(1H1,///27X,27HFEDERAL QUESTION PARAMETERS/26X,29(1H-))       BJU05690
      WRITE(6,459)                                                       BJU05700
  459 FORMAT(/)                                                          BJU05710
      WRITE(6,442)PF                                                     BJU05720
      WRITE(6,443)PEDF                                                   BJU05730
      WRITE(6,444)PIF                                                    BJU05740
      WRITE(6,445)PTF                                                    BJU05750
      WRITE(6,446)PBTF                                                   BJU05760
      WRITE(6,460)                                                       BJU05770
  460 FORMAT(/10X,53HFEDERAL QUESTION INTERARRIVAL DISTRIBUTION PARAMETERBJU05780
     1RS)                                                                BJU05790
      DO 461 I=1,4                                                       BJU05800
      WRITE(6,422)I,PARAM(3,I)                                           BJU05810
  461 CONTINUE                                                           BJU05820
      WRITE(6,424)                                                       BJU05830
```

```
      WRITE(6,425)(PARAM(42,J),J=1,4),(PARAM(8,K),K=1,4)                BJU05840
      WRITE(6,426)(PARAM(44,J),J=1,4),(PARAM(26,K),K=1,4)               BJU05850
      WRITE(6,427)(PARAM(45,J),J=1,4),(PARAM(30,K),K=1,4)               BJU05860
      WRITE(6,450)(PARAM(40,J),J=1,4),(PARAM(9,K),K=1,4)                BJU05870
      WRITE(6,451)(PARAM(54,J),J=1,4),(PARAM(10,K),K=1,4)               BJU05880
      WRITE(6,455)(PARAM(7,J),J=1,4)                                    BJU05890
      WRITE(6,456)(PARAM(61,J),J=1,4)                                   BJU05900
      WRITE(6,457)(PARAM(34,J),J=1,4)                                   BJU05910
C                                                                       BJU05920
C     BEGIN DIVERSITY JURISDICTION ECHO                                 BJU05930
C                                                                       BJU05940
      WRITE(6,462)                                                      BJU05950
  462 FORMAT(1H1,///24X,33HDIVERSITY JURISDICTION PARAMETERS/23X,35(1H-)BJU05960
     *)                                                                 BJU05970
      WRITE(6,459)                                                      BJU05980
      WRITE(6,442)PD                                                    BJU05990
      WRITE(6,443)PEDD                                                  BJU06000
      WRITE(6,444)PID                                                   BJU06010
      WRITE(6,445)PTD                                                   BJU06020
      WRITE(6,446)PBTD                                                  BJU06030
      WRITE(6,463)                                                      BJU06040
  463 FORMAT(/10X,59HDIVERSITY JURISDICTION INTERARRIVAL DISTRIBUTION PABJU06050
     1RAMETERS)                                                         BJU06060
      DO 464 I=1,4                                                      BJU06070
      WRITE(6,422)I,PARAM(4,I)                                          BJU06080
  464 CONTINUE                                                          BJU06090
      WRITE(6,424)                                                      BJU06100
      WRITE(6,425)(PARAM(43,J),J=1,4),(PARAM(12,K),K=1,4)               BJU06110
      WRITE(6,426)(PARAM(46,J),J=1,4),(PARAM(27,K),K=1,4)               BJU06120
      WRITE(6,427)(PARAM(47,J),J=1,4),(PARAM(31,K),K=1,4)               BJU06130
      WRITE(6,450)(PARAM(41,J),J=1,4),(PARAM(13,K),K=1,4)               BJU06140
      WRITE(6,451)(PARAM(55,J),J=1,4),(PARAM(14,K),K=1,4)               BJU06150
      WRITE(6,455)(PARAM(67,J),J=1,4)                                   BJU06160
      WRITE(6,456)(PARAM(60,J),J=1,4)                                   BJU06170
      WRITE(6,457)(PARAM(35,J),J=1,4)                                   BJU06180
C                                                                       BJU06190
C     ECHO INTERCURRENT CHANGE PARAMETERS                               BJU06200
C                                                                       BJU06210
      WRITE(6,520)                                                      BJU06220
  520 FORMAT(1H1,///25X,30HINTERCURRENT CHANGE PARAMETERS/24X,32(1H-))   BJU06230
      WRITE(6,521)TFIC                                                  BJU06240
  521 FORMAT(//10X,40HTIME TO FIRST INTERCURRENT CHANGES' TEST,10(1H-),FBJU06250
     *6.2)                                                              BJU06260
      WRITE(6,522)TSIC                                                  BJU06270
  522 FORMAT(/10X,45HTIME TO SUBSEQUENT INTERCURRENT CHANGES' TEST,5(1H-BJU06280
     *),F6.2)                                                           BJU06290
      WRITE(6,523)                                                      BJU06300
  523 FORMAT(//12X,6HCHANGE,13X,9HTHRESHOLD,7X,10HTEST INDEX/5X,20(1H-),BJU06310
     *5X,11(1H-),5X,12(1H-))                                            BJU06320
      WRITE(6,524)T(1),IQT(1)                                           BJU06330
  524 FORMAT(/6X,14HTOC-JDG (TIME),12X,F6.2,11X,I5)                     BJU06340
      WRITE(6,525)T(2),IQT(2)                                           BJU06350
  525 FORMAT(/6X,14HTOC-ATT (TIME),12X,F6.2,11X,I5)                     BJU06360
      WRITE(6,526)T(3),IQT(3)                                           BJU06370
  526 FORMAT(/6X,6HJDG-CT,20X,F6.2,11X,I5)                              BJU06380
      WRITE(6,527)T(4),IQT(4)                                           BJU06390
  527 FORMAT(/6X,17HATT-CT (CRIMINAL),9X,F6.2,11X,I5)                   BJU06400
      WRITE(6,528)T(5),IQT(5)                                           BJU06410
  528 FORMAT(/6X,19HATT-CT (CIVIL/U.S.),7X,F6.2,11X,I5)                 BJU06420
      WRITE(6,529)T(6),IQT(6)                                           BJU06430
  529 FORMAT(/6X,6HJDG-NC,20X,F6.2,11X,I5)                              BJU06440
      WRITE(6,530)T(7),IQT(7)                                           BJU06450
  530 FORMAT (/6X,17HATT-NC (CRIMINAL),9X,F6.2,11X,I5)                  BJU06460
      WRITE(6,531)T(8),IQT(8)                                           BJU06470
  531 FORMAT(/6X,19HATT-NC (CIVIL/U.S.),7X,F6.2,11X,I5)                 BJU06480
      WRITE(6,532)T(9),IQT(9)                                           BJU06490
  532 FORMAT(/6X,5HPRI-J,21X,F6.2,11X,I5)                               BJU06500
 1000 CONTINUE                                                          BJU06510
C                                                                       BJU06520
C     ENTER DURATION OF DELAY FOR A CASE PASSED BY A JUDGE              BJU06530
C                                                                       BJU06540
```

```
      NFRST=MFE(146)                                                    BJU06550
      NEXT=NSET(NFRST)                                                  BJU06560
      NUM=NSET(NFRST+5)                                                 BJU06570
      IF((NUM.LT.4).OR.(NUM.GT.9))CALL ERROR(608)                       BJU06580
      QSET(NFRST+2)=CDJ                                                 BJU06590
      IF(NEXT.LE.0)CALL ERROR(609)                                      BJU06600
 1700 NUM=NSET(NEXT+5)                                                  BJU06610
      IF((NUM.LT.4).OR.(NUM.GT.9))CALL ERROR(610)                       BJU06620
      QSET(NEXT+2)=CDJ                                                  BJU06630
      NEXT=NSET(NEXT)                                                   BJU06640
      IF(NEXT.GT.0)GO TO 1700                                           BJU06650
C                                                                       BJU06660
C     ENTER DURATION OF DELAY FOR A CASE PASSED BY AN ATTORNEY          BJU06670
C                                                                       BJU06680
      NFRST=MFE(147)                                                    BJU06690
      NEXT=NSET(NFRST)                                                  BJU06700
      NUM=NSET(NFRST+5)                                                 BJU06710
      IF((NUM.LT.10).OR.(NUM.GT.22)) CALL ERROR(611)                    BJU06720
      QSET(NFRST+2)=CDA                                                 BJU06730
      IF(NEXT.LE.0)CALL ERROR(612)                                      BJU06740
 1710 NUM=NSET(NEXT+5)                                                  BJU06750
      IF((NUM.LT.10).OR.(NUM.GT.22))CALL ERROR(613)                     BJU06760
      QSET(NEXT+2)=CDA                                                  BJU06770
      NEXT=NSET(NEXT)                                                   BJU06780
      IF(NEXT.GT.0)GO TO 1710                                           BJU06790
C                                                                       BJU06800
C     ENTER PROBABILITY OF NO JUDGE IN CIVIL CASE                       BJU06810
C                                                                       BJU06820
      IA1=MFE(150)                                                      BJU06830
      IA2=NSET(IA1)                                                     BJU06840
      NUM1=NSET(IA1+5)                                                  BJU06850
      NUM2=NSET(IA2+5)                                                  BJU06860
      IF(NUM1.NE.25)GO TO 1720                                          BJU06870
      QSET(IA1+6)=PC                                                    BJU06880
      IF(NUM2.NE.26)CALL ERROR(614)                                     BJU06890
      QSET(IA2+6)=1.                                                    BJU06900
      GO TO 1730                                                        BJU06910
 1720 CONTINUE                                                          BJU06920
      IF(NUM2.NE.25)CALL ERROR(615)                                     BJU06930
      QSET(IA2+6)=1.                                                    BJU06940
      IF(NUM1.NE.26)CALL ERROR(616)                                     BJU06950
      QSET(IA1+6)=1.-PC                                                 BJU06960
 1730 CONTINUE                                                          BJU06970
C                                                                       BJU06980
C     ENTER PROBABILITY OF NO JUDGE IN FEDERAL QUESTION CASE            BJU06990
C                                                                       BJU07000
      IA1=MFE(152)                                                      BJU07010
      IA2=NSET(IA1)                                                     BJU07020
      NUM1=NSET(IA1+5)                                                  BJU07030
      NUM2=NSET(IA2+5)                                                  BJU07040
      IF(NUM1.NE.27)GO TO 1740                                          BJU07050
      QSET(IA1+6)=PF                                                    BJU07060
      IF(NUM2.NE.28)CALL ERROR(617)                                     BJU07070
      QSET(IA2+6)=1.                                                    BJU07080
      GO TO 1750                                                        BJU07090
 1740 CONTINUE                                                          BJU07100
      IF(NUM2.NE.27)CALL ERROR(618)                                     BJU07110
      QSET(IA2+6)=1.                                                    BJU07120
      IF(NUM1.NE.28)CALL ERROR(619)                                     BJU07130
      QSET(IA1+6)=1.-PF                                                 BJU07140
 1750 CONTINUE                                                          BJU07150
C                                                                       BJU07160
C     ENTER PROBABILITY OF NO JUDGE IN DIVERSITY JURISDICTION CASE      BJU07170
C                                                                       BJU07180
      IA1=MFE(154)                                                      BJU07190
      IA2=NSET(IA1)                                                     BJU07200
      NUM1=NSET(IA1+5)                                                  BJU07210
      NUM2=NSET(IA2+5)                                                  BJU07220
      IF(NUM1.NE.29)GO TO 1760                                          BJU07230
      QSET(IA1+6)=PB                                                    BJU07240
      IF(NUM2.NE.30)CALL ERROR(620)                                     BJU07250
      QSET(IA2+6)=1.                                                    BJU07260
```

```
      GO TO 1770                                                        BJU07270
 1760 CONTINUE                                                          BJU07280
      IF(NUM2.NE.29)CALL ERROR(621)                                     BJU07290
      QSET(IA2+6)=1.                                                    BJU07300
      IF(NUM1.NE.30)CALL ERROR(622)                                     BJU07310
      QSET(IA1+6)=1.-PD                                                 BJU07320
 1770 CONTINUE                                                          BJU07330
C                                                                       BJU07340
C     ENTER PROBABILITY OF INTERNAL DELAY FOR JUDGE                     BJU07350
C                                                                       BJU07360
      IA1=MFE(158)                                                      BJU07370
      IA2=NSET(IA1)                                                     BJU07380
      NUM1=NSET(IA1+5)                                                  BJU07390
      NUM2=NSET(IA2+5)                                                  BJU07400
      IF(NUM1.NE.31)GO TO 1780                                          BJU07410
      QSET(IA1+6)=PJD                                                   BJU07420
      IF(NUM2.NE.32)CALL ERROR(623)                                     BJU07430
      QSET(IA2+6)=1.                                                    BJU07440
      GO TO 1790                                                        BJU07450
 1780 CONTINUE                                                          BJU07460
      IF(NUM2.NE.31)CALL ERROR(624)                                     BJU07470
      QSET(IA2+6)=1.                                                    BJU07480
      IF(NUM1.NE.32)CALL ERROR(625)                                     BJU07490
      QSET(IA1+6)=1.-PJD                                                BJU07500
 1790 CONTINUE                                                          BJU07510
C                                                                       BJU07520
C     ENTER PROBABILITY OF AN INTERNAL DELAY FOR ATTORNEY               BJU07530
C                                                                       BJU07540
      IA1=MFE(164)                                                      BJU07550
      IA2=NSET(IA1)                                                     BJU07560
      NUM1=NSET(IA1+5)                                                  BJU07570
      NUM2=NSET(IA2+5)                                                  BJU07580
      IF(NUM1.NE.24)GO TO 1800                                          BJU07590
      QSET(IA1+6)=PAD                                                   BJU07600
      IF(NUM2.NE.33)CALL ERROR(626)                                     BJU07610
      QSET(IA2+6)=1.                                                    BJU07620
      GO TO 1810                                                        BJU07630
 1800 CONTINUE                                                          BJU07640
      IF(NUM2.NE.24)CALL ERROR(627)                                     BJU07650
      QSET(IA2+6)=1.                                                    BJU07660
      IF(NUM1.NE.33)CALL ERROR(628)                                     BJU07670
      QSET(IA1+6)=1.-PAD                                                BJU07680
 1810 CONTINUE                                                          BJU07690
C                                                                       BJU07700
C     ENTER 20-NACV INTO CONDITION CODE FOR ACTIVITY 62-70              BJU07710
C                                                                       BJU07720
      NA(1)=MFE(62)                                                     BJU07730
      NA(2)=NSET(NA(1))                                                 BJU07740
      NA(3)=NSET(NA(2))                                                 BJU07750
      DO 2400 I=1,3                                                     BJU07760
      IF(NSET(NA(I)+1).EQ.70) GO TO 2401                                BJU07770
 2400 CONTINUE                                                          BJU07780
      CALL ERROR(633)                                                   BJU07790
 2401 NODE=NA(I)                                                        BJU07800
      XDSTR(NODE+2)=20-NACV                                             BJU07810
C                                                                       BJU07820
C     SET UP COLCT NUMBERS FOR ACTIVITY MILESTONES                      BJU07830
C                                                                       BJU07840
      IX=1                                                              BJU07850
      DO 1850 I=1,14                                                    BJU07860
      IACOL(I)=IX                                                       BJU07870
      IX=IX+1                                                           BJU07880
 1850 CONTINUE                                                          BJU07890
C                                                                       BJU07900
C     SET UP COLCT NUMBERS FOR TIME IN SYSTEM FOR CRIMINAL SINKS        BJU07910
C                                                                       BJU07920
      DO 1860 I=1,15                                                    BJU07930
      ISCOL(I)=IX                                                       BJU07940
      IX=IX+1                                                           BJU07950
 1860 CONTINUE                                                          BJU07960
C                                                                       BJU07970
C    SET CUMULATIVE PROBABILITIES                                       BJU07980
C                                                                       BJU07990
```

```
      DO 512 I=1,24                                                    BJU08000
      SUM=0.                                                           BJU08010
      NB=NBRNCH(I)                                                     BJU08020
      DO 513 J=1,NB                                                    BJU08030
      SUM=SUM+PNEXT(I,J)                                               BJU08040
      PNEXT(I,J)=SUM                                                   BJU08050
  513 CONTINUE                                                         BJU08060
  512 CONTINUE                                                         BJU08070
      CALL CPTR(5)                                                     BJU08080
      CALL CPTR(6)                                                     BJU08090
      CALL CPTR(7)                                                     BJU08100
      CALL CPTR(8)                                                     BJU08110
      CALL CPTR(9)                                                     BJU08120
      CALL CPTR(10)                                                    BJU08130
      CALL CPTR(12)                                                    BJU08140
      CALL CPTR(13)                                                    BJU08150
      CALL CPTR(14)                                                    BJU08160
      CALL CPTR(16)                                                    BJU08170
      CALL CPTR(18)                                                    BJU08180
      CALL CPTR(19)                                                    BJU08190
      CALL CPTR(20)                                                    BJU08200
      CALL CPTR(21)                                                    BJU08210
      CALL CPTR(22)                                                    BJU08220
      CALL CPTR(23)                                                    BJU08230
      CALL CPTR(24)                                                    BJU08240
      CALL CPTR(25)                                                    BJU08250
      CALL CPTR(26)                                                    BJU08260
      CALL CPTR(27)                                                    BJU08270
      CALL CPTR(28)                                                    BJU08280
      CALL CPTR(29)                                                    BJU08290
      CALL CPTR(30)                                                    BJU08300
      CALL CPTR(31)                                                    BJU08310
      CALL CPTR(32)                                                    BJU08320
      CALL CPTR(33)                                                    BJU08330
      CALL CPTR(34)                                                    BJU08340
      CALL CPTR(35)                                                    BJU08350
      CALL CPTR(36)                                                    BJU08360
      CALL CPTR(37)                                                    BJU08370
      CALL CPTR(38)                                                    BJU08380
      CALL CPTR(39)                                                    BJU08390
      CALL CPTR(40)                                                    BJU08400
      CALL CPTR(41)                                                    BJU08410
      CALL CPTR(42)                                                    BJU08420
      CALL CPTR(43)                                                    BJU08430
      CALL CPTR(44)                                                    BJU08440
      CALL CPTR(45)                                                    BJU08450
      CALL CPTR(46)                                                    BJU08460
      CALL CPTR(47)                                                    BJU08470
      CALL CPTR(48)                                                    BJU08480
      CALL CPTR(49)                                                    BJU08490
      CALL CPTR(50)                                                    BJU08500
      CALL CPTR(51)                                                    BJU08510
      CALL CPTR(52)                                                    BJU08520
      CALL CPTR(53)                                                    BJU08530
      CALL CPTR(54)                                                    BJU08540
      CALL CPTR(55)                                                    BJU08550
      CALL CPTR(56)                                                    BJU08560
      CALL CPTR(57)                                                    BJU08570
      CALL CPTR(58)                                                    BJU08580
      CALL CPTR(59)                                                    BJU08590
      CALL CPTR(60)                                                    BJU08600
      CALL CPTR(61)                                                    BJU08610
      CALL CPTR(62)                                                    BJU08620
      CALL CPTR(63)                                                    BJU08630
      CALL CPTR(64)                                                    BJU08640
      CALL CPTR(65)                                                    BJU08650
      CALL CPTR(66)                                                    BJU08660
      CALL CPTR(67)                                                    BJU08670
      CALL CPTR(68)                                                    BJU08680
      CALL CPTR(69)                                                    BJU08690
 2500 RETURN                                                           BJU08700
      END                                                              BJU08710
```

```
      FUNCTION UF(IFN)                                                  BJU08720
      COMMON /STRAC/ KTRAC,NPRNT3,NNPTS,KTRCE,KTRCS,NTBTR(50)           BJU08730
      COMMON /QVAR/ NDE,NFTBU(250),NREL(250),NRELP(250),NREL2(250),     BJU08740
     *NRUN,NRUNS,NTC(250),PARAM(100,4),TBEG,TNOW                        BJU08750
      COMMON /STAT/ JCELS(120,20),JSINK(120),NBRKB,NBRKS,NCLCT,NDT,     BJU08760
     *NDTL,NDTU,NHIST,NPD,NQL,NQU,NSINK(120),NSKS,NSKSR,NSKST,NSNR(120  BJU08770
     *),SNODE(120),SUMA(120,7),WIDTH(120),XLOW(120),XSTUS(120)          BJU08780
      COMMON /QUE/ BLMAX(100),BSMAX(100),BSMIN(100),IMNQ(100),MAXQS,    BJU08790
     *MAXNS,MFAQ,MFAS,MFEQ(100),MLEQ(100),MFESQ(100),NABA(280),         BJU08800
     *NPO(100),NPTR(5250),NQAT(5250),NQN,NSAQ(200),NSERE,NSETS(200),    BJU08810
     *NSN,NSTUS(100),QMAX(100),QMIN(100),SBLK(100),SBUS(100),SQUE(100)  BJU08820
     *,TLCB(100),TLCQ(100),XBALK(100),NSAQ2(100),LABLS(100,2)           BJU08830
      DIMENSION XABA(280)                                               BJU08840
      EQUIVALENCE (NABA(1),XABA(1))                                     BJU08850
      COMMON /TRANS/ DESCR(63000),KNOD,MFAD,NDPTR,NDSTR(1300)           BJU08860
      DIMENSION XDSTR(1200),NESCR(63000)                                BJU08870
      EQUIVALENCE (NESCR(1),DESCR(1)), (XDSTR(1),NDSTR(1))              BJU08880
      COMMON /NODAL/ ID,IM,IMM,LSINK(250),MFA,MFE(250),MFEB(250),MX,    BJU08890
     *MXX,NDCH(250,2),NDPT(250),NN,NOQ,NSIGN(250),NTYPE(250),LABLN      BJU08900
     *(550,2)                                                           BJU08910
      COMMON /GENL/ IFIN,IFRST,ISMRY,ITRAC,LIST80,MON,NAME(12),NCRDR,NDABJU08920
     *Y,NNM,NPRNT,NPROJ(12),NSORC(20),NTRCS,NTRCE,NSRC,NYR,TTFIN        BJU08930
      COMMON /UCOM1/ ICRT(18),INJ(18),KFLAG(6),KATH                     BJU08940
      COMMON/CMNLP/NJ,NACR,NACV,BETAJ,BETAR,BETAV,WTMNJ,WTMXJ,WTMNR,WTMXBJU08950
     1R,WTMNV,WTMXV,NOCSJ,NOCSR,NOCSV,NCSJ,NCSAR,NCSAV,STT,CDJ,CDA,DIJ,DBJU08960
     2IA,PC,PF,PD,PJD,PAD,PEDC,PEDF,PEDD,PIV,PIF,PID,PTV,PBTV,PTF,PBTF,PBJU08970
     3TD,PBTD,PPC,T(9),IQT(9),U(19),HOLD(4,2),ST(19),CSTAT(6)           BJU08980
      REAL ATT(11)                                                      BJU08990
      DATA ATT/11*0./                                                   BJU09000
      UF = -99.                                                         BJU09010
      GO TO (1,2,3,4,5,6,7,8,9,10,11,11,13,14,15,16,17,160,19,20,21,22, BJU09020
     *       23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,  BJU09030
     *       42,43,44,45,46,47,48,49,50,51,52,53,54,55,56,57,58,59,60,  BJU09040
     *       61,62,63,64,65,66,67),IFN                                  BJU09050
C                                                                       BJU09060
C     ASSIGN ATTORNEY (CRIMINAL) WITH LOWEST UTILIZATION                BJU09070
C     OR WITH EQUAL PROBABILITY IF TNOW EQUALS ZERO                     BJU09080
C                                                                       BJU09090
    1 IF(TNOW.GE.0.)GO TO 104                                           BJU09100
      TR=TIRU(K)                                                        BJU09110
      I=7                                                               BJU09120
      UF=7                                                              BJU09130
      RUM=TIRU(7)                                                       BJU09140
      K=6+NACR                                                          BJU09150
      DO 101 I=7,K                                                      BJU09160
      IF(TIRU(I).LT.RUM) GO TO 1021                                     BJU09170
      GO TO 101                                                         BJU09180
 1021 UF=I                                                              BJU09190
  101 CONTINUE                                                          BJU09200
      GO TO 99                                                          BJU09210
C                                                                       BJU09220
C     RANDOMLY ASSIGN ATTORNEY NUMBER 7-(6+NACR) (CRIMINAL)             BJU09230
C                                                                       BJU09240
  104 I=UN(70)                                                          BJU09250
      IF(I.EQ.(7+NACR))I=6+NACR                                         BJU09260
      UF=I                                                              BJU09270
      RETURN                                                            BJU09280
C                                                                       BJU09290
C     ASSIGN ATTORNEY (CIVIL) WITH LOWEST UTILIZATION OR WITH           BJU09300
C     EQUAL PROB IF TNOW EQUALS ZERO                                    BJU09310
C                                                                       BJU09320
    2 IF(TNOW.GE.0.)GO TO 204                                           BJU09330
      I=20-NACV                                                         BJU09340
      UF=I                                                              BJU09350
      RUMIN=TIRU(I)                                                     BJU09360
  201 IF(TIRU(I).LT.RUMIN)GO TO 202                                     BJU09370
  203 I=I+1                                                             BJU09380
      IF(I.LE.19)GO TO 201                                              BJU09390
      GO TO 99                                                          BJU09400
  202 RUMIN=TIRU(I)                                                     BJU09410
      UF=I                                                              BJU09420
      GO TO 203                                                         BJU09430
```

