DYNAMIC SIMULATION MODEL OF A LOCAL SWITCHING NETWORK

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of a
LOCAL SWITCHING NETWORK

by

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ABSTRACT

The North American telecommunications system is a vast network with thousands of switching nodes. The main function of the telecommunications network is to interconnect all of these nodes, as well as the telephone subscriber, with one another. The optimization of the equipment configurations to achieve these interconnections in the most econonomical manner presents an ideal opportunity for the application of simulation techniques.

The vast majority of switching centres in Newfoundland and the rest of North America employ analog technology. Most of these switches are vintage equipment and do not have the service, feature and maintenance capabilities of the newer-generation digital switches. It is generally agreed among telecommunications engineers that converting to digital will have long-term benefits. The planning problem has therefore become one of how to convert from analog to digital technology with a minimum of disruption of service and a minimum of cost.

The introduction of digital technology into communications has compounded the network planning problem because of the distributed nature of digital communications as well as the large amount of capital required for digital conversion.

This report uses system dynamics techniques to examine the planning aspects of the local telecommunication network. A model was developed which was capable of simulating up to seven local central offices. This model utilizes present worth of annual charges(PWAC) as the evaluator to assess a number of simulations for different planning configurations and arrives at the optimum plan for local network evolution. The Bay Roberts/Carbonear area in Newfoundland was investigated for the purposes of this study. The study demonstrates that system dynamics is a valuable technique for the analysis of telecommunications networks.

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CHAPTER 1 INTRODUCTION

1.1 PLANNING REQUIREMENTS FOR THE TELECOMMUNICATIONS INDUSTRY

The telecommunications carrier industry, especially the public telephone utility sector, is very highly capital intensive, requiring massive amounts of capital for growth, expansion and operation. In 1980, the ten companies comprising the TransCanada Telephone System required $2.4 Billion for capital construction and another $3.9 Billion for operating expenses. Newfoundland Telephone, one of the smaller Canadian telephone utilities, serves approximately 128,000 subscribers and required over $34 Million in 1980 for capital expansion. The management of this capital spending is a major concern to all telephone managers and a considerable amount of engineering effort is expended in planning activities relative to decision making on how to wisely make use of available capital. Technical planning has therefore been very sensitive to the availability of capital and in the majority of cases, engineering economic analysis is the critical factor in determining the optimal technical plan.

One of the major factors impinging on telecommunications planning within the past several years has been the introduction of digital technology. Until very recently, all facilities, both switching and transmission, have been analog. The advent of digital technology has generally been accepted by the industry to be more desirable from a technical and service point of view, and long-range engineering studies indicate that the long term replacement of analog with digital facilities has economic and technical advantages. The engineering problem has therefore become one of how to convert to digital technology with a minimum disruption of service while minimizing expenses. In the long range planning of digital facilities, certain basic questions must be addressed. These include determining what would be the optimum timing for the replacement of analog technology, whether all analog plant should be replaced simultaneously and whether new digital facilities should only accommodate growth or totally replace the existing analog plant.

1.2 EXISTING PLANNING METHODS

Engineering planning in the telecommunications industry can be divided into several specific categories. These categories, which are illustrated in Figure 1, consist of toll, local and outside plant. In the North American switching plan, there are five levels of switching. These range from the 'Class 1' Montreal and Regina Primary Centres, which handle all international traffic, to the 'Class 5' local switching offices, which may vary in size from the dozen or so lines of many remote communities, up to the tens

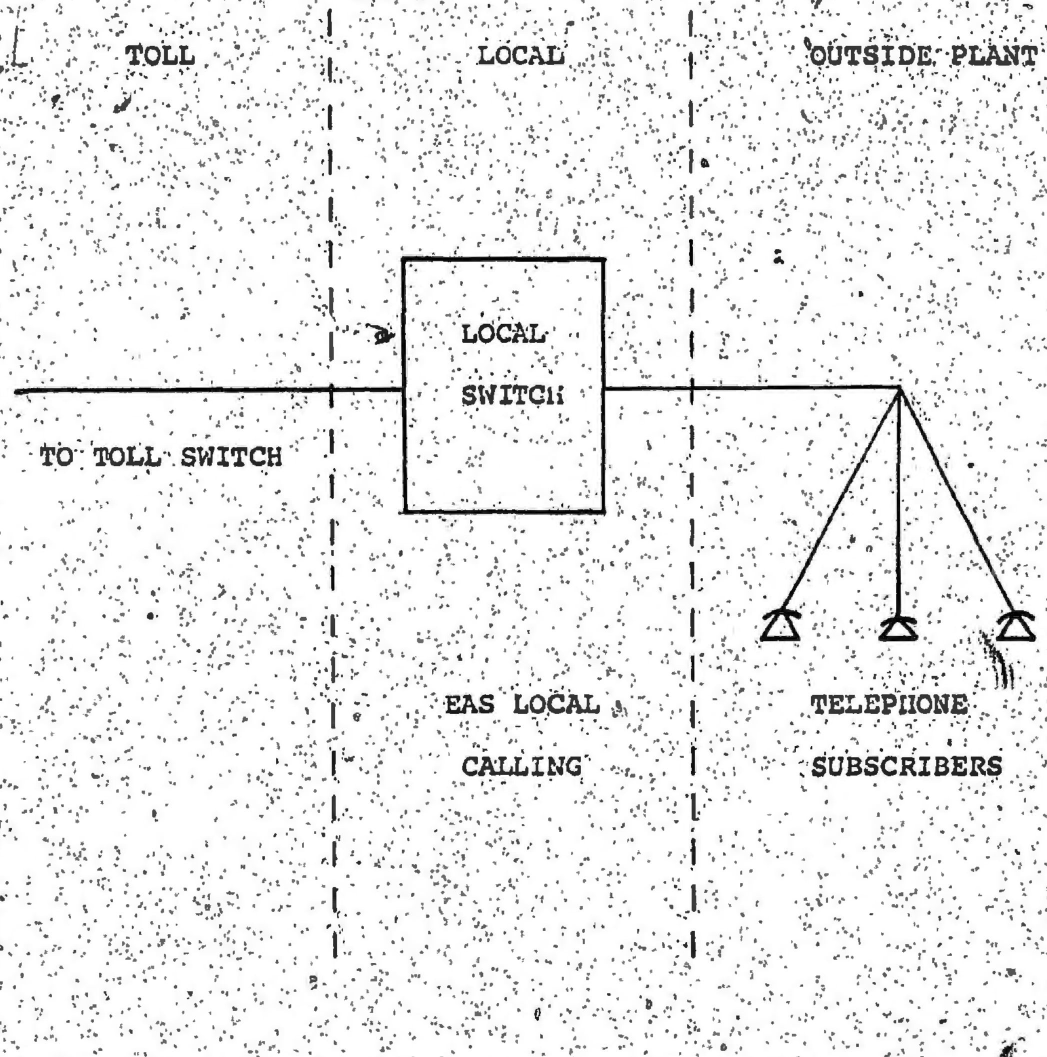


FIGURE 1- Toll/Local/Outside Plant Planning Areas.

of thousand line sizes in the larger metropolitan areas. A schematic of the North American switching hierarchy is presented in Figure 2.

1.21 Local

This area of planning activity examines the growth and expansion of the local telephone switching network. In order to provide local telephone service, many centrally located switching machines are required in order to terminate local subscriber lines. Generally, most small towns have their own central office which in turn serve the smaller communities by means of feeder cable, while some of the larger cities may have one or more central offices. In the St. John's, Newfoundland area, for example, there are central offices in Pouch Cove, Torbay, Bell Island, Witless Bay, Mount Pearl, Long Pond, Portugal Cove and Harbour Maine, as well as two locations in St. John's.

All central offices are interconnected with one another by means of trunks. Trunking may be provided over either radio or cable facilities; however, in most local situations, cable is used. Trunks from Long Pond to St. John's, for instance are carried on pole line, while the trunks between Harbour Main and St. John's are carried on microwave radio. The equipment requirements in a given office are dependent on growth and the community of interest with other locations. A large growth in the Long Pond exchange, for instance, would

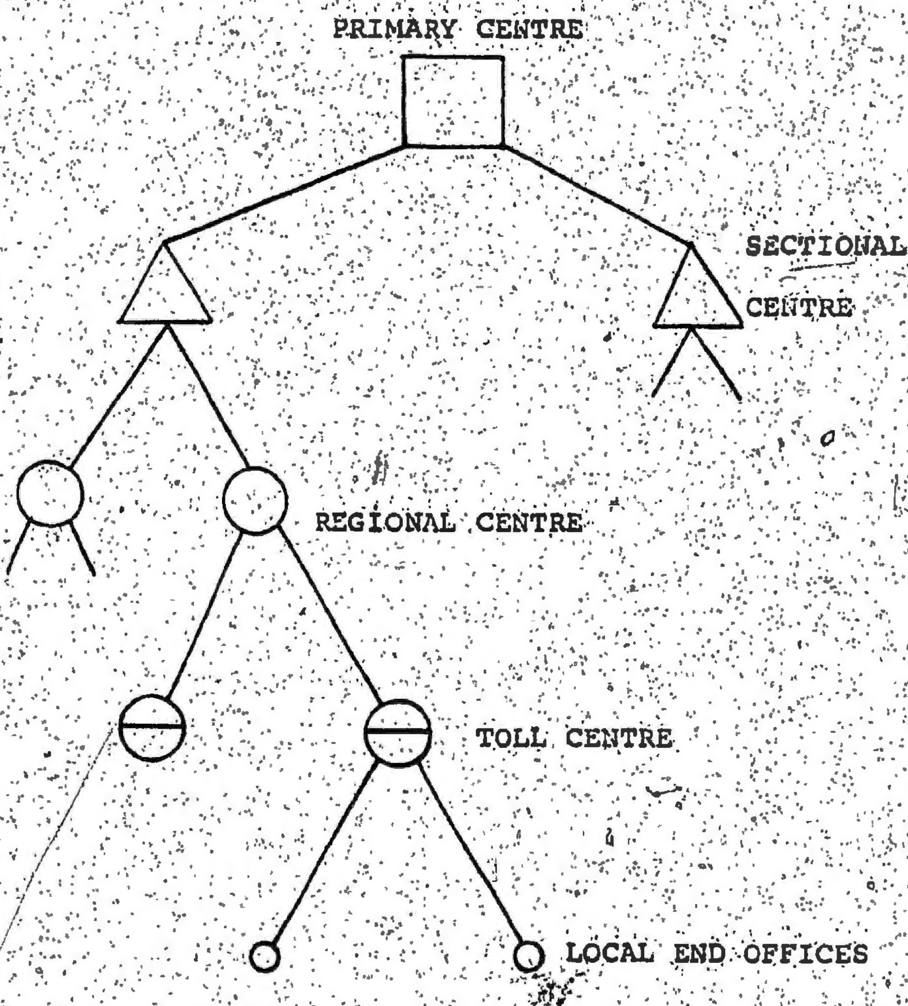


FIGURE 2- North American Switching Hierarchy.

require more trunk facilities between Long Pond and St. John's, as well as additional switching equipment at each location.

1.22 Toll

This area of planning activity is concerned with the growth and expansion of toll facilities. Whenever a long distance call is made, both switching and transmission toll facilities are utilized. In the setting up of a long distance call, the central office equipment is utilized as well as special equipment to handle inter-city switching, trunking and toll billing. For toll traffic, specialized transmission and switching equipment is required. Examples of this are the specialized dedicated toll switchers in both St. John's and Corner Brook and the toll microwave facilities connecting these locations. Other examples of dedicated toll equipment are the computerized toll operator position and the automatic toll billing equipment, which are not used at all for local calling, but exclusively for toll.

1.23 Outside Plant

This area of planning activity focuses on the outside plant facilities required for the provision of local telephone service within the area served by a central office. Planning of this nature includes cables, conduit, pole lines and other outside plant. Outside Plant planning, before the introduction of digital technology, had been essentially mutually exclusive of the type of central office switch on which local subscribers were terminated. Each telephone set, for example, required a dedicated pair of wires connected to the central office. With digital technology, however, subscriber telephone loops can sometimes be concentrated by using remote switching equipment into a few digital links between the remote units and the main switch located at the central switching office. In these cases, the boundary between Outside Plant planning and local planning becomes somewhat ambiguous.

1.24 Other Planning Areas

There are many other specialty areas in the telecommunications industry, such as building planning and special services planning, but these are not significant with respect to the major planning activities previously discussed.

It should be noted that all planning activities involve both long range plans and current plans. Each of these requires special approaches and techniques using both manual and computer tools as appropriate to each planning area.

1.3 Existing Computer Modelling Techniques

For some years, the computer has found use in the planning process. In recent times, the number of computer modelling techniques for planning analysis has been increasing with the advent of new and low cost computer technology. Apart from specialized stand-alone programs there are several common planning computer tools which are in widespread use in the industry. Most of these programs are engineering cost analysis related, but as of late several simulation tools have become available. Some of the common computer techniques are outlined in the following subsections.

All of the programs to be discussed were developed by Bell Canada and Bell-Northern Research (BNR), and are available on a timeshare basis.

1.31 EES-Economic Evaluation System

EES-Economic Evaluation System is a computer model used to analyse the cashflows generated by a project. The program develops engineering cost evaluators and financial and accounting indicators to determine the project's profitability. EES is the most widely employed tool in the telecommunications industry and is chiefly used to develop present worth studies. This program was developed by Bell Canada in 1972 and various versions of it have been in use since then. This program is used by most telecommunications carriers in Canada and has become the standard in the industry for economic cost studies.

EES is a deterministic static modelling technique whose greatest feature is its ability to perform an engineering eonomic assessment of vast amounts of cost input. Some of the cost inputs to the EES model are as follows:

1. Capital Expenditures
2. Expenses
3. Revenues
4. Cost of Equity
5. Cost of debt
6. Salvage and Cost of Removal
7. CCA Rates
8. Tax Rates

EES determines many engineering economic parameters including PWAC (Present Worth of Annual Charges), NPV (Net Present Value), PWCE (Present Worth of Capital Expenditures), as well as parameters such as AROR (Accounting Rate of Return), IROR (Internal Rate of Return) and many others. EES also determines cash flows, taxes, depreciation and has many other features which make it an invaluable tool for both engineering and financial uses.

The major drawback with EES as an engineering planning tool is that it can only perform economic analysis on static situations. Each planning alternative has to be separately costed out by the planner. In addition, all cost factors must be inputted into the model on a discrete basis, along with the time the expenditure is incurred as well as other pertinent information associated with the cost (eg. CCA rate, Average Service Life etc.).

The EES system does however have the ability to perform sensitivity analysis on the cost factors but can run only one planning alternative at a time. It cannot therefore simulate planning scenarios or assess the impact of changes in growth patterns.

As EES is only available on a timeshare basis from Bell Canada and BNR, use of this facility is both expensive and subject to the availability of access ports. As mentioned previously, EES, because of its size, requires a large computing facility. Because EES is so all-encompassing, it is unwieldly for planning use and is better suited for cost studies on large projects for which the planning options are defined and for which no sensitization on either the planning configuration or the growth rates will be required.

1.32 ACES-Annualized Cost Evaluation System

ACES is a computerized economic model which is used to produce annualized service costs and contributions for products and services. This model is primarily used to determine how much the telephone company will charge its customers for products such as decorator telephone sets as well as services such as specially designed assemblies for a customer's individual use.

ACES is another Bell Canada program which is standard throughout the telephone industry in Canada. It is an interactive program which is used for practically all service rating, allowing the comparison of rates for different products and services offerred throughout the Company.

The inputs to the ACES model are the costing data including all capital costs, expenses and maintenance costs, revenues, and the applicable economic parameters.

ACES is an excellent tool for developing service rates but it cannot be utilized to model network planning.

1.33 RDIP - Remote Digital Installation Provisioning

RDIP is a computer program which models the local distribution network when RLMS (Remote Line Modules) are used. RLMs are extensions of digital switching machines which are located in the field near centres of high telephone density. By using an RLM, telephone lines may be concentrated at the unit and trunked back to the digital central office on digital lines. The problem then is essentially one of trading off the cost of copper paired cable with an RLM unit and its associated digital links.

The RDIP program is used to perform an engineering economic evaluation on two plans. The first plan calls for a central office digital switch along with the appropriate feeder cable; the second plan calls for a digital central office switch with remote switching units.

The RDIP program performs an engineering economic analysis on a number of planning scenarios inputted by the user. The inputs are the location of the proposed RLM, the associated capital and expense costs, the usual economic parameters, outside plant information regarding the sizing of cable, and the calling patterns of the subscribers involved.

Since RDIP is not a dynamic computer model, details on each planning scenario must be generated by the user. This model only looks at a very small part of the network and is not suitable for large scale long range network planning.

1.34 RAPS - Route Analysis Planning System

RAPS is another BNR developed model which is used by planners in the planning, design and augmentation of Outside Plant feeder routes, i.e. those telephone cables which extend out from the switching central offices to serve a number of subscribers. From the feeder routes smaller copper paired cables branch out and subsequently connect telephone subscribers. One of the major concerns of Outside Plant design is the determination of the optimum sizing of cables. For instance, is it more economical to install a 400 pair cable initially or install two 200 pair cables on a phased basis? Another problem assessed is the sizing of the gauge of copper cable. The RAPS program helps address these problems and performs an analysis on the different scenarios inputted by the Outside Plant planner.

Some of the main inputs to this program are as follows:

1. Cable size, length and guage.
2. Capital and expense costs.
3. Economic parameters.
4. Forecast of requirements.
5. Details such as load limits, design limits etc.

RAPS is accessed by time share, but the computer results are usually so extensive that printouts are very costly. The cost effective way of obtaining output is achieved by sending the high speed printer outputs from BNR in Ottawa to the user via courier.

This program is an excellent simulation tool but its greatest drawbacks are its lack of interaction and its limitation to studies on a localized basis.

1.35 LNES-Local Network Evolution Study

LNES is a model used to optimize the timing and placement of local switches. This model permits the assessment of various local network configurations by determining the corresponding costs and engineering economic evaluators associated with the various switching and trunking network components.

The main inputs into this model are as follows:

1. Existing switching configuration.
2. Initial values of working and installed lines.
3. Initial traffic.
4. Line and traffic demands.
5. Study time
6. Cost models for switching and trunking equipment.
7. Existing trunk characteristics.
8. Evolution policy of the switching network.

LNES is a good example of the use of dynamic simulation and is the first such model developed expressly for the telecommunications industry. The model permits the development of different planning scenarios, varying costs and growth patterns and different planning horizons. All the usual engineering economic evaluators are developed for each scenario as well as the associated cash flows. The model is not self-optimizing and will only generate engineering cost data for the scenarios set up by the user.

LNES is a BNR developed program which requires a vast amount of computer run time. Runs using this program normally require printout of results at the Bell Canada computer. As in the case of EES, this program is expensive to run, subject to computer access problems and is a far too sophisticated and complicated program for general planning use.

CHAPTER 2 OBJECTIVES

2.1 INTRODUCTION

A systems dynamics model of the local telephone planning network will greatly simplify the work of the planning engineer in assessing the multiple planning options that are under study. The telephone network is in its own right a dynamic model which constantly changes to meet rapidly changing network requirements. Because of its dynamic nature, the telecommunications industry is particularly well suited for an examination using dynamic simulation techniques.

Many cost study models exist for planning purposes and several modelling techniques have already been discussed. These models usually require vast amounts of storage and are very costly to run. In addition to this, most models (with the exception of LNES) do not take into account the inter-relationship of planning events and the dynamic nature of the telecommunications network. There is a need therefore for a model which is applicable to the telecommunications network, and which will be relatively inexpensive to run as well as fairly simple and versatile for planning use. It is therefore the objective of this study to develop a dynamic simulation model that will assist in planning the local switching network. This model will take into account such factors as the impact of digital technology, the changes in growth patterns, and the variability of costs and network evolution.

2.2 OBJECTIVES

The overall objective of this report will be to develop a systems dynamic model of a local telephone switching network. Some of the specific objectives of this model will be as follows:

1. To simulate a local network of at least seven switching centres.
2. To assess the impact of the introduction of digital technology.
3. To assess the impact of the retirement of analog equipment.
4. To determine and assess the impact on capital and expense dollars.
5. To simulate the impact of the following factors:
   a. Change in forecast
   b. Change in costs
   c. Change in equipment lines
      trunks
      facilities
      remote units
6. To simulate the impact of various analog replacement dates.