```
C                                                                       BJUC9440
C     RANDOMLY ASSIGN ATTORNEY NUMBER (20-NACV)-19 (CIVIL/U.S.)         BJU09450
C                                                                       BJU09460
 204  I=UN(71)                                                          BJU09470
      IF(I.EQ.20)I=19                                                   BJU09480
      UF=I                                                              BJU09490
      RETURN                                                            BJU09500
C                                                                       BJU09510
C     ASSIGN JUDGE WITH LOWEST UTILIZATION OR WITH EQUAL                BJU09520
C     PROBABILITY IF TNOW EQUALS ZERO                                   BJU09530
C                                                                       BJU09540
    3 IF(TNOW.GE.0.0)GO TO 3014                                         BJU09550
      I=1                                                               BJU09560
      UF=1                                                              BJU09570
      RUMIN=TIRU(I)                                                     BJU09580
 3011 IF(TIRU(I).LT.RUMIN)GO TO 3012                                    BJU09590
 3013 I=I+1                                                             BJU09600
      IF(I.LE.NJ)GO TO 3011                                             BJU09610
      GO TO 99                                                          BJU09620
 3012 RUMIN=TIRU(I)                                                     BJU09630
      UF=I                                                              BJU09640
      GO TO 3013                                                        BJU09650
C                                                                       BJU09660
C     RANDOMLY ASSIGN JUDGE NUMBER 1-NJ.                                BJU09670
C                                                                       BJU09680
 3014 I=UN(72)                                                          BJU09690
      IF(I.EQ.(NJ+1))I=NJ                                               BJU09700
      UF=I                                                              BJU09710
      RETURN                                                            BJU09720
C                                                                       BJU09730
C     ASSIGN ATTRIBUTES 4,5,7,8, AND 9 FOR EACH CASE TYPE.              BJU09740
C                                                                       BJU09750
 4    CALL GETAT(ATT)                                                   BJU09760
      IF(ATT(2).GE.(20-NACV))GO TO 409                                  BJU09770
      IF(ATT(2).GE.7)CALL ERROR(358)                                    BJU09780
      IF(ATT(2).GE.2)GO TO 429                                          BJU09790
C                                                                       BJU09800
C     FEDERAL QUESTIONS CASE                                            BJU09810
C                                                                       BJU09820
      I=TR(7)                                                           BJU09830
      UF=1                                                              BJU09840
      RN=DRAND(3)                                                       BJU09850
C                                                                       BJU09860
C     TEST FOR AN INJUNCTION (FEDERAL QUESTIONS)                        BJU09870
C                                                                       BJU09880
      IF(RN.LE.PIF)GO TO 439                                            BJU09890
      ATT(5)=0.                                                         BJU09900
      GO TO 449                                                         BJU09910
 439  I=TR(8)                                                           BJU09920
      ATT(5)=I                                                          BJU09930
 449  I=TR(9)                                                           BJU09940
      IF(I.LT.1)CALL ERROR(333)                                         BJU09950
      ATT(7)=I                                                          BJU09960
      I=TR(10)                                                          BJU09970
      ATT(8)=I                                                          BJU09980
      ATT(9)=0.                                                         BJU09990
      GO TO 459                                                         BJU10000
C                                                                       BJU10010
C     DIVERSITY JURISDICTION CASE                                       BJU10020
C                                                                       BJU10030
 429  I=TR(67)                                                          BJU10040
      UF=I                                                              BJU10050
      RN=DRAND(4)                                                       BJU10060
C                                                                       BJU10070
C     TEST FOR AN INJUNCTION (DIVERSITY JURISDICTION)                   BJU10080
C                                                                       BJU10090
      IF(RN.LE. PID)GO TO 469                                           BJU10100
      ATT(5)=0.                                                         BJU10110
      GO TO 479                                                         BJU10120
 469  I=TR(12)                                                          BJU10130
      ATT(5)=I                                                          BJU10140
 479  I=TR(13)                                                          BJU10150
```

```
      IF(I.LT.1)CALL ERROR(334)                                          BJU10160
      ATT(7)=I                                                           BJU10170
      I=TR(14)                                                           BJU10180
      ATT(8)=I                                                           BJU10190
      ATT(9)=0.                                                          BJU10200
      GO TO 459                                                          BJU10210
C                                                                        BJU10220
C     CIVIL/U.S.                                                         BJU10230
C                                                                        BJU10240
 409  I=TR(21)                                                           BJU10250
      UF=I                                                               BJU10260
      RN=DRAND(2)                                                        BJU10270
C                                                                        BJU10280
C     TEST FOR AN INJUNCTION (CIVIL/U.S.)                                BJU10290
C                                                                        BJU10300
      IF(RN.LE. PIV)GO TO 509                                            BJU10310
      ATT(5)=0.                                                          BJU10320
      GO TO 519                                                          BJU10330
 509  I=TR(22)                                                           BJU10340
      ATT(5)=I                                                           BJU10350
 519  I=TR(23)                                                           BJU10360
      IF(I.LT.1)CALL ERROR(336)                                          BJU10370
      ATT(7)=I                                                           BJU10380
      I=TR(24)                                                           BJU10390
      ATT(8)=I                                                           BJU10400
      I=TR(25)                                                           BJU10410
      ATT(9)=I                                                           BJU10420
 459  CALL PUTAT(ATT)                                                    BJU10430
      GO TO 99                                                           BJU10440
C                                                                        BJU10450
C     TEST IF THE CASE HAS FINISHED PROCESSING.                          BJU10460
C                                                                        BJU10470
 5    CALL GETAT(ATT)                                                    BJU10480
      IF(ATT(2).GE.7.AND.ATT(2).LE.(19-NACV)) GO TO 529                  BJU10490
      IF(ATT(4).GT.0.)GO TO 529                                          BJU10500
      IF(ATT(5).GT.0.)GO TO 529                                          BJU10510
      IF(ATT(6).GT.0.)GO TO 529                                          BJU10520
      IF(ATT(7).GT.0.)GO TO 529                                          BJU10530
      IF(ATT(8).GT.0.)GO TO 529                                          BJU10540
      IF(ATT(9).GT.0.)GO TO 529                                          BJU10550
      UF=0.0                                                             BJU10560
      GO TO 99                                                           BJU10570
 529  UF=1.0                                                             BJU10580
      GO TO 99                                                           BJU10590
C                                                                        BJU10600
C     ROUTE CASE INTO A RANDOMLY SELECTED STAGE.                         BJU10610
C                                                                        BJU10620
 6    CALL GETAT(ATT)                                                    BJU10630
      IF(ATT(2).GE.FLOAT(7).AND.ATT(2).LE.(7+NACR)) GO TO 600            BJU10640
      T2=ATT(5)                                                          BJU10650
      T3=T2+ATT(6)                                                       BJU10660
      T4=T3+ATT(7)                                                       BJU10670
      T5=T4+ATT(8)                                                       BJU10680
      T6=T5+ATT(9)                                                       BJU10690
      STAGE=DRAND(5)*T6                                                  BJU10700
      IF(STAGE .GE. T2)GO TO 625                                         BJU10710
C                                                                        BJU10720
C     STAGE = INJUNCTION                                                 BJU10730
C                                                                        BJU10740
      UF=64                                                              BJU10750
      GO TO 99                                                           BJU10760
 625  IF(STAGE .GE. T3)GO TO 630                                         BJU10770
C                                                                        BJU10780
C     STAGE = TRIAL                                                      BJU10790
C     TRIAL BENCH: 66                                                    BJU10800
C     TRIAL JURY:  67                                                    BJU10810
C                                                                        BJU10820
      UF=66                                                              BJU10830
      IF(ATT(6) .GE. 1.2)UF=67                                           BJU10840
      GO TO 99                                                           BJU10850
 630  IF(STAGE .GE. T4)GO TO 635                                         BJU10860
```

```
C                                                                       BJU10870
C      STAGE = OTHER COURT.                                             BJU10880
C                                                                       BJU10890
       UF=65                                                            BJU10900
       GO TO 99                                                         BJU10910
 635   IF(STAGE .GE. T5)GO TO 640                                       BJU10920
C                                                                       BJU10930
C      STAGE = NON-COURTROOM (JUDGE).                                   BJU10940
C                                                                       BJU10950
       UF=68                                                            BJU10960
       GO TO 99                                                         BJU10970
 640   UF=69                                                            BJU10980
C                                                                       BJU10990
C      STAGE = NON-COURTROOM (ATTORNEY).                                BJU11000
C                                                                       BJU11010
       IF(ATT(9) .EQ. 0.)UF=63                                          BJU11020
C                                                                       BJU11030
C      STAGE = EXTERNAL DELAY (REQUIRED).                               BJU11040
C                                                                       BJU11050
       GO TO 99                                                         BJU11060
C                                                                       BJU11070
C       CRIMINAL CASE                                                   BJU11080
C                                                                       BJU11090
  600  NEXT=GATRB(6)                                                    BJU11100
       IF(NEXT.GE.5000) GO TO 610                                       BJU11110
       NEXT=NEXTA(NEXT)                                                 BJU11120
  610  UF=NACT(NEXT,TNOW)                                               BJU11130
       RETURN                                                           BJU11140
C                                                                       BJU11150
C      SET THE NUMBER OF THE TRIAL(B) EPISODES.                         BJU11160
C                                                                       BJU11170
 7     IC=GATRB(2)                                                      BJU11180
       IF(IC.GE.(20-NACV))GO TO 70                                      BJU11190
       IF(IC.GE.7)GO TO 71                                              BJU11200
       IF(IC.GE.2)GO TO 72                                              BJU11210
C                                                                       BJU11220
C      PRIVATE CASE (FEDERAL QUESTIONS)                                 BJU11230
C                                                                       BJU11240
       I=TR(26)                                                         BJU11250
       UF=I+1000                                                        BJU11260
       GO TO 99                                                         BJU11270
C                                                                       BJU11280
C      PRIVATE CASE (DIVERSITY JURISDICTION)                            BJU11290
C                                                                       BJU11300
 72    I=TR(27)                                                         BJU11310
       UF=I+1000                                                        BJU11320
       GO TO 99                                                         BJU11330
C                                                                       BJU11340
C      CRIMINAL CASE                                                    BJU11350
C                                                                       BJU11360
 71    I=TR(28)                                                         BJU11370
       UF=I+1000                                                        BJU11380
       GO TO 99                                                         BJU11390
C                                                                       BJU11400
C      CIVIL/U.S. CASE                                                  BJU11410
C                                                                       BJU11420
 70    I=TR(29)                                                         BJU11430
       UF=I+1000                                                        BJU11440
       GO TO 99                                                         BJU11450
C                                                                       BJU11460
C      SET THE NUMBER OF THE TRIAL(J) EPISODES.                         BJU11470
C                                                                       BJU11480
 8     IC=GATRB(2)                                                      BJU11490
       IF(IC.GE.(20-NACV))GO TO 80                                      BJU11500
       IF(IC.GE.7)GO TO 81                                              BJU11510
       IF(IC.GE.2)GO TO 82                                              BJU11520
C                                                                       BJU11530
C      PRIVATE CASE (FEDERAL QUESTIONS)                                 BJU11540
C                                                                       BJU11550
       I=TR(30)                                                         BJU11560
       UF=I+2000                                                        BJU11570
       GO TO 99                                                         BJU11580
```

```
C                                                                       BJU11590
C     PRIVATE CASE (DIVERSITY JURISDICTION)                             BJU11600
C                                                                       BJU11610
 82   I=TR(31)                                                          BJU11620
      UF=I+2000                                                         BJU11630
      GO TO 99                                                          BJU11640
C                                                                       BJU11650
C     CRIMINAL CASE                                                     BJU11660
C                                                                       BJU11670
 81   I=TR(32)                                                          BJU11680
      UF=I+2000                                                         BJU11690
      GO TO 99                                                          BJU11700
C                                                                       BJU11710
C     CIVIL/U.S. CASE                                                   BJU11720
C                                                                       BJU11730
 80   I=TR(33)                                                          BJU11740
      UF=I+2000                                                         BJU11750
      GO TO 99                                                          BJU11760
C                                                                       BJU11770
C     SELECT BRANCH BASED ON JUDGE ROUTE NODE LOGIC                     BJU11780
C                                                                       BJU11790
 9    CALL GETAT(ATT)                                                   BJU11800
      M2=ATT(2)+0.5                                                     BJU11810
      M3=ATT(3)+0.5                                                     BJU11820
      IF(ATT(2) .LE. 2.)GO TO 975                                       BJU11830
C                                                                       BJU11840
C     PUBLIC CASE                                                       BJU11850
C                                                                       BJU11860
      IF(ATT(10) .GE. 8.)GO TO 920                                      BJU11870
C                                                                       BJU11880
C     JUDGE IS NOT CURRENTLY IN AN INJUNCTION.                          BJU11890
C                                                                       BJU11900
      IF(INJ(M3) .EQ. 1)GO TO 990                                       BJU11910
C                                                                       BJU11920
C     JUDGE IS NOT BEING CALLED TO AN INJUNCTION.                       BJU11930
C                                                                       BJU11940
      IF(ATT(10) .EQ. 7.OR.ATT(10).EQ.6.7)GO TO 960                     BJU11950
C                                                                       BJU11960
C     CASE IN PROCESS                                                   BJU11970
C                                                                       BJU11980
      IF(ICRT(M3) .EQ. 3)GO TO 990                                      BJU11990
C                                                                       BJU12000
C     NOT A JUDGE ONLY TRIAL B/J.                                       BJU12010
C                                                                       BJU12020
      IF(ICRT(M3) .EQ. 2)GO TO 950                                      BJU12030
C                                                                       BJU12040
C     NOT A J/A TRIAL B/J FOR THE JUDGE                                 BJU12050
C                                                                       BJU12060
      IF(ICRT(M2) .EQ. 2)GO TO 990                                      BJU12070
C                                                                       BJU12080
C     NOT A J/A TRIAL B/J FOR THE ATTORNEY.                             BJU12090
C                                                                       BJU12100
C     TEST WORKLOAD                                                     BJU12110
C                                                                       BJU12120
      IF((ST(M2)-TNOW).LE.0.0)GO TO 901                                 BJU12130
      NQNC=123+M3                                                       BJU12140
      NQC1=73+M3                                                        BJU12150
      NQC2=190+M3                                                       BJU12160
      IF(M3.EQ.6)NQC2=221                                               BJU12170
      WORK=XNINQ(NQNC)+BETAJ*XNINQ(NQC1)+BETAJ*XNINQ(NQC2)              BJU12180
      IF(WORK.LT.1.0)GO TO 902                                          BJU12190
      WTIM=WTMXJ/WORK                                                   BJU12200
      IF(WTIM.LT.WTMNJ)WTIM=WTMNJ                                       BJU12210
 903  IF(WTIM.LT.(ST(M2)-TNOW))GO TO 990                                BJU12220
C                                                                       BJU12230
C     WAIT FOR ATTY                                                     BJU12240
C                                                                       BJU12250
 901  ICRT(M2)=2                                                        BJU12260
      ICRT(M3)=2                                                        BJU12270
      GO TO 960                                                         BJU12280
 902  WTIM=WTMXJ                                                        BJU12290
      GO TO 903                                                         BJU12300
```

```
 920  CONTINUE                                                          BJU12310
      IF(INJ(M3) .EQ. 1)GO TO 930                                       BJU12320
C                                                                       BJU12330
C     JUDGE IS NOT BEING CALLED TO AN INJUNCTION.                       BJU12340
C                                                                       BJU12350
      IF(INJ(M2) .EQ. 1)GO TO 990                                       BJU12360
C                                                                       BJU12370
C     REQUIRED ATTORNEY IS NOT IN AN INJUNCTION STATUS.                 BJU12380
C     TEST IF ATTORNEY IS IN A COURTROOM STATUS                         BJU12390
C                                                                       BJU12400
      IF(ICRT(M2).EQ.2) GO TO 910                                       BJU12410
C     SET J/A TO INJUNCTION PENDING STATUS.                             BJU12420
C                                                                       BJU12430
 912  INJ(M2)=1                                                         BJU12440
      INJ(M3)=1                                                         BJU12450
      GO TO 940                                                         BJU12460
C     TEST IF THERE IS A TRANSACTION IN Q-NODE 40                       BJU12470
 910  IF(NREL(40).EQ.0) GO TO 912                                       BJU12480
      IQ=LSINK(40)-NSKS                                                 BJU12490
      NEXT=MFEQ(IQ)                                                     BJU12500
C     GET ATTRIBUTE 2 OF NEXT                                           BJU12510
 913  IK=NQAT(NEXT) + 1                                                 BJU12520
      IF(DESCR(IK).EQ.M2) GO TO 915                                     BJU12530
C     ATTRIBUTE 2 OR 3 IS NOT EQUAL TO M2 OR M3 RESPECTIVELY            BJU12540
 916  NEXT=NPTR(NEXT)                                                   BJU12550
      IF(NEXT.EQ.0) GO TO 912                                           BJU12560
      GO TO 913                                                         BJU12570
C     GET ATTRIBUTE 3 OF NEXT                                           BJU12580
 915  IK=IK+1                                                           BJU12590
      IF(DESCR(IK).EQ.M3) GO TO 990                                     BJU12600
      GO TO 916                                                         BJU12610
 930  CONTINUE                                                          BJU12620
C                                                                       BJU12630
C     TEST TO SEE IF THERE IS A TRANSACTION IN Q-NODE 20.               BJU12640
C                                                                       BJU12650
      IF(NREL(20) .EQ. 0)GO TO 990                                      BJU12660
      IQ=LSINK(20)-NSKS                                                 BJU12670
      NEXT=MFEQ(IQ)                                                     BJU12680
C                                                                       BJU12690
C     GET ATTRIBUTE 1 OF NEXT                                           BJU12700
C                                                                       BJU12710
 7070 IK=NQAT(NEXT)                                                     BJU12720
      IF(DESCR(IK) .EQ. ATT(1))GO TO 940                                BJU12730
C                                                                       BJU12740
C     ATTRIBUTE 1 IS NOT EQUAL TO ATT(1)                                BJU12750
C                                                                       BJU12760
      NEXT=NPTR(NEXT)                                                   BJU12770
      IF(NEXT .EQ. 0)GO TO 990                                          BJU12780
      GO TO 7070                                                        BJU12790
 940  CONTINUE                                                          BJU12800
      UF=4.                                                             BJU12810
      GO TO 99                                                          BJU12820
 950  CONTINUE                                                          BJU12830
C                                                                       BJU12840
C     TEST TO SEE IF THERE IS A TRANSACTION IN Q-NODE 40.               BJU12850
C                                                                       BJU12860
      IF(NREL(40) .EQ. 0)GO TO 990                                      BJU12870
      IQ=LSINK(40)-NSKS                                                 BJU12880
      NEXT=MFEQ(IQ)                                                     BJU12890
C                                                                       BJU12900
C     GET ATTRIBUTE OF NEXT.                                            BJU12910
C                                                                       BJU12920
 7071 IK=NQAT(NEXT)                                                     BJU12930
      IF(DESCR(IK) .EQ. ATT(1))GO TO 960                                BJU12940
C                                                                       BJU12950
C     ATTRIBUTE 1 IS NOT EQUAL TO ATT(1)                                BJU12960
C                                                                       BJU12970
      NEXT=NPTR(NEXT)                                                   BJU12980
      IF(NEXT .EQ. 0)GO TO 990                                          BJU12990
      GO TO 7071                                                        BJU13000
 960  CONTINUE                                                          BJU13010
      UF=3.                                                             BJU13020
      GO TO 99                                                          BJU13030
 975  CONTINUE                                                          BJU13040
      IF(INJ(M3) .EQ. 1)GO TO 990                                       BJU13050
```

```
C                                                                       BJU13060
C     JUDGE IS NOT IN AN INJUNCTION STATUS.                             BJU13070
C                                                                       BJU13080
      IF(ICRT(M3) .EQ. 2)GO TO 990                                      BJU13090
C                                                                       BJU13100
C     JUDGE IS NOT IN A TRIAL B/J OR O.C.                               BJU13110
C                                                                       BJU13120
      UF=2.                                                             BJU13130
      IF(ATT(10).GE.3.0.AND.ATT(10).LE.4.0)ICRT(M3)=1                   BJU13140
      IF(ATT(10).GE.5.0.AND.ATT(10).LE.7.0)ICRT(M3)=3                   BJU13150
      IF(ATT(10).GE.8.0.AND.ATT(10).LE.9.0)INJ(M3)=2                    BJU13160
      GO TO 99                                                          BJU13170
 990  CONTINUE                                                          BJU13180
      UF=1.                                                             BJU13190
C                                                                       BJU13200
C     FREE JUDGE AND DELAY CASE.                                        BJU13210
C                                                                       BJU13220
      GO TO 99                                                          BJU13230
C                                                                       BJU13240
C     SELECT BRANCH BASED ON ATTORNEY ROUTE NODE LOGIC.                 BJU13250
C                                                                       BJU13260
  10  CALL GETAT(ATT)                                                   BJU13270
      M2=ATT(2)+0.5                                                     BJU13280
      M3=ATT(3)+0.5                                                     BJU13290
C                                                                       BJU13300
C     IS THE CASE AN INJUNCTION?                                        BJU13310
C                                                                       BJU13320
      IF(ATT(10) .GE. 8.)GO TO 1050                                     BJU13330
C                                                                       BJU13340
C     NO...IS THE ATTORNEY IN AN INJUNCTION STATUS?                     BJU13350
C                                                                       BJU13360
      IF(INJ(M2) .EQ. 1)GO TO 1090                                      BJU13370
C                                                                       BJU13380
C     IS THE ATTORNEY ON A TRIAL B/J OR O.C. CASE WHICH IS IN PROCESS?  BJU13390
C                                                                       BJU13400
      IF(ATT(10) .EQ. /.OR.ATT(10).EQ.6.7)GO TO 1030                    BJU13410
C                                                                       BJU13420
C     NO...IS THE ATTORNEY STARTING A TRIAL B/J OR O.C. CASE?           BJU13430
C                                                                       BJU13440
      IF(ICRT(M2) .EQ. 2)GO TO 1020                                     BJU13450
C                                                                       BJU13460
C     NO...IS THE JUDGE ON A TRIAL B/J OR AN O.C. CASE?                 BJU13470
C                                                                       BJU13480
      IF(ICRT(M3) .GE. 2)GO TO 1090                                     BJU13490
C                                                                       BJU13500
C     THIS TESTS AGAINST THE PROBABILITY OF HAVING THE JUDGE            BJU13510
C     AND ATTORNEY TAKE ON A PUBLIC CASE                                BJU13520
C                                                                       BJU13530
      RN=ORAND(5)                                                       BJU13540
      IF(RN.LE.PPC) GO TO 1019                                          BJU13550
      NODQ=190+M3                                                       BJU13560
      IF(M3.EQ.6)NODQ=221                                               BJU13570
      IF(NREL(NODQ).LE.0) GO TO 1019                                    BJU13580
      ICRT(M3)=3                                                        BJU13590
      GO TO 1090                                                        BJU13600
C                                                                       BJU13610
C     TEST WORKLOAD                                                     BJU13620
C                                                                       BJU13630
 1019 IF((ST(M3)-TNOW).LE.0.0)GO TO 1018                                BJU13640
      NQNC=123+M2                                                       BJU13650
      IF(M2.EQ.19)NQNC=226                                              BJU13660
      NQC1=73+M2                                                        BJU13670
      IF(M2.EQ.19)NQC1=224                                              BJU13680
      IF(M2.LE.(19-NACV))GO TO 1017                                     BJU13690
C                                                                       BJU13700
C     ATTORNEY (CIVIL)                                                  BJU13710
C                                                                       BJU13720
      WORK=XNINQ(NQNC)+BETAV*XNINQ(NQC1)                                BJU13730
      IF(WORK.LT.1.0)GO TO 1016                                         BJU13740
      WTIM=WTMXV/WORK                                                   BJU13750
      IF(WTIM.LT.WTMNV)WTIM=WTMNV                                       BJU13760
 1015 IF(WTIM.LT.(ST(M3)-TNOW))GO TO 1090                               BJU13770
C                                                                       BJU13780
C     WAIT FOR JUDGE. SET J/A TO TRIAL B/J                              BJU13790
C     OR O.C. STATUS                                                    BJU13800
C                                                                       BJU13810
```

```
 1018 ICRT(M3)=2                                                        BJU13820
      ICRT(M2)=2                                                        BJU13830
      GO TO 1030                                                        BJU13840
C                                                                       BJU13850
C     ATTORNEY CRIMINAL                                                 BJU13860
C                                                                       BJU13870
 1017 WORK=XNINQ(NQNC)+BETAR*XNINQ(NQC1)                                BJU13880
      IF(WORK.LT.1.0)GO TO 1014                                         BJU13890
      WTIM=MTMXR/WORK                                                   BJU13900
      IF(WTIM.LT.WTMNR)WTIM=WTMNR                                       BJU13910
      GO TO 1015                                                        BJU13920
 1016 WTIM=WTMXV                                                        BJU13930
      GO TO 1015                                                        BJU13940
 1014 WTIM=WTMXR                                                        BJU13950
      GO TO 1015                                                        BJU13960
 1020 CONTINUE                                                          BJU13970
C                                                                       BJU13980
C     TEST TO SEE IF THERE IS A TRANSACTION IN Q-NODE 39.               BJU13990
C                                                                       BJU14000
      IF(NREL(39) .EQ. 0)GO TO 1090                                     BJU14010
      IQ=LSINK(39)-NSKS                                                 BJU14020
      NEXT=MFEQ(IQ)                                                     BJU14030
C                                                                       BJU14040
C     GET ATTRIBUTE 1 OF NEXT.                                          BJU14050
C                                                                       BJU14060
 1077 IK=NQAT(NEXT)                                                     BJU14070
      IF(DESCR(IK).EQ.ATT(1))GO TO 1030                                 BJU14080
C                                                                       BJU14090
C     ATTRIBUTE 1 IS NOT EQUAL TO ATT(1).                               BJU14100
C                                                                       BJU14110
      NEXT=NPTR(NEXT)                                                   BJU14120
      IF(NEXT .EQ. 0)GO TO 1090                                         BJU14130
      GO TO 1077                                                        BJU14140
 1030 CONTINUE                                                          BJU14150
      J/A=3.                                                            BJU14160
C                                                                       BJU14170
C     ROUTE TO Q-NODE 40.                                               BJU14180
C                                                                       BJU14190
      GO TO 99                                                          BJU14200
 1050 CONTINUE                                                          BJU14210
C                                                                       BJU14220
C     YES...IS THE REQUIRED ATTORNEY IN AN INJUNCTION STATUS?           BJU14230
C                                                                       BJU14240
      IF(INJ(M2) .EQ. 1)GO TO 1060                                      BJU14250
C                                                                       BJU14260
C     NO...IS THE REQUIRED JUDGE IN AN INJUNCTION STATUS?               BJU14270
C                                                                       BJU14280
      IF(INJ(M3) .EQ. 1)GO TO 1090                                      BJU14290
C                                                                       BJU14300
C     TEST IF JUDGE IS IN A COURTROOM STATUS                            BJU14310
      IF(ICRT(M3).EQ.2) GO TO 1033                                      BJU14320
C     NO...SET REQUIRED J/A TO INJUNCTION PENDING STATUS.               BJU14330
C                                                                       BJU14340
 1034 INJ(M3)=1                                                         BJU14350
      INJ(M2)=1                                                         BJU14360
      GO TO 1070                                                        BJU14370
C     TEST IF THERE IS A TRANSACTION IN Q-NODE 39                       BJU14380
 1033 IF(NREL(39).EQ.0) GO TO 1034                                      BJU14390
      IQ=LSINK(39)-NSKS                                                 BJU14400
      NEXT=MFEQ(IQ)                                                     BJU14410
C     GET ATTRIBUTE 3 OF NEXT                                           BJU14420
 1035 IK=NQAT(NEXT) + 2                                                 BJU14430
      IF(DESCR(IK).EQ.M3) GO TO 1037                                    BJU14440
C     ATTRIBUTE 2 OR 3 IS NOT EQUAL TO M2 OR M3 RESPECTIVELY            BJU14450
 1036 NEXT=NPTR(NEXT)                                                   BJU14460
      IF(NEXT.EQ.0) GO TO 1034                                          BJU14470
      GO TO 1035                                                        BJU14480
C     GET ATTRIBUTE 2 OF NEXT                                           BJU14490
 1037 IK=IK-1                                                           BJU14500
      IF(DESCR(IK).EQ.M2)GO TO 1090                                     BJU14510
      GO TO 1036                                                        BJU14520
 1060 CONTINUE                                                          BJU14530
C                                                                       BJU14540
C     TEST TO SEE IF THERE IS A TRANSACTION I Q-NODE 19.                BJU14550
C                                                                       BJU14560
      IF(NREL(19) .EQ. 0)GO TO 1090                                     BJU14570
      IQ=LSINK(19)-NSKS                                                 BJU14580
      NEXT=MFEQ(IQ)                                                     BJU14590
```

```
C                                                                       BJU14600
C     GET ATTRIBUTE 1 OF NEXT.                                          BJU14610
C                                                                       BJU14620
 1073 IK=NQAT(NEXT)                                                     BJU14630
      IF(DESCR(IK) .EQ. ATT(1))GO TO 1070                               BJU14640
C                                                                       BJU14650
C     ATTRIBUTE 1 IS NOT EQUAL TO ATT(1).                               BJU14660
C                                                                       BJU14670
      NEXT=NPTR(NEXT)                                                   BJU14680
      IF(NEXT .EQ. 0)GO TO 1090                                         BJU14690
      GO TO 1073                                                        BJU14700
 1070 CONTINUE                                                          BJU14710
      UF=4.                                                             BJU14720
      GO TO 99                                                          BJU14730
 1090 UF=1.                                                             BJU14740
      GO TO 99                                                          BJU14750
C                                                                       BJU14760
C     SET PRIORITY LEVEL OF PASSED-OVER CASE.                           BJU14770
C                                                                       BJU14780
  11  TI=GATRB(10)                                                      BJU14790
      IF(TI.EQ. 3.)GO TO 110                                            BJU14800
      IF(TI.EQ. 5.)GO TO 111                                            BJU14810
      IF(TI.EQ. 8.)GO TO 112                                            BJU14820
      IF(TI.EQ.6.3) GO TO 113                                           BJU14830
      IF(TI.EQ.6.5) GO TO 114                                           BJU14840
      UF=TI                                                             BJU14850
      GO TO 99                                                          BJU14860
 110  UF=4.                                                             BJU14870
      GO TO 99                                                          BJU14880
 111  UF=6.                                                             BJU14890
      GO TO 99                                                          BJU14900
 112  UF=9.                                                             BJU14910
      GO TO 99                                                          BJU14920
 113  UF=6.4                                                            BJU14930
      GO TO 99                                                          BJU14940
 114  UF=6.6                                                            BJU14950
      GO TO 99                                                          BJU14960
C                                                                       BJU14970
C     SET INJ(A),INJ(J)=0                                               BJU14980
C                                                                       BJU14990
  13  I=GATRB(2)                                                        BJU15000
      J=GATRB(3)                                                        BJU15010
      INJ(I)=0                                                          BJU15020
      INJ(J)=0                                                          BJU15030
      GO TO 99                                                          BJU15040
C                                                                       BJU15050
C     SET INJ(J)=0, IF INJ(J)=2.                                        BJU15060
C                                                                       BJU15070
  14  J=GATRB(3)                                                        BJU15080
      IF(INJ(J) .EQ. 2)INJ(J)=0                                         BJU15090
      GO TO 99                                                          BJU15100
C                                                                       BJU15110
C     SET ICRT(J)=0.                                                    BJU15120
C                                                                       BJU15130
  15  J=GATRB(3)                                                        BJU15140
      ICRT(J)=0                                                         BJU15150
      GO TO 99                                                          BJU15160
C                                                                       BJU15170
C     IF ATTRIBUTE 10 = 3,4,6.3,6.4 SET ICRT(J),ICRT(A) =0.             BJU15180
C                                                                       BJU15190
  16  TK=GATRB(10)                                                      BJU15200
      IF(TK.EQ. 3..OR. TK.EQ.4..OR.TK.EQ.6.3.OR.TK.EQ.6.4)GO TO 160     BJU15210
      GO TO 99                                                          BJU15220
C                                                                       BJU15230
C     SET ICRT(A),ICRT(J)=0.                                            BJU15240
C                                                                       BJU15250
 160  I=GATRB(2)                                                        BJU15260
      J=GATRB(3)                                                        BJU15270
      ICRT(I)=0                                                         BJU15280
      ICRT(J)=0                                                         BJU15290
      GO TO 99                                                          BJU15300
C                                                                       BJU15310
C     IF ATTRIBUTE 10 = 5,6,7,6.5,6.6,6.7 DECREMENT ATTRIBUTE 6 BY 1.   BJU15320
C                                                                       BJU15330
  17  TK=GATRB(10)                                                      BJU15340
      IF(TK.EQ.5..OR.TK.EQ.6..OR.TK.EQ.7..OR.TK.EQ.6.5.OR.TK.EQ.6.6.OR. BJU15350
     *TK.EQ.6.7) GO TO 170                                              BJU15360
      IF (TK.EQ.6.3.OR.TK.EQ.6.4)  TK=9                                 BJU15370
      CALL FATRB(TK,10)                                                 BJU15380
      GO TO 99                                                          BJU15390
```

```
 170  I=GATRB(6)                                                    BJU15400
      AJ=I-1                                                        BJU15410
      CALL PATRB(AJ,6)                                              BJU15420
      GO TO 99                                                      BJU15430
C                                                                   BJU15440
C     SET ATTRIBUTE 11 FOR INJ/NO-INJ(A).                           BJU15450
C                                                                   BJU15460
  19  J=GATRB(3)                                                    BJU15470
      IF(INJ(J) .EQ. 1)GO TO 190                                    BJU15480
      K=GATRB(11)                                                   BJU15490
      UF=K                                                          BJU15500
      GO TO 99                                                      BJU15510
 190  K=GATRB(11)                                                   BJU15520
      UF=-K                                                         BJU15530
      GO TO 99                                                      BJU15540
C                                                                   BJU15550
C     SET ROUTING ATTRIBUTE FOR INJ/NO-INJ(J).                      BJU15560
C                                                                   BJU15570
  20  CALL GETAT(ATT)                                               BJU15580
C                                                                   BJU15590
C     SET  FLAG FOR ATTORNEY WITH COMPLETED TRIAL B/J .             BJU15600
C                                                                   BJU15610
      IF(ATT(11) .EQ. -5.)ATT(3)=7.                                 BJU15620
      IF(ATT(11) .EQ.  0.)ATT(3)=7.                                 BJU15630
      IF(ATT(11) .EQ.  5.)ATT(3)=7.                                 BJU15640
C                                                                   BJU15650
C     SET INJUNCTION ROUTING FLAG FOR IMMEDIATE INJUNCTION.         BJU15660
C                                                                   BJU15670
      IF(INJ(M2) .EQ. 1)UF=1.                                       BJU15680
      CALL PUTAT(ATT)                                               BJU15690
      GO TO 99                                                      BJU15700
C                                                                   BJU15710
C     EXTERNAL DELAY SERVICE TIME                                   BJU15720
C                                                                   BJU15730
  21  IC=GATRB(2)                                                   BJU15740
      IF(IC .GE. (20-NACV))GO TO 210                                BJU15750
      IF(IC .GE.  7)GO TO 211                                       BJU15760
      IF(IC .GE.  2)GO TO 212                                       BJU15770
C                                                                   BJU15780
C     FEDERAL QUESTION CASE                                         BJU15790
C                                                                   BJU15800
      UF=TR(34)                                                     BJU15810
      GO TO 99                                                      BJU15820
C                                                                   BJU15830
C     DIVERSITY JURISDICTION CASE                                   BJU15840
C                                                                   BJU15850
 212  UF=TR(35)                                                     BJU15860
      GO TO 99                                                      BJU15870
C                                                                   BJU15880
C     CRIMINAL CASE                                                 BJU15890
C                                                                   BJU15900
 211  UF=TR(36)                                                     BJU15910
      GO TO 99                                                      BJU15920
C                                                                   BJU15930
C     CIVIL/U.S. CASE                                               BJU15940
C                                                                   BJU15950
 210  UF=TR(37)                                                     BJU15960
      GO TO 99                                                      BJU15970
C                                                                   BJU15980
C     PUBLIC INJUNCTION SERVICE TIME.                               BJU15990
C                                                                   BJU16000
  22  IC=GATRB(2)                                                   BJU16010
      ICJ=GATRB(3)                                                  BJU16020
      IF(IC .GE. (20-NACV))GO TO 220                                BJU16030
      IF(IC .LT.  7)CALL ERROR(337)                                 BJU16040
C                                                                   BJU16050
C     CRIMINAL CASE                                                 BJU16060
C                                                                   BJU16070
      UF=TR(38)                                                     BJU16080
      GO TO 97                                                      BJU16090
C                                                                   BJU16100
C     CIVIL/U.S. CASE                                               BJU16110
C                                                                   BJU16120
 220  UF=TR(39)                                                     BJU16130
      GO TO 97                                                      BJU16140
C                                                                   BJU16150
C     OTHER COURTROOM SERVICE TIME                                  BJU16160
C                                                                   BJU16170
```

```
 23   IC=GATRB(2)                                                    BJU16180
      ICJ=GATRB(3)                                                   BJU16190
      IF(IC .GE. 3)CALL ERROR(338)                                   BJU16200
      IF(IC .GE. 2)GO TO 230                                         BJU16210
C                                                                    BJU16220
C     FEDERAL QUESTION CASE                                          BJU16230
C                                                                    BJU16240
      UF=TR(40)                                                      BJU16250
      GO TO 98                                                       BJU16260
C                                                                    BJU16270
C     DIVERSITY JURISDICTION CASE                                    BJU16280
C                                                                    BJU16290
 230  UF=TR(41)                                                      BJU16300
      GO TO 98                                                       BJU16310
C                                                                    BJU16320
C     PRIVATE INJUNCTION SERVICE TIME                                BJU16330
C                                                                    BJU16340
 24   IC=GATRB(2)                                                    BJU16350
      ICJ=GATRB(3)                                                   BJU16360
      IF(IC .GE. 3)CALL ERROR(339)                                   BJU16370
      IF(IC .GE. 2)GO TO 240                                         BJU16380
C                                                                    BJU16390
C     FEDERAL QUESTION CASE                                          BJU16400
C                                                                    BJU16410
      UF=TR(42)                                                      BJU16420
      GO TO 98                                                       BJU16430
C                                                                    BJU16440
C     DIVERSITY JURISDICTION CASE                                    BJU16450
C                                                                    BJU16460
 240  UF=TR(43)                                                      BJU16470
      GO TO 98                                                       BJU16480
C                                                                    BJU16490
C     PRIVATE TRIAL SERVICE TIMES                                    BJU16500
C                                                                    BJU16510
 25   IC=GATRB(2)                                                    BJU16520
      ICJ=GATRB(3)                                                   BJU16530
      IF(IC .GE. 3)CALL ERROR(340)                                   BJU16540
      IF(IC .GE. 2)GO TO 250                                         BJU16550
C                                                                    BJU16560
C     FEDERAL QUESTION CASE                                          BJU16570
C                                                                    BJU16580
      IT=GATRB(6)                                                    BJU16590
      IF(IT .GE. 2000)GO TO 251                                      BJU16600
      UF=TR(44)                                                      BJU16610
      GO TO 98                                                       BJU16620
 251  UF=TR(45)                                                      BJU16630
      GO TO 98                                                       BJU16640
C                                                                    BJU16650
C     DIVERSITY JURISDICTION CASE                                    BJU16660
C                                                                    BJU16670
 250  IT=GATRB(6)                                                    BJU16680
      IF(IT .GE. 2000)GO TO 252                                      BJU16690
      UF=TR(46)                                                      BJU16700
      GO TO 98                                                       BJU16710
 252  UF=TR(47)                                                      BJU16720
      GO TO 98                                                       BJU16730
C                                                                    BJU16740
C     PUBLIC TRIAL OR OTHER COURTROOM SERVICE TIMES                  BJU16750
C                                                                    BJU16760
 26   IC=GATRB(10)                                                   BJU16770
      ICJ=GATRB(3)                                                   BJU16780
      IF(IC .GE. 8)CALL ERROR(342)                                   BJU16790
      IF(IC .GE. 5)GO TO 260                                         BJU16800
      IF(IC .LE. 2)CALL ERROR(343)                                   BJU16810
C                                                                    BJU16820
C     OTHER COURTROOM SERVICE TIME                                   BJU16830
C                                                                    BJU16840
      IC=GATRB(2)                                                    BJU16850
      IF(IC .GE. (20-NACV))GO TO 261                                 BJU16860
      IF(IC .LT.  7)CALL ERROR(344)                                  BJU16870
C                                                                    BJU16880
C     CRIMINAL CASE                                                  BJU16890
C                                                                    BJU16900
      IA=GATRB(6)                                                    BJU16910
      IF(IA.EQ.2) GO TO 2601                                         BJU16920
      IF(IA.EQ.3) GO TO 2602                                         BJU16930
      IF (IA.EQ.4) GO TO 2603                                        BJU16940
      IF(IA.EQ.8) GO TO 2604                                         BJU16950
      IF(IA.EQ.14)GO TO 2605                                         BJU16960
      CALL ERROR(361)                                                BJU16970
```

```
C                                                                       BJU16980
C      GRAND JURY                                                       BJU16990
C                                                                       BJU17000
 2601 UF=TR(52)                                                         BJU17010
      GO TO 97                                                          BJU17020
C                                                                       BJU17030
C     INDICTMENT                                                        BJU17040
C                                                                       BJU17050
 2602 UF=TR(16)                                                         BJU17060
      GO TO 97                                                          BJU17070
C                                                                       BJU17080
C     ARRAIGNMENT                                                       BJU17090
C                                                                       BJU17100
 2603 UF=TR(63)                                                         BJU17110
      GO TO 97                                                          BJU17120
C                                                                       BJU17130
C     RE-ARRAIGNMENT HEARINGS                                           BJU17140
C                                                                       BJU17150
 2604 UF=TR(6)                                                          BJU17160
      GO TO 97                                                          BJU17170
C                                                                       BJU17180
C      SENTENCING                                                       BJU17190
C                                                                       BJU17200
 2605 UF=TR(5)                                                          BJU17210
      GO TO 97                                                          BJU17220
C                                                                       BJU17230
C     CIVIL/U.S. CASE (OTHER COURTROOM)                                 BJU17240
C                                                                       BJU17250
 261  UF=TR(53)                                                         BJU17260
      GO TO 97                                                          BJU17270
C                                                                       BJU17280
C     TRIAL SERVICE TIME                                                BJU17290
C                                                                       BJU17300
 260  IC=GATRB(2)                                                       BJU17310
      IF(IC .GE. (20-NACV))GO TO 262                                    BJU17320
      IF(IC .LT.  7)CALL ERROR(345)                                     BJU17330
C                                                                       BJU17340
C     CRIMINAL CASE (TRIAL)                                             BJU17350
C                                                                       BJU17360
      IT=GATRB(6)                                                       BJU17370
      IF(IT .GE. 2000)GO TO 263                                         BJU17380
      UF=TR(48)                                                         BJU17390
      GO TO 97                                                          BJU17400
 263  UF=TR(49)                                                         BJU17410
      GO TO 97                                                          BJU17420
C                                                                       BJU17430
C     CIVIL/U.S. (TRIAL)                                                BJU17440
C                                                                       BJU17450
 262  IT=GATRB(6)                                                       BJU17460
      IF(IT .GE. 2000)GO TO 264                                         BJU17470
      UF=TR(50)                                                         BJU17480
      GO TO 97                                                          BJU17490
 264  UF=TR(51)                                                         BJU17500
      GO TO 97                                                          BJU17510
C                                                                       BJU17520
C     NON-COURTROOM SERVICE TIMES (JUDGE)                               BJU17530
C                                                                       BJU17540
 27   IC=GATRB(2)                                                       BJU17550
      ICJ=GATRB(3)                                                      BJU17560
      IF(IC .GE. (20-NACV))GO TO 270                                    BJU17570
      IF(IC .GE.  7)GO TO 271                                           BJU17580
      IF(IC .GE.  2)GO TO 272                                           BJU17590
C                                                                       BJU17600
C     FEDERAL QUESTION CASE                                             BJU17610
C                                                                       BJU17620
      UF=TR(54)                                                         BJU17630
      GO TO 98                                                          BJU17640
C                                                                       BJU17650
C     DIVERSITY JURISDICTION                                            BJU17660
C                                                                       BJU17670
 272  UF=TR(55)                                                         BJU17680
      GO TO 98                                                          BJU17690
C                                                                       BJU17700
C     CRIMINAL CASE                                                     BJU17710
C                                                                       BJU17720
 271  UF=TR(56)                                                         BJU17730
      GO TO 98                                                          BJU17740
C                                                                       BJU17750
C     CIVIL/U.S. CASE                                                   BJU17760
C                                                                       BJU17770
 270  UF=TR(57)                                                         BJU17780
      GO TO 98                                                          BJU17790
```