7. To simulate the impact of various homing arrangements for RLMS.
8. To take into account the geographic separation between switching offices.
9. To determine present worth costs for the alternatives under study.
10. To develop trunk forecasts for the various planning scenarios.

2.3 METHODOLOGY

The simulation model under study will be developed with the use of Dynamo, a computer simulation technique developed by Alexander Pugh and extensively applied by Jay Forrester. Dynamo is discussed in further detail in Appendix B.

One of the first steps in the development of a model is the preparation of a schematic diagram of the situation to be modelled. In the case of subject under study, a sketch of the switching configuration is given in Figure 3. For demonstration purposes, this figure illustrates only three switching offices. A small sample is used for the sake of simplicity, keeping in mind that the number of interconnections between offices increases exponentially with each new office added.

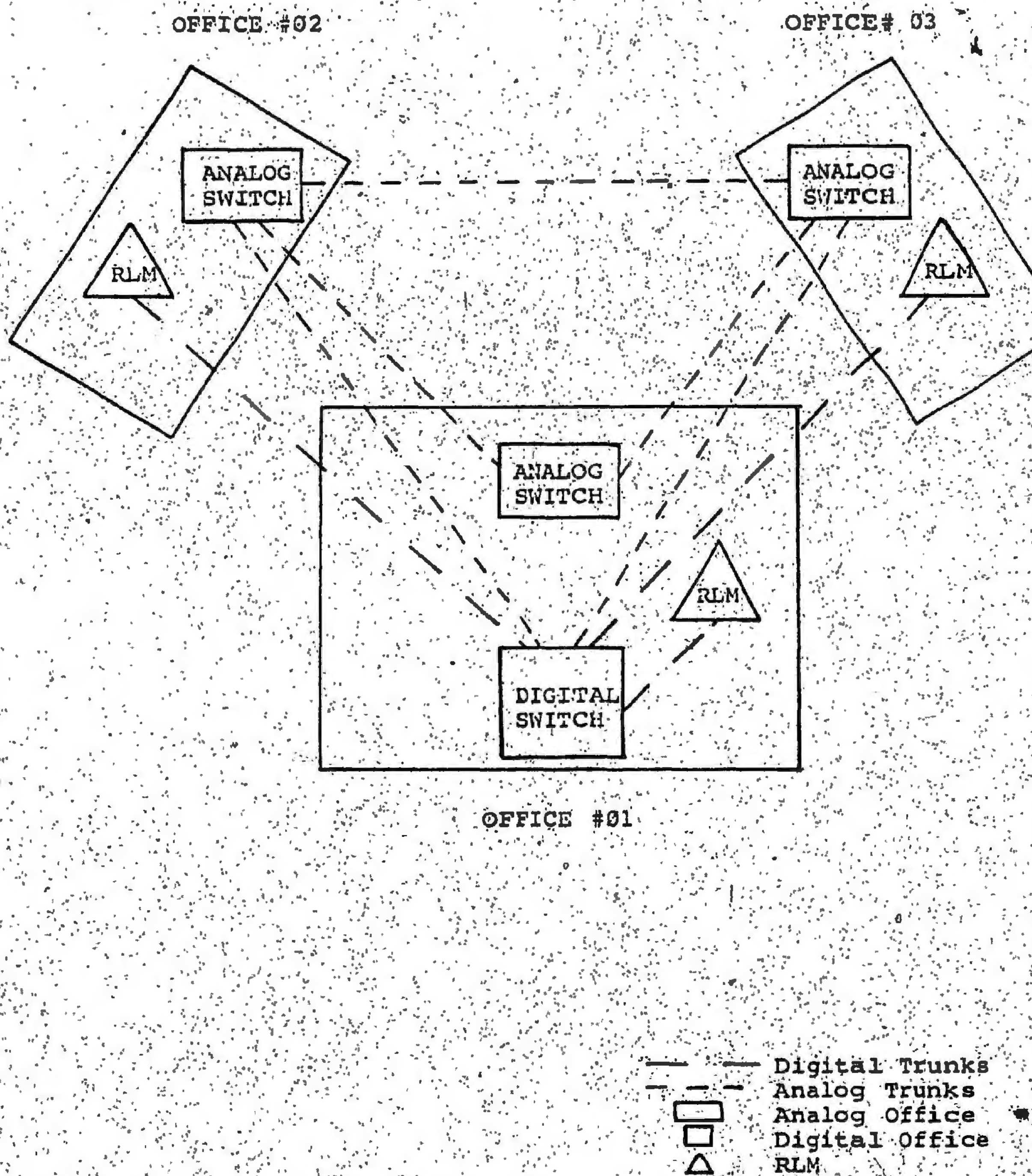


FIGURE 3- Local Switching Network.

Figure 3 represents a physical plant layout of a typical local switching network. It should also be noted that a planning model should be capable of configuring the network in any manner that the user desires. Hence in a real configuration not all possible interconnections will be necessarily examined, but instead, the planner will limit his model only to those particular configurations that he wishes examined.

2.4 ASSUMPTIONS

In the development of a local network model, certain guidelines are required to separate the local network planning subsystems from the toll and outside plant subsystems. In order to bound the local network system and also to keep the model to a manageable size, the following assumptions were made:

1. No digital switch will be installed in a location without retiring the existing analog switch.
2. All new trunks installed will be digital.
3. Extended Area Service (EAS) is assumed between all locations and will be provided using direct trunking.
4. No new analog switches will be installed; however analog growth will be permitted as set up in the simulation(s) under investigation.
5. It will be assumed that building space exists for all

growth. A building cost will be included in the model to reflect capital improvements and rearrangements.

6. The model will only consider the local switching network and will not examine the impact of toll and outside plant.
7. The model assumes that there are no spare trunk facilities available at the beginning of the study.
8. All new transmission facilities to be installed will be digital.

CHAPTER 3 DYNAMIC MODELLING

3.1 Introduction

The use of modelling techniques as a management tool has become of great interest since the introduction of computers into management science. Whereas only ten years ago the use of computers was unheard of in many applications, nowadays the low cost of computer time makes the computer an indispensable tool in a variety of many management applications.

The trend in modern management is towards long range planning and away from the familiar five year planning cycles which have been in common use. Because of the vulnerability of industry to changes in the external environment (e.g. technological change, price increases, changes in market conditions etc.), long range planning has become recognized as an important aspect of the decision making process. Many opponents of long range techniques question the validity of long term planning because of the uncertainty and unreliability of long range data. This argument, however, is not valid because long range planning is not meant to give precise answers on planning problems, but rather to provide direction and guidelines. It is in an uncertain environment such as this that modelling becomes an indispensable tool.

In all planning situations, the longer the planning horizon, the more uncertain the information used in the study. Whereas the planning information used in short term plans is relatively reliable, the information used in long term studies is uncertain and prone to the impact of many unpredictable variables. As the planning horizon expands, the planning scenarios become more numerous and the number of planning options greatly increases. Because of this, modelling techniques which have the ability to answer "What if?" questions become extremely valuable in long range studies. This is particularly true in long range planning for the telecommunications industry, which is characterized by rapid technological development and frequent rearrangements and changes because of fluctuating customer requirements.

As stated in 2.3 above, a simulation language called DYNAMO will be used in this project to model the local telecommunications switching network. Since DYNAMO is used for dynamic simulation modelling, it is appropriate at this point to elaborate on the terms 'dynamic' and 'simulation'.

"Dynamic" pertains to changing with time. Since the local telephone switching network must continually be examined to ensure that operating costs are optimized to meet current communications patterns, it represents a dynamic model. Very few real life situations are not affected by time, and hence it is desirable for long range planning to use dynamic techniques.

"Simulation" pertains to the act of tracing a certain time history. i.e., simulating what would happen if a certain event occurred at a particular time. Because of the myriad of planning alternatives in a long range study, especially one involving the telephone network, it is highly desirable that different planning options be evaluated using simulation. The "Dynamic Simulation Model of the Local Switching Network" developed in this report will simulate the occurrences of various events and alternatives over various time cycles using dynamic techniques.

3.2 BACKGROUND TO SIMULATION MODELLING

The ever increasing complexity of modern industrial systems is making the decision making processes extremely problematic. Because of such factors as the diversity of products, costs, markets and raw materials, it is becoming increasingly difficult for managers to assess the consequences of their decisions. For most large industries, the cause-effect relationships of management decisions have become almost impossible to investigate without computer aids. By simulating the effect of management decisions through a structured simulation process, the overall decision-making process is greatly enhanced. The speed of computer simulation gives the manager the benefit of time, which he would not have if he had to assess planning scenarios using other planning aids.

Although simulation techniques are in common use for many applications, simulaton modelling is still in its infancy. One possible reason for this is the current rapid change in computer technology which does not allow the stability required for many businesses to dedicate human and technical resources to model development because of the perception on the part of many managers of the early obsolescence of existing computer systems. A second factor is that the entire industrial complex is changing so rapidly that it is difficult to capture a "snapshot" in time of an industrial situation as the basis for the formulation of a simulation model. Both of these factors, however, underline the need for the development of a simulation tool which will assist managers in studying the impact of change.

Before proceeding with model development, it is first of all necessary to review some of the various aspects of simulation.

3.21 Static/Dynamic

A static simulation is one which does not change over time. Such a simulation would have limited use for most business and industrial uses. As previously mentioned, Dynamic refers to changing with time and therefore has greater applicatons to modelling processes.

3.22 Aggregate/Detailed

An aggregate model is one which consolidates components of the model, whereas a detailed model examines discrete individual components. In certain models, for instance, it may be appropriate to look at the total costs, total materials etc., of a subsystem rather than taking the detailed approach and modelling every individual component. Aggregation is used in those cases where detailed modelling does not contribute significantly to the accuracy of the model, or in those instances where the additional time and expense incurred in developing a detailed model are deemed unwarranted.

3.23 Physical/Behavioral

The simulation model may either contain only physical components (ie. size, amount, weight etc.) or it may also include behavioral decision making components (as in the case of the impact that a change in government might have on a certain strategy). Most simulations contain both physical and behavioral characteristics.

3.24 Computer/Human

A computer model is one which is simulated on a computer whereas a human model is one which utilizes human involvement and decision making. Human involvement is seldom used in modelling with the exception of models employing gaming techniques.

3.25 Recursive/Quasi-Equilibrium

The recursive approach to a modelling situation involves the derivation of the various model components from other data used in the model at earlier times. In the recursive technique, the model itself is used to derive other information about itself.

The quasi-equilibrium technique involves the development of a set of equations representing a set of interactions for each time period, while also allowing the opportunity for the planner to make modifications to the equations where he feels in his judgement that modification is warranted.

3.26 Continuous/Discrete

Either continuous or discrete variables may be used in simulation. Continuous pertains to a continuous change over a period of time whereas discrete pertains to a discrete occurrence of an event at a fixed point in time. In an engineering economic study, for instance, the actual occurrences of installations and expenditures of a project may be discrete, but the treatment of the cost of money factors may be done on a continuous basis.

3.27 Deterministic/Stochastic

Stochastic models are ones which have randomly varying or probabilistic elements, whereas a deterministic model has no probabilistic factors. Depending on the situation being modelled, both deterministic and stochastic modelling are often used.

3.28 Time Intervals

It is important that the appropriate time elements be determined for all models. The planner must decide if he wishes to examine the system on the basis of a very short time interval or a longer one. A simulation of a transportation system might require time elements of minutes or hours, whereas a shipbuilding model might require a time interval of months or years.

The model to be developed in this report is dynamic because the response of the local telephone network over a period of time is to be examined. Since no probabalistic elements will be taken into account, the model will be deterministic in nature. Although there are some aggregate components in the model, most elements will be detailed in the sense that individual switching components will be simulated. Only physical components will be examined using recursive computer techniques. Both discrete and continuous components will be involved and because the simulation model is designed for long range studies, a time interval of one year over a twenty year time period will be sufficient.

3.3 SYSTEM DYNAMICS TECHNIQUES

The development of a systems model should be undertaken with an organized planning system. Jay Forrester (1968, INDUSTRIAL DYNAMICS) proposes the following number of organizational steps which will lead towards a successful model.

GOALS- The overall objectives and goals of the simulation model must be documented along with the questions and problems to be answered.

DESCRIPTION- The situation to be modelled must be described and an understanding obtained of all the factors which will impact on the questions to be answered.

MATHEMATIC MODEL- A set of mathematical relationships must be developed which will represent the situation being modelled. This is probably the most difficult and most tedious aspect of model development and is also the most critical with respect to accuracy.

SIMULATION- By controlling certain experimental conditions, simulations of the planning model are obtained. The computer is ideal for simulations and a great number of simulations could be easily obtained for many different experimental conditions once a computer is employed.

INTERPRETATION- The results of the simulations must next be examined to determine trends and results. The interpretation of the results should answer the original questions posed.

REPEATED EXPERIMENTATION- Since no situation can be modelled exactly, it often occurs to the experimenter after simulation runs that further runs will be neccessary in order to focus on a situation which was not expected.

The above steps are only guidelines, but they generally follow the approaches taken to most modelling situations. Consequently, these steps will be generally followed in this report.

3.4 APPLICATION OF DYNAMIC MODELLING TO TELECOMMUNICATIONS

The telecommunications network consists of many switching nodes all interconnected to another by trunks. These switching nodes and interconnections constantly require review because of varying calling patterns and changes in technology.

The variations which occur as a result of changes in calling patterns are external environmental conditions over which the planning engineer has little control. For instance, a potential economic boom in St. John's resulting from oil development will most likely greatly increase the central office line and toll trunk requirement. This sort of occurrence is beyond the control of the planning engineer but he can, through simulating different growth scenarios, determine the impact that an oil boom might have on the telephone network and take the appropriate steps to ensure that the telephone network can accommodate the additional traffic.

The other type of change is that initiated by the planning engineer. This usually involves the replacement of plant or the extension of existing plant. These changes may be dictated by improvements in technology or reductions in cost. The long term impact of these changes would be difficult to ascertain without elaborate modelling techniques because of the countless combinations and permutations to the switching network, as well as the many changes in costs and technology.

Dynamic modelling is undoubtedly a necessity for successful long range technical planning and thus the development of an appropriate model is the objective of this report.

CHAPTER 4 SYSTEM DYNAMICS MODEL OF THE LOCAL TELEPHONE NETWORK

4.1 INTRODUCTION

In this section, a system dynamics model of a local telephone network will be developed and the various equations constituting the model will be explained.

The planning for local switching networks is extremely complex because of the interrelationships of the many variables, but the planning model can be addressed by subdividing the problem into the following categories:

1) Input Module: This portion of the model contains all the constants, initial values, tables, and model configuration constants. The variables in this section are generally beyond the control of the planner and are set by external constraints such as growth forecasts and equipment costs.

2) Forecasting Module: This portion of the model contains the equations for developing analog and digital growths as well as the development of trunking quantities. This part of the model generates forecasts based on the various scenarios under study.

3) Cost Module: This section derives capital and expense costs for all components of the model. This part of the model is also dependent on the scenarios under study.

4) Economic Analysis Module: This section performs an engineering economic analysis of the scenarios modelled and develops present worth of annual charges (PWAC) figures. Since PWAC is the most commonly used evaluator for engineering analysis, the propsed model will develop PWAC figures for all scenarios.

The telephone network is made up of many discrete components. Since the present study focusses only on the local network, the outside plant and toll components will not be taken into account.

The main components of the local switching network are discussed in the following sections.

4.11 Local Switch

The most important segment of the local telephone network is the local switch. The local switch is the equipment through which all telephone calls are set up and completed. Every telephone subscriber's telephone set is physically connected to a local switch. Since all subscribers in a given exchange terminate on the same switching equipment, any two customers can be connected together through the process of dialing a number, which in turn sets up a chain of events which directs the switching equipment to complete a connection between the two subscribers.

Another term which is synonomous with local switch is

CENTRAL OFFICE. Every central office serves a number of subscribers bounded in a specified geographic area called an EXCHANGE. Any completed telephone call between any two subscribers within the same exchange area is called a LOCAL call. Calls between subscribers in two different exchange areas will be either TOLL calls or EAS (Extended Area Service) calls. A Toll call is a call for which long distance charges apply. EAS service is a service allowing subscribers to place calls between different central offices without incurring long distance charges. Upgrading to EAS is usually accompanied by a small increase in monthly rate, reflecting the larger number of telephones that can be accessed without using the toll network. Since EAS calling is achieved without accessing the long distance or TOLL network, EAS calling is considered part of the local switching network. A schematic description of the local, EAS, and toll networks was given in Figure 1.

The technology of local switches has changed dramatically over the past twenty or so years. Highlights of local switching history include the Step by Step (SXS) electromechanical switch which was first introduced in the early part of this century and is still in common use throughout the telephone industry today. The next major change in local switching came in the late 1930's with the introduction of the common control crossbar switch. Common control switching greatly increased efficiency by permitting faster circuit completion times and also reducing equipment requirements. Next in the evolution of telephone local switching came the stored program office. This system is completely software controlled; however, the actual switching may either be performed by electromechanical or semiconductor devices. The latest entry into the local switch evolution is the digital switch. The digital switch is completely software controlled and all switching is performed by solid state devices. The digital switch is far superior to previous generations of switches because of its lower capital and operational costs, superior features, and reduced maintenance. These advantages make it very attractive to retire older generation equipment and to convert to digital technology as soon as practical.

An adjunct to the digital switch is a device called a remote line module (RLM). This device permits the placement of many switching functions normally handled by the main digital switch to a remote location nearer to a group of subscribers. The RLM can concentrate a group of subscriber telephone lines into a few cable pairs, reducing the need for costly feeder routes resulting in a significant saving in copper cable. Figure 4 provides a representation of the digital switch/RLM relationship.

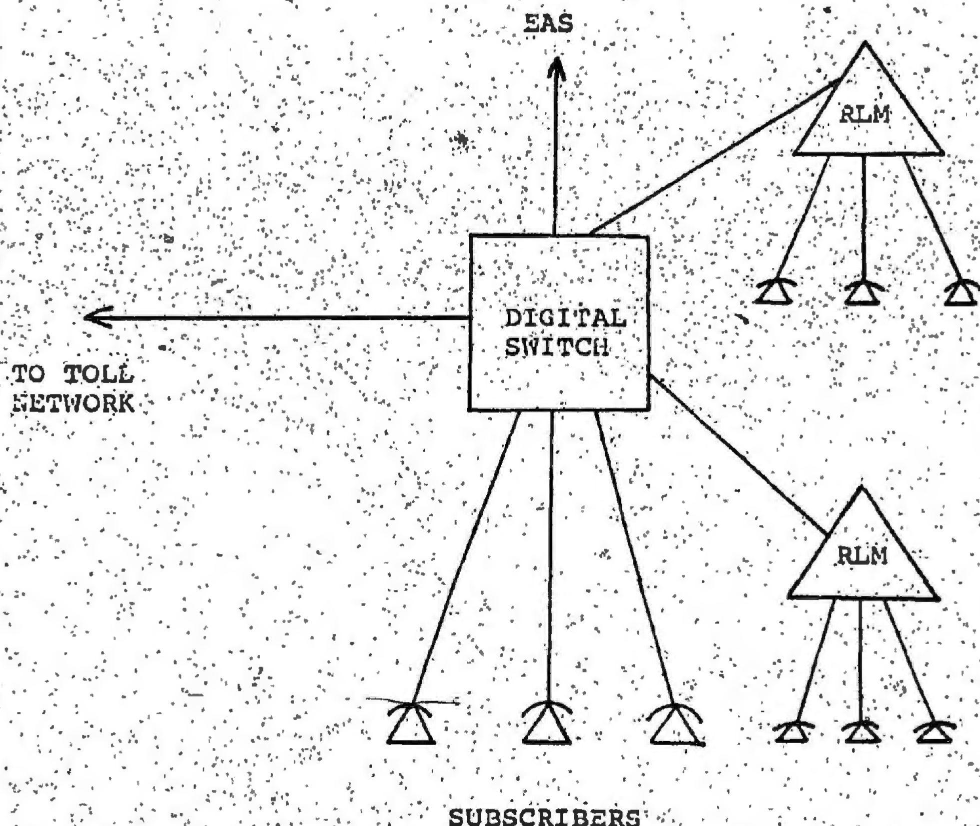


FIGURE 4- DIGITAL SWITCH AND RLM CONFIGURATION

Since there are many SXS, common control and stored program switches still in service in the telecommunications network, a significant planning problem is to determine how additional customer growth will be acccommodated in those areas still not served by the latest state of the art technology. The technique used in arriving at this decision is therefore the main thrust of this paper.

The local switches are the most critical elements of the network but there are several other components in the planning network which require further elaboration and will be discussed in the following sections.

4.12 Trunks

Trunks are the equipment required to interface one switching machine with another. A local call originating in Office #1, for instance, and terminating in Office #2, will use trunks to interface the transmission facilities between the two offices. The interface between a digital switching machine and a remote digital line unit (RLM) is also called a trunk.

Before the advent of digital technology all trunks were of course analog. In the late 1960's, digital technology was developed to the extent that digital trunks became economic alternatives. Such trunks required digital to analog converters at each end before interfacing with the analog switches. With the installation of digital switching machines, it will no longer be necessary for digital to analog conversion.

Digital trunking still constitutes only a fraction of the number of trunks presently in service. As a general rule, any new trunking systems required in the future will be digital. This decision is usually an economic one in view of the ever increasing cost of analog trunks and is also desirable from a technical point of as it facitates the transition to an all digital network.

The cost of trunking is a significant factor in network planning not only because of the high cost of trunks but also because of the fact that changing the trunking at any given office necessarily changes the trunking to all those offices interconnected with that office.

The quantity of trunking is determined by the volume of calls between any two offices as well as by the duration of these calls. Two locations with few long duration calls between them, for instance, might require the same number of trunks as two different locations where frequent calls of short duration are made. The volume of calling between two communities is usually directly related to the populations of the communities. When the actual measured traffic data between locations is not readily available, the traffic can be estimated mathematically. Once the traffic information is determined the number of trunks can be determined with the use of Poisson tables.

4.13 Facilities

Whereas trunks are the system interconnections between switching offices, transmission facilities are required to carry the telecommunications signals. Trunking between offices can be provided by several means including copper paired cable, analog or digital radio, and analog or digital carrier. In the local switching network the most common facility used is copper wire. For distances which make copper wire either technically unfeasible or uneconomic, PCM (Pulse Coded Modulation) is often used.

There must be a sufficient number of facilities available in order to accommodate the required number of trunks. As a general rule, the interconnecting facility has enough capacity to provide for an additional year of trunk growth. The cost of facilities is a function of the type of facility used and the length of the facility. Unless unusual circumstances are encountered, for long term planning purposes the cost of facilities is usually estimated on a unit cost basis.

4.14 Remote Line Modules (RLMs)

Remote Line modules are extensions of digital switches. Instead of bringing all telephone lines into a central office and terminating them on a digital switch, a part of the digital switch can be distributed further out into the network and interconnected with the digital switch by means of digital (PCM) facilities. The decision to use RLMs is one based on economics and is determined by an enginering cost evaluation of the expenditures associated with placing equipment remote from the central office (along with the associated facility and RLM building costs), versus the option of installing a new feeder route plus line and switching equipment in the central office.

For long range planning purposes, charts and graphs have been developed to indicate the approximate prove in distances for RLMS over paired cable for various sizes of RLMS. An example of this is given in Figure 5. The RDIP program discussed earlier can be used to fine tune a long range RLM study.

RLMS often prove to be appropriate for serving isolated pockets of subscribers as well as concentrated groups of subscribers in places such as appartment buildings. An RLM is not considered a separate central office switch because the switching is not done by the RLM, but rather by the digital office on which the RLM homes. If the facility between the RLM and its home office is cut off, then there would be limited or even no switching available in the area that the RLM serves.

RLMS are an important consideration in local network planning because very often the key planning decision hinges on whether separate digital switching offices should be installed or whether one digital switch would suffice, augmented by a number of RLMs. This becomes a major factor

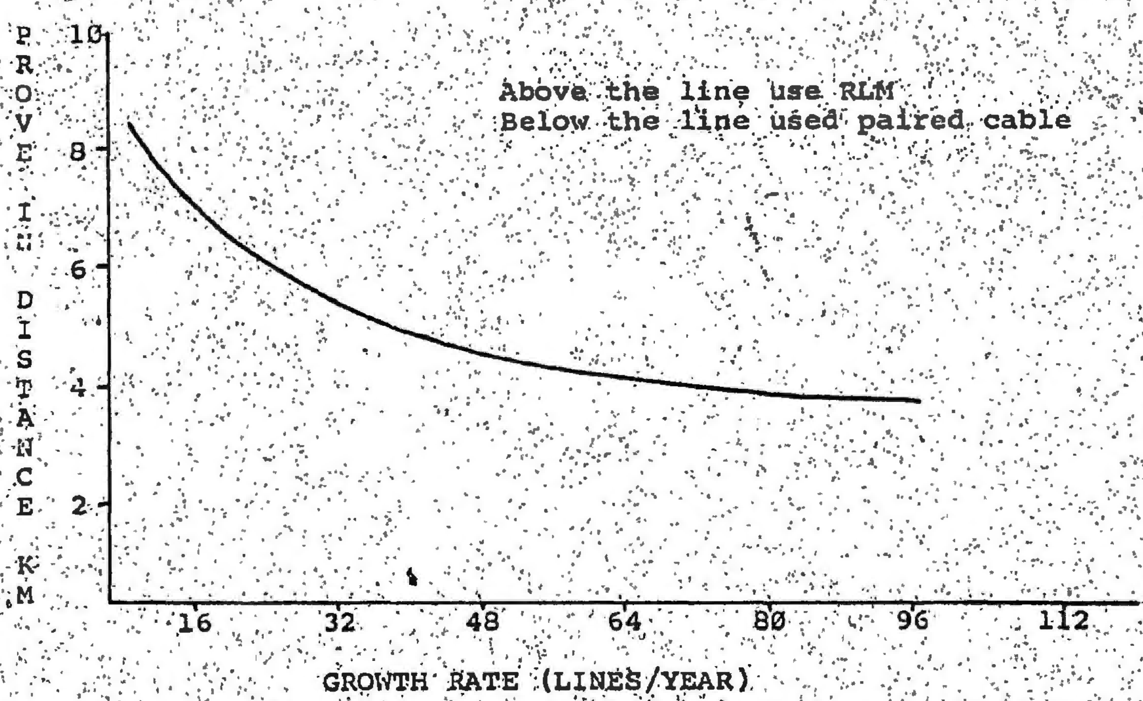


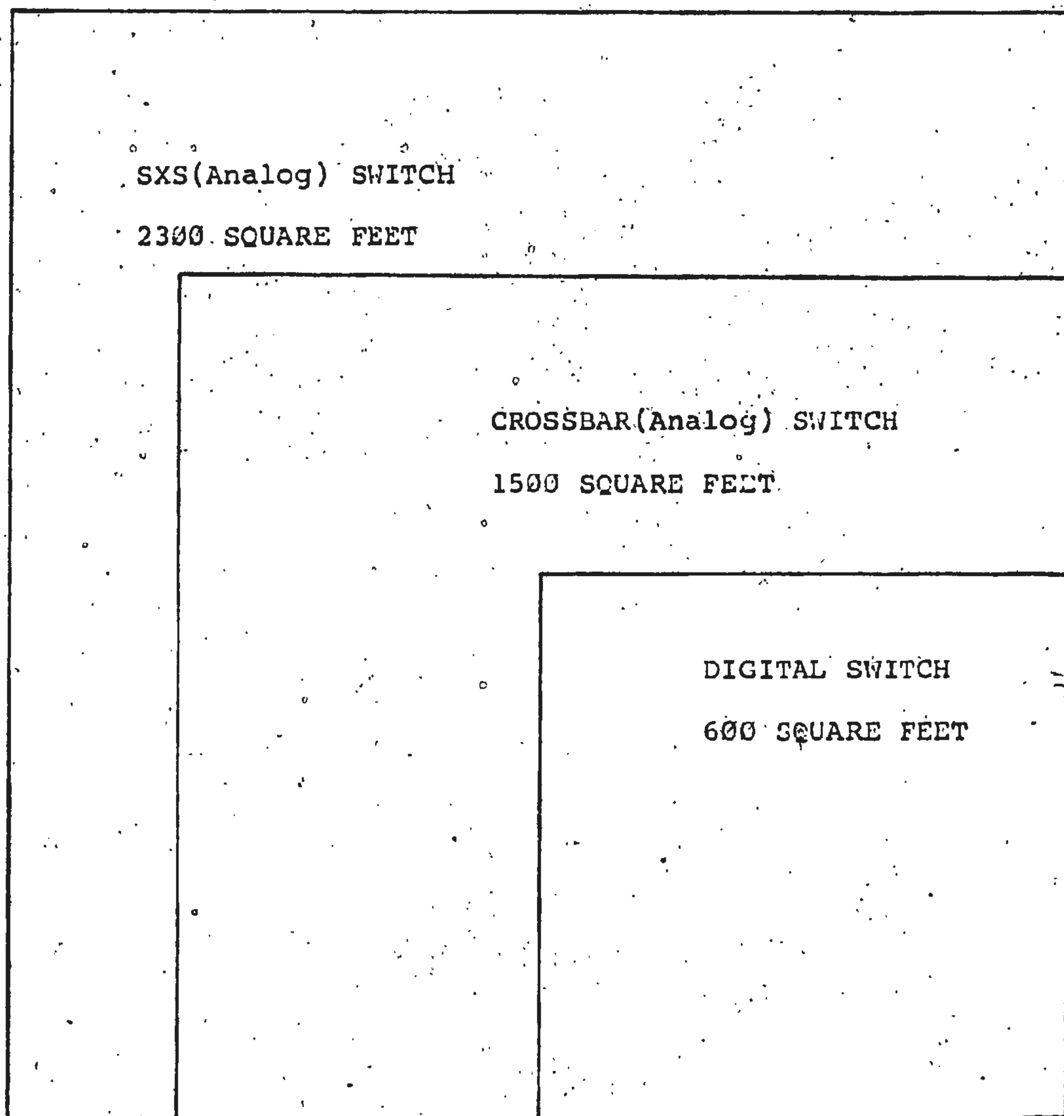
FIGURE 5- RLM Prove in Distance

because of the large switching capacity of digital switches, which can often accommodate 100,000 subscriber lines or more. Two switches of this size would have sufficient capacity to provide the local switching requirements of every telephone subscriber in Newfoundland. Because of many practical considerations, including the risk of equipment failure, two single switches would not be practical. The use of RLMs will nevertheless have the effect of drastically reducing the number of new central office switches which will be required.

4.15 Buildings

All switching machines and RLMs require building space of some sort. In the case of RLMs the building could be nothing more than a heated 8x10 foot enclosure. In the case of switching machines, the building would sometimes be small and unattended; larger installations would require that the buildings be quite sizable and be manned 24 hours a day.

The more switching equipment that is installed, the more the building space that is needed. Digital equipment, because of its inherent dense packaging, normally requires less building space than does analog equipment. Further, the modern diagnostic and maintenance routines available with digital technology reduce the requirement for constant maintenance activity, hence reducing the people requirements in the buildings. Figure 6 provides a representation of the relative floor space requirements of both digital and analog switching equipment.



Typical floorspace requirements based on a 5000 line SXS Office.

FIGURE 6- Switching Machine Floorspace Requirements.

There is a definite cost associated with buildings, in addition to all associated maintenance and operating costs. The major impact of the cost of buildings is associated with the initial construction of the building. It is a general rule that buildings and subsequent extensions are sized to provide the optimum long term economic benefit. When new digital switching machines or RLMs are installed, every effort is made to house this equipment in existing buildings. This is not always possible because of building constraints and even in those cases where a new building is avoided, there are still capital costs incurred because of renovations and rearrangements.

4.2 INPUT MODULE

The Input module consists of all initial values, tables and the model configuration. Normally, this portion of the DYNAMO model is the part that is user changeable to allow for different switching offices, unit costs etc. Listed below are the equations for this module with representative right hand sides. The final values, of course, depend on the simulation required.

N LINØ1=1ØØØ   The initial number of working lines in Office #01.

N TLIN01=0	The initial number of digital lines in Office #01.
N QLIN01=0	The initial number of main stations served by a digital switch in Office #01.
N TLIN=0	Initial number of total digital lines in a planning area not served by RLMS.
N TRLM=0	Initial total number of lines served by RLMs.
N PWAC=0	Initial value for present worth of annual charges.
N TRKMST=0	Initial value of trunk maintenance cost.
N FAXMST=0	Initial value of facility maintenance cost.
T GPFT01=1/2,..	20 year forecast of line growth for Office #01.
C INST01=1100	The number of installed lines in Office #01
C GPFTI01=1	The variable factor for Office #01
C GPFT=1	The total variable factor for all Offices.
C OVER01=1	Time when growth in Office #01 is provided by RLMs.
C RE01=1	Time when Office #01 is totally replaced by digital.
C RE0201=1	Truth equation indicating Office #02 will grow on office #01 via an RLM.
C INTRAM=.6	Factor representing intra machine traffic
C CCSPL=2.5	Average number of CCS's per line.
C CCSCOE=2	Factor representing central office traffic.

```
C D02Ø1=10       Distance in miles between Office #Ø1 and
                 Office #Ø2.
C RATIO=.5       Debt ratio.
C TAX=.51        Income tax rate.
C CCAØ1=.2       CCA rate for capital group type Ø1.
C ASLØ1=1Ø       Average service life of capital group Ø1.
C INT=.135       Cost of Capital.
C INTD=.14       Cost of debt.
C INTF=0         Inflation factor.
C ICIFR=1        Inflation factor for cost of RLM lines.
C ICIFF=1        Inflation factor for cost.
                 of analog facilities.
C ICIFFD=1       Inflation factor for cost
                 of digital facilities.
C ICIFB=1        Inflation factor for cost of building space.
C ICIFD=1        Inflation factor for cost of digital lines.
C ICIFT=1        Inflation factor for cost of trunks.
C ICIFG=1        Inflation factor for cost of analog lines.
C SALV=.1Ø       Salvage factor.
C REMOV=.Ø5      Cost of removal factor.
C FAXMAN=.Ø5     Facility maintenance factor.
C MSXS=1Ø        Analog switch maintenance(per line).
C MRLM=7         Remote switch maintenance(per RLM line).
C MDMS=5         Digital switch maintenance(per line).
C MBLDA=3        Analog building maintenance(per line).
C MBLDR=1.5      RLM building maintenance.(per line).
C MBLDD=1        Digital building maintenance(per line).
```

C MRKDIG=20 Digital trunk maintenance(per trunk).

C MRKANA=60 Analog trunk maintenance(per trunk).

C SXS=200 Analog switch cost per line.

C RLM=200 RLM switch cost per line.

C DMS=300 DMS switch cost per line.

C TRKDIG=225 Digital trunk cost per trunk.

C TRKANA=900 Analog trunk cost per trunk.

C TRKSOF=100 Software cost per digital trunk.

C BLDA=20 Analog building cost per line.

C BLDD=4 Digital building cost per line.

C BLDR=4 RLM building cost per line.

C PCM=250 Digital facility cost per line per mile.

C DE3=500 Cost per digital facility termination.

C TRA=104 Analog facility cost per trunk per mile.

C PEREXP=.1 Fraction of digital line cost expensed for tax purposes.

C GSSOFT=185000 Digital get started software.

C GSCOST=540000 Digital capital get started cost.

C GSCRLM=240000 RLM get started cost.

Most of the above equations are replicated in the model to apply to all different central offices and facilities. The critical equations with regard to determining the simulations are the three configuration equations. These will be briefly elaborated upon.

The configuration equations are those in which OVERXX, REXX, or REXXXX appear on the left hand side. Once all other tables and constants are set up, these equations will be the only ones that are changed during the simulations in order to simulate different switching relationships. Equations with constants and tables can also be changed to reflect changing costs, forecasts etc.

OVERXX must always be less than or equal to REXX. This is because the model assumes that there will never be a partial replacement of an analog office. The REXXXX equations have no limitations except that the OVERXX and REXX equations must first be set up to permit the remote-host relationships. The equation RE0405=1, for example, is only valid if Office #05 has been replaced and Office #04 has been overlaid within the study period. If the user is certain of the host-remote relationships, then only the OVERXX and REXX constants have to be changed in reruns.

4.3 FORECASTING MODULE

The forecasting module consists of all the equations used to derive central office sizes, trunks and facilities. The input data consists of tables giving the annual growths for each central office. From this basic data the following quantities are derived:

4.31 Central Office Lines

The equations concerned with central office lines constitute the major portion of the forecasting module. This section contains the equations for the forecasted main station growth, as well as the various derived forecasts for the various analog/digital conditions in the model.

4.311 Main Station Growth (GPF)

The main station growth(GPF) is a forecast of telephone demand which is derived by studying population patterns, new industrial developments and other significant forecasting factors. The forecast requires a great deal of subjective input and is generated on an annual basis. The GPF indicates annual gain and the total figure is therefore not cumulative.

```
A GPF01.K=GPFT01*GPFT*TABLE(GPFT01,TIME.K,0,20,1)
   where    GPFT01 = Variable factor for Office #01
            GPFT   = Variable factor for all offices
```

4.312 Installed Working Lines (LIN)

The total number of telephone lines that is served by a central office is a function of the main station growth (GPF).

```
L LIN01.K=LIN01.J+DT*GPF01.J
```

4.313 Main Station Growth-Provisioned by Analog Switching (GPFA)

Analog switching growth is a function of the overall growth(GPF) and the implementation date of digital switching.

A GPFA01.K=GPF01.K*CLIP(0,1,TIME.K,OVER01)

*CLIP(1,0,LIN01.K,INST01)

4.314 Total Analog Line Growth (GPFTOT)

The total analog line growth in the planning network is the sum of the analog growth in all the individual offices.

A GPFTOT01.K=GPFA01.K+GPFA02.K+GPFA03.K+. . . .GPFA07.K

4.315 Remaining Analog Lines in Central Office (LLIN)

The number of analog lines in any given office at any point in time is a function of the main station forecast, the part of the forecast accommodated on digital lines and the timing for the replacement of the analog terminations.

A LLIN01.K=(LIN01.K-QLIN01.K)*CLIP(1,0,RE01,TIME.K)

4.316 Total Number of Analog Lines (LIN)

The total number of analog lines in the planning network of interest is the grand sum of the remaining analog lines in all of the central offices in the study.

A LIN.K=LLIN01.K+LLIN02.K+. LLIN07.K

4.317 Host Digital Office Line Growth (OLIN)

The digital line growth in a host digital office is a function of the main station digital growth for that switching centre and the growth accommodated by TLMs.

```
A OLIN01.K=GPF01.K+RE0201*GPF02.K
        *CLIP(1,0,TIME.K,OVER02)+RE0301*GPF03.K
        +RE0701*GPF07.K*CLIP(1,0,TIME.K,OVER07)
```

4.318 Digital Line Growth (NLIN)

The digital line growth in any office is a function of the main station growth and the time that the switching centre becomes digital.

```
A NLIN01.K=OLIN01.K*CLIP(1,0,TIME.K,OVER01)
```

4.319 Total Digital Lines in an Office (DLIN)

The total number of digital lines in a switching centre

L TLINØ1.K=TLINØ1.J+DT*LRINØ1.J

4.321 Digital Growth in an Office (LRIN)

The total digital growth in an office is a function of the digital line growth, remote offices that are converted to digital, and the logical variable TEØ1.

A LRINØ1.K=SWITCH(1,Ø,TEØ1.K)*(NLINØ1.K+LLINØ2.K*REØ2Ø1*
PULSE(1,REØ2,1ØØ)+LLINØ1.K*PULSE(1,REØ1,1ØØ)+
LLINØ3.K*REØ3Ø1*PULSE(1,REØ3,1ØØ)+......

4.322 Total Digital Growth for the
Planning Area (LRIN)

The total planning area digital switching growth is the sum of the digital growth in all the switching offices under study.

A LRIN.K=LRINØ1.K+LRINØ2.K+......LRINØ7.K

4.323 Total Number of Lines served by a
Central Office.(XLIN)

The total number of lines served by a switching office is a function of the number of analog and digital lines served by the central office as well as the number of main station lines provided by remote units homing on the office.

A XLINØ1.K=TLINØ1.K-LLINØ1.K

4.324 Total Digital Line Growth in the Planning Network. (DMSTOT)

The total growth of digital lines in the planning area is the difference between the total digital line growth and the lines that are served by digital remote units.

A DMSTOT.K=LRIN.K-RMTOT.K

4.325 Total Number of Digital Lines that are not remote (TLIN)

The total number of digital lines in a planning area which are not provided by remote units is a function of the non-remote digital growth.

L TLIN.K=TLIN.J+DT*DMSTOT.J

4.326 Logical Equation to determine if RLMs are used (TE01)

This logical equation for TEXX is required to determine if a digital office has RLM remote units homing on it. TE01 is not equal to zero if there are RLMS homing on it.