```
C                                                                       BJU17800
C     NON-COURTROOM SERVICE TIMES (ATTORNEY)                            BJU17810
C                                                                       BJU17820
 28   IC=GATRB(2)                                                       BJU17830
      IF(IC .GE. (20-NACV))GO TO 280                                    BJU17840
      IF(IC .LT.  7)CALL ERROR(341)                                     BJU17850
C                                                                       BJU17860
C     CRIMINAL CASE                                                     BJU17870
C                                                                       BJU17880
      IA=GATRB(6)                                                       BJU17890
      IF(IA.EQ.1) GO TO 2801                                            BJU17900
      IF(IA.EQ.5) GO TO 2802                                            BJU17910
      IF(IA.EQ.6) GO TO 2803                                            BJU17920
      IF(IA.EQ.7) GO TO 2804                                            BJU17930
      IF(IA.EQ.9) GO TO 2805                                            BJU17940
      IF(IA.EQ.13) GO TO 2806                                           BJU17950
      CALL ERROR(362)                                                   BJU17960
C                                                                       BJU17970
C     INVESTIGATION                                                     BJU17980
C                                                                       BJU17990
 2801 UF=TR(58)                                                         BJU18000
      GO TO 2807                                                        BJU18010
C                                                                       BJU18020
C     INFORMATION                                                       BJU18030
C                                                                       BJU18040
 2802 UF=TR(20)                                                         BJU18050
      GO TO 2807                                                        BJU18060
C                                                                       BJU18070
C     INITIAL CASE PREPARATION                                          BJU18080
C                                                                       BJU18090
 2803 UF=TR(65)                                                         BJU18100
      GO TO 2807                                                        BJU18110
C                                                                       BJU18120
C     PLEA BARGAINING NEGOTIATIONS                                      BJU18130
C                                                                       BJU18140
 2804 UF=TR(66)                                                         BJU18150
      GO TO 2807                                                        BJU18160
C                                                                       BJU18170
C     FINAL CASE PREPARATION                                            BJU18180
C                                                                       BJU18190
 2805 UF=TR(68)                                                         BJU18200
      GO TO 2807                                                        BJU18210
C                                                                       BJU18220
C     PREPARATION FOR SENTENCING                                        BJU18230
C                                                                       BJU18240
 2806 UF=TR(69)                                                         BJU18250
      GO TO 2807                                                        BJU18260
 2807 ST(IC)=TNOW+UF                                                    BJU18270
      RETURN                                                            BJU18280
C                                                                       BJU18290
C     CIVIL/U.S. CASE                                                   BJU18300
C                                                                       BJU18310
 280  UF=TR(59)                                                         BJU18320
      ST(IC)=TNOW+UF                                                    BJU18330
      GO TO 99                                                          BJU18340
C                                                                       BJU18350
C     TEST FOR A TRIAL.                                                 BJU18360
C                                                                       BJU18370
 29   IC=GATRB(2)                                                       BJU18380
      IF(IC .GE. (20-NACV))GO TO 290                                    BJU18390
      IF(IC .GE.  7)CALL ERROR(359)                                     BJU18400
      IF(IC .GE.  2)GO TO 292                                           BJU18410
C                                                                       BJU18420
C     FEDERAL QUESTION CASE                                             BJU18430
C                                                                       BJU18440
      RN=DRAND(3)                                                       BJU18450
      IF(RN .LE. PTF)GO TO 293                                          BJU18460
C                                                                       BJU18470
C     NO TRIAL                                                          BJU18480
C                                                                       BJU18490
      UF=0.                                                             BJU18500
      GO TO 99                                                          BJU18510
C                                                                       BJU18520
C     TRIAL                                                             BJU18530
C                                                                       BJU18540
 293  UF=1.0                                                            BJU18550
      GO TO 99                                                          BJU18560
C                                                                       BJU18570
C     DIVERSTIY JURISDICTION CASE                                       BJU18580
C                                                                       BJU18590
 292  RN=DRAND(4)                                                       BJU18600
      IF(RN .LE. PTD)GO TO 294                                          BJU18610
```

```
C                                                                       BJU18620
C     NO TRIAL                                                          BJU18630
C                                                                       BJU18640
      UF=0.                                                             BJU18650
      GO TO 99                                                          BJU18660
C                                                                       BJU18670
C     TRIAL                                                             BJU18680
C                                                                       BJU18690
 294  UF=1.                                                             BJU18700
      GO TO 99                                                          BJU18710
C                                                                       BJU18720
C     CIVIL/U.S. CASE                                                   BJU18730
C                                                                       BJU18740
 290  RN=DRAND(2)                                                       BJU18750
      IF(RN .LE. PTV)GO TO 296                                          BJU18760
C                                                                       BJU18770
C     NO TRIAL                                                          BJU18780
C                                                                       BJU18790
      UF=0.                                                             BJU18800
      GO TO 99                                                          BJU18810
C                                                                       BJU18820
C     TRIAL                                                             BJU18830
C                                                                       BJU18840
 296  UF=1.                                                             BJU18850
      GO TO 99                                                          BJU18860
C                                                                       BJU18870
C     ASSIGN A BENCH OR JURY TRIAL.                                     BJU18880
C                                                                       BJU18890
 30   IC=GATRB(2)                                                       BJU18900
      IF(IC .GE. (20-NACV))GO TO 300                                    BJU18910
      IF(IC .GE.  7)CALL ERROR(360)                                     BJU18920
      IF(IC .GE.  2)GO TO 302                                           BJU18930
C                                                                       BJU18940
C     FEDERAL QUESTION CASE                                             BJU18950
C                                                                       BJU18960
      RN=DRAND(3)                                                       BJU18970
      IF(RN .LE. PBTF)GO TO 303                                         BJU18980
C                                                                       BJU18990
C     JURY TRIAL                                                        BJU19000
C                                                                       BJU19010
      UF=2.                                                             BJU19020
      GO TO 99                                                          BJU19030
C                                                                       BJU19040
C     BENCH TRIAL                                                       BJU19050
C                                                                       BJU19060
 303  UF=1.                                                             BJU19070
      GO TO 99                                                          BJU19080
C                                                                       BJU19090
C     DIVERSITY JURISDICTION CASE                                       BJU19100
C                                                                       BJU19110
 302  RN=DRAND(4)                                                       BJU19120
      IF(RN .LE. PBTD)GO TO 304                                         BJU19130
C                                                                       BJU19140
C     JURY TRIAL                                                        BJU19150
C                                                                       BJU19160
      UF=2.                                                             BJU19170
      GO TO 99                                                          BJU19180
C                                                                       BJU19190
C     BENCH TRIAL                                                       BJU19200
C                                                                       BJU19210
 304  UF=1.                                                             BJU19220
      GO TO 99                                                          BJU19230
C                                                                       BJU19240
C     CIVIL/U.S. CASE                                                   BJU19250
C                                                                       BJU19260
 300  RN=DRAND(2)                                                       BJU19270
      IF(RN .LE. PBTV)GO TO 306                                         BJU19280
C                                                                       BJU19290
C     JURY TRIAL                                                        BJU19300
C                                                                       BJU19310
      UF=2.                                                             BJU19320
      GO TO 99                                                          BJU19330
C                                                                       BJU19340
C     BENCH TRIAL                                                       BJU19350
C                                                                       BJU19360
 306  UF=1.                                                             BJU19370
      GO TO 99                                                          BJU19380
C                                                                       BJU19390
C     ASSIGN ATTRIBUTES 3,4,5,6,7,8,9 FOR DIVERSITY JURISDICTION        BJU19400
C     CASES INVOLVING NO JUDGE SERVICE.                                 BJU19410
C                                                                       BJU19420
```

```
 31   CALL GETAT(ATT)                                                    BJU19430
      I=TR(60)                                                           BJU19440
      IF(I.LT.1)CALL ERROR(346)                                          BJU19450
      UF=I                                                               BJU19460
 310  ATT(9)=0.                                                          BJU19470
 311  ATT(3)=0.                                                          BJU19480
      ATT(5)=0.                                                          BJU19490
      ATT(6)=0.                                                          BJU19500
      ATT(7)=0.                                                          BJU19510
      ATT(8)=0.                                                          BJU19520
      CALL PUTAT(ATT)                                                    BJU19530
      GO TO 99                                                           BJU19540
C                                                                        BJU19550
C     ASSIGN ATTRIBUTES 3,4,5,6,7,8,9 FOR FEDERAL QUESTION CASES         BJU19560
C     INVOLVING NO JUDGE SERVICE.                                        BJU19570
C                                                                        BJU19580
 32   CALL GETAT(ATT)                                                    BJU19590
      I=TR(61)                                                           BJU19600
      IF(I.LT.1)CALL ERROR(347)                                          BJU19610
      UF=I                                                               BJU19620
      GO TO 310                                                          BJU19630
C                                                                        BJU19640
C     ASSIGN ATTRIBUTES 3,4,5,6,7,8,9 FOR CIVIL/U.S. CASES               BJU19650
C     INVOLVING NO JUDGE SERVICE.                                        BJU19660
C                                                                        BJU19670
 33   CALL GETAT(ATT)                                                    BJU19680
      I=TR(62)                                                           BJU19690
      IF(I.LT.1)CALL ERROR(348)                                          BJU19700
      UF=I                                                               BJU19710
      J=TR(64)                                                           BJU19720
      ATT(9)=J                                                           BJU19730
      GO TO 311                                                          BJU19740
C                                                                        BJU19750
C     UF=0,IF A4=0 OR IF IT IS A CRIMINAL CASE, OTHERWISE UF=1           BJU19760
C                                                                        BJU19770
   34 UF=1.0                                                             BJU19780
      I4=GATRB(4)                                                        BJU19790
      IC=GATRB(2)                                                        BJU19800
      IF(I4.EQ.0) UF=0.0                                                 BJU19810
      IF(IC.GE.7.AND.IC.LE.(19-NACV)) UF=0.0                             BJU19820
      RETURN                                                             BJU19830
C                                                                        BJU19840
C     ASSIGN A UNIQUE NUMBER TO EACH TRANSACTION BEGINNING WITH 1        BJU19850
C                                                                        BJU19860
   35 KATH=KATH+1                                                        BJU19870
      UF=KATH                                                            BJU19880
      GO TO 99                                                           BJU19890
C                                                                        BJU19900
C      BOTH THE ATTORNEY AND THE JUDGE ARE BUSY                          BJU19910
C                                                                        BJU19920
   36 IA=GATRB(2)                                                        BJU19930
      IF (IA.LE.2) CALL ERROR (350)                                      BJU19940
      IJ=GATRB(3)                                                        BJU19950
      IF (IJ.LE.0)CALL ERROR(351)                                        BJU19960
      CALL TIM(1.0,IA)                                                   BJU19970
      CALL TIM(1.0,IJ)                                                   BJU19980
      GO TO 99                                                           BJU19990
C                                                                        BJU20000
C     BOTH THE ATTORNEY AND THE JUDGE ARE IDLE                           BJU20010
C                                                                        BJU20020
   37 IA=GATRB(2)                                                        BJU20030
      IF(IA.LE.2) CALL ERROR(352)                                        BJU20040
      IJ=GATRB(3)                                                        BJU20050
      IF(IJ.LE.0) CALL ERROR(353)                                        BJU20060
      CALL TIM(0.0,IA)                                                   BJU20070
      CALL TIM(0.0,IJ)                                                   BJU20080
      GO TO 99                                                           BJU20090
C                                                                        BJU20100
C     ONLY THE ATTORNEY IS BUSY                                          BJU20110
C                                                                        BJU20120
   38 IA=GATRB(2)                                                        BJU20130
      CALL GETAT(ATT)                                                    BJU20140
      IF(ATT(2).NE.7.) GO TO 7010                                        BJU20150
 7010 CONTINUE                                                           BJU20160
      IF(IA.LE.2)CALL ERROR(354)                                         BJU20170
      CALL TIM(1.0,IA)                                                   BJU20180
      GO TO 99                                                           BJU20190
C                                                                        BJU20200
C     ONLY THE ATTORNEY IS IDLE                                          BJU20210
C                                                                        BJU20220
```

```
   39  IA=GATRB(2)                                                    BJU20230
       IF(IA.LE.2) CALL ERROR (355)                                   BJU20240
       CALL TIM(0.0,IA)                                               BJU20250
       GO TO 99                                                       BJU20260
C                                                                     BJU20270
C      ONLY THE JUDGE IS BUSY                                         BJU20280
   40  IJ=GATRB(3)                                                    BJU20290
       IF (IJ.LE.0) CALL ERROR (356)                                  BJU20300
       CALL TIM(1.0,IJ)                                               BJU20310
       GO TO 99                                                       BJU20320
C                                                                     BJU20330
C      ONLY THE JUDGE IS IDLE                                         BJU20340
C                                                                     BJU20350
   41  IJ=GATRB(3)                                                    BJU20360
       IF (IJ.LE.0) CALL ERROR (357)                                  BJU20370
       CALL TIM(0.0,IJ)                                               BJU20380
       GO TO 99                                                       BJU20390
C                                                                     BJU20400
C      CLEAR USER STATISTICS ARRAY                                    BJU20410
C                                                                     BJU20420
   42  CALL TIMC(0)                                                   BJU20430
       CALL COLC(0)                                                   BJU20440
       GO TO 99                                                       BJU20450
C                                                                     BJU20460
C      DECREMENT A4 BY 1 UNLESS A CRIMINAL CASE                       BJU20470
C                                                                     BJU20480
   43  IC=GATRB(2)                                                    BJU20490
       I4=GATRB(4)                                                    BJU20500
       UF=I4-1                                                        BJU20510
       IF(IC.GE.7.AND.IC.LE.(19-NACV))UF=I4                           BJU20520
       RETURN                                                         BJU20530
C                                                                     BJU20540
C      DECREMENT A5 BY 1 UNLESS A CRIMINAL CASE                       BJU20550
C                                                                     BJU20560
   44  IC=GATRB(2)                                                    BJU20570
       I5=GATRB(5)                                                    BJU20580
       UF=I5-1                                                        BJU20590
       IF(IC.GE.7.AND.IC.LE.(19-NACV))UF=I5                           BJU20600
       RETURN                                                         BJU20610
C                                                                     BJU20620
C      DECREMENT A7 BY 1 UNLESS A CRIMINAL CASE                       BJU20630
C                                                                     BJU20640
   45  IC=GATRB(2)                                                    BJU20650
       I7=GATRB(7)                                                    BJU20660
       UF=I7-1                                                        BJU20670
       IF(IC.GE.7.AND.IC.LE.(19-NACV))UF=I7                           BJU20680
       A10=GATRB(10)                                                  BJU20690
       IF(A10.EQ.9) A10=6.3                                           BJU20700
       CALL PATRB(A10,10)                                             BJU20710
       RETURN                                                         BJU20720
C                                                                     BJU20730
C      SET A6 TO ZERO UNLESS A CRIMINAL CASE, IN WHICH CASE           BJU20740
C      SET A6 TO ITSELF                                               BJU20750
C                                                                     BJU20760
   46  IC=GATRB(2)                                                    BJU20770
       UF=0.0                                                         BJU20780
       IF(IC.GE.7.AND.IC.LE.(19-NACV))UF=GATRB(6)                     BJU20790
       RETURN                                                         BJU20800
C                                                                     BJU20810
C      DECREMENT A8 BY 1 UNLESS A CRIMINAL CASE                       BJU20820
C                                                                     BJU20830
   47  IC=GATRB(2)                                                    BJU20840
       I8=GATRB(8)                                                    BJU20850
       UF=I8-1                                                        BJU20860
       IF(IC.GE.7.AND.IC.LE.(19-NACV))UF=I8                           BJU20870
       RETURN                                                         BJU20880
C                                                                     BJU20890
C       DECREMENT A9 BY 1 UNLESS A CRIMINAL CASE                      BJU20900
C                                                                     BJU20910
   48  IC=GATRB(2)                                                    BJU20920
       I9=GATRB(9)                                                    BJU20930
       UF=I9-1                                                        BJU20940
       IF(IC.GE.7.AND.IC.LE.(19-NACV))UF=I9                           BJU20950
       RETURN                                                         BJU20960
C                                                                     BJU20970
C                                                                     BJU20980
C      EXTERNAL DELAY BASED ON CASE TYPE                              BJU20990
C                                                                     BJU21000
   49  IC=GATRB(2)                                                    BJU21010
       IF(IC.GE.(20-NACV))GO TO 490                                   BJU21020
       IF(IC.GE.7)CALL ERROR(363)                                     BJU21030
       IF(IC.GE.2)GO TO 492                                           BJU21040
```

```
C                                                                       BJU21050
C     FEDERAL QUESTION CASE                                             BJU21060
C                                                                       BJU21070
      RN=DRAND(3)                                                       BJU21080
      UF=0.0                                                            BJU21090
C                                                                       BJU21100
C     EXTERNAL DELAY WHEN UF=1.0                                        BJU21110
C                                                                       BJU21120
      IF(RN.LE.PEDF)UF=1.0                                              BJU21130
      RETURN                                                            BJU21140
C                                                                       BJU21150
C     DIVERSITY JURISDICTION                                            BJU21160
C                                                                       BJU21170
  492 RN=DRAND(4)                                                       BJU21180
      UF=0.0                                                            BJU21190
C                                                                       BJU21200
C     EXTERNAL DELAY WHEN UF=1.0                                        BJU21210
C                                                                       BJU21220
      IF(RN.LE.PEDD)UF=1.0                                              BJU21230
      RETURN                                                            BJU21240
C                                                                       BJU21250
C     CIVIL / US CASE                                                   BJU21260
C                                                                       BJU21270
  490 RN=DRAND(2)                                                       BJU21280
      UF=0.0                                                            BJU21290
C                                                                       BJU21300
C     EXTERNAL DELAY WHEN UF=1.0                                        BJU21310
      IF(RN.LE.PEDC)UF=1.0                                              BJU21320
      GO TO 99                                                          BJU21330
C                                                                       BJU21340
C     SET QUEUE RANKING FOR EXTERNAL DELAY                              BJU21350
C                                                                       BJU21360
   50 UF=0.0                                                            BJU21370
C                                                                       BJU21380
C     TEST IF A SPEEDY TRIAL CASE                                       BJU21390
C                                                                       BJU21400
  501 IF(GATRB(4).LT.0.0)UF=GATRB(10)                                   BJU21410
      RETURN                                                            BJU21420
C                                                                       BJU21430
C     SET QUEUE RANKING FOR INJUNCTION                                  BJU21440
C                                                                       BJU21450
   51 UF=0.0                                                            BJU21460
      GO TO 501                                                         BJU21470
C                                                                       BJU21480
C      SET QUEUE RANKING FOR OTHER COURTROOM                            BJU21490
C                                                                       BJU21500
   52 UF=3.0                                                            BJU21510
      GO TO 501                                                         BJU21520
C                                                                       BJU21530
C     SET QUEUE RANKING FOR TRIAL                                       BJU21540
C                                                                       BJU21550
   53 UF=5.0                                                            BJU21560
      GO TO 501                                                         BJU21570
C                                                                       BJU21580
C     SET QUEUE RANKING FOR NONCOURTROOM (JUDGE)                        BJU21590
C                                                                       BJU21600
   54 UF=2.0                                                            BJU21610
      GO TO 501                                                         BJU21620
C                                                                       BJU21630
C     SET QUEUE RANKING FOR NONCOURTROOM (ATTORNEY)                     BJU21640
C                                                                       BJU21650
   55 UF=1.0                                                            BJU21660
      GO TO 501                                                         BJU21670
C                                                                       BJU21680
C     SET QUEUE RANKING FOR TRIAL IN PROGRESS                           BJU21690
   56 UF=7.0                                                            BJU21700
      IF(GATRB(4).LT.0.0)UF=6.7                                         BJU21710
      RETURN                                                            BJU21720
C                                                                       BJU21730
C     IS THIS THE BEGINNING OF A SPEEDY TRIAL                           BJU21740
C                                                                       BJU21750
   57 UF=1.0                                                            BJU21760
      QR=GATRB(10)                                                      BJU21770
      IF(QR.EQ.6.5.OR.QR.EQ.6.6)GO TO 570                               BJU21780
      RETURN                                                            BJU21790
C                                                                       BJU21800
C     TEST TIME SINCE ARRAIGNMENT AGAINST SPEEDY TRIAL                  BJU21810
C     TIME THRESHOLD (STT) (A4 = -(TIME OF ARRAIGNMENT))                BJU21820
C                                                                       BJU21830
  570 IF((TNOW+GATRB(4)).LE.STT)RETURN                                  BJU21840
C                                                                       BJU21850
C     DID NOT INITIATE SPEEDY TRIAL WITHIN TIME LIMIT                   BJU21860
C                                                                       BJU21870
```

```
      UF=0.0                                                            BJU21880
      RETURN                                                            BJU21890
C                                                                       BJU21900
C     INTERCURRENT CHANGES TRIGGERED BY AVERAGE WAITING TIMES           BJU21910
C     AND AVERAGE QUEUE LENGTHS (IF ANY ONE THRESHOLD IS PASSED         BJU21920
C     ALL INTERCURRENT CHANGES ARE MADE.)                               BJU21930
C                                                                       BJU21940
   58 AVGJ=0.0                                                          BJU21950
      AVGK=0.0                                                          BJU21960
      AVGL=0.0                                                          BJU21970
      AVGM=0.0                                                          BJU21980
      AVGN=0.0                                                          BJU21990
      AVGO=0.0                                                          BJU22000
      AVGP=0.0                                                          BJU22010
      XNJ=NJ                                                            BJU22020
      XNAR=NACR                                                         BJU22030
      XNAV=NACV                                                         BJU22040
      NLB=NSKS+1                                                        BJU22050
      LQL=NSKS+NQN                                                      BJU22060
      DO 581 I=NLB,LQL                                                  BJU22070
      IF(NSINK(I).EQ.39)GO TO 583                                       BJU22080
      IF(NSINK(I).EQ.40)GO TO 584                                       BJU22090
      IF(NSINK(I).GE.74.AND.NSINK(I).LE.(73+NJ)) GO TO 585              BJU22100
      IF(NSINK(I).GE.80.AND.NSINK(I).LE.(79+NACR)) GO TO 586            BJU22110
      IF(NSINK(I).GE.(93-NACV).AND.NSINK(I).LE.91) GO TO 587            BJU22120
      IF(NSINK(I).EQ.224) GO TO 587                                     BJU22130
      IF(NSINK(I).GE.124.AND.NSINK(I).LE.(123+NJ)) GO TO 588            BJU22140
      IF(NSINK(I).GE.130.AND.NSINK(I).LE.(129+NACR)) GO TO 589          BJU22150
      IF(NSINK(I).GE.(143-NACV).AND.NSINK(I).LE.141) GO TO 5810         BJU22160
      IF(NSINK(I).EQ.226) GO TO 5810                                    BJU22170
      IF(NSINK(I).GE.191.AND.NSINK(I).LE.(190+NJ)) GO TO 5811           BJU22180
      IF(NJ.EQ.6.AND.NSINK(I).EQ.221) GO TO 5811                        BJU22190
      GO TO 581                                                         BJU22200
C                                                                       BJU22210
C     AVERAGE WAITING TIME                                              BJU22220
C                                                                       BJU22230
C                                                                       BJU22240
C     TOC-JDG(TIME)                                                     BJU22250
C                                                                       BJU22260
  583 IF(IQT(1).EQ.0)GO TO 581                                          BJU22270
      NTEMP=39                                                          BJU22280
  5814 AWT=AVEWT(NTEMP)                                                 BJU22290
      WRITE(6,7017) AWT,K                                               BJU22300
 7017 FORMAT(1X,F10.5,1X,I2)                                            BJU22310
      IF(AWT.GT.W(NTEMP-38))GO TO 5813                                  BJU22320
      GO TO 581                                                         BJU22330
C                                                                       BJU22340
C     TOC - ATT(TIME)                                                   BJU22350
C                                                                       BJU22360
  584 IF(IQT(2).EQ.0)GO TO 581                                          BJU22370
      NTEMP=40                                                          BJU22380
      K=LSINK(40)-NSKS                                                  BJU22390
      GO TO 5814                                                        BJU22400
C                                                                       BJU22410
C     AVERAGE QUEUE LENGTHS                                             BJU22420
C                                                                       BJU22430
C                                                                       BJU22440
C     JDG - CT                                                          BJU22450
C                                                                       BJU22460
  585 AVGJ=AVGJ+(TINIQ(NSINK(I))/(TNOW-TBEG))                           BJU22470
      GO TO 581                                                         BJU22480
C                                                                       BJU22490
C     ATT-CT (CRIMINAL)                                                 BJU22500
  586 AVGK=AVGK+(TINIQ(NSINK(I))/(TNOW-TBEG))                           BJU22510
      GO TO 581                                                         BJU22520
C                                                                       BJU22530
C     ATT - CT (CIVIL)                                                  BJU22540
C                                                                       BJU22550
  587 AVGL=AVGL+(TINIQ(NSINK(I))/(TNOW-TBEG))                           BJU22560
      GO TO 581                                                         BJU22570
C                                                                       BJU22580
C     JDG - NC                                                          BJU22590
C                                                                       BJU22600
  588 AVGM=AVGM+(TINIQ(NSINK(I))/(TNOW-TBEG))                           BJU22610
      GO TO 581                                                         BJU22620
C                                                                       BJU22630
C     ATT - NC (CRIMINAL)                                               BJU22640
C                                                                       BJU22650
  589 AVGN=AVGN+(TINIQ(NSINK(I))/(TNOW-TBEG))                           BJU22660
      GO TO 581                                                         BJU22670
C                                                                       BJU22680
C     ATT-NC (CIVIL)                                                    BJU22690
C                                                                       BJU22700
```