A TE01.K=RE0102+RE0103+RE0104+RE0105+RE0106+RE0107

4.33 RLM LINES

Although both RLM and Digital lines are switched by the same digital switch, it is necessary to differentiate between the two because of the following factors:

a. The unit costs are different.

b. RLMs require special facilities.

c. RLMs may serve part of the area served by another switching machine although their home digital office is remote from that area.

As discussed previously, an RLM is the appropriate technology in situations where

a. The cost of RLMS is less than that of constructing a new feeder route.(Outside the scope of this study).

b. The cost of RLMS is less than that of installing another digital switch or of extending analog technology.

The latter factor is the one of interest in this model, whereas the other factor is directly related to Outside Plant planning. The equations associated with RLMs are as follows:

4.331 The Number of RLM Lines (RM0201)

The number of RLM lines is dependent on the main station forecast, the timing of the installation of RLMs, the size of the analog office which is replaced, and a logic variable indicating which switching centre area is accommodated on RLMs and which digital switch is the home office.

```
A RM0201.K=RE0201*(GPF02.K*CLIP(1,0,TIME.K,REPL02)+
        LLIN02.K*PULSE(1,RE02,100))
```

4.332 Total RLM Line Growth (RMTOT)

The total growth in the number of RLM lines in the network under study is the sum total of the growths of lines served by all RLMs in the network.

A RMTOT.K=RM0201.K+RM0301.K+RM0401.K+. . .+RM0706

4.333 Total Number of RLM Lines (TRLM)

The total number of RLM lines in the local network is the summation of the rates of growth of RLMs.

L TRLM.K=TRLM.J+DT*RMTOT.J

4.334 Total Number of RLM lines homing on an Office (RM01)

A RM01.K=RM0201.K+RM0301.K+RM0401.K+RM0501.K+. . . .

4.335 Logical Equation to determine size of RLMS (RM1)

This logical equation ensures that the initial RLM unit is sized for 1200 lines. This equation sets RM1 to RM01 (Number of RLM lines served by a digital office) if RM01 is greater than 1200 and alternatively to 1200 ,if RM01 is less than 1200

A RM1.K=CLIP(RM01.K,1200,RM01.K,1200)

4.336 Logical Equation to determine if Overlay is used (RL1)

This equation sets RL1 to 0 if TE01.K=0. Alternatively, RL1 is set to 1 if TE01.K<>0.

A RL1.K=SWITCH(0,1,TE01.K)

4.34 Trunking

Trunking, or the switching links between central offices, is a complex issue since it is a function of some of the following factors:

a. The community of interest between the subscribers of the different switching areas.

b. The holding times of the telephone calls (ie. the average length of every telephone call in CCS's(1CCS=100 Call Seconds))

c. The frequency of the telephone calls.

d. The type of switches at each location.

e. The use or non-use of RLMs.

f. The distance between switching locations.

g. The type of facility between locations.

The following are the equations associated with determining the trunking facilities required in the local network planning area.

4.341 Number of CCS's between Central Offices (RS0201)

The CCS's between central offices can be determined by measurement; howevever this would be of no use for long range studies. What is known is the typical intra-office CCS (INTRAM) and the typical CCS per subscriber line. (CCSPL) With this information, plus the number of subscribers in any two locations, the number of CCS's between any two offices can be approximated by the following equation.

```
A RSØ2Ø1.K=(INTRAM*CCSPL*XLINØ1.K*XLINØ2.K)/
        (XLINØ1.K+XLINØ2.K)
```

4.342 Total Trunks required between Offices-Digital and Analog (RRØ2Ø1)

The number of trunks required between offices is a function of the CCS's required between offices and a traffic blocking coefficient (CCSCOE)

```
A RRØ2Ø1.K=(RSØ2Ø1.K/36)+CCSCOE*SQRT(RSØ2Ø1.K/36)
```

4.343 CCS's provided by Digital Trunks (DCØ2Ø1)

The CCS's provided by digital trunks is analagous to RS except that only the digital requirement is examined. DS is a function of the size of the digital offices, the intra-office CCS and the CCS per digital line.

```
A DCØ2Ø1.K=(INTRAM*CCSPL*TLINØ1.K*TLINØ2.K)/
        (TLINØ1.K+TLINØ2.K)
```

4.344 Digital Trunks required between Offices (DT0201)

The digital trunks between two digital offices is analogous to the equation for RR in that the number of digital trunks required is a function of the digital CCS's required and the blocking factor (CCSCO2).

```
A DT0201.K=(DC0201.K/36)+CCSCO2*SQRT(DC0201.K/36)
```

4.345 Analog Trunks required between Offices (AT0201)

The number of analog trunks required between two analog offices is represented as the difference between the total trunks and the digital trunks.

```
A AT0201.K=RR0201.K-DT0201.K
```

4.346 Analog Trunk Growth between Offices (AG0201)

The analog trunk growth between any two offices is the absolute value of the difference between the existing number of trunks and the number for the previous year.

```
A AG0201.K=MAX(AT0201.K-AF0201.K,0)
```

4.347 Analog Trunks for the previous year (AF0201)

The number of analog trunks between any two offices for the previous year is a function of the first order delay of the equation for AR.

A AFØ201.K=DELAY1(ATØ201.K,1)

4.348 Total Analog Trunks (TOATRK)

The total number of analog trunks is equal to the sum of all trunks interconnecting central offices.

A TOATRK.K=AGØ201.K+AGØ301.K+AGØ401.K
+AGØ302.K+AGØ402.K+.....

4.349 Digital Trunks required for the previous year (DFØ201)

The number of digital trunks between any two central offices is equal to the first order delay of the equation for Digital Trunks(DF).

A DFØ201.K=DELAY1(DTØ201.K,1)

4.350 Digital Trunk Growth between Offices (DGØ201)

The digital trunk growth between offices is the absolute value of the difference between one years digital trunk growth and the digital growth of the previous year.

A DGØ201.K=MAX(DTT201.K-DFØ201.K,Ø)

4.351 Total Digital Trunks (TODTRK)

The total of digital trunks is the sum of all digital trunks interconnecting central offices.

A TODTRK.K=DGØ201.K+DGØ301.K+DGØ401.K
+DGØ302.K+DGØ402.K+.....

4.36 Facilities

This model assumes that all new facilities installed will be digital. This is a planning decision which will help facilitate the conversion to a full digital network.

4.361 Number of PCM Lines between two Offices (TTØ201)

The number of PCM lines between any two offices is based on two assumptions. Firstly, twenty four digital trunks (DGØ201) will require one PCM line, ie. .Ø4 (1/24) PCM systems per digital trunk (DGØ201), and secondly, .ØØ7 (8/12ØØ) PCM systems per RLM unit. An RLM unit needs approximately 8 PCM systems for every 12ØØ lines.

A TTØ201.K=.Ø4*DGØ201.K+.ØØ7*(RMØ201.K+RMØ1Ø2.K)

4.362 Total Number of Facilities (TOTFAX)

The total number of facilities is the grand sum of all facilities between all Offices.

A TOTFAX.K=TTØ201.K+TTØ301.K+TTØ401.K+TTØ5Ø1.K+....

4.4 COSTING MODULE

This module consists of the equations used to derive all capital and expense costs. The costs are determined by developing cost equations from the equations developed in the FORECASTING module, and by using various cost factors. The development of costs in the telecommunications industry is a very elaborate process with project costs being broken down into many sub-accounts and categories. As an example, switching costs would be subdivided into initial capital cost, future capital costs, engineering cost, RST, transportation and shipping, interest during construction, administration charges, software costs, maintenance during construction etc. For the purposes of this model, most of these components have been consolidated into several categories--a) Capital, b) Maintenance, c) Software, and d) Get started. Average costs were used in the model so the impact of treating the costing in this manner will be satisfactory for long range planning.

The equations constituting this module are described in the following sections.

4.41 Capital Costs

Capital costs are those expenditures which can be applied towards the assets of a company. Capital costs may not only represent expenditures for equipment and material, but may also involve the expenditures entailed in acquiring these assets. Engineering and installation effort expended in setting up a new central office may therefore be considered a capital expenditure.

The determination of whether an expenditure is 'capital' or 'expense' has become problematic since the advent of digital technology. This occurs because of the inherent software content of digital equipment. Since software is constantly being revised and improved, it is deemed by the income tax authorities in many cases to be an expense item for income tax purposes.

Both expense costs and capital costs are treated differently for income tax purposes. Capital costs go towards the acquisition of an asset and for income tax purposes, the depreciation of this asset may be claimed as an expense item over the life of the asset. Expense costs incurred by maintenance and repair, on the other hand, may be claimed as income deductions in the year that the expenses were incurred.

4.411 Cost of Analog Lines (GPFCST)

The cost of analog lines is a function of the growth of analog main stations and the unit cost of an analog line (SXS). Because analog lines can be added in small increments, there is no significant get started cost associated with analog switches.

```
A GPFCST.K=CIF*ICIFG*SXS*GPFTOT.K
```

4.412 Cost of RLM Lines (RLMCST)

The cost of RLM lines is a function of the growth of main stations provided by RLMS and the unit cost of RLM lines, as well as the get-started cost associated with the project. Each RLM can accommodate 1200 subscriber lines and there is a get started cost associated with each RLM unit.

```
A RLMCST.K=CIF*ICIFR*RLM*RMTOT.K+GSCRLM*(PULSE(RM1.K/1200,
        OVERØ1,100)*RL1.K+PULSE(RM2.K/1200,OVERØ2,100...
```

4.413 Cost of Building Space (BLDCST)

The building space requirements of analog and digital switching differ significantly because of the higher density of lines per unit area permitted by digital technology. The cost of building space is therefore a function of both the analog and digital main station growth and the unit cost per line.

```
A BLDCST.K=CIF*ICIFB*(BLDA*GPFTOT.K+BLDR*RMTOT.K
        +BLDD*DMSTOT.K)
```

4.414 Cost of Trunks (TRKCST)

The cost of trunks is a function of the number of analog and digital trunks required and the unit costs of each.

```
A TRKCST.K=CIF*ICIFT*((TRKDIG*TODTRK.K)
        +(TRLANA*TOATRK.K))
```

4.415 Cost of Digital Lines (DMSCST)

The cost of digital lines is a function of the total growth in main stations served by digital lines and the unit cost per digital line.

```
A DMSCST.K=CIF*ICIFD*DMS*DMSTOT.K
```

4.416 Digital Get Started Cost (DMSGSC)

With every large digital installation, there is a cost associated with the engineering, installation, logistics etc., which is not directly associated with the number of lines in the switch. The total digital get started cost is equal to the sum of the get started costs for all those locations where a digital switch was installed.

```
A DMSGSC.K=GSCOST*(SWITCH(1,Ø,TEØ1.K)*PULSE(1,REØ1,1ØØ)
        +SWITCH(1,Ø,TEØ2.K)*PULSE(1,REØ2,1ØØ)+....
```

4.417 Cost of Analog Facilities (FAXAST)

The cost of analog facilities depends on the unit cost of the analog facilities, the number of analog trunks between each central office and the distance(in miles) between the central offices.

A FAXSST.K=CIF*ICIFF*(PCM/24)*(AG0201.K*D0201
+AG0301.K*D0301+AG0504*D0504)+...)

A FAXAST.K=FAXSST.K+(2*DE3)*TOATRK.K

4.418 Cost of Digital Facilities (FAXDST)

The cost of digital facilities is a function of the unit cost of the digital facilities, the number of digital trunks between each central office and the distance (in miles) between the central offices.

A FAXDST.K=CIF*ICIFFD*PCM*(TT0201.K*D0201+TT0301*D0301
+TT0401.K*D0401+......)

4.419 Total Cost of Facilities (FAXCST)

The total cost of facilities is the sum of the cost of the analog and digital facilities.

A FAXCST.K=FAXAST.K+FAXDST.K

4.42 Expense Expenditures

Expense costs are expenditures that cannot be capitalized. As discussed previously, expense costs are directly deductible for income tax purposes and the income tax relief is obtained in the year of expenditure. The types of expenditures considered 'expense' for income tax purposes are maintenance, software, repair and administrative work.

4.421 Analog Line Maintenance (GPFMST)

Analog line maintenance is a function of the number of analog lines and the unit cost per line maintenance costs.

A GPFMST.K=CIF*MIF*MSXS*LIN.K

4.422 Digital Line Maintenance (DMSMST)

The total digital line maintenance is a function of the total number of digital lines installed and the per unit cost of maintenance.

A DMSMST.K=CIF*MIF*MDMS*TLIN.K

4.423 RLM Maintenance (RLMMST)

RLM maintenance is a function of the number of RLM lines in service and the per unit RLM maintenance costs.

A RLMMST.K=CIF*MIF*MRLM*TRLM.K

4.424 Building Maintenance Cost (BLDMST)

The building maintenance cost is a function of the number of analog, digital and RLM lines and the per unit building maintenance costs for each technology.

A BLDMST.K=CIF*MIF*(MBLDA*LIN.K+MBLDR*TRLM.K
+MBLDD*TLIN.K)

4.425 Annual Trunk Maintenance Cost (TRTMST)

The annual trunk maintenance cost is a function of the number of digital and analog trunks and the respective per unit maintenance costs for each type of trunk.

```
A TRKTST.K=CIF*MIF*(((MRKDIG+(TRKSOF/MIF))*TODTRK.K
        +(MRKANA*TOATRK.K))
```

4.426 Trunk Maintenance Cost (TRKMST)

The trunk maintenance cost is the accumulation of the annual trunk maintenance costs (TRKTST).

```
L TRKMST.K=TRKMST.J+DT*TRTMST.K
```

4.427 Annual Facility Maintenance Cost (FATMST)

The facility maintenance cost is determined as an annual percentage of the capital investment in facilities.

```
A FATMST.K=FAXMAN*FAXCST.K
```

4.428 Facility Maintenance Cost (FAXMST)

The facility maintenance cost is the accumulation of the annual facility maintenance costs.

```
L FAXMST.K=FAXMST.J+DT*FATMST.K
```

4.429 Digital Switch Software Cost (DMSSOF)

All digital switches are software controlled. This software is constantly being updated, either by the manufacturer with new improvements, or by the telephone company with changes in switching software instructions. Since the original software has a very short usage life before it is improved or upgraded, the cost associated with this is an expense item. The total cost of software associated with digital switches is a function of which of the offices in the network under study will be converted to digital.

```
A DMSSOF.K=CSSOFT*(SWITCH(1,Ø,TEØ1.K)*PULSE(1,REØ1,1ØØ)
           +SWITCH(1,Ø,TEØ2.K)*PULSE(1,REØ2,1ØØ)+....
```

4.430 Digital Switch Expense Cost (DMEXCT)

The income tax regulations allow a small percentage of the capital cost of a digital switch to be expensed for income tax purposes. This expense allowance is related to software associated line equipment.

```
A DMEXCT.K=DMSCST*PEREXP
```

4.5 ECONOMIC ANALYSIS MODULE

The Economic Analysis Module consists of all those equations used to derive the economic evaluators for the model. This module develops Present Worth of Annual Charges (PWAC's) taking into account all capital costs, salvage and cost of removal, income tax and CCA, maintenance and other expense costs and varying service lives and planning periods. Since this model is designed for long range studies, the economic analysis model is optimized to give long term economic results.

The equations in this model are as follows:

4.51 Future Worth of a Continuous Present Amount (FNA)

The future worth of a continuous amount is the factor by which a continuous present amount will accumulate at a given rate of return over a specified period of time.

```
A FNA.K=EXP(TIME.K*LOGN(1+INT))
```

4.52 Present Worth of a Continuous Future Amount (FNB)

The present worth of a continuous future amount is the factor which will yield a continuous future amount at a fixed rate of return over a specified time period.

```
A FNB.K=EXP(-TIME.K*LOGN(1+INT))
```

4.53 Future Worth of a Continuous Annuity (FNC)

The future worth of a continuous annuity is the factor by which a continuous annuity will accumulate at a given interest over a fixed period of time.

A FNC.K=(EXP(TIME.K*LOGN(1+INT))-1)/INT

4.54 Present Worth of a Continuous Annuity (FNE)

The present worth of a continuous annuity is the factor by which a continuous annuity will accumulate at a given rate of return over a given period of time.

A FNE.K=FNC.K/FNA.K

4.55 Annuity from Continuous Capital & Inc.Tax (FNG)

The annuity from continuous capital and income tax is the factor which will yield an annuity for a continuous capital expenditure and its associated income tax at a given rate of return over a given period of time.

```
A FNG.K=FNK.K*(1+FI.K-(CCA/(CCA+INTT.K))
      *(INTT.K/JAY.K))*FIA.K+
      FNK.K*(FIA.K-FI.K)/((FNK.K*ASLØ11)))
```

4.56 Annuity from Gross Salvage (FNH)

The annuity from gross salvage is the factor which will yield an annuity from a future gross salvage at a given rate of return over a specified time period.

```
A FNH.K=FNK.K*((1+FI.K-((CCA/(CCA+INTT.K))
        *INTT.K/JAY.K))*FIA.K)/
        EXP(JAY.K*ASLØ11)+(FIA.K-FI.K)/(FNK.K*ASLØ11))
```

4.57 Annuity from Cost of Removal (FNI)

The annuity from cost of removal is the factor which will yield an annuity at a given rate of return over the life of an asset from the cost of removal of plant.

```
A FNI.K=FNK.K*((1+FI.K-(1/(1+INTT.K))*(INTT.K/JAY.K)
        *FIA.K)/EXP(JAY.K*ASLØ11
        +FIA.K-FI.K)/(FNK.K*ASLØ11))
```

4.58 Present Worth of a Discrete Future Amount (FNN)

The present worth of a discrete future amount is the factor which will yield a discrete amount at a given rate of return over a given period of time.

```
A FNN.K=FNB.K*INTT.K/JAY.K
```

4.59 Annuity from a Continuous Present Amount (FNK)

The annuity from a continuous present amount is the factor required to produce an annuity from a present amount at a given rate of return over a given period of time.

```
A FNK.K=(JAY*EXP(JAY.K*ASLØ11))
        /(((EXP(JAY.K*ASLØ11)))-1))
```

4.60 Continuous Cost of Equity Capital (JAY)

The continuous cost of equity capital is the effective rate of return required to raise equity capital.

A JAY.K=LOGN(1+INT)

4.61 Continuous Cost of Debt Capital (JAYD)

The continuous cost of debt capital is the effective rate of return required to raise debt financing.

A JAYD.K=LOGN(1+INTD)

4.62 Income Tax Factor (FI)

The income tax factor is the factor required to determine the income tax cost associated with a capital asset. It is a function of the rate of return, corporate income tax rate and the debt ratio.

A FI.K=(TAX/(1-TAX))*(1-RATIO*(JAYD.K/JAY.K))

4.63 Effective Income Tax Factor (FIA)

The effective income tax factor is the tax rate taking into account the corporate tax rate and the income tax factor.

A FIA.K=TAX*(1+FI.K)

4.64 Effective Interest Rate including Inflation (INTT)

The effective interest rate is the interest rate taking into account the rate of return on capital and the inflation rate.

```
A INTT.K=(INT-INTF)/(1+INTF)
```

4.65 Capital and Income Tax Factor (CAPTX1)

The capital and income tax factor gives the annuity of the capital and income tax cash flows taking into account salvage and cost of removal.

```
A CAPTX1.K=(FNG.K-SALV*FN[illegible].K+REMOV*FNI.K)*FNB.K
```

4.66 Present Worth of Analog Line Capital Costs (ANCGPF)

The present worth of analog line capital costs is the present worth of the annuity of the capital and income tax cash flows associated with analog line extensions.

```
A ANCGPF.K=CAPTX1.K*GPFCST.K
```

4.67 Present Worth of RLM Capital Costs (ANCRLM)

The present worth of RLM capital costs is the present worth of the annuity of the capital and income tax cash flows associated with RLMs.

A ANCRLM.K=CAPTX1.K*RLMCST.K

4.68 Present Worth of Initial Digital Capital Costs (ANCDMS)

The present worth of digital capital costs is the present worth of the annuity of the capital and income tax cash flows associated with the initial digital switch.

A ANCDMS.K=CAPTX1.K*DMSCST.K

4.69 Present Worth of Buildings Capital Costs (ANCBLD)

The present worth of buildings capital costs is the present worth of the annuity of the capital and income tax cash flows for building space.

A ANCBLD.K=CAPTX2.K*BLDCST.K/FNK2.K

4.70 Present Worth of Trunk Capital Costs (ANCTRK)

The present worth of trunk capital costs is the present worth of the annuity of the capital and income tax cash flows for trunks.

A ANCTRK.K=CAPTX1.K*TRKCST.K/FNK.K

4.71 Present Worth of Facility Capital Costs (ANCFAX)

The present worth of facility capital costs is the present worth of the annuity of the capital and income tax cash flows for facilities.

A ANCFAX.K=CAPTX3.K*FAXCST.K/FNK3.K

4.72 Present Worth of Analog Get Started Capital Costs (ANCGSC)

The present worth of analog get started costs is the present worth of the annuity of the capital and income tax cash flows for analog get started costs.

A ANCGSC.K=CAPTX1.K*DMSGSC.K/FNK.K

4.73 Present Worth of Startup Software Costs (ANMSOF)

The present worth of startup software costs is the present worth of the annuity of the capital and income tax cash flows for digital switch software.

A ANMSOF.K=DMSSOF.K*(FNB.K-(TAX*FNN.K/(1+INTT.K))

4.74 Present Worth of Digital Extension Expense Costs (AEEDMS)

The present worth of digital extension expenses is the present worth of the annuity of the expense and income tax cash flows for digital extensions.

A AEEDMS.K=FNK.K*DMEXCT.K*(FNB.K-(TAX*FNB.K/(1+INTT.K)*
(INTT.K/JAY.K)))

4.75 Present Worth of Analog Line Maintenance (ANMGPF)

The present worth of analog line maintenance is the present worth of the annuity of the maintenance and income tax cash flows associated with the maintenance of analog lines.

A ANMGPF.K=GPFMST.K*(FNB.K-TAX*FNN.K/(1+INTT.K))

4.76 Present Worth of RLM Maintenance (ANMRLM)

The present worth of RLM maintenance is the present worth of the annuity of the maintenance and income tax cash flows associated with the maintenance of RLMs.

A ANMRLM.K=RLMMST.K*(FNB.K-TAX*FNN.K/(1+INTT.K))

4.77 Present Worth of Digital Line Maintenance (ANMDMS)

The present worth of digital line maintenance is the present worth of the annuity of the maintenance and income tax cash flows associated with the maintenance of digital lines.

A ANMDMS.K=DMSMST.K*(FNB.K-TAX*FNN.K/(1+INTT.K))

4.78 Present Worth of Building Maintenance (ANMBLD)

The present worth of building maintenance is the present worth of the annuity of the maintenance and income tax flows associated with the maintenance of building space.

A ANMBLD.K=BLDMST.K*(FNB.K-TAX*FNN.K/(1+INTT.K))

4.79 Present Worth of Trunk Maintenance (ANMTRK)

The present worth of trunk maintenance is the present worth of the annuity of the maintenance and income tax cash flows associated with the maintenance of trunks.

A ANMTRK.K=TRKMST.K*(FNB.K-TAX*FNN.K/(1+INTT.K))

4.80 Present Worth of Facility Maintenance (ANMFAX)

The present worth of facility maintenance is the present worth of the annuity of the maintenance and income tax cash flows associated with the maintenance of facilities.

A ANMFAX.K=FAXMST.K*(FNB.K-TAX*FNN.K/(1+INTT.K))

4.81 Total Present Worth of Analog Line Charges (TANGPF)

The total present worth of analog line charges is the total of the present worths of analog line extension capital and maintenance costs.

A TANGPF.K=ANCGPF.K+ANMGPF.K

4.82 Total Present Worth of RLM Charges (TANRLM)

The total present worth of RLM charges is the total of the present worths of RLM capital and maintenance costs.

A TANRLM.K=ANCRLM.K+ANMRLM.K

4.83 Total Present Worth of Digital Switch Charges (TANDMS)

The total present worth of digital switch charges is the total of the present worths of the digital switch capital, maintenance and software costs.

A TANDMS.K=ANCDMS.K+ANMDMS.K+AEEDMS.K+ANCGSC.K+ANMSOF.K

4.84 Total Present Worth of Building Charges (TANBLD)

The total present worth of building charges is the total of the present worths of the building capital and maintenance costs.

A TANBLD.K=ANCBLD.K+ANMBLD.K

4.85 Total Present Worth of Trunk Charges (TANTRK)

The total present worth of trunk charges is the total of the present worths of the trunk capital capital and maintenance costs.

A TANTRK.K=ANCTRK.K+ANMTRK.K

4.86 Total Present Worth of Facility Charges (TANFAX)

The total present worth of facilities charges is the total of the present worths of the facility capital and maintenance costs.

A TANFAX.K=ANCFAX.K+ANMFAX.K

4.87 Total Present Worth (TOTTAN)

The total present worth factor is the total of the present worths of the capital and maintenance costs associated with analog lines, RLMs, digital lines, buildings, trunks, and facilities.

A TOTTAN.K=TANGPF.K+TANRLM.K+TANDMS.K+TANBLD.K
+TANTRK.K+TANFAX.K

4.88 Present Worth of Annual Charges (PWAC)

The present worth of annual charges factor is the summation of all capital and expense present worths. This factor differs from TOTTAN and the other present worth factors above in that PWAC gives the present worth of annual charges for all cash flows whereas the other present worth factors apply only to the cash flow at a single point in time.

A PWAC.K=PWAC.J+DT*TOTTAN.J

CHAPTER 5 SIMULATION AND ANALYSIS OF A LOCAL PLANNING NETWORK

5.1 INTRODUCTION

This model of a local planning network allows the planner to simulate various network switching configurations. This is an extremely valuable tool which enables the planner to test the effects that different configurations, costs, timing, interest rates etc. have on the different planning scenarios. The use of the computer in an experimental laboratory environment permits the review of many situations which cannot reasonably be performed manually and most certainly cannot be duplicated in real life for evaluative purposes.

This technique can not only be used for evaluating various alternatives, but can also be used to test interrelationships and inter-dependencies between variables. Once the planner gains an appreciation of the various relationships, he can devote more attention to the critical interrelationships and test how significantly they can affect his plan.

Having established the interrelationships and dependencies described by the equations in the previous chapter, the next step in the development of the model is the simulation of the different planning scenarios of interest. Several examples of these simulations will be presented later. First a short explanation will be provided of the different types of simulations to be performed.

1. Network Configurations

The most useful feature of this model is its ability to configure and examine various switching arrangements. This type of simulation examines the effects of rearranging the network from both a physical and a timing point of view. Examples of this would be the decision to convert Office #01 to a digital office, or to make it a remote office homing on a digital switch located elsewhere. These are but some of the issues which may be addressed by simulating different network configurations.

2. Cost Analysis

The model can also be used to investigate the impact on the preferrred plans by sensitizing capital and maintenance costs as well as economic parameters. Simulations of this nature are useful when uncertainity in the validity of the costing information exists. Since costing information is sometimes not reliable, varying the cost inputs may be useful to test the sensitivity of the preferred plan(s) to unexpected increases in costs in future years.

3. Growth Analysis

Growth simulations are based on growth projections which are the best that can be obtained to suit the planner's needs. Accurate growth projections are extremely important to the simulation, and it is critical that care be taken in assessing the quality of the growth data before embarking on long and involved simulatons. Having selected the best available data, the planner may still identify uncertainities in the growth projections that will require closer examination. An example of this would occur in the situation where the possibility of a population boom exists but may not yet be certain enough for inclusion in official forecasts. A case in point is the much discussed oil boom for St. John's.

The simulation of configuration, cost and growth are unfortunately not mutually exclusive. The preferred plan determined from the simulation of various network configurations, for example, might not be the optimum plan once the extremes in cost and growth variations are examined. Indeed, in order to test all possible combinations of various configurations, costs and growths, an inordinate amount of planning and computer resources would be required. Because this approach is neither feasible nor practical, planning will still require intuition and analytical judgement to ensure that the most reasonable scenarios are examined for the planning system in question.

Various simulation runs are presented in the following sections. As the starting point for these simulations, the computer model was initialized with initial input variables. The following is the pertinent input data for the initial simulation.

5.2 NETWORK DESCRIPTION

For the purposes of this report, the Bay Roberts/ Carbonear switching area of Newfoundland Telephone will be examined. This area is presently all analog and will serve as an excellent application for this model. Figure 7 provides a geographic layout of this area.

The west side of Conception Bay contains the two large towns of Carbonear and Bay Roberts and several dozen smaller communities. The telephone switching requirements of this area are provided by the seven central offices listed below:

Carbonear	Office #1
Bay Roberts	Office #2
Brigus	Office #3
New Harbour	Office #4
Upper Island Cove	Office #5
Lower Island Cove	Office #6
Western Bay	Office #7

There are presently no digital switches in this network, which means, of course, that there are also no RLM's in service. For long range study purposes, it was assumed that all of the central offices have free calling with one another,

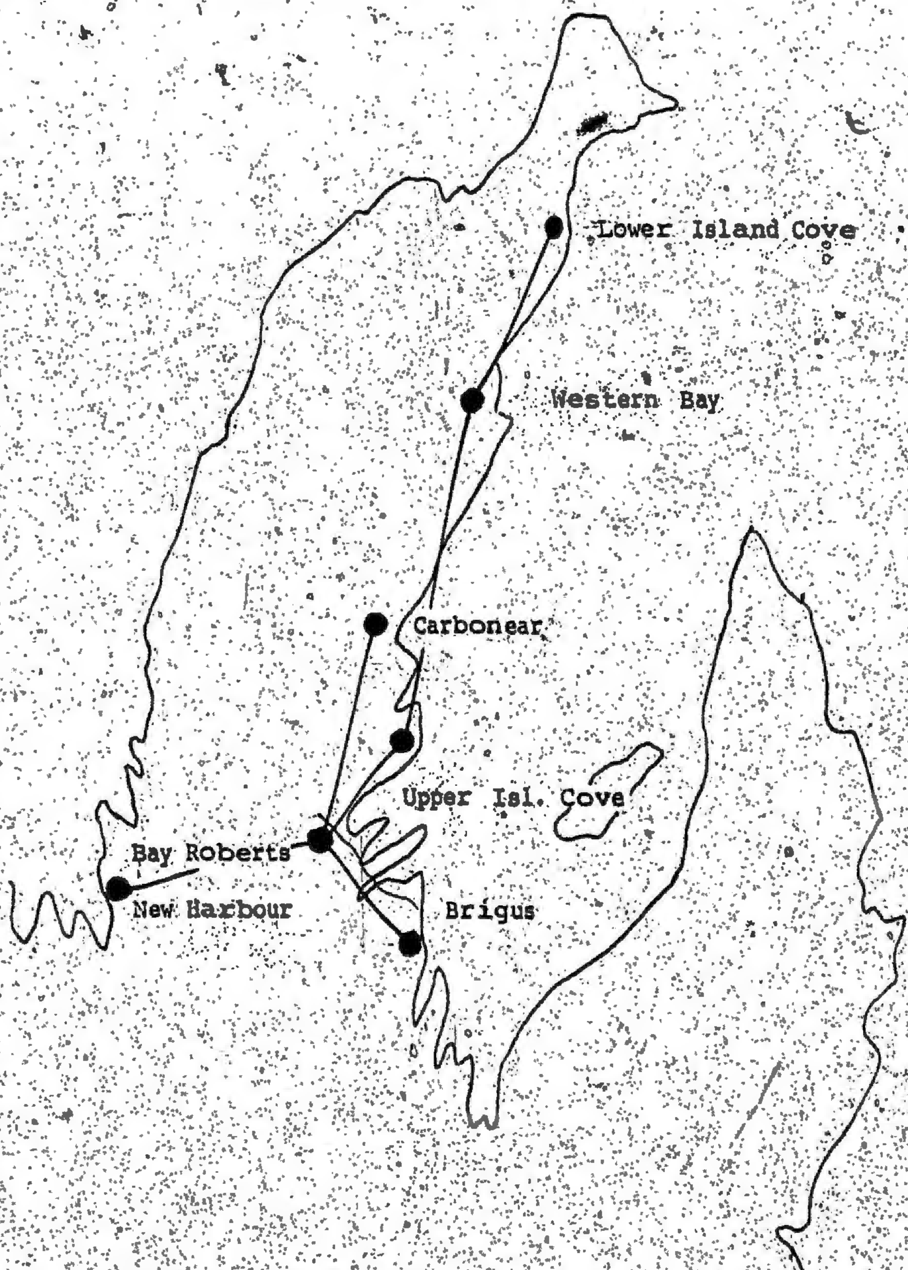


Figure 7- Map of Local Planning Area

and are presently interconnected with one another by analog facilities.

The total number of main stations served by the above central offices is given in Section 5.3 below:

5.3 INITIAL INPUT VARIABLES

Initial number of lines in Office #1	LIN01=3794
Initial number of lines in Office #2	LIN02=3409
Initial number of lines in Office #3	LIN03= 732
Initial number of lines in Office #4	LIN04= 934
Initial number of lines in Office #5	LIN05= 605
Initial number of lines in Office #6	LIN06= 474
Initial number of lines in Office #5	LIN07= 399
Initial number of Digital lines (All)	TLIN0X= 0

The main station growth for the above central offices is given in Table 1.

Central Office Switching Parameters

Intra-office traffic parameter	INTRAM=.6
Average CCS's per line	CCSPL=2.5
Central Office traffic factor	CSCOE=2.0

RLM logic equations.

By using "1's" and "0's", the equations for the network configuration can be established. For instance, RE0201=1 indicates that the growth in the area served in Office #02

Table 1- Main Station Gain Forecast
(non-cumulative)

TIME	OFC#1	OFC#2	OFC#3	OFC#4	OFC#5	OFC#6	OFC#7
1	39	123	39	27	18	14	9
2	157	137	37	38	23	18	17
3	168	162	36	40	25	18	18
4	200	171	37	41	28	18	20
5	199	170	37	44	28	18	20
6	210	180	38	47	31	19	21
7	210	180	39	50	33	22	22
8	210	180	39	50	33	22	22
9	210	180	39	50	33	22	22
10	210	180	39	50	33	22	22
11	210	180	39	50	33	22	22
12	210	180	39	50	33	22	22
13	210	180	39	50	33	22	22
14	210	180	39	50	33	22	22
15	210	180	39	50	33	22	22
16	210	180	39	50	33	22	22
17	210	180	39	50	33	22	22
18	210	180	39	50	33	22	22
19	210	180	39	50	33	22	22
20	210	180	39	50	33	22	22

Base Year is 1980

will be accommodated by an RLM homing on Office #Ø1. REØ2Ø1=Ø indicates that no RLM will be used.

REØ2Ø1=0	REØ3Ø1=Ø	REØ4Ø1=Ø	REØ5Ø1=0	REØ6Ø1=Ø
REØ7Ø1=0	REØ1Ø2=Ø	REØ3Ø2=Ø	REØ4Ø2=Ø	REØ5Ø2=Ø
REØ6Ø2=Ø	REØ7Ø2=Ø	REØ1Ø3=Ø	REØ2Ø3=Ø	REØ4Ø3=Ø
REØ5Ø3=0	REØ6Ø3=Ø	REØ7Ø3=Ø	REØ1Ø4=0	REØ2Ø4=Ø
REØ3Ø4=0	REØ5Ø4=Ø	REØ6Ø4=Ø	REØ7Ø4=0	REØ1Ø5=Ø
REØ2Ø5=Ø	REØ3Ø5=Ø	REØ4Ø5=0	REØ6Ø5=Ø	REØ7Ø5=Ø
REØ1Ø6=0	REØ2Ø6=0	REØ3Ø6=Ø	REØ4Ø6=Ø	REØ5Ø6=Ø
REØ7Ø6=Ø	REØ1Ø7=0	REØ2Ø7=0	REØ3Ø7=Ø	REØ4Ø7=Ø
REØ5Ø7=0	REØ6Ø7=Ø			

Digital Overlay Equations

The digital overlay equations indicates the study year in which growth in an analog office will be provided by an RLM. For the purposes of this model, it is assumed that if the RLM equations above call for an overlay option, then that office, unless otherwise instructed, will be overlayed in the year that its analog equipment exhausts. OVERØ1=2, for example, is the instruction to overlay Office #1 in year 2.

OVERØ1=2	OVERØ4=6	OVERØ6=8
OVERØ2=2	OVERØ5=6	OVERØ7=15
OVERØ3=6		

Digital Replacement Logical Equations

REØ1=3 indicates that Office #1 will be replaced by digital technology in time period 3 (ie. three years after year zero).

REØ1=100	REØ2=100	REØ3=100	REØ4=100
REØ5=100	REØ6=100	REØ7=100	

Distance (miles) between Central Offices

DØ2Ø1=1Ø indicates that the distance between Office #Ø1 and Office #Ø2 is 1Ø route miles.

DØ2Ø1=1Ø	DØ3Ø1=15	DØ4Ø1=2Ø	DØ3Ø2=5
DØ4Ø3=18	DØ5Ø1=8	DØ5Ø2=14	DØ5Ø3=12
DØ4Ø2=12	DØ5Ø4=2Ø	DØ6Ø1=43.6	DØ6Ø2=3Ø
DØ6Ø3=36.3	DØ6Ø4=44.9	DØ6Ø5=23	DØ6Ø7=1Ø
DØ7Ø1=33.6	DØ7Ø2=2Ø	DØ7Ø3=26.3	DØ7Ø4=34.9
DØ7Ø5=13			

Economic Factors

Debt Ratio	RATIO=.5
Income Tax Rate	TAX =.51
CCA Rate for Capital Group Type 1	CCAØ1=.2
CCA Rate for Capital Group Type 2	CCAØ2=.1
CCA Rate for Capital Group Type 3	CCAØ3=.2
Average Service Life Group Type 1	ASLØ1=1Ø
Average Service Life Group Type 2	ASLØ2=4Ø
Average Service Life Group Type 3	ASLØ3=2Ø

Cost of Capital	INT=.135
Cost of Debt	INTD=.14
Inflation Factor	INTF=0
Salvage Factor	SALV=.10
Cost of Removal Factor	REMOV=.05
Maintenance Factors	
Facility	FAXMAN=.05
Analog Switch	MSXS=10
RLM	MRLM= 7
Digital Switch	MDMS= 5
Analog Building	MBLDA= 3
Digital Building	MBLDD= 1
Digital Trunk	MRKDIG=20
Analog Trunk	MRKANA=60
Capital Costs	
Analog Switch	SXS=200
RLM(per line)	RLM=270
Digital Switch(per line)	DMS=300
Analog Trunk	TRKANA=900
Digital Trunk	TRKDIG=225
Building(Analog)	BLDA=20
Building(Digital)	BLDD=4
Building(RLM)	BLDR=4
Digital Facility(per line)	PCM=250
Analog Facility(per line)	DE3=500
Percentage of Digital Line Cost Expensed for Tax Purposes	PEREXP=.1

Digital Get-Started Software Cost	GSSOFT=165000
Digital Capital Get-Started Cost	GSCDMS=540000
RLM Get-Started Cost	RLMCST=240000

The above initial values will be used for the status quo simulation of the local network. In order to set up the model for further simulations, only the above equations have to be changed. When a particular local network is under study, all of the initial values for costing, financial and forecasting will normally be held constant. This would be expected, of course, since these variables are usually fixed because of external constraints. In order to assess different network strategies, only the digital replacement and RLM logic equations will have to be changed to reflect the different network strategies. Many different configurations may be therefore tested by making small changes in the computer program. DYNAMO allows the user to do this conveniently by permitting changes in rerun options.

If it is desired to test the effects of ranges in costs, interest rates, etc., the network configuration could be held constant and the sensitivity of the plan would be tested by varying the cost and interest factors.

5.4 STATUS QUO SIMULATION

Using the constants defined in the previous section, an initial simulation was performed for the status quo situation. In practically all simulation studies, it is desirable to simulate the situation as it exists initially. In this particular case, the status quo simulation serves only as a reference point, because it is very unlikely that over the course of the study period the network extensions and configurations will remain static. The status quo scenario is therefore not a realistic candidate for further consideration relative to some of the other alternatives that will be reviewed. The old analog SXS equipment, used in the status quo scenario, cannot provide the maintenance and service features that modern digital equipment can provide. In addition, SXS equipment is becoming difficult to obtain and many manufacturers have ceased its production.