```
 5810 AVGO=AVGO+(TINIQ(NSINK(I))/(TNOW-TBEG))                                BJU22710
      GO TO 581                                                              BJU22720
C                                                                            BJU22730
C     PRI = J                                                                BJU22740
C                                                                            BJU22750
 5811 AVGP=AVGP+(TINIQ(NSINK(I))/(TNOW-TBEG))                               BJU22760
  581 CONTINUE                                                               BJU22770
      IF(IQT(3).EQ.0)GO TO 5815                                              BJU22780
      AVGJ=AVGJ/XNJ                                                          BJU22790
      IF(AVGJ.GT.T(3))GO TO 5813                                             BJU22800
 5815 IF(IQT(4).EQ.0)GO TO 5816                                              BJU22810
      AVGK=AVGK/XNAR                                                         BJU22820
      IF(AVGK.GT.T(4))GO TO 5813                                             BJU22830
 5816 IF(IQT(5).EQ.0)GO TO 5817                                              BJU22840
      AVGL=AVGL/XNAV                                                         BJU22850
      IF(AVGL.GT.T(5))GO TO 5813                                             BJU22860
 5817 IF(IQT(6).EQ.0)GO TO 5818                                              BJU22870
      AVGM=AVGM/XNJ                                                          BJU22880
      IF(AVGM.GT.T(6))GO TO 5813                                             BJU22890
 5818 IF(IQT(7).EQ.0)GO TO 5819                                              BJU22900
      AVGN=AVGN/XNAR                                                         BJU22910
      IF(AVGN.GT.T(7))GO TO 5813                                             BJU22920
 5819 IF(IQT(8).EQ.0)GO TO 5820                                              BJU22930
      AVGO=AVGO/XNAV                                                         BJU22940
      IF(AVGO.GT.T(8))GO TO 5813                                             BJU22950
 5820 IF(IQT(9).EQ.0)GO TO 5821                                              BJU22960
      AVGP=AVGP/XNJ                                                          BJU22970
      IF(AVGP.GT.T(9))GO TO 5813                                             BJU22980
 5821 UF=1.0                                                                 BJU22990
      RETURN                                                                 BJU23000
 5813 CALL CHNG                                                              BJU23010
      WRITE(6,7002) AVGJ,AVGK,AVGL,AVGM,AVGN,AVGO,AVGP                       BJU23020
 7002 FORMAT(7(1X,F10.5))                                                    BJU23030
      WRITE(6,5822) TNOW                                                     BJU23040
 5822 FORMAT(/5X,34HINTERCURRENT CHANGES MADE AT TIME ,F8.3)                 BJU23050
      UF=0.0                                                                 BJU23060
      RETURN                                                                 BJU23070
C                                                                            BJU23080
C     SET ST(I) ACCORDING TO JUDGE'S INTERNAL DELAY                          BJU23090
C                                                                            BJU23100
   59 ICJ=GATRB(3)                                                           BJU23110
      ST(ICJ)=TNOW+DIJ                                                       BJU23120
      UF=DIJ                                                                 BJU23130
      RETURN                                                                 BJU23140
C                                                                            BJU23150
C     SET ST(I) ACCORDING TO ATTORNEY'S INTERNAL DELAY                       BJU23160
C                                                                            BJU23170
   60 ICA=GATRB(2)                                                           BJU23180
      ST(ICA)=TNOW+DIA                                                       BJU23190
      UF=DIA                                                                 BJU23200
      RETURN                                                                 BJU23210
C                                                                            BJU23220
C     DUMMY UF                                                               BJU23230
C                                                                            BJU23240
   61 RETURN                                                                 BJU23250
C                                                                            BJU23260
C     FREEING JUDGE (NC)                                                     BJU23270
C                                                                            BJU23280
   62 IC=GATRB(3)                                                            BJU23290
      IF(NCSJ.EQ.1)GO TO 621                                                 BJU23300
      IF(INJ(IC).EQ.1)GO TO 622                                              BJU23310
      IF(ICRT(IC).EQ.2.OR.ICRT(IC).EQ.3)GO TO 622                            BJU23320
  621 NQNC=123+IC                                                            BJU23330
      NQC1=73+IC                                                             BJU23340
      NQC2=190+IC                                                            BJU23350
      IF(IC.EQ.6)NQC2=221                                                    BJU23360
      IF(BETAJ*XNINQ(NQC1)+BETAJ*XNINQ(NQC2).GE.XNINQ(NQNC))GO TO 622        BJU23370
C                                                                            BJU23380
C     SEND JUDGE TO NC                                                       BJU23390
C                                                                            BJU23400
      UF=0.0                                                                 BJU23410
      RETURN                                                                 BJU23420
C                                                                            BJU23430
C     SEND JUDGE TO C                                                        BJU23440
C                                                                            BJU23450
  622 UF=1.0                                                                 BJU23460
      RETURN                                                                 BJU23470
C                                                                            BJU23480
C     FREEING ATTORNEY (NC)                                                  BJU23490
C                                                                            BJU23500
   63 IC=GATRB(2)                                                            BJU23510
      IF(IC.LE.(19-NACV))GO TO 633                                           BJU23520
C                                                                            BJU23530
C     ATTORNEY (CIVIL)                                                       BJU23540
C                                                                            BJU23550
```

```
      IF(NCSAV.EQ.1)GO TO 631                                              BJU23560
  632 IF(INJ(IC).EQ.1)GO TO 637                                            BJU23570
  638 IF(ICRT(IC).EQ.2)GO TO 637                                           BJU23580
  631 NQNC=123+IC                                                          BJU23590
      IF(IC.EQ.19)NQNC=226                                                 BJU23600
      NQC1=73+IC                                                           BJU23610
      IF(IC.EQ.19)NQC1=224                                                 BJU23620
      IF(IC.LE.(19-NACV)) GO TO 634                                        BJU23630
      IF(BETAV*XNINQ(NQC1).GE.XNINQ(NQNC))GO TO 637                        BJU23640
      GO TO 636                                                            BJU23650
C                                                                          BJU23660
C     ATTORNEY (CRIMINAL)                                                  BJU23670
C                                                                          BJU23680
  633 IF(NCSAR.EQ.1) GO TO 631                                             BJU23690
      GO TO 632                                                            BJU23700
  634 IF(BETAR*XNINQ(NQC1).GE.XNINQ(NQNC))GO TO 637                        BJU23710
C                                                                          BJU23720
C     SEND ATTORNEY TO NC                                                  BJU23730
C                                                                          BJU23740
  636 UF=0.0                                                               BJU23750
      RETURN                                                               BJU23760
C                                                                          BJU23770
C     SEND ATTORNEY TO C                                                   BJU23780
C                                                                          BJU23790
  637 UF=1.0                                                               BJU23800
      RETURN                                                               BJU23810
C                                                                          BJU23820
C     FREEING JUDGE (END OF TRIAL)                                         BJU23830
C                                                                          BJU23840
C                                                                          BJU23850
C     INJ STATUS HAS PREVIOUSLY BEEN TESTED                                BJU23860
C                                                                          BJU23870
   64 IC=GATRB(3)                                                          BJU23880
      NQNC=123+IC                                                          BJU23890
      NQC1=73+IC                                                           BJU23900
      NQC2=190+IC                                                          BJU23910
      IF(IC.EQ.6)NQC2=221                                                  BJU23920
      IF(BETAJ*XNINQ(NQC1)+BETAJ*XNINQ(NQC2).GE.XNINQ(NQNC))GO TO 641      BJU23930
C                                                                          BJU23940
C     SEND JUDGE TO NC                                                     BJU23950
C                                                                          BJU23960
      UF=-1.0                                                              BJU23970
      GO TO 642                                                            BJU23980
C                                                                          BJU23990
C     SEND JUDGE TO C                                                      BJU24000
  641 UF=1.0                                                               BJU24010
C                                                                          BJU24020
C     CHECK IF THIS IS A PUBLIC CASE                                       BJU24030
C                                                                          BJU24040
  642 IF(GATRB(2).GT.2.0)UF=UF*5.                                          BJU24050
      RETURN                                                               BJU24060
C                                                                          BJU24070
C     FREEING ATTORNEY (END OF TRIAL)                                      BJU24080
C                                                                          BJU24090
C                                                                          BJU24100
C     INJ STATUS HAS PREVIOUSLY BEEN TESTED                                BJU24110
C                                                                          BJU24120
   65 IC=GATRB(2)                                                          BJU24130
      GO TO 631                                                            BJU24140
C                                                                          BJU24150
C     FREEING JUDGE (TRIAL EPISODE/OTHER COURTROOM/SPEEDY                  BJU24160
C        TRIAL TIME LIMIT REACHED)                                         BJU24170
C                                                                          BJU24180
C     INJ STATUS HAS PREVIOUSLY BEEN TESTED                                BJU24190
C                                                                          BJU24200
   66 TIS=GATRB(10)                                                        BJU24210
      ICA=GATRB(2)                                                         BJU24220
      ICJ=GATRB(3)                                                         BJU24230
      IF(TIS.EQ.7.0.OR.TIS.EQ.6.7)GO TO 660                                BJU24240
C                                                                          BJU24250
C     FREEING JUDGE (OTHER COURTROOM/SPEEDY TRIAL TIME LIMIT)              BJU24260
C                                                                          BJU24270
      IF(NOCSJ.EQ.1)GO TO 665                                              BJU24280
      IF(ICRT(ICJ).EQ.2.OR.ICRT(ICJ).EQ.3)GO TO 666                        BJU24290
  665 NQNC=123+ICJ                                                         BJU24300
      NQC1=73+ICJ                                                          BJU24310
      NQC2=190+ICJ                                                         BJU24320
      IF(ICJ.EQ.6)NQC2=221                                                 BJU24330
      IF(BETAJ*XNINQ(NQC1)+BETAJ*XNINQ(NQC2).GE.XNINQ(NQNC))GO TO 666      BJU24340
C                                                                          BJU24350
C     SEND JUDGE TO NC                                                     BJU24360
C                                                                          BJU24370
      UF=-1.0                                                              BJU24380
      GO TO 667                                                            BJU24390
C                                                                          BJU24400
C     SEND JUDGE TO C                                                      BJU24410
C                                                                          BJU24420
```

```
  666 UF=1.0                                                                BJU24430
C                                                                           BJU24440
C     CHECK IF THIS IS A PUBLIC CASE                                        BJU24450
C                                                                           BJU24460
  667 IF(ICA.GT.2)UF=UF*3.                                                  BJU24470
      RETURN                                                                BJU24480
C                                                                           BJU24490
C     FREEING JUDGE (TRIAL EPISODE)                                         BJU24500
C                                                                           BJU24510
C                                                                           BJU24520
C     TEST IF THIS IS A PRIVATE CASE                                        BJU24530
C                                                                           BJU24540
  660 IF(ICA.LE.2)GO TO 664                                                 BJU24550
      IF(INJ(ICA).EQ.1)GO TO 661                                            BJU24560
C                                                                           BJU24570
C     TEST JUDGES'S C/NC QUEUE STATUS                                       BJU24580
C                                                                           BJU24590
  664 NQNC=123+ICJ                                                          BJU24600
      NQC1=73+ICJ                                                           BJU24610
      NQC2=190+ICJ                                                          BJU24620
      IF(ICJ.EQ.6)NQC2=221                                                  BJU24630
      IF(BETAJ*XNINQ(NQC1)+BETAJ*XNINQ(NQC2).LT.XNINQ(NQNC))GO TO 661       BJU24640
C                                                                           BJU24650
C     TEST IF THIS IS A PRIVATE CASE                                        BJU24660
C                                                                           BJU24670
      IF(ICA.LE.2) GO TO 663                                                BJU24680
C                                                                           BJU24690
C     TEST ATTORNEY'S C/NC QUEUE STATUS                                     BJU24700
C                                                                           BJU24710
      NQNC=123+ICA                                                          BJU24720
      IF(ICA.EQ.19)NQNC=226                                                 BJU24730
      NQC1=78+ICA                                                           BJU24740
      IF(ICA.EQ.19)NQC1=224                                                 BJU24750
      IF(ICA.LE.(19-NACV)) GO TO 662                                        BJU24760
C                                                                           BJU24770
C     ATTORNEY (CIVIL)                                                      BJU24780
C                                                                           BJU24790
      IF(BETAV*XNINQ(NQC1).LT.XNINQ(NQNC))GO TO 661                         BJU24800
      GO TO 663                                                             BJU24810
C                                                                           BJU24820
C      ATTORNEY (CRIMINAL)                                                  BJU24830
C                                                                           BJU24840
  662 IF(BETAR*XNINQ(NQC1).LT.XNINQ(NQNC))GO TO 661                         BJU24850
C                                                                           BJU24860
C     SEND JUDGE TO C                                                       BJU24870
C                                                                           BJU24880
  663 UF=1.0                                                                BJU24890
C                                                                           BJU24900
C     CHECK IF THIS IS A PUBLIC CASE                                        BJU24910
C                                                                           BJU24920
      IF(ICA.GT.2)UF=UF*3.0                                                 BJU24930
      IF(ICA.GT.2)CSTAT(ICJ)=1.0                                            BJU24940
      RETURN                                                                BJU24950
C                                                                           BJU24960
C    SEND JUDGE TO NC                                                       BJU24970
  661 UF=-1.0                                                               BJU24980
C                                                                           BJU24990
C     CHECK IF THIS IS A PUBLIC CASE                                        BJU25000
C                                                                           BJU25010
      IF(ICA.GT.2)UF=UF*3.0                                                 BJU25020
      IF(ICA.GT.2)CSTAT(ICJ)=0.0                                            BJU25030
      RETURN                                                                BJU25040
C     ------------------------------------------------------------------    BJU25050
C     FREEING ATTORNEY (TRIAL EPISODE/OTHER COURTROOM/SPEEDY                BJU25060
C                       TRIAL TIME LIMIT REACHED)                           BJU25070
C                                                                           BJU25080
C     INJ STATUS HAS PREVIOUSLY BEEN TESTED                                 BJU25090
C                                                                           BJU25100
   67 TIS=GATRB(10)                                                         BJU25110
      IC=GATRB(2)                                                           BJU25120
      ICJ=GATRB(3)                                                          BJU25130
      IF(TIS.EQ.7.0.OR.TIS.EQ.6.7)GO TO 670                                 BJU25140
C                                                                           BJU25150
C     FREEING ATTORNEY (OTHER COURTROOM/SPEEDY TRIAL TIME LIMIT)            BJU25160
C                                                                           BJU25170
      IF(IC.LE.(19-NACV))GO TO 672                                          BJU25180
C                                                                           BJU25190
C     ATTORNEY (CIVIL)                                                      BJU25200
C                                                                           BJU25210
      IF(NOCSV.EQ.1)GO TO 631                                               BJU25220
      GO TO 638                                                             BJU25230
```

```
C                                                                       BJU25240
C     ATTORNEY (CRIMINAL)                                               BJU25250
C                                                                       BJU25260
  672 IF(NOCSR.EQ.1)GO TO 631                                           BJU25270
      GO TO 638                                                         BJU25280
C                                                                       BJU25290
C     FREEING ATTORNEY (TRIAL EPISODE)                                  BJU25300
C                                                                       BJU25310
  670 IF(INJ(ICJ).EQ.1.OR.INJ(ICJ).EQ.2)GO TO 671                       BJU25320
      IF(CSTAT(ICJ).EQ.0.)GO TO 671                                     BJU25330
C                                                                       BJU25340
C     SEND ATTORNEY TO C                                                BJU25350
C                                                                       BJU25360
      UF=1.0                                                            BJU25370
      CSTAT(ICJ)=0.0                                                    BJU25380
      RETURN                                                            BJU25390
C                                                                       BJU25400
C     SEND ATTORNEY TO NC                                               BJU25410
C                                                                       BJU25420
  671 UF=0.0                                                            BJU25430
      CSTAT(ICJ)=0.0                                                    BJU25440
      RETURN                                                            BJU25450
   97 ST(IC)=TNOW+UF                                                    BJU25460
   98 ST(ICJ)=TNOW+UF                                                   BJU25470
   99 RETURN                                                            BJU25480
      END                                                               BJU25490
      SUBROUTINE UO                                                     BJU25500
      COMMON /STRAC/ KTRAC,NPRNT3,NNPTS,KTRCE,KTRCS,NTBTR(50)           BJU25510
      COMMON /QVAR/ NDE,NFTBU(250),NREL(250),NRELP(250),NREL2(250),     BJU25520
     *NRUN,NRUNS,NTC(250),PARAM(100,4),TBEG,TNOW                        BJU25530
      COMMON/CMNLP/NJ,NACR,NACV,BETAJ,BETAR,BETAV,WTMNJ,WTMXJ,WTMNR,WTMXBJU25540
     1R,WTMNV,WTMXV,NOCSJ,NOCSR,NOCSV,NCSJ,NCSAR,NCSAV,STT,CDJ,CDA,DIJ,DBJU25550
     2IA,PC,PF,PD,PJD,PAD,PEDC,PEDF,PEDD,PIV,PIF,PID,PTV,PBTV,PTF,PBTF,PBJU25560
     3TD,PBTD,PPC,T(9),IQT(9),U(19),HOLD(4,2),ST(19),CSTAT(6)           BJU25570
      COMMON /USTAT/ UOBV(29,5),NUCOL,MUCOL,LLCOL(29,2),UTPV(25,6),NUTINBJU25580
     1,MUTIM,LLTIM(25,2),INCEL(25),IJCEL(500),UHLOW(25),UHWID(25),LLHIS(BJU25590
     225,2),NUHIS,MUHIS,UTCLR(25)                                       BJU25600
C                                                                       BJU25610
C     UTILIZATION STATISTICS                                            BJU25620
C                                                                       BJU25630
      DO 1 J=1,19                                                       BJU25640
      A = UTPV(J,1)+UTPV(J,6)*(TNOW-UTPV(J,3))                          BJU25650
      IF(A) 1,1,2                                                       BJU25660
    2 XT = TNOW-UTCLR(J)                                                BJU25670
      U(J) = U(J)+(A/XT)                                                BJU25680
    1 CONTINUE                                                          BJU25690
C                                                                       BJU25700
C     COMPLETION'S STATISTICS COLLECTION                                BJU25710
C                                                                       BJU25720
      DO 3 K = 70,73                                                    BJU25730
      KK = K-69                                                         BJU25740
      HOLD(KK,1)=HOLD(KK,1)+FLOAT(NTC(K))                               BJU25750
      HOLD(KK,2)=HOLD(KK,2)+FLOAT(NTC(K))*FLOAT(NTC(K))                 BJU25760
    3 CONTINUE                                                          BJU25770
C                                                                       BJU25780
C     PRINT OUT USER STATISTICS                                         BJU25790
C                                                                       BJU25800
      CALL TIMP(0)                                                      BJU25810
      RETURN                                                            BJU25820
      END                                                               BJU25830
      SUBROUTINE FUS                                                    BJU25840
      COMMON /QVAR/ NDE,NFTBU(250),NREL(250),NRELP(250),NREL2(250),     BJU25850
     *NRUN,NRUNS,NTC(250),PARAM(100,4),TBEG,TNOW                        BJU25860
      COMMON /STAT/ JCELS(120,20),JSINK(120),NBRKB,NBRKS,NCLCT,NDT,     BJU25870
     *NDTL,NDTU,NHIST,NPD,NQL,NQU,NSINK(120),NSKS,NSKSR,NSKST,NSNR(120  BJU25880
     *),SNODE(120),SUMA(120,7),WIDTH(120),XLOW(120),XSTUS(120)          BJU25890
      COMMON /QUE/ BLMAX(100),BSMAX(100),BSMIN(100),IMNQ(100),MAXQS,    BJU25900
     *MAXNS,MFAQ,MFAS,MFEQ(100),MLEQ(100),MFESQ(100),NABA(280),         BJU25910
     *NPO(100),NPTR(5250),NQAT(5250),NQN,NSAQ(200),NSERE,NSETS(200),    BJU25920
     *NSN,NSTUS(100),QMAX(100),QMIN(100),SBLK(100),SBUS(100),SQUE(100)  BJU25930
     *,TLCB(100),TLCQ(100),XBALK(100),NSAQ2(100),LABLS(100,2)           BJU25940
      DIMENSION XABA(280)                                               BJU25950
      EQUIVALENCE (NABA(1),XABA(1))                                     BJU25960
      COMMON/CMNLP/NJ,NACR,NACV,BETAJ,BETAR,BETAV,WTMNJ,WTMXJ,WTMNR,WTMXBJU25970
     1R,WTMNV,WTMXV,NOCSJ,NOCSR,NOCSV,NCSJ,NCSAR,NCSAV,STT,CDJ,CDA,DIJ,DBJU25980
     2IA,PC,PF,PD,PJD,PAD,PEDC,PEDF,PEDD,PIV,PIF,PID,PTV,PBTV,PTF,PBTF,PBJU25990
     3TD,PBTD,PPC,T(9),IQT(9),U(19),HOLD(4,2),ST(19),CSTAT(6)           BJU26000
      WRITE(6,500)                                                      BJU26010
  500 FORMAT(1H1,20X,13HOUTPUT REPORT/20X,15(1H-))                      BJU26020
      WRITE(6,501)                                                      BJU26030
  501 FORMAT(///4X,15HOUTPUT VARIABLE,8X,4HMEAN,5X,7HSTD DEV,3X,        BJU26040
     17HSTD ERR/1X,21(1H-),1X,3(2X,8(1H-)))                             BJU26050
      WRITE(6,502)                                                      BJU26060
  502 FORMAT(//1X,11HUTILIZATION)                                       BJU26070
```