The status quo situation establishes the framework for other simulations and will act as a benchmark for other simulation runs. The complete computer printout for the status quo situation is given in Appendix C. As can be seen from these data, the PWAC for this alternative is fairly low for a 20 year study at approximately $1.7 million. The factors that tend to keep the present worth of annual charges low are that no plant is replaced in the study period, and that the unit cost of analog switching equipment is low relative to digital equipment. The current price for SXS equipment is approximately $800 per line, whereas the study has assumed a cost of $200 per line. This is justified because it was assumed that reused SXS salvaged from SXS offices previously replaced would be utilized. The equipment cost will therefore be very low and the majority of the cost will be constituted by refurbishing, engineering and installation charges.

Another factor which tends to keep the status quo alternative low is that there are no get started costs. SXS equipment can be extended on a 100 line increment basis with the installation done by local technicians, whereas digital installations normally require installation by the manufacturer.

If it is desired to examine the impact of varying the cost of analog equipment from $200 per line to $800 per line, this could be quite easily done by changing the SXS variable and rerunning the computer model. Similarly, the model variables could be modified to test their impact on the plans under consideration.

CHAPTER 6 NETWORK SIMULATION PLANNING ALTERNATIVES

6.1 PLANNING ALTERNATIVES

Once the computer model has been established, a wide variety of planning alternatives can be easily assessed. In previous sections, the concept of sensitizing on the basis of configuration, growth and cost was discussed; in this chapter the results of the various planning scenarios will be reviewed.

The two larger offices of Carbonear (Office #01) and Bay Roberts (Office #02) are the only two locations which will be able to support their own digital switch. Although Alternative 8 calls for eight digital switches, for the purposes of simulating replacement versus overlay, only Carbonear and Bay Roberts will be modelled to have RLMS home on them.

Timing, growth and cost considerations aside, there are eight planning scenarios of interest. These alternatives and a general description of each are provided below:

Alternative 1 (Status Quo)

This alternative, the status quo alternative, proposes that the entire planning area continue with analog technology over the life of the planning period. This alternative was discussed in detail in the previous chapter. Computer printouts for this simulation are found in Appendix C.

Alternative 2 (Carbonear Overlay)

This alternative proposes that a digital switch be located in Carbonear in Year 2 to replace the existing analog switch, and that all growth in the other locations be provided by remote line modules upon exhaust of the analog equipment. Computer printouts for this simulation are found in Appendix D.

Alternative 3 (Carbonear Replace)

This alternative proposes that a digital switch be located in Carbonear in Year 2 to replace the existing analog switch, and that analog switching machines in all other locations be replaced by remote line units upon exhaust of the analog equipment. Computer printouts for this simulation are found in Appendix E.

Alternative 4 (Bay Roberts Overlay)

This alternative is the same as Alternative 2 with the exception that the digital switch is placed in Bay Roberts and not Carbonear. Computer printouts for this simulation are found in Appendix F.

Alternative 5 (Bay Roberts Replace)

This alternative is similar to Alternative 3 with the exception that the digital switch is installed in Bay Roberts rather than Carbonear. Computer printouts for this simulation are found in Appendix G.

Alternative 6 (Bay Roberts/Carbonear Overlay)

This alternative proposes that digital switches be placed in both Carbonear (Year 2) and Bay Roberts (Year 3) providing growth to the other locations by means of RLMs. The Lower Island Cove and Western Bay RLMs will be served by the Carbonear digital switch and the New Harbour, Brigus and Upper Island Cove RLMs will be served by the Bay Roberts switch. The RLMs will be installed upon exhaust of the analog equipment. Computer printouts for this simulation are found in Appendix H.

Alternative 7 (Bay Roberts/Carbonear Replace)

This alternative is similar to Alternative 6 with the exception that Brigus, Upper Island Cove, Lower Island Cove, New Harbour and Western Bay will be totally replaced by RLM's. Computer printouts for this simulation are found in Appendix I.

Alternative 8 (All Digital Replace)

This scenario proposes that digital switches be installed in all locations according to the following schedule:

Location	Year
Carbonear	2
Bay Roberts	3
Brigus	4
New Harbour	5
Upper Island Cove	4
Lower Island Cove	3
Western Bay	5

For this simulation, the Carbonear switch was replaced with a digital switch in Year 2, Bay Roberts in Year 3, and the remaining offices at the time of the exhaust of the existing analog equipment.

Computer printouts for this simulation are found in Appendix J.

The above alternatives are the broad fundamental alternatives for study. Within each alternative, the optimum timing of installations should be determined, and in addition, an examination made of taking a phased approach to each scenario. It may be desirable, for instance, to install an RLM for growth initially, and at some later date replace the existing analog equipment. The number of variations is endless and skill is required on the planner's part to determine which simulations are meaningful to his study.

Table 2- SUMMARY OF PWAC RESULTS

SCENARIO	PWAC($000'S)
ALTERNATIVE 1 (All Analog)	1700
ALTERNATIVE 2 (Overlay on Carbonear)	4689
ALTERNATIVE 3 (Replace on Carbonear)	5922
ALTERNATIVE 4 (Overlay on Bay Roberts)	4630
ALTERNATIVE 5 (Replace on Bay Roberts)	5929
ALTERNATIVE 6 (Overlay Hybrid)	6379
ALTERNATIVE 7 (Replace Hybrid)	7030
ALTERNATIVE 8 (All Digital)	8947

6.2 STUDY RESULTS

A listing of the summary of PWAC results of the various simulations is given in Table 2. As can be seen from this summary, the least cost option is the status quo plan, which is rejected for both technical and service reasons. The second least costly plan is Alternative 4, which proposes that a digital switch be installed in Bay Roberts and that all other growth in the area be provided by RLMs.

The scenarios involving the installation of two digital switches (Alternatives 6 and 7) have PWAC's approximately 35% higher than the plans proposing a single digital switch. A difference of this size is unlikely to be caused by the configuration chosen or by a change in any of the growth or cost factors. Consequently, these two alternatives may be immediately dismissed as serious contenders in this study. The installation of seven digital switches (Alternative #8) can also be immediately dismissed because this alternative has the highest cost.

As a result, four serious planning alternatives remain in contention. It should be noted that the options involving replacement of the smaller offices (Aternatives 3 and 5) are approximately 25% higher than the overlay options. These plans are more costly of course because of the larger capital requirement for analog plant replacement. These alternatives may still be candidates for further evaluation if it is determined that for technical or other reasons it may be appropriate to retire certain analog offices early. For the purposes of this study, however, Alternatives 3 and 5 will be discarded.

The difference between the prime contenders (Alternatives 2 and 4) is less than 2%, which is not significant considering the accuracy of the input data. For most long range planning studies, the rule of thumb is that a difference in PWAC of less than 5% is not a significant difference between alternatives.

6.3 SENSITIVITY ANALYSIS

In order to determine whether Alternatives 2 and 4 are sensitive to any of the variables, additional computer runs should be performed. Particular attention should be given to those variables which are questionable or are subject to change. When the Present Worth of Annual Charges are very similar, the planning alternatives should be tested for various ranges of costs, interest rates, growth rates and changes in timing, to determine whether any change in these variables will affect the relative difference between the PWAC's of the contending alternatives.

For study purposes, it was assumed that an increase in the cost of RLMs might affect the relative outcomes of the contending alternatives. Complete computer printouts for a 100% RLM cost increase simulation for Alternatives 2 and 4 is given in Appendix K and L.

To demonstrate how the model is modified to perform simulations, the following variables were changed in computer reruns to obtain the RLM cost sensitization for Alternative 4.

```
C REØ2=2     Bay Roberts          Install digital switch
                                   in Year 2
C OVERØ2=2   Bay Roberts          Stop Analog growth
                                   in Year 2
C OVERØ1=5   Carbonear            Install RLM in Year 5
C OVERØ3=5   Brigus               Install RLM in Year 5
C OVERØ4=4   New Harbour          Install RLM in Year 4
C OVERØ5=5   Upper Island Cove    Install RLM in Year 5
C OVERØ6=4   Lower Island Cove    Install RLM in Year 4
C OVERØ7=3   Western Bay          Install RLM in Year 3
C REØ1Ø2=1   Bay Roberts is home switch for Carbonear
C REØ3Ø2=1   Bay Roberts is home switch for Brigus
C REØ4Ø2=1   Bay Roberts is home switch for New Harbour
C REØ5Ø2=1   Bay Roberts is home switch for
                Upper Island Cove
C REØ6Ø2=1   Bay Roberts is home switch for
                Lower Island Cove
C REØ7Ø2=1   Bay Roberts is home switch for Western Bay
C ICIFR=2    The cost of RLM lines is to increase
                by a factor of 2.
```

The PWAC results for the RLM cost sensitization along with the results of several other sensitizations is given in Table 3.

Table 3 - PWAC's of Sensitivity Runs

	PWAC ($000's)	
Sensitization	Alternative 2	Alternative 4
Original Simulation	4689	4630
RLM cost increased 100%	4988	5016
All costs increased 25%	5398	5316
Growth increased 25%	5009	4952

It can be seen from the above that although the relative PWAC of the two contending plans reverse when the cost of RLM lines is increased by 100%, the alternatives are still not significantly different for long range planning purposes.

6.4 SIMULATION SUMMARY

Since the two contending alternatives were not shown to have a 5% difference between their PWAC's for the several sensitizations performed, the planner must consider factors other than cost in determining the preferred plan. This fact underlines the fact that a simulation model is only a tool at the planners disposal; and although it serves a useful purpose in eliminating many alternatives, the planner still has a significant role to play in assessing those factors which cannot be assessed quantitatively.

For the planning area under study, the lowest cost plans involve the installation of a single digital switch at either Carbonear or Bay Roberts. The costs marginally favour Bay Roberts, but as previously mentioned, this is not significant. What is worthy of note is that fairly large extremes of cost and growth did not significantly alter the PWAC's of the plans, which seems to suggest that the majority of the costs are attributable to the replacement of existing analog plant. The corollary from this is that once the network is configured for a single digital switch, what happens several years into the plan (ie cost increases etc.) should not detract from the long range direction indicated in this study. Further weight is given to this when the single digital switch concept is compared to the plans for multiple digital switch scenarios previously reviewed.

CHAPTER 7 CONCLUSIONS

7.1 LOCAL TELEPHONE NETWORK PLANNING

This report has addressed the problem of planning a local telephone network with particular emphasis on the impact that the introduction of digital technology would have on network evolution. The introduction of digital technology has become the focus of telecommunications planning, an area in which it is necessary to use planning tools in optimizing planning decisions.

The planning tools that are presently in use do not fulfill the planner's requirements for ease of use, flexibility, and simulative capability. Modelling is becoming more commonly used throughout the telecommunications industry but there still remains wide latitude for model development in all aspects of technical planning.

The model which was developed does have its constraints, yet these can be easily overcome by modifying the computer program. For the purposes of this model, certain factors were not taken into account- some because they were not significant to the study results and others because they were not part of the original design. Some of these factors are as follows:

1. Since this was a local study, toll and Outside Plant factors were not built into the model.

2. End of Study (EOS) treatment was not considered in the economic analysis. This was not considered to have a significant impact because of the diminishing impact of EOS with long term studies.

3. Unit costing was extensively used instead of capital program costs. In order to make the costing correspond to the actual year of expenditure it would have been necessary to greatly increase the size of the model. Since the purpose of the model was for long range studies, the unit costing approach was considered sufficient for comparative costing. The result of this, of course, is that the model will not be able to give capital program costs. The model is therefore better suited to comparative cost studies and is not suitable for capital allocations.

System Dynamics is a powerful tool for planning purposes and the model developed in this report will greatly simplify planning analysis. Dynamic simulation using Dynamo is shown to be capable of simulating vast amounts of data in a method that is relatively simple for the planner to apply. The results obtained with this model in a matter of a few minutes of computer time would require man-days of effort using existing planning methods. In assessing the introduction of digital technology, the model developed herein meets most planning requirements.

7.2 LIMITATIONS

The model is presently sized to accommodate up to seven switching centres. If examination of a larger network is required the expansion of the model to include more than seven central offices can be easily achieved by replication of certain of the model equations to allow for a greater number of switches. The limit to the model size is dependent on the computer used and the capacity of the DYNAMO compiler. This model was sized for a small local network, and in the Newfoundland environment a model sized for seven switches will suffice for most applications.

The Dynamo simulation language is extremely powerful for simulation modelling but was specifically designed for cases involving flows of information, material, money, orders, people and equipment. The concept of time delays and changes over time is also inherent in Dynamo; this creates certain problems when developing models which do not extensively require these capabilities. In the development of economic anaysis equations in this study, Dynamo sometimes required a number of equations where a single equation might have sufficed in Fortran or Basic.

The use of equations involving arrays was also difficult to implement in Dynamo. In the case of adding more switching centres to the model, replication of existing equations was required. This is tedious work in model development and again

Fortran with its Do Loop or Basic with its For-Next would have been very useful during the development.

The proposed model is not self-optimizing which means the planner must input the various scenarios he wishes assesed. There remains the remote possibility that the planner, either through ignorance or oversight, might overlook the optimum scenario. Dynamo does not have a self optimizing routine and hence a large amount of human involvement is still required.

The small difficulties encounterd with model development using Dynamo should not detract from the practical use of the model. The model developed herein is easy to use and maintain in spite of some of the difficulties experienced in program development, i.e., in using Dynamo language for a model as complex as the telephone network.

7.3 CONCLUSIONS

The local telephone network model developed in this study is suitable for only a small portion of the telecommunications network. With digital technology, it is becoming increasingly difficult to look at planning networks in isolation. The local, toll, and outside plant networks are not mutually exclusive and the planner must be careful to take into account the effect that a local planning scenario would have on the toll network and vice versa.

The obvious recommendation to emerge from this project is that system dynamics be applied to the entire telephone network. In Newfoundland Telephone's case, for instance, the entire communications system could be simulated by means of a computer model.

The model could also be expanded to perform the main station forecast. The model presently requires the line growth forecasts to be inputted as tables. In addition to developing main station forecasts, once the optimum planning scenario was determined, the model could be modified to determine capital requirement forecasts based on forecasted line growth demand. This however would only be of practical use if the entire network were also simulated on the model.

The model is presently set up for a given set of constants and parameters. It is important that these constants be periodically updated to suit changing conditions. It is not difficult to overlook changing the cost of RLM lines, for instance, once the planner becomes accustomed to changing only those variables which are pertinent to the network configuration under study.

Although a powerful analytical model for the development of planning costs was developed in this project, the planning process is not complete without the intuitive insight of the planning engineer in order to select the most reasonable scenarios for evaluation and to take into account factors which do not lend themselves to modelling techniques.

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Appendix A

DYNAMO Model Equations for Local Network

```
10000 NOTE      ************************************************
10010 NOTE      *                                              *
10020 NOTE      *           DYNAMIC SIMULATION MODEL           *
10030 NOTE      *                   OF A                       *
10040 NOTE      *           LOCAL SWITCHING NETWORK            *
10050 NOTE      *                                              *
10060 NOTE      ************************************************
10070 NOTE
10080 NOTE
10090 NOTE
10100 NOTE
10110 NOTE                  BY DONALD R TARRANT
10120 NOTE                  58 RUTLEDGE CRESCENT
10130 NOTE                  ST. JOHN'S NEWFOUNDLAND
10140 NOTE                  MEMORIAL UNIVERSITY OF NEWFOUNDLAND
10150 NOTE
10160 NOTE
10170 NOTE
10180 NOTE
10190 NOTE      OFFICE LINES AND GPF FORECASTS
10200 NOTE
10210 NOTE
10220 NOTE     THE ANALOG SWITCHING EQUIPMENT EXHAUSTS IN THE CENTRAL
10230 NOTE     OFFICES AT THE FOLLOWING TIMES:
10240 NOTE
10250 NOTE     OFFICE1=1985  OFF2=1987  OFF3=1985  OFF4=1984
10260 NOTE     OFFICE5=1985  OFF6=1984  OFF7=1983
10270 NOTE
10280 NOTE
10290 NOTE
10300 NOTE
10310 NOTE     INITIAL MAIN STATIONS
10320 NOTE
10330 N LIN01=3794            CARBONEAR
10340 N LIN02=3409            BAY ROBERTS
10350 N LIN03=732             BRIGUS
10360 N LIN04=934             NEW HARBOUR
10370 N LIN05=605             UPPER ISLAND COVE
10380 N LIN06=474             LOWER ISLAND COVE
10390 N LIN07=399             WESTERN BAY
10400 NOTE
10410 NOTE  TABLE EQUATIONS FOR MAIN STATION LINE GROWTH
10420 NOTE
10430 T GPFT01=39/157/168/200/199/210/220/220/220/220/220/220/220/220/220/
10440 X 220/220/220/220/220/0
10450 T GPFT02=123/137/162/171/170/180/175/175/175/175/175/175/175/175/175/
10460 X 175/175/175/175/175/0
10470 T GPFT03=39/37/36/37/37/38/39/39/39/39/39/39/39/39/39/39/39/39/39/39/
10480 T GPFT04=27/38/40/41/44/47/50/50/50/50/50/50/50/50/50/50/50/50/50/50/
10490 T GPFT05=18/23/25/28/28/31/33/33/33/33/33/33/33/33/33/33/33/33/33/33/
10500 T GPFT06=14/18/18/18/18/19/22/22/22/22/22/22/22/22/22/22/22/22/22/22/
10510 T GPFT07=9/17/18/20/20/21/22/22/22/22/22/22/22/22/22/22/22/22/22/22/0
10520 NOTE
10530 NOTE
10540 C GPFI01=1       GROWTH INCREASE FACTOR FOR OFFICE #1

READY.
```

```
10550 C GPFIØ2=1       GROWTH INCREASE FACTOR FOR OFFICE #2
10560 C GPFIØ3=1       GROWTH INCREASE FACTOR FOR OFFICE #3
10570 C GPFIØ4=1       GROWTH INCREASE FACTOR FOR OFFICE #4
10580 C GPFIØ5=1       GROWTH INCREASE FACTOR FOR OFFICE #5
10590 C GPFIØ6=1       GROWTH INCREASE FACTOR FOR OFFICE #6
10600 C GPFIØ7=1       GROWTH INCREASE FACTOR FOR OFFICE #7
10610 C GPFT=1         GROWTH INCREASE FACTOR FOR ALL OFFICES
10620 NOTE
10630 NOTE
10640 NOTE  EQUATIONS FOR TOTAL CONNECTED MAIN STATION LINES
10650 NOTE
10660 L LINØ1.K=LINØ1.J+DT*GPFØ1.J
10670 L LINØ2.K=LINØ2.J+DT*GPFØ2.J
10680 L LINØ3.K=LINØ3.J+DT*GPFØ3.J
10690 L LINØ4.K=LINØ4.J+DT*GPFØ4.J
10700 L LINØ5.K=LINØ5.J+DT*GPFØ5.J
10710 L LINØ6.K=LINØ6.J+DT*GPFØ6.J
10720 L LINØ7.K=LINØ7.J+DT*GPFØ7.J
10730 NOTE
10740 NOTE
10750 NOTE    MAIN STATION GROWTH RATE
10760 NOTE
10770 A GPFØ1.K=GPFIØ1*GPFT*TABLE(GPFTØ1,TIME.K,Ø,2Ø,1)
10780 A GPFØ2.K=GPFT*GPFIØ2*TABLE(GPFTØ2,TIME.K,Ø,2Ø,1)
10790 A GPFØ3.K=GPFT*GPFIØ3*TABLE(GPFTØ3,TIME.K,Ø,2Ø,1)
10800 A GPFØ4.K=GPFT*GPFIØ4*TABLE(GPFTØ4,TIME.K,Ø,2Ø,1)
10810 A GPFØ5.K=GPFT*GPFIØ5*TABLE(GPFTØ5,TIME.K,Ø,2Ø,1)
10820 A GPFØ6.K=GPFT*GPFIØ6*TABLE(GPFTØ6,TIME.K,Ø,2Ø,1)
10830 A GPFØ7.K=GPFT*GPFIØ7*TABLE(GPFTØ7,TIME.K,Ø,2Ø,1)
10840 NOTE
10850 NOTE     MAIN STATION GROWTH RATE FOR LINES SERVED BY ANALOG
10860 NOTE
10870 A GPFAØ1.K=GPFØ1.K*CLIP(Ø,1,TIME.K,OVERØ1)*CLIP(1,Ø,LINØ1.K,INSTØ1)
10880 A GPFAØ2.K=GPFØ2.K*CLIP(Ø,1,TIME.K,OVERØ2)*(CLIP(1,Ø,LINØ2.K,INSTØ2))
10890 A GPFAØ3.K=GPFØ3.K*CLIP(Ø,1,TIME.K,OVERØ3)*CLIP(1,Ø,LINØ3.K,INSTØ3)
10900 A GPFAØ4.K=GPFØ4.K*CLIP(Ø,1,TIME.K,OVERØ4)*CLIP(1,Ø,LINØ4.K,INSTØ4)
10910 A GPFAØ5.K=GPFØ5.K*CLIP(Ø,1,TIME.K,OVERØ5)*CLIP(1,Ø,LINØ5.K,INSTØ5)
10920 A GPFAØ6.K=GPFØ6.K*CLIP(Ø,1,TIME.K,OVERØ6)*CLIP(1,Ø,LINØ6.K,INSTØ6)
10930 A GPFAØ7.K=GPFØ7.K*CLIP(Ø,1,TIME.K,OVERØ7)*CLIP(1,Ø,LINØ7.K,INSTØ7)
10940 A GPFTOT.K=GPFAØ1.K+GPFAØ2.K+GPFAØ3.K+GPFAØ4.K
10950 X +GPFAØ5.K+GPFAØ6.K+GPFAØ7.K
10960 NOTE
10970 NOTE  INSTALLED NUMBER OF LINES
10980 NOTE
10990 C INSTØ1=459Ø
11000 C INSTØ2=47ØØ
11010 C INSTØ3=92Ø
11020 C INSTØ4=111Ø
11030 C INSTØ5=74Ø
11040 C INSTØ6=55Ø
11050 C INSTØ7=45Ø
11060 NOTE
11070 NOTE
11080 NOTE
11090 NOTE

READY.
```

```
11100 NOTE   CENTRAL OFFICE SWITCHING PARAMETERS
11110 NOTE
11120 C INTRAM=.6        %INTRA MACHINE TRAFFIC
11130 C CCSPL=2.5        CCS TRAFFIC PER LINE
11140 C CCSCOE=2.Ø       COEFFICIENT WHICH DEPENDS ON TRAFFIC
11150 NOTE
11160 NOTE DIGITAL  GROWTH IN HOST OFFICE #XX --- OVERLAY OPTION
11170 NOTE
11180 A OLINØ1.K=GPFØ1.K+REØ2Ø1*GPFØ2.K*CLIP(1,Ø,TIME.K,OVERØ2)+
11190 X REØ3Ø1*GPFØ3.K*CLIP(1,Ø,TIME.K,OVERØ3)+
11200 X REØ4Ø1*GPFØ4.K*CLIP(1,Ø,TIME.K,OVERØ4)
11210 X +REØ5Ø1*GPFØ5.K*CLIP(1,Ø,TIME.K,OVERØ5)+
11220 X REØ6Ø1*GPFØ6.K*CLIP(1,Ø,TIME.K,OVERØ6)+
11230 X REØ7Ø1*GPFØ7.K*CLIP(1,Ø,TIME.K,OVERØ7)
11240 A NLINØ1.K=OLINØ1.K*CLIP(1,Ø,TIME.K,OVERØ1)
11250 NOTE
11260 A OLINØ2.K=GPFØ2.K+REØ1Ø2*GPFØ1.K*CLIP(1,Ø,TIME.K,OVERØ1)+
11270 X REØ3Ø2*GPFØ3.K*CLIP(1,Ø,TIME.K,OVERØ3)+
11280 X REØ4Ø2*GPFØ4.K*CLIP(1,Ø,TIME.K,OVERØ4)
11290 X +REØ5Ø2*GPFØ5.K*CLIP(1,Ø,TIME.K,OVERØ5)+
11300 X REØ6Ø2*GPFØ6.K*CLIP(1,Ø,TIME.K,OVERØ6)+
11310 X REØ7Ø2*GPFØ7.K*CLIP(1,Ø,TIME.K,OVERØ7)
11320 A NLINØ2.K=OLINØ2.K*CLIP(1,Ø,TIME.K,OVERØ2)
11330 NOTE
11340 A OLINØ3.K=GPFØ3.K+REØ1Ø3*GPFØ1.K*CLIP(1,Ø,TIME.K,OVERØ1)+
11350 X REØ2Ø3*GPFØ2.K*CLIP(1,Ø,TIME.K,OVERØ2)+
11360 X REØ4Ø3*GPFØ4.K*CLIP(1,Ø,TIME.K,OVERØ4)
11370 X +REØ5Ø3*GPFØ5.K*CLIP(1,Ø,TIME.K,OVERØ5)+
11380 X REØ6Ø3*GPFØ6.K*CLIP(1,Ø,TIME.K,OVERØ6)+
11390 X REØ7Ø3*GPFØ7.K*CLIP(1,Ø,TIME.K,OVERØ7)
11400 A NLINØ3.K=OLINØ3.K*CLIP(1,Ø,TIME.K,OVERØ3)
11410 NOTE
11420 A OLINØ4.K=GPFØ4.K+REØ1Ø4*GPFØ1.K*CLIP(1,Ø,TIME.K,OVERØ1)+
11430 X REØ2Ø4*GPFØ2.K*CLIP(1,Ø,TIME.K,OVERØ2)+
11440 X REØ3Ø4*GPFØ3.K*CLIP(1,Ø,TIME.K,OVERØ3)
11450 X +REØ5Ø4*GPFØ5.K*CLIP(1,Ø,TIME.K,OVERØ5)+
11460 X REØ6Ø4*GPFØ6.K*CLIP(1,Ø,TIME.K,OVERØ6)+
11470 X REØ7Ø4*GPFØ7.K*CLIP(1,Ø,TIME.K,OVERØ7)
11480 A NLINØ4.K=OLINØ4.K*CLIP(1,Ø,TIME.K,OVERØ4)
11490 NOTE
11500 A OLINØ5.K=GPFØ5.K+REØ1Ø5*GPFØ1.K*CLIP(1,Ø,TIME.K,OVERØ1)+
11510 X REØ2Ø5*GPFØ2.K*CLIP(1,Ø,TIME.K,OVERØ2)+
11520 X REØ3Ø5*GPFØ3.K*CLIP(1,Ø,TIME.K,OVERØ3)+
11530 X REØ4Ø5*GPFØ4.K*CLIP(1,Ø,TIME.K,OVERØ4)+
11540 X REØ6Ø5*GPFØ6.K*CLIP(1,Ø,TIME.K,OVERØ6)+
11550 X REØ7Ø5*GPFØ7.K*CLIP(1,Ø,TIME.K,OVERØ7)
11560 A NLINØ5.K=OLINØ5.K*CLIP(1,Ø,TIME.K,OVERØ5)
11570 NOTE
11580 A OLINØ6.K=GPFØ6.K+REØ1Ø6*GPFØ1.K*CLIP(1,Ø,TIME.K,OVERØ1)+
11590 X REØ2Ø6*GPFØ2.K*CLIP(1,Ø,TIME.K,OVERØ2)+
11600 X REØ3Ø6*GPFØ3.K*CLIP(1,Ø,TIME.K,OVERØ3)+
11610 X REØ4Ø6*GPFØ4.K*CLIP(1,Ø,TIME.K,OVERØ4)+
11620 X REØ5Ø6*GPFØ5.K*CLIP(1,Ø,TIME.K,OVERØ5)+
11630 X REØ7Ø6*GPFØ7.K*CLIP(1,Ø,TIME.K,OVERØ7)
11640 A NLINØ6.K=OLINØ6.K*CLIP(1,Ø,TIME.K,OVERØ6)

READY.
```

```
11650 NOTE
11660 A OLINØ7.K=GPFØ7.K+REØ1Ø7*GPFØ1.K*CLIP(1,Ø,TIME.K,OVERØ1)+
11670 X REØ2Ø7*GPFØ2.K*CLIP(1,Ø,TIME.K,OVERØ2)+
11680 X REØ3Ø7*GPFØ3.K*CLIP(1,Ø,TIME.K,OVERØ3)+
11690 X REØ4Ø7*GPFØ4.K*CLIP(1,Ø,TIME.K,OVERØ4)+
11700 X REØ5Ø7*GPFØ5.K*CLIP(1,Ø,TIME.K,OVERØ5)+
11710 X REØ6Ø7*GPFØ6.K*CLIP(1,Ø,TIME.K,OVERØ6)
11720 A NLINØ7.K=OLINØ7.K*CLIP(1,Ø,TIME.K,OVERØ7)
11730 NOTE
11740 NOTE       OVERLAY CONSTANTS - YEAR OF OVERLAY
11750 NOTE
11760 C OVERØ1=99
11770 C OVERØ2=99
11780 C OVERØ3=99
11790 C OVERØ4=99
11800 C OVERØ5=99
11810 C OVERØ6=99
11820 C OVERØ7=99
11830 NOTE
11840 NOTE         TOTAL DIGITAL LINES
11850 NOTE
11860 N QLINØ1=Ø
11870 L QLINØ1.K=QLINØ1.J+DT*OLINØ1.J*CLIP(1,Ø,TIME.J,OVERØ1)
11880 A LLINØ1.K=(LINØ1.K-QLINØ1.K)*CLIP(1,Ø,REØ1,TIME.K)
11890 NOTE
11900 N QLINØ2=Ø
11910 L QLINØ2.K=QLINØ2.J+DT*OLINØ2.J*(CLIP(1,Ø,TIME.J,OVERØ2))
11920 A LLINØ2.K=(LINØ2.K-QLINØ2.K)*CLIP(1,Ø,REØ2,TIME.K)
11930 NOTE
11940 N QLINØ3=Ø
11950 L QLINØ3.K=QLINØ3.J+DT*OLINØ3.J*CLIP(1,Ø,TIME.J,OVERØ3)
11960 A LLINØ3.K=(LINØ3.K-QLINØ3.K)*CLIP(1,Ø,REØ3,TIME.K)
11970 NOTE
11980 N QLINØ4=Ø
11990 L QLINØ4.K=QLINØ4.J+DT*OLINØ4.J*CLIP(1,Ø,TIME.J,OVERØ4)
12000 A LLINØ4.K=(LINØ4.K-QLINØ4.K)*CLIP(1,Ø,REØ4,TIME.K)
12010 NOTE
12020 N QLINØ5=Ø
12030 L QLINØ5.K=QLINØ5.J+DT*OLINØ5.J*CLIP(1,Ø,TIME.J,OVERØ5)
12040 A LLINØ5.K=(LINØ5.K-QLINØ5.K)*CLIP(1,Ø,REØ5,TIME.K)
12050 NOTE
12060 N QLINØ6=Ø
12070 L QLINØ6.K=QLINØ6.J+DT*OLINØ6.J*CLIP(1,Ø,TIME.J,OVERØ6)
12080 A LLINØ6.K=(LINØ6.K-QLINØ6.K)*CLIP(1,Ø,REØ6,TIME.K)
12090 NOTE
12100 N QLINØ7=Ø
12110 L QLINØ7.K=QLINØ7.J+DT*OLINØ7.J*CLIP(1,Ø,TIME.J,OVERØ7)
12120 A LLINØ7.K=(LINØ7.K-QLINØ7.K)*CLIP(1,Ø,REØ7,TIME.K)
12130 NOTE
12140 A LIN.K=LLINØ1.K+LLINØ2.K+LLINØ3.K+LLINØ4.K+LLINØ5.K+LLINØ6.K+LLINØ7.K
12150 NOTE
12160 NOTE
12170 NOTE
12180 NOTE      REPLACEMENT OPTION LINES
12190 NOTE

READY.
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12200 NOTE     INITIAL DIGITAL LINES SERVED BY A DIGITAL SWITCH
12210 NOTE
12220 N TLINØ1=0
12230 N TLINØ2=0
12240 N TLINØ3=0
12250 N TLINØ4=0
12260 N TLINØ5=0
12270 N TLINØ6=0
12280 N TLINØ7=0
12290 NOTE
12300 NOTE   NUMBER OF LINES  SERVED BY A DIGITAL SWITCH
12310 NOTE
12320 L TLINØ1.K=TLINØ1.J+DT*LRINØ1.J
12330 L TLINØ2.K=TLINØ2.J+DT*LRINØ2.J
12340 L TLINØ3.K=TLINØ3.J+DT*LRINØ3.J
12350 L TLINØ4.K=TLINØ4.J+DT*LRINØ4.J
12360 L TLINØ5.K=TLINØ5.J+DT*LRINØ5.J
12370 L TLINØ6.K=TLINØ6.J+DT*LRINØ6.J
12380 L TLINØ7.K=TLINØ7.J+DT*LRINØ7.J
12390 NOTE
12400 A XLINØ1.K=TLINØ1.K+LLINØ1.K
12410 A XLINØ2.K=TLINØ2.K+LLINØ2.K
12420 A XLINØ3.K=TLINØ3.K+LLINØ3.K
12430 A XLINØ4.K=TLINØ4.K+LLINØ4.K
12440 A XLINØ5.K=TLINØ5.K+LLINØ5.K
12450 A XLINØ6.K=TLINØ6.K+LLINØ6.K
12460 A XLINØ7.K=TLINØ7.K+LLINØ7.K
12470 NOTE
12480 NOTE GROWTH OF DIGITAL CENTRAL OFFICE AND REMOTE LINES
12490 NOTE
12500 A LRINØ1.K=SWITCH(1,Ø,TEØ1.K)*(NLINØ1.K+LLINØ2.K*REØ201*
12510 X PULSE(1,REØ2,1ØØ)+LLINØ1.K*PULSE(1,REØ1,1ØØ)+
12520 X LLINØ5.K*REØ501*PULSE(1,REØ5,1ØØ)+
12530 X LLINØ3.K*REØ301*PULSE(1,REØ3,1ØØ)+LLINØ4.K*REØ401*PULSE(1,REØ4,1ØØ)
12540 X +LLINØ6.K*REØ601*PULSE(1,REØ6,1ØØ)+LLINØ7.K*REØ701*PULSE(1,REØ7,1ØØ)
12550 NOTE
12560 A LRINØ2.K=SWITCH(1,Ø,TEØ2.K)*(NLINØ2.K+LLINØ1.K*REØ102*
12570 X PULSE(1,REØ1,1ØØ)+LLINØ2.K*PULSE(1,REØ2,1ØØ)+
12580 X LLINØ6.K*REØ602*PULSE(1,REØ6,1ØØ)+
12590 X LLINØ7.K*REØ702*PULSE(1,REØ7,1ØØ)+
12600 X LLINØ5.K*REØ502*PULSE(1,REØ5,1ØØ)+
12610 X LLINØ3.K*REØ302*PULSE(1,REØ3,1ØØ)+LLINØ4.K*REØ402*PULSE(1,REØ4,1ØØ))
12620 NOTE
12630 A LRINØ3.K=SWITCH(1,Ø,TEØ3.K)*(NLINØ3.K+LLINØ1.K*REØ103*
12640 X PULSE(1,REØ1,1ØØ)+LLINØ3.K*PULSE(1,REØ3,1ØØ)+
12650 X LLINØ6.K*REØ6Ø3*PULSE(1,REØ6,1ØØ)+
12660 X LLINØ7.K*REØ7Ø3*PULSE(1,REØ7,1ØØ)+
12670 X LLINØ2.K*REØ2Ø3*PULSE(1,REØ2,1ØØ)+LLINØ4.K*REØ403*PULSE(1,REØ4,1ØØ))
12680 NOTE
12690 A LRINØ4.K=SWITCH(1,Ø,TEØ4.K)*(NLINØ4.K+LLINØ1.K*REØ104*
12700 X PULSE(1,REØ1,1ØØ)+LLINØ4.K*PULSE(1,REØ4,1ØØ)+
12710 X LLINØ5.K*REØ5Ø4*PULSE(1,REØ5,1ØØ)+
12720 X LLINØ6.K*REØ6Ø4*PULSE(1,REØ6,1ØØ)+LLINØ7.K*REØ7Ø4*PULSE(1,REØ7,1ØØ)+
12730 X LLINØ2.K*REØ2Ø4*PULSE(1,REØ2,1ØØ)+LLINØ3.K*REØ3Ø4*PULSE(1,REØ3,1ØØ))
12740 NOTE

READY.
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12750 A  LRINØ5.K=SWITCH(1,0,TEØ5.K)*(NLINØ5.K+LLINØ1.K*REØ105*
12760 X  PULSE(1,REØ1,100)+LLINØ2.K*REØ205*PULSE(1,REØ2,100)+
12770 X  LLINØ3.K*REØ305*PULSE(1,REØ3,100)+LLINØ4.K*REØ405*PULSE(1,REØ4,100)+
12780 X  LLINØ6.K*REØ605*PULSE(1,REØ6,100)+
12790 X  LLINØ7.K*REØ705*PULSE(1,REØ7,100)+
12800 X  LLINØ5.K*PULSE(1,REØ5,100))
12810 NOTE
12820 A  LRINØ6.K=SWITCH(1,0,TEØ6.K)*(NLINØ6.K+LLINØ1.K*REØ106*
12830 X  PULSE(1,REØ1,100)+LLINØ2.K*REØ206*PULSE(1,REØ2,100)+
12840 X  LLINØ3.K*REØ306*PULSE(1,REØ3,100)+
12850 X  LLINØ4.K*REØ406*PULSE(1,REØ4,100)+
12860 X  LLINØ5.K*REØ506*PULSE(1,REØ5,100)+
12870 X  LLINØ6.K*PULSE(1,REØ6,100)+
12880 X  LLINØ7.K*REØ706*PULSE(1,REØ7,100))
12890 NOTE
12900 A  LRINØ7.K=SWITCH(1,0,TEØ7.K)*(NLINØ7.K+LLINØ1.K*REØ107*
12910 X  PULSE(1,REØ1,100)+LLINØ2.K*REØ207*PULSE(1,REØ2,100)+
12920 X  LLINØ3.K*REØ307*PULSE(1,REØ3,100)+
12930 X  LLINØ4.K*REØ407*PULSE(1,REØ4,100)+
12940 X  LLINØ5.K*REØ507*PULSE(1,REØ5,100)+
12950 X  LLINØ6.K*REØ607*PULSE(1,REØ6,100)+
12960 X  LLINØ7.K*PULSE(1,REØ7,100))
12970 NOTE
12980 A  LRIN.K=LRINØ1.K+LRINØ2.K+LRINØ3.K+LRINØ4.K+LRINØ5.K+LRINØ6.K+LRINØ7.