```
C                                                                       BJU26080
C     UTILIZATION STATISTICS                                            BJU26090
C                                                                       BJU26100
      XN=NRUN                                                           BJU26110
      XSJ=0                                                             BJU26120
      XSSJ=0                                                            BJU26130
      XSAR=0.                                                           BJU26140
      XSSAR=0.                                                          BJU26150
      XSAV=0.                                                           BJU26160
      XSSAV=0.                                                          BJU26170
      XNJ=NJ                                                            BJU26180
      XNAR=NACR                                                         BJU26190
      XNAV=NACV                                                         BJU26200
      DO 401 J=1,19                                                     BJU26210
      IF(J.LE.6)GO TO 402                                               BJU26220
      IF(J.LE.(6+NACR)) GO TO 403                                       BJU26230
      IF(J.LE.19)GO TO 404                                              BJU26240
C                                                                       BJU26250
C     JUDGE UTILIZATION                                                 BJU26260
C                                                                       BJU26270
  402 XSJ=XSJ+U(J)/XN                                                   BJU26280
      XSSJ=XSSJ+(U(J)/XN)*(U(J)/XN)                                     BJU26290
      GO TO 401                                                         BJU26300
C                                                                       BJU26310
C     ATTORNEY (CRIMINAL) UTILIZATION                                   BJU26320
C                                                                       BJU26330
  403 XSAR=XSAR+U(J)/XN                                                 BJU26340
      XSSAR=XSSAR+(U(J)/XN)*(U(J)/XN)                                   BJU26350
      GO TO 401                                                         BJU26360
C                                                                       BJU26370
C     ATTORNEY (CIVIL) UTILIZATION                                      BJU26380
C                                                                       BJU26390
  404 XSAV=XSAV+U(J)/XN                                                 BJU26400
      XSSAV=XSSAV+(U(J)/XN)*(U(J)/XN)                                   BJU26410
  401 CONTINUE                                                          BJU26420
C                                                                       BJU26430
      AVEJ=XSJ/XNJ                                                      BJU26440
      AVEAR=XSAR/XNAR                                                   BJU26450
      AVEAV=XSAV/XNAV                                                   BJU26460
      IF(XNJ*XSSJ-XSJ*XSJ)405,405,406                                   BJU26470
  408 IF(XNAR*XSSAR-XSAR*XSAR)409,409,410                               BJU26480
  412 IF(XNAV*XSSAV-XSAV*XSAV)413,413,414                               BJU26490
C                                                                       BJU26500
C     JUDGE UTILIZATION                                                 BJU26510
C                                                                       BJU26520
  406 IF(XNJ.EQ.1.)GO TO 405                                            BJU26530
      STDJ=(((XNJ*XSSJ)-(XSJ*XSJ))/(XNJ*(XNJ-1.)))**0.5                 BJU26540
      GO TO 407                                                         BJU26550
  405 STDJ=0.                                                           BJU26560
  407 SEJ=STDJ/SQRT(XNJ)                                                BJU26570
      WRITE(6,503)AVEJ,STDJ,SEJ                                         BJU26580
  503 FORMAT(/3X,9HJUDGE,14X,3(2X,F8.2))                                BJU26590
      GO TO 408                                                         BJU26600
C                                                                       BJU26610
C     ATTORNEY (CRIMINAL) UTILIZATION                                   BJU26620
C                                                                       BJU26630
  410 IF(XNAR.EQ.1.)GO TO 409                                           BJU26640
      STDR=(((XNAR*XSSAR)-(XSAR*XSAR))/(XNAR*(XNAR-1.)))**0.5          BJU26650
      GO TO 411                                                         BJU26660
  409 STDR=0.                                                           BJU26670
  411 SER=STDR/SQRT(XNAR)                                               BJU26680
      WRITE(6,504)AVEAR,STDR,SER                                        BJU26690
  504 FORMAT(/3X,19HATTORNEY (CRIMINAL),3(2X,F8.2))                     BJU26700
      GO TO 412                                                         BJU26710
C                                                                       BJU26720
C     ATTORNEY (CIVIL) UTILIZATION                                      BJU26730
C                                                                       BJU26740
  414 IF(XNAV.EQ.1.)GO TO 413                                           BJU26750
      STDV=(((XNAV*XSSAV)-(XSAV*XSAV))/(XNAV*(XNAV-1.)))**0.5           BJU26760
      GO TO 415                                                         BJU26770
  413 STDV=0.                                                           BJU26780
  415 SEV=STDV/SQRT(XNAV)                                               BJU26790
      WRITE(6,505)AVEAV,STDV,SEV                                        BJU26800
  505 FORMAT(/3X,16HATTORNEY (CIVIL),3X,3(2X,F8.2))                     BJU26810
  506 WRITE(6,507)                                                      BJU26820
  507 FORMAT(//1X,12HELAPSED TIME)                                      BJU26830
      DO 201 I=1,NSNS                                                   BJU26840
      IF(NSINK(I).EQ.70)GO TO 202                                       BJU26850
      IF(NSINK(I).EQ.71)GO TO 202                                       BJU26860
      IF(NSINK(I).EQ.72)GO TO 202                                       BJU26870
      IF(NSINK(I).EQ.73)GO TO 202                                       BJU26880
      GO TO 201                                                         BJU26890
C                                                                       BJU26900
C     ELAPSED TIME STATISTICS                                           BJU26910
C                                                                       BJU26920
```

```
  202 XS=SUMA(I,1)                                                      BJU26930
      XN=SUMA(I,3)                                                      BJU26940
      IF(XN.EQ.0.0) GO TO 609                                           BJU26950
      AVG=XS/XN                                                         BJU26960
      XSS=SUMA(I,2)                                                     BJU26970
      IF(XN*XSS-XS*XS)204,204,203                                       BJU26980
  203 IF(XN.EQ.1.)GO TO 204                                             BJU26990
      STD=(((XN*XSS)-(XS*XS))/(XN*(XN-1.)))**0.5                        BJU27000
      GO TO 205                                                         BJU27010
  204 STD=0.                                                            BJU27020
  205 SE=STD/SQRT(XN)                                                   BJU27030
      JK = NSINK(I)-69                                                  BJU27040
      GO TO(206,207,208,209),JK                                         BJU27050
  206 WRITE(6,508)AVG,STD,SE                                            BJU27060
  508 FORMAT(/3X,10HCIVIL/U.S.,7X,3(2X,F8.2))                           BJU27070
      GO TO 201                                                         BJU27080
  207 WRITE(6,509)AVG,STD,SE                                            BJU27090
  509 FORMAT(/3X,8HCRIMINAL,11X,3(2X,F8.2))                             BJU27100
      GO TO 201                                                         BJU27110
  208 WRITE(6,510)AVG,STD,SE                                            BJU27120
  510 FORMAT(/3X,9HDIV. JUR.,10X,3(2X,F8.2))                            BJU27130
      GO TO 201                                                         BJU27140
  209 WRITE(6,511)AVG,STD,SE                                            BJU27150
  511 FORMAT(/3X,16HFEDERAL QUESTION,3X,3(2X,F8.2))                     BJU27160
      GO TO 201                                                         BJU27170
  609 JK=NSINK(I)-69                                                    BJU27180
      GO TO (601,603,605,607),JK                                        BJU27190
  601 WRITE(6,602)                                                      BJU27200
  602 FORMAT(/3X,10HCIVIL/U.S.,18X,18HNO VALUES RECORDED)               BJU27210
      GO TO 201                                                         BJU27220
  603 WRITE(6,604)                                                      BJU27230
  604 FORMAT(/3X,8HCRIMINAL,20X,18HNO VALUES RECORDED)                  BJU27240
      GO TO 201                                                         BJU27250
  605 WRITE(6,606)                                                      BJU27260
  606 FORMAT(/3X,9HDIV. JUR.,19X,18HNO VALUES RECORDED)                 BJU27270
      GO TO 201                                                         BJU27280
  607 WRITE(6,608)                                                      BJU27290
  608 FORMAT(/3X,16HFEDERAL QUESTION,12X,18HNO VALUES RECORDED)         BJU27300
  201 CONTINUE                                                          BJU27310
C                                                                       BJU27320
C     COMPLETIONS                                                       BJU27330
C                                                                       BJU27340
      WRITE(6,512)                                                      BJU27350
  512 FORMAT(//1X,18HNO. OF COMPLETIONS)                                BJU27360
      JK=1                                                              BJU27370
  308 XS=HOLD(JK,1)                                                     BJU27380
      XN=NRUN                                                           BJU27390
      AVG=XS/XN                                                         BJU27400
      XSS=HOLD(JK,2)                                                    BJU27410
      IF(XN*XSS-XS*XS)302,302,301                                       BJU27420
  301 IF(XN.EQ.1.)GO TO 302                                             BJU27430
      STD=(((XN*XSS)-(XS*XS))/(XN*(XN-1.)))**0.5                        BJU27440
      GO TO 303                                                         BJU27450
  302 STD=0.                                                            BJU27460
  303 SE=STD/SQRT(XN)                                                   BJU27470
      GO TO (304,305,306,307),JK                                        BJU27480
  304 WRITE(6,508)AVG,STD,SE                                            BJU27490
      JK=2                                                              BJU27500
      GO TO 308                                                         BJU27510
  305 WRITE(6,509)AVG,STD,SE                                            BJU27520
      JK=3                                                              BJU27530
      GO TO 308                                                         BJU27540
  306 WRITE(6,510)AVG,STD,SE                                            BJU27550
      JK=4                                                              BJU27560
      GO TO 308                                                         BJU27570
```

```
  307 WRITE(6,511)AVG,STD,SE                                          BJU27580
      XSJ=0                                                           BJU27590
      XSSJ=0                                                          BJU27600
      XSK=0                                                           BJU27610
      XSSK=0                                                          BJU27620
      XSL=0                                                           BJU27630
      XSSL=0                                                          BJU27640
      XSM=0                                                           BJU27650
      XSSM=0                                                          BJU27660
      XSN=0                                                           BJU27670
      XSSN=0                                                          BJU27680
      XSO=0                                                           BJU27690
      XSSO=0                                                          BJU27700
      XSP=0                                                           BJU27710
      XSSP=0                                                          BJU27720
      NLB=NSKS+1                                                      BJU27730
      LQL=NSKS+NQN                                                    BJU27740
      DO 101 I=NLB,LQL                                                BJU27750
      IF(NSINK(I).EQ.39)GO TO 136                                     BJU27760
      IF(NSINK(I).EQ.40)GO TO 137                                     BJU27770
      IF(NSINK(I).GE.74.AND.NSINK(I).LE.(73+NJ)) GO TO 102            BJU27780
      IF(NSINK(I).GE.80.AND.NSINK(I).LE.(79+NACR)) GO TO 103          BJU27790
      IF(NSINK(I).GE.(93-NACV).AND.NSINK(I).LE.91) GO TO 104          BJU27800
      IF(NSINK(I).EQ.224) GO TO 104                                   BJU27810
      IF(NSINK(I).GE.124.AND.NSINK(I).LE.(123+NJ)) GO TO 105          BJU27820
      IF(NSINK(I).GE.130.AND.NSINK(I).LE.(129+NACR)) GO TO 106        BJU27830
      IF(NSINK(I).GE.(143-NACV).AND.NSINK(I).LE.141) GO TO 107        BJU27840
      IF(NSINK(I).EQ.226) GO TO 107                                   BJU27850
      IF(NSINK(I).GE.191.AND.NSINK(I).LE.(190+NJ)) GO TO 108          BJU27860
      IF(NJ.EQ.6.AND.NSINK(I).EQ.221) GO TO 108                       BJU27870
      GO TO 101                                                       BJU27880
C                                                                     BJU27890
C     COMPUTE Q-STATS FOR JDG-CT                                      BJU27900
C                                                                     BJU27910
  102 XSJ=XSJ+SUMA(I,1)/XN                                            BJU27920
      XSSJ=XSSJ+(SUMA(I,1)/XN)*(SUMA(I,1)/XN)                         BJU27930
      GO TO 101                                                       BJU27940
C                                                                     BJU27950
C     COMPUTE Q-STATS FOR ATT-CT (CRIMINAL)                           BJU27960
  103 XSK=XSK+SUMA(I,1)/XN                                            BJU27970
      XSSK=XSSK+(SUMA(I,1)/XN)*(SUMA(I,1)/XN)                         BJU27980
      GO TO 101                                                       BJU27990
C                                                                     BJU28000
C      COMPUTE Q-STATS FOR ATT-CT (CIVIL)                             BJU28010
C                                                                     BJU28020
  104 XSL=XSL+SUMA(I,1)/XN                                            BJU28030
      XSSL=XSSL+(SUMA(I,1)/XN)*(SUMA(I,1)/XN)                         BJU28040
      GO TO 101                                                       BJU26050
C                                                                     BJU28060
C     COMPUTE Q-STATS FOR JDG-NC                                      BJU28070
C                                                                     BJU28080
  105 XSM=XSM+SUMA(I,1)/XN                                            BJU28090
      XSSM=XSSM+(SUMA(I,1)/XN)*(SUMA(I,1)/XN)                         BJU28100
      GO TO 101                                                       BJU28110
C                                                                     BJU28120
C     COMPUTE Q-STATS FOR ATT-NC (CRIMINAL)                           BJU28130
C                                                                     BJU28140
  106 XSN=XSN+SUMA(I,1)/XN                                            BJU28150
      XSSN=XSSN+(SUMA(I,1)/XN)*(SUMA(I,1)/XN)                         BJU28160
      GO TO 101                                                       BJU28170
C                                                                     BJU28180
C     COMPUTE Q-STATS FOR ATT-NC (CIVIL)                              BJU28190
C                                                                     BJU28200
  107 XSO=XSO+SUMA(I,1)/XN                                            BJU28210
      XSSO=XSSO+(SUMA(I,1)/XN)*(SUMA(I,1)/XN)                         BJU28220
      GO TO 101                                                       BJU28230
C                                                                     BJU28240
C     COMPUTE Q-STATS FOR PRI-J                                       BJU28250
C                                                                     BJU28260
  108 XSP=XSP+SUMA(I,1)/XN                                            BJU28270
      XSSP=XSSP+(SUMA(I,1)/XN)*(SUMA(I,1)/XN)                         BJU28280
      GO TO 101                                                       BJU28290
C                                                                     BJU28300
C     COMPUTE TIME Q-STATS FOR TOC-JDG                                BJU28310
C                                                                     BJU28320
  136 WXSJ=SUMA(I,6)                                                  BJU28330
      WSSJ=SUMA(I,3)                                                  BJU28340
      AWTJ=WXSJ/XN                                                    BJU28350
      IF(XN*WSSJ-WXSJ*WXSJ)139,139,138                                BJU28360
  138 IF(XN.EQ.1.)GO TO 139                                           BJU28370
      WTSDJ=(((XN*WSSJ)-(WXSJ*WXSJ))/(XN*(XN-1.)))**0.5               BJU28380
      GO TO 140                                                       BJU28390
```

```
  139 WTSDJ=0.                                                          BJU28400
  140 WTSEJ=WTSDJ/SQRT(XN)                                              BJU28410
      WRITE(6,513)AWTJ,WTSDJ,WTSEJ                                      BJU28420
  513 FORMAT(//1X,20HAVERAGE WAITING TIME//3X,7HTOC-JDG,12X,3(2X,F8.2)) BJU28430
      GO TO 101                                                         BJU28440
C                                                                       BJU28450
C     COMPUTE TIME Q-STATS FOR TOC-ATT                                  BJU28460
C                                                                       BJU28470
  137 WXSA=SUMA(I,6)                                                    BJU28480
      WSSA=SUMA(I,3)                                                    BJU28490
      AWTA=WXSA/XN                                                      BJU28500
      IF(XN*WSSA-WXSA*WXSA)142,142,141                                  BJU28510
  141 IF(XN.EQ.1.)GO TO 142                                             BJU28520
      WTSDA=(((XN*WSSA)-(WXSA*WXSA))/(XN*(XN-1.)))**0.5                 BJU28530
      GO TO 143                                                         BJU28540
  142 WTSDA=0.                                                          BJU28550
  143 WTSEA=WTSDA/SQRT(XN)                                              BJU28560
      WRITE(6,514)AWTA,WTSDA,WTSEA                                      BJU28570
  514 FORMAT(/3X,7HTOC-ATT,12X,3(2X,F8.2))                              BJU28580
  101 CONTINUE                                                          BJU28590
      WRITE(6,515)                                                      BJU28600
  515 FORMAT(//1X,20HAVERAGE QUEUE LENGTH)                              BJU28610
      AVGJ=XSJ/XNJ                                                      BJU28620
      AVGK=XSK/XNAR                                                     BJU28630
      AVGL=XSL/XNAV                                                     BJU28640
      AVGM=XSM/XNJ                                                      BJU28650
      AVGN=XSN/XNAR                                                     BJU28660
      AVGO=XSO/XNAV                                                     BJU28670
      AVGP=XSP/XNJ                                                      BJU28680
      IF(XNJ*XSSJ-XSJ*XSJ)109,109,110                                   BJU28690
  124 IF(XNAR*XSSK-XSK*XSK)111,111,112                                  BJU28700
  126 IF(XNAV*XSSL-XSL*XSL)113,113,114                                  BJU28710
  128 IF(XNJ*XSSM-XSM*XSM)115,115,116                                   BJU28720
  130 IF(XNAR*XSSN-XSN*XSN)117,117,118                                  BJU28730
  132 IF(XNAV*XSSO-XSO*XSO)119,119,120                                  BJU28740
  134 IF(XNJ*XSSP-XSP*XSP)121,121,122                                   BJU28750
  110 IF(XNJ.EQ.1.)GO TO 109                                            BJU28760
      STDJ=(((XNJ*XSSJ)-(XSJ*XSJ))/(XNJ*(XNJ-1.)))**0.5                 BJU28770
      GO TO 123                                                         BJU28780
  109 STDJ=0.                                                           BJU28790
  123 SEJ=STDJ/SQRT(XNJ)                                                BJU28800
      WRITE(6,516)AVGJ,STDJ,SEJ                                         BJU28810
  516 FORMAT(/3X,6HJDG-CT,13X,3(2X,F8.2))                               BJU28820
      GO TO 124                                                         BJU28830
  112 IF(XNAR.EQ.1.)GO TO 111                                           BJU28840
      STDK=(((XNAR*XSSK)-(XSK*XSK))/(XNAR*(XNAR-1.)))**0.5              BJU28850
      GO TO 125                                                         BJU28860
  111 STDK=0.                                                           BJU28870
  125 SEK=STDK/SQRT(XNAR)                                               BJU28880
      WRITE(6,517)AVGK,STDK,SEK                                         BJU28890
  517 FORMAT(/3X,17HATT-CT (CRIMINAL),2X,3(2X,F8.2))                    BJU28900
      GO TO 126                                                         BJU28910
  114 IF(XNAV.EQ.1.)GO TO 113                                           BJU28920
      STDL=(((XNAV*XSSL)-(XSL*XSL))/(XNAV*(XNAV-1.)))**0.5              BJU28930
      GO TO 127                                                         BJU28940
  113 STDL=0.                                                           BJU28950
  127 SEL=STDL/SQRT(XNAV)                                               BJU28960
      WRITE(6,518)AVGL,STDL,SEL                                         BJU28970
  518 FORMAT(/3X,14HATT-CT (CIVIL),5X,3(2X,F8.2))                       BJU28980
      GO TO 128                                                         BJU28990
  116 IF(XNJ.EQ.1.)GO TO 115                                            BJU29000
      STDM=(((XNJ*XSSM)-(XSM*XSM))/(XNJ*(XNJ-1.)))**0.5                 BJU29010
      GO TO 129                                                         BJU29020
  115 STDM=0.                                                           BJU29030
  129 SEM=STDM/SQRT(XNJ)                                                BJU29040
      WRITE(6,519)AVGM,STDM,SEM                                         BJU29050
  519 FORMAT(/3X,6HJDG-NC,13X,3(2X,F8.2))                               BJU29060
      GO TO 130                                                         BJU29070
  118 IF(XNAR.EQ.1.)GO TO 117                                           BJU29080
      STDN=(((XNAR*XSSN)-(XSN*XSN))/(XNAR*(XNAR-1.)))**0.5              BJU29090
      GO TO 131                                                         BJU29100
  117 STDN=0.                                                           BJU29110
  131 SEN=STDN/SQRT(XNAR)                                               BJU29120
      WRITE(6,520)AVGN,STDN,SEN                                         BJU29130
  520 FORMAT(/3X,17HATT-NC (CRIMINAL),2X,3(2X,F8.2))                    BJU29140
      GO TO 132                                                         BJU29150
  120 IF(XNAV.EQ.1.)GO TO 119                                           BJU29160
      STDO=(((XNAV*XSSO)-(XSO*XSO))/(XNAV*(XNAV-1.)))**0.5              BJU29170
      GO TO 133                                                         BJU29180
```

```
  119 STDO=0.                                                          BJU29190
  133 SEO=STDO/SQRT(XNAV)                                              BJU29200
      WRITE(6,521)AVGO,STDO,SEO                                        BJU29210
  521 FORMAT(/3X,14HATT-NC (CIVIL),5X,3(2X,F8.2))                      BJU29220
      GO TO 134                                                        BJU29230
  122 IF(XNJ.EQ.1.)GO TO 121                                           BJU29240
      STDP=(((XNJ*XSSP)-(XSP*XSP))/(XNJ*(XNJ-1.)))**0.5                BJU29250
      GO TO 135                                                        BJU29260
  121 STDP=0.                                                          BJU29270
  135 SEP=STDP/SQRT(XNJ)                                               BJU29280
      WRITE(6,522)AVGP,STDP,SEP                                        BJU29290
  522 FORMAT(/3X,5HPRI-J,14X,3(2X,F8.2))                               BJU29300
      RETURN                                                           BJU29310
      END                                                              BJU29320
      FUNCTION NSTG(IX)                                                BJU29330
      COMMON/CRMNL/NFOLW(15),UFA(15),IEPSD(15),IATTR(15),NBRNCH(25),   BJU29340
     *             NEXTS(25,6),PNEXT(25,6),IDRTN(7),PCINJ(15),PCEXD(15),BJU29350
     *             IACOL(15),ISCOL(15),SPEED(15),RLSE,BAIL,PMDTR(5)    BJU29360
      DIMENSION VAL(6),PROB(6)                                         BJU29370
C                                                                      BJU29380
C     THIS FUNCTION SELECTS THE NEXT STAGE FOLLOWING DECISION POINT IX BJU29390
C                                                                      BJU29400
      NB=NBRNCH(IX)                                                    BJU29410
      DO 25 I=1,NB                                                     BJU29420
      PROB(I)=PNEXT(IX,I)                                              BJU29430
      VAL(I)=NEXTS(IX,I)                                               BJU29440
   25 CONTINUE                                                         BJU29450
      NSTG=DPROB(PROB,VAL,NBRNCH(IX),1)                                BJU29460
      RETURN                                                           BJU29470
      END                                                              BJU29480
      SUBROUTINE DVRSN(LAST,NEXT)                                      BJU29490
      COMMON/CRMNL/NFOLW(15),UFA(15),IEPSD(15),IATTR(15),NBRNCH(25),   BJU29500
     *             NEXTS(25,6),PNEXT(25,6),IDRTN(7),PCINJ(15),PCEXD(15),BJU29510
     *             IACOL(15),ISCOL(15),SPEED(15),RLSE,BAIL,PMDTR(5)    BJU29520
C                                                                      BJU29530
C     THIS ROUTINE DETERMINES THE OUTCOME OF A DIVERSION               BJU29540
C                                                                      BJU29550
C     IF THE DIVERSION IS SUCCESSFUL                                   BJU29560
C          NEXT = 209 OR 210 - WHICH INDICATE A SINK (CASE COMPLETION) BJU29570
C                                                                      BJU29580
C     IF THE DIVERSION IS UNSUCCESSFUL                                 BJU29590
C          NEXT = IDRTN(LAST) WHICH RETURNS THE CASE TO THE NEXT       BJU29600
C          STAGE IN THE CRIMMINAL CASE FLOW                            BJU29610
C                                                                      BJU29620
C     LAST IS THE DECISION POINT AT WHICH THE DIVERSION WAS INITIATED  BJU29630
C                                                                      BJU29640
      NEXT=NSTG(8)                                                     BJU29650
      NEXT=NEXT*(-1)                                                   BJU29660
      NEXT=NSTG(NEXT)                                                  BJU29670
      IF(NEXT.EQ.100)NEXT=IDRTN(LAST)                                  BJU29680
      RETURN                                                           BJU29690
      END                                                              BJU29700
      FUNCTION NEXTA(IX)                                               BJU29710
      COMMON/CRMNL/NFOLW(15),UFA(15),IEPSD(15),IATTR(15),NBRNCH(25),   BJU29720
     *             NEXTS(25,6),PNEXT(25,6),IDRTN(7),PCINJ(15),PCEXD(15),BJU29730
     *             IACOL(15),ISCOL(15),SPEED(15),RLSE,BAIL,PMDTR(5)    BJU29740
C                                                                      BJU29750
C     THIS ROUTINE DETERMINES THE NEXT STAGE IN THE CRIMINAL           BJU29760
C     CASE STRUCTURE FOR THE CURRENT CASE                              BJU29770
C                                                                      BJU29780
C     DETERMINE IF THE CURRENT TRANSACTION IS JUST ENTERING THE SYSTEM  BJU29790
C                                                                      BJU29800
      IF(IX.GT.0)GO TO 25                                              BJU29810
      NEXTA=1                                                          BJU29820
      RETURN                                                           BJU29830
C                                                                      BJU29840
C     DETERMINE IF THE CURRENT TRANSACTION HAS JUST COMPLETED TRIAL    BJU29850
C                                                                      BJU29860
   25 CONTINUE                                                         BJU29870
      IF(IX.GE.1000)GO TO 500                                          BJU29880
C                                                                      BJU29890
C     CURRENT TRANSACTIONIS NOT COMPLETING TRIAL                       BJU29900
C                                                                      BJU29910
C     DETERMINE IF THE CURRENT TRANSACTION COULD HAVE MULTIPLE EPISODES BJU29920
C                                                                      BJU29930
      IF(IEPSD(IX).LE.0)GO TO 50                                       BJU29940
C                                                                      BJU29950
C     DETERMINE IF THE NUMBER OF EPISODES REMAINING IS > 0             BJU29960
C                                                                      BJU29970
      J=IATTR(IX)                                                      BJU29980
      K=GATRB(J)                                                       BJU29990
      IF(K.LE.0)GO TO 50                                               BJU30000
```

```
C                                                                       BJU30010
C     THE CURRENT TRANSACTION HAS EPISODES REMAINING                    BJU30020
C                                                                       BJU30030
      NEXTA=IX                                                          BJU30040
      RETURN                                                            BJU30050
   50 CONTINUE                                                          BJU30060
C                                                                       BJU30070
C     DETERMINE THE NEXT STAGE OF THE CURRENT TRANSACTION               BJU30080
C                                                                       BJU30090
      NEXT=NFOLW(IX)                                                    BJU30100
   75 CONTINUE                                                          BJU30110
      IF(NEXT)300,200,100                                               BJU30120
  200 CALL ERROR(550)                                                   BJU30130
  300 CONTINUE                                                          BJU30140
C                                                                       BJU30150
C     CURRENT STAGE IS A DECISION POINT                                 BJU30160
C                                                                       BJU30170
      NEXT=NEXT*(-1)                                                    BJU30180
      LAST=NEXT                                                         BJU30190
C                                                                       BJU30200
C     SELECT NEXT STAGE                                                 BJU30210
C                                                                       BJU30220
  325 NEXT=NSTG(NEXT)                                                   BJU30230
      IF(NEXT)350,250,100                                               BJU30240
  250 CALL ERROR(550)                                                   BJU30250
  350 CONTINUE                                                          BJU30260
C                                                                       BJU30270
C     RESULT OF PATH SELECTION IS A DECISION POINT                      BJU30280
C                                                                       BJU30290
C     FIRST CHECK IF DP = 8 (THE DIVERSION DECISION POINT)              BJU30300
C                                                                       BJU30310
      NEXT=NEXT*(-1)                                                    BJU30320


      IF(NEXT.EQ.8)GO TO 375                                            BJU30330
      LAST=NEXT                                                         BJU30340
      GO TO 325                                                         BJU30350
  375 CONTINUE                                                          BJU30360
C                                                                       BJU30370
C     A DIVERSION HAS BEEN ATTEMPTED                                    BJU30380
C                                                                       BJU30390
      CALL DVRSN(LAST,NEXT)                                             BJU30400
      IF(NEXT.EQ.0)CALL ERROR(551)                                      BJU30410
      GO TO 75                                                          BJU30420
  100 CONTINUE                                                          BJU30430
C                                                                       BJU30440
C     DETERMINE IF NEXT STAGE IS A SINK                                 BJU30450
C                                                                       BJU30460
      IF(NEXT.LT.200)GO TO 150                                          BJU30470
      NEXTA=NEXT                                                        BJU30480
      RETURN                                                            BJU30490
C                                                                       BJU30500
C     THE NEXT STAGE HAS BEEN DETERMINED                                BJU30510
C                                                                       BJU30520
  150 NEXTA=NEXT                                                        BJU30530
      I=IEPSD(NEXT)                                                     BJU30540
      J=IATTR(NEXT)                                                     BJU30550
      NEPSD=0                                                           BJU30560
      IF(I.GT.0)NEPSD=TR(I)                                             BJU30570
      IF(I.GT.0)CALL PATRB(FLOAT(NEPSD),J)                              BJU30580
      RETURN                                                            BJU30590
C                                                                       BJU30600
C     THE TRANSACTION HAS JUST COMPLETED TRIAL - SET NEXT STAGE         BJU30610
C                                                                       BJU30620
  500 CONTINUE                                                          BJU30630
      NEXTA=NSTG(18)                                                    BJU30640
      RETURN                                                            BJU30650
      END                                                               BJU30660
      FUNCTION NACT(IX,TNOW)                                            BJU30670
      COMMON/CRMNL/NFOLW(15),UFA(15),IEPSD(15),IATTR(15),NBRNCH(25),    BJU30680
     *             NEXTS(25,6),PNEXT(25,6),IDRTN(7),PCINJ(15),PCEXD(15),BJU30690
     *             IACOL(15),ISCOL(15),SPEED(15),RLSE,BAIL,PMDTR(5)     BJU30700
```

```
C                                                                       BJU30710
C     THIS ROUTINE :                                                    BJU30720
C                                                                       BJU30730
C        1 - RETURNS THE APPROPRIATE USER FUNCTION                      BJU30740
C            VALUE TO INITIATE ACTIVITY IX                              BJU30750
C                                                                       BJU30760
C        2 - SETS THE APPROPRIATE ATTRIBUTES                            BJU30770
C                                                                       BJU30780
C        3 - GENERATES THE OCCURENCE OF INJUNCTIONS                     BJU30790
C            AND EXTERNAL DELAYS FOR CRIMINAL CASES                     BJU30800
C                                                                       BJU30810
      IF(IX.LT.5000)GO TO 100                                           BJU30820
      IX=IX-5000                                                        BJU30830
      IF(IX.EQ.1000)IX=10                                               BJU30840
      IF(IX.EQ.2000)IX=11                                               BJU30850
      IXP=IX                                                            BJU30860
      A6=IX                                                             BJU30870
      CALL PATRB(A6,6)                                                  BJU30880
      IS=GATRB(4)                                                       BJU30890
      IF(IS.LT.0)CALL PATRB(SPEED(IX),10)                               BJU30900
      NACT=UFA(IX)                                                      BJU30910
      GO TO 1500                                                        BJU30920
C                                                                       BJU30930
C                                                                       BJU30940
C PROCESS ALL CASES NOT RETURNING FROM AN EXTERNAL DELAY OR AN INJUNCTIOBJU30950
C                                                                       BJU30960
  100 IXP=GATRB(6)                                                      BJU30970
      IF(IX.GT.200)GO TO 200                                            BJU30980
      IF((IX.EQ.10).OR.(IX.EQ.11)) GO TO 300                            BJU30990
      IF(IX.EQ.6)GO TO 400                                              BJU31000
      IF(IX.EQ.7)GO TO 500                                              BJU31010
      IF(IEPSD(IX).GT.0)GO TO 600                                       BJU31020
C                                                                       BJU31030
C     NEXT STAGE REQUIRES NO SPECIAL PROCESSING                         BJU31040
C         - SET ATTRIBUTE 6 AND NEXTA APPROPRIATELY                     BJU31050
C                                                                       BJU31060
      CALL PATRB(FLOAT(IX),6)                                           BJU31070
      TIME=TNOW - TMARK(IX)                                             BJU31080
      CALL COL(TIME,IACOL(IX))                                          BJU31090
      IF(GATRB(4).LT.0)CALL PATRB(SPEED(IX),10)                         BJU31100
      NACT=UFA(IX)                                                      BJU31110
      GO TO 1500                                                        BJU31120
C                                                                       BJU31130
C     NEXT STAGE IS A SINK (CASE COMPLETION)                            BJU31140
  200 CONTINUE                                                          BJU31150
      TIME=TNOW-TMARK(IX)                                               BJU31160
      I=IX-205                                                          BJU31170
      CALL COL(TIME,ISCOL(I))                                           BJU31180
      NACT=71                                                           BJU31190
      RETURN                                                            BJU31200
C                                                                       BJU31210
C     NEXT STAGE IN CASE FLOW IS A TRIAL                                BJU31220
C                                                                       BJU31230
  300 CONTINUE                                                          BJU31240
      TIME=TNOW-TMARK(IX)                                               BJU31250
      CALL COL(TIME,IACOL(IX))                                          BJU31260
      IF(IX.EQ.10)CALL PATRB(1000.,6)                                   BJU31270
      IF((IX.EQ.10).AND.(GATRB(4).LT.0.))CALL PATRB(SPEED(IX),10)       BJU31280
      IF(IX.EQ.11)CALL PATRB(2000.,6)                                   BJU31290
      IF((IX.EQ.11).AND.(GATRB(4).LT.0.))CALL PATRB(SPEED(IX),10)       BJU31300
      NACT=UFA(IX)                                                      BJU31310
      GO TO 1500                                                        BJU31320
C                                                                       BJU31330
C     ACTIVITY A6 IS NEXT - DETERMINE IF SPEEDY TRIAL REQUIRED          BJU31340
C                                                                       BJU31350
  400 CONTINUE                                                          BJU31360
      TIME=TNOW-TMARK(IX)                                               BJU31370
      CALL COL(TIME,IACOL(IX))                                          BJU31380
      IF(DRAND(7).LE.RLSE)GO TO 420                                     BJU31390
      IF(DRAND(7).LE.BAIL)GO TO 420                                     BJU31400
C                                                                       BJU31410
C     SPEEDY TRIAL MUST TAKE PLACE                                      BJU31420
C                                                                       BJU31430
      CALL PATRB(-TNOW,4)                                               BJU31440
      CALL PATRB(SPEED(IX),10)                                          BJU31450
  420 CALL PATRB(FLOAT(IX),6)                                           BJU31460
      NACT=UFA(IX)                                                      BJU31470
      GO TO 1500                                                        BJU31480
```

```
C                                                                       BJU31490
C     ACTIVITY A7 IS NEXT - SET SPEEDY TRIAL IF NECESSARY               BJU31500
C                         - DECREMENT EPISODES BY 1                     BJU31510
C                                                                       BJU31520
  500 CONTINUE                                                          BJU31530
      TIME=TNOW-TMARK(IX)                                               BJU31540
      CALL COL(TIME,IACOL(IX))                                          BJU31550
      IF((IXP.EQ.6).OR.(IXP.EQ.7))GO TO 520                             BJU31560
C                                                                       BJU31570
C     DETERMINE IF SPEEDY TRIAL REQUIRED                                BJU31580
C                                                                       BJU31590
      IF(DRAND(7).LE.RLSE)GO TO 520                                     BJU31600
      IF(DRAND(7).LE.BAIL)GO TO 520                                     BJU31610
C                                                                       BJU31620
C     SPEEDY TRIAL REQUIRED                                             BJU31630
C                                                                       BJU31640
      CALL PATRB(-TNOW,4)                                               BJU31650
      CALL PATRB(SPEED(IX),10)                                          BJU31660
C                                                                       BJU31670
C     CONTINUE SETTING ATTRIBUTES FOR ACTIVITY A7                       BJU31680
C                                                                       BJU31690
  520 CALL PATRB(FLOAT(IX),6)                                           BJU31700
      EPR=GATRB(IATTR(IX))-1.                                           BJU31710
      CALL PATRB(EPR,IATTR(IX))                                         BJU31720
      NACT=UFA(IX)                                                      BJU31730
      GO TO 1500                                                        BJU31740
C                                                                       BJU31750
C     NEXT STAGE HAS EPISODES - DECREMENT THE APPROPRIATE ATTRIBUTE     BJU31760
C                                                                       BJU31770
  530 CONTINUE                                                          BJU31780
      TIME=TNOW-TMARK(IX)                                               BJU31790
      CALL COL(TIME,IACOL(IX))                                          BJU31800
      CALL PATRB(FLOAT(IX),6)                                           BJU31810
      EPR=GATRB(IATTR(IX))-1.                                           BJU31820
      CALL PATRB(EPR,IATTR(IX))                                         BJU31830
      NACT=UFA(IX)                                                      BJU31840
C                                                                       BJU31850
C     DETERMINE IF AN INJUNCTION OR AN EXTERNAL DELAY TAKES PLACE       BJU31860
C                                                                       BJU31870
 1500 CONTINUE                                                          BJU31880
      IF(IXP.EQ.0)RETURN                                                BJU31890
      I=GATRB(4)                                                        BJU31900
      IF(DRAND(8).GT.PCINJ(IX))GO TO 1520                               BJU31910
C                                                                       BJU31920
C     DETERMINE IF AN INJUNCTION OCCURS                                 BJU31930
C                                                                       BJU31940
      NACT=64                                                           BJU31950
      I=GATRB(6)                                                        BJU31960
      I=I+5000                                                          BJU31970
      CALL PATRB(FLOAT(I),6)                                            BJU31980
      IF(I.LT.0)CALL PATRB(10.,10)                                      BJU31990
      RETURN                                                            BJU32000
 1520 CONTINUE                                                          BJU32010
C                                                                       BJU32020
C     DETERMINE IF AN EXTERNAL DELAY OCCURS                             BJU32030
C                                                                       BJU32040
C     FIRST DETERMINE IF THE CURRENT ACTIVITY IS A TRIAL                BJU32050
C                                                                       BJU32060
      IF((IX.EQ.10).OR.(IX.EQ.11))GO TO 1530                            BJU32070
      IF(I.LT.0)RETURN                                                  BJU32080
C                                                                       BJU32090
C     CURRENT TRANSACTION - NON-TRIAL ACTIVITY                          BJU32100
C                                                                       BJU32110
      IF(DRAND(8).GT.PCEXD(IX))RETURN                                   BJU32120
C                                                                       BJU32130
C     AN EXTERNAL DELAY OCCURS                                          BJU32140
C                                                                       BJU32150
      NACT=63                                                           BJU32160
      I=GATRB(6)                                                        BJU32170
      I=I+5000                                                          BJU32180
      CALL PATRB(FLOAT(I),6)                                            BJU32190
      RETURN                                                            BJU32200
C                                                                       BJU32210
C     CURRENT TRANSACTION IS GOING TO TRIAL                             BJU32220
C                                                                       BJU32230
 1530 CONTINUE                                                          BJU32240
      IF(IX.EQ.IXP)GO TO 1540                                           BJU32250
C                                                                       BJU32260
C     CURRENT TRANSACTION HAS NOT BEEN DELAYED PRIOR TO START OF TRIAL  BJU32270
C                                                                       BJU32280
```

```
      IF(DRAND(8),GT,PCEXD(IX))RETURN                                   BJU32290
      NACT=63                                                           BJU32300
      I=GATRB(6)                                                        BJU32310
      I=I+5000                                                          BJU32320
      CALL PATRB(1.,5)                                                  BJU32330
      CALL PATRB(FLOAT(I),6)                                            BJU32340
      RETURN                                                            BJU32350
C                                                                       BJU32360
C CURRENT TRANSACTION WAS PREVIOUSLY DELAYED PRIOR TO START OF TRIAL    BJU32370
C                                                                       BJU32380
 1540 CONTINUE                                                          BJU32390
      KDLY=0                                                            BJU32400
      NDLY=KDLY                                                         BJU32410
      IF(KDLY.GE.5)NDLY=5                                               BJU32420
      IF(DRAND(8),GT,PMDTR(NDLY))RETURN                                 BJU32430
      NACT=63                                                           BJU32440
      I=GATRB(6)                                                        BJU32450
      I=I+5000                                                          BJU32460
      DLY=KDLY+1                                                        BJU32470
      CALL PATRB(DLY,5)                                                 BJU32480
      CALL PATRB(FLOAT(I),6)                                            BJU32490
      RETURN                                                            BJU32500
      END                                                               BJU32510
      SUBROUTINE CHNG                                                   BJU32520
      COMMON /QVAR/ NDE,NFTBU(250),NREL(250),NRELP(250),NREL2(250),     BJU32530
     *NRUN,NRUNS,NTC(250),PARAM(100,4),TBEG,TNOW                        BJU32540
      DIMENSION ICOM(4)                                                 BJU32550
      INTEGER STAR                                                      BJU32560
      DATA STAR/1H*/                                                    BJU32570
C                                                                       BJU32580
C     THIS ROUTINE READS AND CHANGES THE APPROPRIATE                    BJU32590
C     PARAMETERS ASSOCIATED WITH AN INTERCURRENT CHANGE                 BJU32600
C                                                                       BJU32610
    1 READ(5,2)(ICOM(I),I=1,4),NCHNG                                    BJU32620
    2 FORMAT(A1,3A3,I5)                                                 BJU32630
      IF(ICOM(1).EQ.STAR) GO TO 1                                       BJU32640
      IF(NCHNG.LT.0) CALL ERROR(630)                                    BJU32650
C                                                                       BJU32660
C     READ NCHNG PARAMETER CHANGES                                      BJU32670
C                                                                       BJU32680
      DO 200 I=1,NCHNG                                                  BJU32690
    3 READ(5,4)(ICOM(IA),IA=1,4),IPS                                    BJU32700
    4 FORMAT(A1,3A3,I5)                                                 BJU32710
      IF(ICOM(1).EQ.STAR) GO TO 3                                       BJU32720
      IF(IPS.LT.0) CALL ERROR (631)                                     BJU32730
    5 READ(5,6)(ICOM(IA),IA=1,4),(PARAM(IPS,JA),JA=1,4)                 BJU32740
    6 FORMAT (A1,3A3,4F5.2)                                             BJU32750
      IF(ICOM(1).EQ.STAR) GO TO 5                                       BJU32760
      IF(PARAM(IPS,1).LT.0.) CALL ERROR(632)                            BJU32770
      IF((IPS.GT.4).OR.(IPS.LT.70)) CALL CPTR(IPS)                      BJU32780
  200 CONTINUE                                                          BJU32790
      RETURN                                                            BJU32800
      END                                                               BJU32810
```

APPENDIX D

DATA SOURCES

There are a number of kinds and sources of data which should regularly be considered at the outset of a JRE study, when data sources must be matched up with data needs. We make one major distinction, between "objective" and "subjective" data. Briefly put, "subjective" data are data that must be extracted from peoples' minds for the purposes of a JRE; "objective" data means everything else -- i.e., data routinely recorded for purposes other than research, and data maintained for, or acquired in the course of, scientific research. The problems with objective data, as a type of JRE source, are access and the degree of similarity between the fact patterns from which they arose and the fact patterns to which the JRE relates. With subjective data, the main problems are developing methods of elicitation, and finding the most appropriate respondents.

Data Sources -- Objective Data

Data for the execution of justice resource estimates are available from a number of sources and in a number of forms. Data and estimation methodology are intertwined; however, assuming network simulation is the prime technique for arriving at justice resource estimates, a number of general observations can be made on available data.

Various components of the federal justice system collect, process, and analyze data. In each case the reasons are different and at present there is no overarching rationale, nor system of coordination, to link the data-gathering efforts of the Department of Justice, the federal courts, and ancillary agencies. Collected data serve essentially managerial functions of public institutions and the oversight functions of Congress. Facilitating scholarly or applied research is not a prime objective of most data collection. Existing information can be, and is, most productively used in important studies that focus on "macro" or systemwide variables. However, most scholarship and applied management research concerned with more detailed "micro" level variables affecting the case processing system have involved considerable independent data collection efforts.

Since they represent two separate branches of the national government, the Department of Justice and the federal court system collect and report data reflecting different tasks. There is some overlap in these two bodies of information but each exhibits idiosyncrasies of method, categorization, and selection. The problems arising from distinctive

features of these data bases are numerous and too closely linked to specific subjects and operations to be discussed in detail here. But, they do raise serious questions about attempts to combine data from several sources in the execution of a single resource estimate.

With these preliminary points in mind, the following is a general overview of salient characteristics of data, including sources within the Judicial and Executive branches.

Dockets

Each federal district court maintains an abbreviated history of each case that comes before it. For most districts, the information included in these capsule histories or dockets is a matter of local judicial policy administered by a clerk of the court. Dockets tell us when and how a case began, the judge who presided, record milestones in the case, motions by the parties, the eventual disposition and final award or sentence. For each recorded bit of data, a date is included so that in addition to charting the flow of a case from milestone to milestone, event to event the dockets can tell us the amount of calendar time elapsed between key decisional points. Obviously, dockets comprise an invaluable source of raw data for network simulation.

Case Files

For every docket sheet there are often copious supplementary records maintained in the archives of individual courts. These provide elaboration on the brief docket entries and include support information bail, pleas, all defense, prosecution (plaintiff) motions, opinions of the bench, results of discovery, and contributions of expert witnesses. Like the dockets, this content of case files are governed by local courts. Compared to case dockets, these files probably contain little data of direct relevance for network simulation.

The Administrative Office of United States Courts (A.O.)

The A.O. collects and processes some form of data from court dockets on every case that enters the federal court system. Using a series of reporting forms (JS1 through JS5) the Statistical Analysis and Reports Division receives regular breakdowns on criminal and civil cases, which are required either by the Judicial Conference or Congress. The A.O. is currently pilot testing the automation of dockets, which would ultimately link all 94 districts to Washington in an elaborate and uniform data collection network. As yet however, the preponderance of reporting is done by hand, by clerks from raw dockets.

This case reporting effort results in massive amounts of data, from which several important publications result:

- Annual Report of the Director - This provides an overview of the operations of the entire system. Reporting is by circuit and by district, cases are categorized by statute or offense and, where relevant, basis of federal jurisdiction. Usually one can determine on the basis of these large categories the number of a certain type of case (assuming it is one included in A.O.'s system of categories) in a given district and

nationally, method of disposition, outcome of disposition and, for criminal cases, some detailed information on the status of defendants and convicted offenders.

- Court Management Statistics - This report, issued annually, provides an overall statistical profile of every federal court. It includes data on various types of actions per judgeships and courtwide median times from filing of a case to disposition.

- Federal Offender/Sentences Imposed Reports - Combined, these reports may be the most elaborately detailed of A.O. publications. They provide information on methods of criminal disposition and type of sentence broken down by district and by very specific offense categories.

- Reports on Implementation of the Speedy Trial Act - The Speedy Trial Act imposed time limits on several stages of the federal criminal process. Congress requires regular reporting of the progress made by courts in meeting these deadlines. This is accomplished through reports which show both national and district statistics on time intervals from arrest to indictment, indictment to arraignment, arraignment to trial (appeal or dismissal), and trial to sentencing. These reports also include reasons for delay in meeting deadlines and statistics on the number of persons detained prior to trial. While not broken down by offenses, these data may allow the setting of ranges and probabilistic distributions for those processing arcs in network simulation that correspond to the stages affected by the Speedy Trial Act.

The A.O. does not report all the data it collects, nor does it combine these data in every permutation of currently reported categories. The Statistical Analysis and Reports Division can retrieve collected, but unreported, data through the use of special programs. When faced with the task of executing a justice resource estimate this Division should be formally notified of our exact data needs to determine if they can provide them from their files.

COURTRAN I

This is the pilot project mentioned above. Currently operational in ten (10) districts, this software package introduces a discipline to the sequencing and scheme of docketing in the affected courts. It also enables a wide range of calculations from the resultant data. If adopted throughout the country it will homogenize a currently idiosyncratic and inconsistent process of data collection. Until then, the COURTRAN courts may be considered a possible sample from which some generalization might be possible. In the discussion of the specific data requirements of network simulation the points at which COURTRAN might be particularly useful will be included.

The Department of Justice

The Department of Justice is a potentially rich source of data. Like the federal court system, DOJ collects, processes and analyzes large amounts of data from managerial and Congressional reporting services. Profiles of the activities of the Department can be found in the Annual Report of the Attorney General and more detailed information on criminal and civil cases can be found in the annual United States Attorneys' Offices Statistical Report. As with comparable publications of the Court System, some data can be drawn from these essential documents. Data which are collected but unpublished are available through the Legal Information Systems Service and all available data files are listed in the Information Systems Catalog, prepared by the staff of Information and Communications Systems of the Office of Management and Finance. As will be noted below, data from these sources should be used in conjunction with that collected by the courts, but there are also mechanisms which allow for rapid retrieval in certain areas.

Published Judicial Opinions

Published judicial opinions are coded by the West Publishing Company according to a highly detailed dictionary of key words, and in systems such as JURIS and LEXIS, are entered full-text into computer files. Whether by manual search in West publications (by key words), or by word or phrase-based retrieval in the computerized systems, one can readily get a list of cases that pertain to the subject one intends to research. The published record of factual findings and legal rulings that can be accessed from that list supply data on an aggregation of cases, all on the same specified topic. The kinds of information that one might expect to find in these records, and limitations on their research utility, include the following:

- Outcomes - numbers of dismissals, withdrawals, settlements, judgments, bench or jury trials, etc. This sort of information could be useful in validating network simulation, although only with careful expert-opinion interpretation. Not all published opinions deal with case dispositions, but may instead contain rulings on motions or other matters short of final outcome. That is, some intermediate decision point may be reported. The object may, however, be to retrieve cases in which an intermediate matter, such as a type of motion corresponding to some internal part of a network diagram, without particular concern for what the verdict or judgment later proved to be. Published opinions at the appellate level give counts of cases, by specified type which extend to post-trial adjudications.

- Types of parties - whether plaintiff or defendant is a private individual, a small business, a corporation, a State, the United States, etc. Some information about the kinds of parties in cases on a given subject can be expected to be found in published opinions. This may be needed as part of the modeling of inputs to a case processing system. Knowing what type of party was involved can lead to a decision as to whether subsequent experiences in the case processing system vary according to type of litigant. This may then, influence system modeling.

- Factual background - what conditions are evident that might explain why the case arose. This could be important in estimating feedback relationships between external factors and the case processing system.

- Elapsed time - total time from case filing to date of opinion. To the extent the opinion explains what transpired, it will show not only what path the case followed through the system, but what amount of time was involved, as well.

These few observations above indicate that published opinions, because of their retrievability and content, have some research potential. The actual extent of research utility has not to our knowledge been established, though we may be able to make some contribution in that area in the justice resource project. Some shortcomings of published opinions as research data should be noted:

- Deciding to publish - whether a judge or judicial panel will decide to publish their findings or rulings. We know of no requirement on a judge to write; a ruling may be made in open court and not reduced to writing, or written and circulated only to the parties, or written and not circulated beyond the case file. Judges are not subject to a "publish-or-perish" rule, and the decision is mainly individualistic.

- Coverage - what aspects of a case are written about in the opinion. This depends on what the judge feels is necessary to explain the ruling, and is highly individualistic, tied to both the particular judge and the particular case. Apart from a statement of outcome, some description of the parties, some background on how the issue arose, and time from filing to opinion, there may be nothing that one could expect to find consistently covered.

- Sampling bias - relating to what subset of cases on a given subject enter into the published opinions. It is likely that the cases on a given factual subject that result in published opinions will mainly be those where some novel legal question has to be answered. These cases cannot be expected to be typical of all such fact questions. The nature and extent of bias in reporting could be explored by comparing the data from a sample of published opinions with the same sort of data in a sample of case files drawn from the same jurisdiction and time period.

It is also somewhat of a shortcoming that extracting such data requires that the data gatherer possess some degree of legal training, since judicial opinions are written for a legally-trained leadership, and a point one wishes to research may be found in the midst of a discussion of some intricate legal matter. This problem may be more than offset, however, by the fact that published judicial opinions are in a completely centralized data source, requiring no field expeditions, authorizations, and cooperation on the part of study respondents.

Automated Data Processing Case Retrieval Systems

One means for expediting JRE research on case-processing systems is the utilization of automated data processing (ADP) case retrieval systems. ADP systems encompass a broad range of information on such subjects as arrests, crime trend analysis, court calendaring, docketing, jury management, and workload analysis.[1/] Some of the ADP systems which would seem most pertinent to the Justice Resource Estimation project might be the court caseload management and reporting systems, case disposition records, juvenile data systems, courtroom event systems, courts workload analysis, and case statistics systems. Many of these data systems contain information relating to the specifics of the court actions for each case passing through the justice system. Certain problems associated with their use are accessibility and scarcity of automated systems with federal level data. Information from State and local jurisdictions are considerably more numerous and contain a great deal of detailed information. Data for the federal court system are less often available and frequently lack the desired level of detail.

Some of the exemplary ADP systems utilized at the local level are being expanded to include federal cases. For example, the

---

1/ For a more complete listing, see the Directory of Automated Criminal Justice Information Systems, U.S. Department of Justice, Law Enforcement Assistance Administration.

Prosecutor's Management Information System (PROMIS) of the District of Columbia was first transferred for use in twenty-two other jurisdictions and is now planned for implementation in the D.C. District Court.*

Other ADP systems that provide useful information for the JRE project are the Federal Legal Information Through Electronics (FLITE) and the Department of Justice's own Justice Retrieval and Inquiry System (JURIS). FLITE is basically a military justice data system. The full text of the U.S. Code is in the system, as well as opinions of the U.S. Court of Military Appeals, and published and unpublished decisions of the Comptroller General. Use of FLITE would be most helpful in researching cases and decisions pertaining to military law.**

JURIS is a legal information retrieval system operated by the U.S. Department of Justice (DOJ) primarily for the use of DOJ attorneys in pursuing legal research. JURIS provides an interactive capability via terminal (leased line or dial up).

---

* See the "Overview of PROMIS," page D-18.

** See the "Overview of FLITE," page D-20.

JURIS is ideal for arranging information pertaining to caselaw, statutes, or published digest materials. JURIS can facilitate and speed up the process of locating published opinions on federal cases of a certain type. One can be relatively certain that a search on the JURIS system will elicit the case type or will cite the cases which are of interest. This saving of time and effort may permit the legal researcher to devote more time to reviewing relevant opinions and cases rather than to searching for these materials.

One other case retrieval system should be mentioned, which is LEXIS. It is similar to JURIS in being a full-text, key word in context system, accessible through remote terminals, and may without a great deal of distortion of reality be thought of as the private-sector version of JURIS. It is strictly proprietary. Its coverage of federal judicial opinions appears to be more extensive than JURIS, with respect to how far it extends into the past. Perhaps the major difference between JURIS and LEXIS from our point of view is that LEXIS includes opinions from the reporters for a number of States.

OVERVIEW OF PROMIS (1976)

STATE(S)----------DISTRICT OF COLUMBIA
JURISDICTION(S)----------WASHINGTON

NAME OF SYSTEM----------PROSECUTOR'S MANAGEMENT INFORMATION SYSTEM
CODE NAME----------PROMIS

FEDERAL REGION(S)----------03
SYSTEM CATEGORY----------COURTS
AGENCY(S)----------U.S. ATTORNEY'S OFFICE

POPULATION AREA SERVED----700,000
PRESENT STATUS----------OPERATIONAL
OPERATIONAL DATE----------01/01/71

CONTRACTOR(S)
INSLAW (ACTIVE)

COST OF SYSTEM
TOTAL DEVELOPMENT COSTS---NOT REPORTED
TOTAL ANNUAL COSTS--------57,000
TOTAL LEAA FUNDS USED-----NOT REPORTED

TRANSFERRED SYSTEM--------NO
TELECOPIER----------NONE

PLANNED ADDITIONS---IMPLEMENTATION FOR FEDERAL CASES IN DISTRICT OF COLUMBIA. ADAPTATION TO INCLUDE CONSUMER COMPLAINTS.

SOFTWARE----------OS/VS;FASTER
HARDWARE----------IBM 370/158
3330 DISKS, 3275/3277 CRT'S
CPU--LEASED, PERIPHERAL--LEASED
ENVIRONMENT---------SHARED ONLY WITH OTHER CRIMINAL JUSTICE SYSTEMS
INTERFACE----------TERMINAL WITH WALES
TERMINAL WITH NCIC
DOCUMENTATION-------COMPLETE

PROMIS IS AN AUTOMATED INFORMATION SYSTEM DESIGNED TO ASSIST THE PROSECUTOR IN THE PLANNING, CONTROL AND RESEARCH OF A LARGE VOLUME CRIMINAL CASE SYSTEM. PROMIS RANKS PENDING CASES ACCORDING TO THEIR RELATIVE URGENCY FOR PROSECUTION SO THAT THE MANAGEMENT OF THE PROSECUTORS OFFICE CAN INTELLIGENTLY ALLOCATE SCARCE MANPOWER FOR PREPARATION AND TRIAL OF CASES. IT AUTOMATICALLY PRODUCES WITNESS SUBPOENAS AND SCHEDULING REPORTS. PROMIS ALSO TRACKS ALL CASES IN THE COURT SYSTEM THROUGH FINAL DISPOSITION, AND CAPTURES FOR RESEARCH PURPOSES ALL PARTICULARS ABOUT EVERY COURT ACTION IN A CASE. PROMIS HAS BEEN DESIGNATED AN EXEMPLARY PROJECT BY LEAA AND IS CURRENTLY BEING TRANSFERRED TO TWENTY-TWO OTHER JURISDICTIONS.

RESPONSIBLE AGENCY CONTACT
DEAN C. MERRILL
VICE PRESIDENT, INSLAW
1125 FIFTEENTH ST. N.W., #625
WASHINGTON,D.C. 20005
202 872-9380

DATA PROCESSING CONTACT
SAME

**** SYSTEM FUNCTIONS ****

FUNCTION	LANGUAGE	DOCUMENTATION	MODE	STATUS
ARRESTS	COBOL	COMPLETE	MIXED	OPERATIONAL
CALENDARING/SCHEDULING	COBOL	COMPLETE	MIXED	OPERATIONAL
CASE CONTROL	COBOL	COMPLETE	BATCH	OPERATIONAL
CASE DISPOSITION REPORTS	COBOL	COMPLETE	BATCH	OPERATIONAL
COMM-ON-LINE INQUIRY	FASTER	COMPLETE	ON-LINE	OPERATIONAL
CRIME TREND ANALYSIS	COBOL	COMPLETE	BATCH	OPERATIONAL

CONTINUED

3 OF 4

**** SYSTEM FUNCTIONS CONT. ****

FUNCTION	LANGUAGE	DOCUMENTATION	MODE	STATUS
DEFENDANT CONTROL	COBOL	COMPLETE	BATCH	OPERATIONAL
GEOPROCESSING (GEOCODING)	COBOL	COMPLETE	BATCH	OPERATIONAL
OFFENDER BASED TRANSACTION STATISTICS	COBOL	COMPLETE	BATCH	OPERATIONAL
PROSECUTION MANAGEMENT	COBOL	COMPLETE	MIXED	OPERATIONAL
RESEARCH/STATISTICS	COBOL	COMPLETE	BATCH	OPERATIONAL
RESOURCE ALLOCATION	COBOL	COMPLETE	BATCH	OPERATIONAL
SUBJECTS-IN-PROCESS	COBOL	COMPLETE	MIXED	OPERATIONAL
SUMMONS CONTROL	COBOL	COMPLETE	BATCH	OPERATIONAL
WITNESS CONTROL	COBOL	COMPLETE	MIXED	OPERATIONAL
WORK LOAD ANALYSIS	COBOL	COMPLETE	MIXED	OPERATIONAL

OVERVIEW OF FLITE (1976)

STATE(S)----------FEDERAL
JURISDICTION(S)----------FED GOVT

NAME OF SYSTEM----------FEDERAL LEGAL INFORMATION THROUGH ELECTRONICS
CODE NAME----------FLITE

FEDERAL REGION(S)---------00
SYSTEM CATEGORY----------COURTS,OTHER
AGENCY(S)----------JUDGE ADVOCATE GEN, USAF

POPULATION AREA SERVED----NOT REPORTED
PRESENT STATUS----------OPERATIONAL
OPERATIONAL DATE----------01/01/67

CONTRACTOR(S)
NONE REPORTED

COST OF SYSTEM
TOTAL DEVELOPMENT COSTS---8,500,000
TOTAL ANNUAL COSTS--------500,000
TOTAL LEAA FUNDS USED-----NO LEAA FUNDS RECEIVED

TRANSFERRED SYSTEM--------NO
TELECOPIER----------NONE

PLANNED ADDITIONS---DEVELOPMENT OF DATA BANK OF FEDERAL STATUTORY, REGULATORY, AND DECISIONAL LAW

SOFTWARE----------OS/MVT ASP;
HARDWARE----------IBM 360/65
3330 DISK, 1403 PNTR, 2540 CRDR, TI 924-6 TAPE STATIONS
CPU--LEASED, PERIPHERAL--LEASED
ENVIRONMENT---------SHARED WITH OTHER GOVERNMENTAL SYSTEM
INTERFACE----------NO INTERFACE SYSTEMS
DOCUMENTATION-------PARTIAL

FLITE (FEDERAL LEGAL INFORMATION THROUGH ELECTRONICS) IS A SYSTEM WHICH USES COMPUTER TECHNOLOGY TO STORE, SEARCH AND RETRIEVE LEGAL INFORMATION. IT IS A DEPARTMENT OF DEFENSE ACTIVITY, MANAGED AND OPERATED BY THE U.S. AIR FORCE AS EXECUTIVE AGENT. THE FLITE SEARCH SERVICE IS AVAILABLE TO ALL DOD ACTIVITIES, WITHOUT CHARGE, AND TO ALL FEDERAL, STATE, AND LOCAL GOVERNMENT AGENCIES ON A COST REIMBURSEMENT BASIS. THE DATA BANK INCLUDES THE FULL TEXT OF THE UNITED STATES CODE; COMPTROLLER GENERAL DECISIONS (PUBLISHED AND UNPUBLISHED); COURTS-MARTIAL REPORTS; MANUAL FOR COURTS MARTIAL (1969 REV.); BOARD OF CONTRACT APPEALS DECISIONS; ARMED SERVICES PROCUREMENT REGULATIONS; INTERNATIONAL LAW AGREEMENTS; COURT OF CLAIMS DECISIONS; U.S. SUPREME COURT REPORTS; FEDERAL SUPPLEMENT; FEDERAL REPORTER 2D SERIES.

RESPONSIBLE AGENCY CONTACT
A. L. BERTHELSON, CHIEF
ATTORNEY SECTION, FLITE
HQ USAF/JAESL
DENVER, COLORADO 80279
303 825-1161

DATA PROCESSING CONTACT
CHARLES P. HOWERTON, CHIEF
EDP SECTION, FLITE
HQ USAF/JAESL
DENVER, COLORADO 80279
303 825-1161

**** SYSTEM FUNCTIONS ****

FUNCTION	LANGUAGE	DOCUMENTATION	MODE	STATUS
LEGAL INFO RETRIEVAL	COBOL	PARTIAL	BATCH	OPERATIONAL

OVERVIEW OF JURIS (1976)

STATE(S)----------FEDERAL
JURISDICTION(S)----------FED GOVT

NAME OF SYSTEM----------JUSTICE RETRIEVAL AND INQUIRY SYSTEM
CODE NAME----------JURIS

FEDERAL REGION(S)---------00
SYSTEM CATEGORY----------COURTS,OTHER
AGENCY(S)----------DEPARTMENT OF JUSTICE

POPULATION AREA SERVED----NOT REPORTED
PRESENT STATUS----------OPERATIONAL
OPERATIONAL DATE----------07/01/74

CONTRACTOR(S)
NONE REPORTED

COST OF SYSTEM
TOTAL DEVELOPMENT COSTS---300,000
TOTAL ANNUAL COSTS--------600,000
TOTAL LEAA FUNDS USED-----NO LEAA FUNDS RECEIVED

TRANSFERRED SYSTEM--------NASA ;RECON
TELECOPIER----------NONE

PLANNED ADDITIONS---ENHANCEMENT OF USER INTERFACE STRUCTURE

SOFTWARE----------OS/MVT REL 21.7;CICS V2.3
HARDWARE----------IBM 370/155 2M
3330 DISK, 8-R 2000 CRT, CRDR, PNTR, TAPE
CPU--LEASED, PERIPHERAL--LEASED
ENVIRONMENT---------SHARED WITH OTHER GOVERNMENTAL SYSTEM
INTERFACE----------NO INTERFACE SYSTEMS
DOCUMENTATION-------PARTIAL

THE JURIS SYSTEM PROVIDES AN INTERACTIVE CAPABILITY VIA TERMINAL (LEASED LINE OR DIAL-UP) FOR DEPARTMENT OF JUSTICE ATTORNEYS TO PURSUE LEGAL RESEARCH. THE FULL TEXT AND/OR INDEX TERMS OF LEGAL DOCUMENTS; E.G., COURT DECISIONS, ARE STORED IN THE COMPUTER AND ARE RETRIEVED BY SPECIFYING TO THE COMPUTER WHICH WORDS ARE DESIRED. THE SYSTEM IS USED TO SUPPORT GENERAL LEGAL RESEARCH, AS WELL AS INDIVIDUAL LITIGATION EFFORTS.

RESPONSIBLE AGENCY CONTACT
B. W. BASHEER, CHIEF
LEGAL INFORMATION SYSTEMS GP.
DEPARTMENT OF JUSTICE
WASHINGTON, D.C. 20530
202 376-7123

DATA PROCESSING CONTACT
SAME

**** SYSTEM FUNCTIONS ****

FUNCTION	LANGUAGE	DOCUMENTATION	MODE	STATUS
LEGAL INFO RETRIEVAL	ASSEMBLY	PARTIAL	MIXED	OPERATIONAL

FIVE FILE GROUPS OF THE JURIS DATABASE
(Revised January 1979)

CASELAW:

U.S. Supreme Court	1900 - advance sheets
Federal Reporter, 2nd Series	June 1962 - slip opinions (West proofs)
Federal Supplement	January 1970 - slip opinions (West proofs)
Court of Claims	February 1956 - June 1975
Federal Rules Decisions	March 1975 - advance sheets
Court of Military Review, Vols. 1-50	1951 - 1975
Military Justice Reporter	1975 - to date

DIGEST:

Modern Federal Practice Digest	
Supreme Court Reporter	1960 - advance sheets
Federal Reporter, 2nd Series	1960 - advance sheets
Federal Supplement	1960 - advance sheets
Federal Rules Decisions	1960 - advance sheets
Federal Digest	
Regional Reporters (State cases)	1967 - advance sheets

STATUTORY LAW:

United States Code	1970 ed. through Supp. II
Public Laws	93rd Congress - 95th Congress
Executive Orders	July 1973 - April 1975
Code of Federal Regulations, Titles 10, 18, 28, 37, and selected portions of 7, 24, 36, and 40	1974 ed.

ADMINISTRATIVE LAW:

Comptroller General Decisions, Vols. 1-54	July 1921 - June 1975
Nuclear Regulatory Commission Decisions	March 1972 - April 1978

DISTRICT OF COLUMBIA LAW:

D.C. Court of Appeals (criminal decisions only)	February 1971 - May 1975
Atlantic Reporter, 2nd Series (DCCA only)	June 1976 - November 1977
U.S. Attorneys Office briefs filed in the U.S. Court of Appeals, D.C. Circuit	January 1974 - May 1975
Selected D.C. Superior Court decisions (criminal only)	January 1966 - November 1974
Washington Law Reporter	October 1969 - April 1976

Special Studies

Once the data requirements have been established, the research analysts then have the rather large task of ferreting out applicable research reports. There are various means by which this might be accomplished. One avenue might be to inquire of experts in the field of interest as to possible studies that might have generated the kind of data currently being sought. Possible constraints on this approach include the time available for locating and requesting assistance from experts, as well as their willingness to cooperate and their knowledgeability about the subject matter. It may or may not be readily apparent who the "experts in the field" actually are. The "justice system" consists of lawyers representing a very broad array of interests, judges, court clerks, court administrators, and many other less permanent actors such as clients, defendants, witnesses, etc. Any of these types of actors may have had occasion to know about research pertaining to the justice system. In addition, there are numerous scholars of the legal system who would, presumably, be familiar with pertinent studies. Research personnel at the Federal Judicial Center are an excellent source of scholars who are familiar with studies relevant to legislative and other impacts on the federal justice system. In many, if not all, cases, guidance of the intended JRE user will be helpful, both in locating studies, and in locating the appropriate experts.

Libraries, particularly institutions which specialize in specific subject areas, often will have reference personnel who have a

great deal of expertise in recalling and locating research materials. These may also provide a rich source for familiarizing a project team with applicable studies as well as realizing the "state-of-the-art" in the field. The use of libraries should include a routine search of available empirical studies using Readers' Guide to Current Periodical Literature, Public Affairs Information Service, and Index to Legal Periodicals. The SCORPIO system for scanning the book and periodical holdings of the Library of Congress will greatly aid in this effort.

The time and effort expended in locating and examining relevant studies will sometimes be better spent than the time, money, and work hours needed to develop a research study. The construction and preliminary testing of data gathering instruments is usually a rather expensive and time-consuming process. The data collection and preparation for data analysis stages may likewise require a great deal of time and effort on the part of many employees. The analyses of the data and writing of results, etc., are also crucial points in the research that are dependent on highly skilled and knowledgeable individuals. In those instances in which time, finances, and highly skilled personnel are at a premium, a secondary analysis of a relevant body of data will provide a considerable economy of scarce resources.

Secondary analysis basically entails the testing of hypotheses "on data that were originally collected and analyzed by others for some other purpose."*

---

* Gerald S. Ferman and Jack Levin, Social Science Research. (New York: John Wiley and Sons, 1975), pp.58-59.

Freed from the collection and processing of data, the researcher may devote his major efforts to the development and analysis of the problem.

The primary problem associated with conducting a secondary analysis is the location of data that provide a good "fit" with the hypotheses of interest. Because the data collection instruments were not specifically designed to provide data for the questions posed by the JRE researcher, there may not be enough information or detail in the responses to completely satisfy the needs of the current study. The main job, therefore, is to select very carefully the data set that comes closest to matching the information requirements with the data. If the data are too far from addressing the principal issues, a secondary analysis would be useless. The section of this report that deals with subjective data raises the point, however, that the proper sort of opinion or expert judgment may be able to transform, through analogy, data generated in one setting into data suitable in another setting.

Our experience in the justice resource project in tracking down data in the areas of juvenile justice and class action reform are illustrative of the above steps. Experts were contacted and special library resources were tapped and scrutinized in order to arrive at candidate studies for secondary analyses.

The class action portion of the project may be used as an example of the investigative process that took place in obtaining sources of secondary data. Numerous experts were consulted, including two who had worked directly in the area of class action research/litigation. Several Federal

Circuit Executives, from various parts of the country were contacted for advice in locating federal level research. Two researchers contacted were employed in the Research Division of the Federal Judicial Center.

The archival resources utilized were primarily the Library of Congress, including the American Law Section, several local law libraries, the Federal Judicial Center Library, and LEAA's library, the National Criminal Justice Reference Service.

The next major steps involved the obtaining and examination of documents procured through the search process. Research reports were read and authors were contacted for more detailed information or clarification. Further contacts were initiated to seek out sources for raw data when the studies were thought to be pertinent. At this latter point, a Class Action Data Catalog was established in order to organize the procurement process. The data catalog consisted of a matrix with the data sources referenced down the rows and specifications of the data contents across the columns. The data specifications noted were:

1) the authorship, date, and location of the publication;

2) the current physical location and proprietorship of the raw data files;

3) data availability: machine readability and costs;

4) case selection factors: sampling techniques, period of data collection, substantive area of the law, and geographic spread;

5) number of cases; and,

6) research documentation.

The data catalog also included a column for comments which were maintained on an ongoing basis to enable the research team to monitor the progress of obtaining data files from the various sources.

Once the data files were received they were examined to determine the "fit" of the available data to the research problems. This involved finding time distributions for the activities that occur in class action cases, probabilities for activity occurrences, and time distributions for system actors performing the activities.

Case-Weighting Study

The Federal Justice Research Program of the Office for Improvements in the Administration of Justice and the Executive Office for U.S. Attorneys funded a project to develop a case-weighting system for U.S. Attorneys' Offices. The purpose behind the study was to improve the ability of the various offices to estimate the number of assistant U.S. attorney positions needed for incorporation in the budget.

The case weights estimated the workload associated with particular types of cases. The service times associated with the particular events and activities occurring in the lives of cases were also tabulated.

This level of detail is what the simulation model requires in order to accurately assign the amount of time to the various activities which modeled attorneys perform. The same level of detail is needed for all modeled actors, federal judges and any other system resources which the user may wish to examine.

The data collected and published in the "Allocation of Resources to U.S. Attorney's Offices: A Case-Weighting Approach" was used in estimating the processing times for various case events. Also special data runs were made to produce distributions of processing times for specific case events and activities of federal criminal cases.

Such studies are needed for both U.S. Attorneys and the judiciary in order to make most efficient use of simulation models.

END