12990 NOTE
13000 NOTE
13010 A  DMSTOT.K=LRIN.K-RMTOT.K      TOTAL GROWTH IN DIGITAL LINES ALL SWITCHE
13020 NOTE
13030 NOTE
13040 N  TLIN=0                   TOTAL DIGITAL LINES SERVED BY ALL DIGITAL SWITCH
13050 L  TLIN.K=TLIN.J+DT*DMSTOT.J
13060 NOTE
13070 NOTE
13080 N  TRLM=Ø
13090 L  TRLM.K=TRLM.J+DT*RMTOT.J
13100 NOTE
13110 NOTE
13120 NOTE DIGITAL REPLACEMENT DATES FOR ALL OFFICES
13130 NOTE
13140 NOTE
13150 C  REØ1=100
13160 C  REØ2=100
13170 C  REØ3=100
13180 C  REØ4=100
13190 C  REØ5=100
13200 C  REØ6=100
13210 C  REØ7=100
13220 NOTE
13230 NOTE
13240 NOTE HOMING OFFICE TRUTH TABLE
13250 NOTE
13260 C  REØ201=0,REØ301=Ø,REØ401=0,REØ501=Ø,REØ601=0,REØ701=0
13270 C  REØ102=Ø,REØ302=Ø,REØ402=0,REØ502=Ø,REØ602=0,REØ702=0
13280 C  REØ103=0,REØ203=Ø,REØ403=Ø,REØ503=Ø,REØ603=Ø,REØ703=0
13290 C  REØ104=0,REØ204=0,REØ304=Ø,REØ504=Ø,REØ604=Ø,REØ704=0

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13300 C RE0105=0,RE0205=0,RE0305=0,RE0405=0,RE0605=0,RE0705=0
13310 C RE0106=0,RE0206=0,RE0306=0,RE0406=0,RE0506=0,RE0706=0
13320 C RE0107=0,RE0207=0,RE0307=0,RE0407=0,RE0507=0,RE0607=0
13330 NOTE
13340 A TE01.K=RE0102+RE0103+RE0104+RE0105+RE0106+RE0107
13350 A TE02.K=RE0201+RE0203+RE0204+RE0205+RE0206+RE0207
13360 A TE03.K=RE0301+RE0302+RE0304+RE0305+RE0306+RE0307
13370 A TE04.K=RE0401+RE0402+RE0403+RE0405+RE0406+RE0407
13380 A TE05.K=RE0501+RE0502+RE0503+RE0504+RE0506+RE0507
13390 A TE06.K=RE0601+RE0602+RE0603+RE0604+RE0605+RE0607
13400 A TE07.K=RE0701+RE0702+RE0703+RE0704+RE0705+RE0706
13410 NOTE
13420 NOTE
13430 NOTE          CCS'S BETWEEN OFFICES -- ALL LINES
13440 NOTE
13450 NOTE
13460 A RS0201.K=(INTRAM*CCSPL*XLIN01.K*XLIN02.K)/(XLIN01.K+XLIN02.K+.1)
13470 A RS0301.K=(INTRAM*CCSPL*XLIN01.K*XLIN03.K)/(XLIN01.K+XLIN03.K+.1)
13480 A RS0401.K=(INTRAM*CCSPL*XLIN01.K*XLIN04.K)/(XLIN01.K+XLIN04.K+.1)
13490 A RS0501.K=(INTRAM*CCSPL*XLIN01.K*XLIN05.K)/(XLIN01.K+XLIN05.K+.1)
13500 A RS0601.K=(INTRAM*CCSPL*XLIN01.K*XLIN06.K)/(XLIN01.K+XLIN06.K+.1)
13510 A RS0701.K=(INTRAM*CCSPL*XLIN01.K*XLIN07.K)/(XLIN01.K+XLIN07.K+.1)
13520 NOTE
13530 A RS0302.K=(INTRAM*CCSPL*XLIN02.K*XLIN03.K)/(XLIN02.K+XLIN03.K+.1)
13540 A RS0402.K=(INTRAM*CCSPL*XLIN02.K*XLIN04.K)/(XLIN02.K+XLIN04.K+.1)
13550 A RS0502.K=(INTRAM*CCSPL*XLIN02.K*XLIN05.K)/(XLIN02.K+XLIN05.K+.1)
13560 A RS0602.K=(INTRAM*CCSPL*XLIN02.K*XLIN06.K)/(XLIN02.K+XLIN06.K+.1)
13570 A RS0702.K=(INTRAM*CCSPL*XLIN02.K*XLIN07.K)/(XLIN02.K+XLIN07.K+.1)
13580 NOTE
13590 A RS0403.K=(INTRAM*CCSPL*XLIN03.K*XLIN04.K)/(XLIN03.K+XLIN04.K+.1)
13600 A RS0503.K=(INTRAM*CCSPL*XLIN03.K*XLIN05.K)/(XLIN03.K+XLIN05.K+.1)
13610 A RS0603.K=(INTRAM*CCSPL*XLIN03.K*XLIN06.K)/(XLIN03.K+XLIN06.K+.1)
13620 A RS0703.K=(INTRAM*CCSPL*XLIN03.K*XLIN06.K)/(XLIN03.K+XLIN07.K+.1)
13630 NOTE
13640 A RS0504.K=(INTRAM*CCSPL*XLIN04.K*XLIN05.K)/(XLIN04.K+XLIN05.K+.1)
13650 A RS0604.K=(INTRAM*CCSPL*XLIN04.K*XLIN06.K)/(XLIN04.K+XLIN06.K+.1)
13660 A RS0704.K=(INTRAM*CCSPL*XLIN04.K*XLIN07.K)/(XLIN04.K+XLIN07.K+.1)
13670 NOTE
13680 A RS0605.K=(INTRAM*CCSPL*XLIN05.K*XLIN06.K)/(XLIN06.K+XLIN05.K+.1)
13690 A RS0607.K=(INTRAM*CCSPL*XLIN07.K*XLIN06.K)/(XLIN06.K+XLIN07.K+.1)
13700 A RS0705.K=(INTRAM*CCSPL*XLIN05.K*XLIN07.K)/(XLIN05.K+XLIN07.K+.1)
13710 NOTE
13720 NOTE          TRUNKS CALCULATED FROM CCS'S--ALL LINES
13730 NOTE
13740 A RR0201.K=(RS0201.K/36)+CCSCOE*SQRT(RS0201.K/36)
13750 A RR0301.K=(RS0301.K/36)+CCSCOE*SQRT(RS0301.K/36)
13760 A RR0401.K=(RS0401.K/36)+CCSCOE*SQRT(RS0401.K/36)
13770 A RR0501.K=(RS0501.K/36)+CCSCOE*SQRT(RS0501.K/36)
13780 A RR0601.K=(RS0601.K/36)+CCSCOE*SQRT(RS0601.K/36)
13790 A RR0701.K=(RS0701.K/36)+CCSCOE*SQRT(RS0701.K/36)
13800 NOTE
13810 A RR0302.K=(RS0302.K/36)+CCSCOE*SQRT(RS0302.K/36)
13820 A RR0402.K=(RS0402.K/36)+CCSCOE*SQRT(RS0402.K/36)
13830 A RR0502.K=(RS0502.K/36)+CCSCOE*SQRT(RS0502.K/36)
13840 A RR0602.K=(RS0602.K/36)+CCSCOE*SQRT(RS0602.K/36)

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13850 A RRØ702.K=(RSØ702.K/36)+CCSCOE*SQRT(RSØ702.K/36)
13860 NOTE
13870 A RRØ403.K=(RSØ403.K/36)+CCSCOE*SQRT(RSØ403.K/36)
13880 A RRØ503.K=(RSØ503.K/36)+CCSCOE*SQRT(RSØ503.K/36)
13890 A RRØ603.K=(RSØ603.K/36)+CCSCOE*SQRT(RSØ603.K/36)
13900 A RRØ703.K=(RSØ703.K/36)+CCSCOE*SQRT(RSØ703.K/36)
13910 NOTE
13920 A RRØ504.K=(RSØ504.K/36)+CCSCOE*SQRT(RSØ504.K/36)
13930 A RRØ604.K=(RSØ604.K/36)+CCSCOE*SQRT(RSØ604.K/36)
13940 A RRØ704.K=(RSØ704.K/36)+CCSCOE*SQRT(RSØ704.K/36)
13950 NOTE
13960 A RRØ605.K=(RSØ605.K/36)+CCSCOE*SQRT(RSØ605.K/36)
13970 A RRØ705.K=(RSØ705.K/36)+CCSCOE*SQRT(RSØ705.K/36)
13980 NOTE
13990 A RRØ607.K=(RSØ607.K/36)+CCSCOE*SQRT(RSØ607.K/36)
14000 NOTE
14010 NOTE                       CALCULATION OF RLM LINES
14020 NOTE
14030 A RMØ201.K=REØ201*(GPFØ2.K*CLIP(1,Ø,TIME.K,OVERØ2)
14040 X +LLINØ2.K*PULSE(1,REØ2,100))
14050 A RMØ301.K=REØ301*(GPFØ3.K*CLIP(1,Ø,TIME.K,OVERØ3)
14060 X +LLINØ3.K*PULSE(1,REØ3,100))
14070 A RMØ401.K=REØ401*(GPFØ4.K*CLIP(1,Ø,TIME.K,OVERØ4)
14080 X +LLINØ4.K*PULSE(1,REØ4,100))
14090 A RMØ501.K=REØ501*(GPFØ5.K*CLIP(1,Ø,TIME.K,OVERØ5)
14100 X +LLINØ5.K*PULSE(1,REØ5,100))
14110 A RMØ601.K=REØ601*(GPFØ6.K*CLIP(1,Ø,TIME.K,OVERØ6)
14120 X +LLINØ6.K*PULSE(1,REØ6,100))
14130 A RMØ701.K=REØ701*(GPFØ7.K*CLIP(1,Ø,TIME.K,OVERØ7)
14140 X +LLINØ7.K*PULSE(1,REØ7,100))
14150 NOTE
14160 A RMØ102.K=REØ102*(GPFØ1.K*CLIP(1,Ø,TIME.K,OVERØ1)
14170 X +LLINØ1.K*PULSE(1,REØ1,100))
14180 A RMØ302.K=REØ302*(GPFØ3.K*CLIP(1,Ø,TIME.K,OVERØ3)
14190 X +LLINØ3.K*PULSE(1,REØ3,100))
14200 A RMØ402.K=REØ402*(GPFØ4.K*CLIP(1,Ø,TIME.K,OVERØ4)
14210 X +LLINØ4.K*PULSE(1,REØ4,100))
14220 A RMØ502.K=REØ502*(GPFØ5.K*CLIP(1,Ø,TIME.K,OVERØ5)
14230 X +LLINØ5.K*PULSE(1,REØ5,100))
14240 A RMØ602.K=REØ602*(GPFØ6.K*CLIP(1,Ø,TIME.K,OVERØ6)
14250 X +LLINØ6.K*PULSE(1,REØ6,100))
14260 A RMØ702.K=REØ702*(GPFØ7.K*CLIP(1,Ø,TIME.K,OVERØ7)
14270 X +LLINØ7.K*PULSE(1,REØ7,100))
14280 NOTE
14290 A RMØ103.K=REØ103*(GPFØ1.K*CLIP(1,Ø,TIME.K,OVERØ1)
14300 X +LLINØ1.K*PULSE(1,REØ1,100))
14310 A RMØ203.K=REØ203*(GPFØ2.K*CLIP(1,Ø,TIME.K,OVERØ2)
14320 X +LLINØ2.K*PULSE(1,REØ2,100))
14330 A RMØ403.K=REØ403*(GPFØ4.K*CLIP(1,Ø,TIME.K,OVERØ4)
14340 X +LLINØ4.K*PULSE(1,REØ4,100))
14350 A RMØ503.K=REØ503*(GPFØ5.K*CLIP(1,Ø,TIME.K,OVERØ5)
14360 X +LLINØ5.K*PULSE(1,REØ5,100))
14370 A RMØ603.K=REØ603*(GPFØ6.K*CLIP(1,Ø,TIME.K,OVERØ6)
14380 X +LLINØ6.K*PULSE(1,REØ6,100))
14390 A RMØ703.K=REØ703*(GPFØ7.K*CLIP(1,Ø,TIME.K,OVERØ7)

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14400 X +LLINØ7.K*PULSE(1,REØ7,100))
14410 NOTE
14420 A RMØ104.K=REØ104*(GPFØ1.K*CLIP(1,0,TIME.K,OVERØ1)
14430 X +LLINØ1.K*PULSE(1,REØ1,100))
14440 A RMØ204.K=REØ204*(GPFØ2.K*CLIP(1,0,TIME.K,OVERØ2)
14450 X +LLINØ2.K*PULSE(1,REØ2,100))
14460 A RMØ304.K=REØ304*(GPFØ3.K*CLIP(1,0,TIME.K,OVERØ3)
14470 X +LLINØ3.K*PULSE(1,REØ3,100))
14480 A RMØ504.K=REØ504*(GPFØ5.K*CLIP(1,Ø,TIME.K,OVERØ5)
14490 X +LLINØ5.K*PULSE(1,REØ5,100))
14500 A RMØ604.K=REØ604*(GPFØ6.K*CLIP(1,Ø,TIME.K,OVERØ6)
14510 X +LLINØ6.K*PULSE(1,REØ6,100))
14520 A RMØ704.K=REØ704*(GPFØ7.K*CLIP(1,Ø,TIME.K,OVERØ7)
14530 X +LLINØ7.K*PULSE(1,REØ7,100))
14540 NOTE
14550 A RMØ105.K=REØ105*(GPFØ1.K*CLIP(1,0,TIME.K,OVERØ1)
14560 X +LLINØ1.K*PULSE(1,REØ1,100))
14570 A RMØ205.K=REØ205*(GPFØ2.K*CLIP(1,0,TIME.K,OVERØ2)
14580 X +LLINØ2.K*PULSE(1,REØ2,100))
14590 A RMØ305.K=REØ305*(GPFØ3.K*CLIP(1,0,TIME.K,OVERØ3)
14600 X +LLINØ3.K*PULSE(1,REØ3,100))
14610 A RMØ405.K=REØ405*(GPFØ4.K*CLIP(1,0,TIME.K,OVERØ4)
14620 X +LLINØ4.K*PULSE(1,REØ4,100))
14630 A RMØ605.K=REØ605*(GPFØ6.K*CLIP(1,Ø,TIME.K,OVERØ6)
14640 X +LLINØ6.K*PULSE(1,REØ6,100))
14650 A RMØ705.K=REØ705*(GPFØ7.K*CLIP(1,Ø,TIME.K,OVERØ7)
14660 X +LLINØ7.K*PULSE(1,REØ7,100))
14670 NOTE
14680 A RMØ106.K=REØ106*(GPFØ1.K*CLIP(1,0,TIME.K,OVERØ1)
14690 X +LLINØ1.K*PULSE(1,REØ1,100))
14700 A RMØ206.K=REØ206*(GPFØ2.K*CLIP(1,Ø,TIME.K,OVERØ2)
14710 X +LLINØ2.K*PULSE(1,REØ2,100))
14720 A RMØ306.K=REØ306*(GPFØ3.K*CLIP(1,0,TIME.K,OVERØ3)
14730 X +LLINØ3.K*PULSE(1,REØ3,100))
14740 A RMØ406.K=REØ406*(GPFØ4.K*CLIP(1,0,TIME.K,OVERØ4)
14750 X +LLINØ4.K*PULSE(1,REØ4,100))
14760 A RMØ506.K=REØ506*(GPFØ5.K*CLIP(1,0,TIME.K,OVERØ5)
14770 X +LLINØ5.K*PULSE(1,REØ5,100))
14780 A RMØ706.K=REØ706*(GPFØ7.K*CLIP(1,0,TIME.K,OVERØ7)
14790 X +LLINØ7.K*PULSE(1,REØ7,100))
14800 NOTE
14810 A RMØ107.K=REØ107*(GPFØ1.K*CLIP(1,Ø,TIME.K,OVERØ1)
14820 X +LLINØ1.K*PULSE(1,REØ1,100))
14830 A RMØ207.K=REØ207*(GPFØ2.K*CLIP(1,Ø,TIME.K,OVERØ2)
14840 X +LLINØ2.K*PULSE(1,REØ2,100))
14850 A RMØ307.K=REØ307*(GPFØ3.K*CLIP(1,Ø,TIME.K,OVERØ3)
14860 X +LLINØ3.K*PULSE(1,REØ3,100))
14870 A RMØ407.K=REØ407*(GPFØ4.K*CLIP(1,Ø,TIME.K,OVERØ4)
14880 X +LLINØ4.K*PULSE(1,REØ4,100))
14890 A RMØ507.K=REØ507*(GPFØ5.K*CLIP(1,Ø,TIME.K,OVERØ5)
14900 X +LLINØ5.K*PULSE(1,REØ5,100))
14910 A RMØ607.K=REØ607*(GPFØ6.K*CLIP(1,Ø,TIME.K,OVERØ6)
14920 X +LLINØ6.K*PULSE(1,REØ6,100))
14930 NOTE
14940 NOTE TOTAL NUMBER OF RLM LINES

READY.
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14950 NOTE
14960 A RMTOT.K=RM01.K+RM02.K+RM03.K+RM04.K+RM05.K+RM06.K+RM07.K
14970 NOTE
14980 A RM01.K=RM0201.K+RM0301.K+RM0401.K+RM0501.K+RM0601.K+RM0701.K
14990 A RM02.K=RM0102.K+RM0302.K+RM0402.K+RM0502.K+RM0602.K+RM0702.K
15000 A RM03.K=RM0103.K+RM0203.K+RM0403.K+RM0503.K+RM0603.K+RM0703.K
15010 A RM04.K=RM0104.K+RM0204.K+RM0304.K+RM0504.K+RM0604.K+RM0704.K
15020 A RM05.K=RM0105.K+RM0205.K+RM0305.K+RM0405.K+RM0605.K+RM0705.K
15030 A RM06.K=RM0106.K+RM0206.K+RM0306.K+RM0406.K+RM0506.K+RM0706.K
15040 A RM07.K=RM0107.K+RM0207.K+RM0307.K+RM0407.K+RM0507.K+RM0607.K
15050 NOTE
15060 NOTE              PCM LINES REQUIRED
15070 NOTE
15080 A TT0201.K=.04*DG0201.K+.007*(RM0201.K+RM0102.K)
15090 A TT0301.K=.04*DG0301.K+.007*(RM0301.K+RM0103.K)
15100 A TT0401.K=.04*DG0401.K+.007*(RM0401.K+RM0104.K)
15110 A TT0501.K=.04*DG0501.K+.007*(RM0501.K+RM0105.K)
15120 A TT0302.K=.04*DG0302.K+.007*(RM0302.K+RM0203.K)
15130 A TT0402.K=.04*DG0402.K+.007*(RM0402.K+RM0204.K)
15140 A TT0502.K=.04*DG0502.K+.007*(RM0502.K+RM0205.K)
15150 A TT0403.K=.04*DG0403.K+.007*(RM0403.K+RM0304.K)
15160 A TT0503.K=.04*DG0503.K+.007*(RM0503.K+RM0305.K)
15170 A TT0504.K=.04*DG0504.K+.007*(RM0504.K+RM0405.K)
15180 NOTE
15190 A TT0601.K=.04*DG0601.K+.007*(RM0601.K+RM0106.K)
15200 A TT0701.K=.04*DG0701.K+.007*(RM0701.K+RM0107.K)
15210 A TT0602.K=.04*DG0602.K+.007*(RM0602.K+RM0206.K)
15220 A TT0702.K=.04*DG0702.K+.007*(RM0702.K+RM0207.K)
15230 A TT0703.K=.04*DG0703.K+.007*(RM0703.K+RM0307.K)
15240 A TT0603.K=.04*DG0603.K+.007*(RM0603.K+RM0306.K)
15250 A TT0604.K=.04*DG0604.K+.007*(RM0604.K+RM0406.K)
15260 A TT0704.K=.04*DG0704.K+.007*(RM0704.K+RM0407.K)
15270 A TT0605.K=.04*DG0605.K+.007*(RM0605.K+RM0506.K)
15280 A TT0705.K=.04*DG0705.K+.007*(RM0705.K+RM0507.K)
15290 A TT0607.K=.04*DG0607.K+.007*(RM0607.K+RM0706.K)
15300 NOTE
15310 A TOTFAX.K=TT0201.K+TT0301.K+TT0401.K+TT0302.K+TT0402.K
15320 X +TT0403.K+TT0501.K+TT0502.K+TT0504.K+TT0503.K
15330 X +TT0601.K+TT0701.K+TT0602.K+TT0702.K+TT0603.K+TT0703.K
15340 X +TT0604.K+TT0704.K+TT0605.K+TT0705.K+TT0607.K
15350 NOTE
15360 NOTE
15370 NOTE                    FACILITY COSTS
15380 NOTE
15390 A FAXSST.K=CIF*ICIFF*(PCM/24)*(AG0201.K*D0201+AG0301.K*D0301
15400 X +AG0501.K*D0501+AG0502.K*D0502+AG0503.K*D0503+AG0504.K*D0504
15410 X +AG0601.K*D0601+AG0602.K*D0602+AG0603.K*D0603+AG0604.K*D0604
15420 X +AG0605.K*D0605+AG0607.K*D0607+AG0701.K*D0701+AG0702.K*D0702
15430 X +AG0703.K*D0703+AG0704.K*D0704+AG0705.K*D0705
15440 X +AG0401.K*D0401+AG0302.K*D0302+AG0402.K*D0402+AG0403.K*D0403)
15450 A FAXAST.K=FAXSST.K+(2*DE3)*TOATRK.K
15460 A FAXCST.K=FAXAST.K+FAXDST.K
15470 A FAXDST.K=CIF*ICIFFD*PCM*(TT0201.K*D0201+TT0301.K*D0301
15480 X +TT0501.K*D0501+TT0502.K*D0502+TT0503.K*D0503+TT0504.K*D0504
15490 X +TT0601.K*D0601+TT0602.K*D0602+TT0603.K*D0603+TT0604.K*D0604

READY.
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15500 X +TT0605.K*D0605+TT0607.K*D0607+TT0701.K*D0701+TT0702.K*D0702
15510 X +TT0703.K*D0703+TT0704.K*D0704+TT0705.K*D0705
15520 X +TT0401.K*D0401+TT0302.K*D0302+TT0402.K*D0402
15530 X +TT0403.K*D0403)
15540 NOTE
15550 NOTE    DISTANCES BETWEEN SWITCHING CENTRES
15560 NOTE
15570 C D0201=13.6,D0301=19.9,D0401=28.5,D0302=6.3,D0402=14.9,D0403=21.2
15580 C D0501=20.6,D0502=7,D0503=13.3,D0504=21.9
15590 C D0601=43.6,D0602=30,D0604=44.9,D0603=36.3,D0605=23,D0607=10
15600 C D0701=33.6,D0702=20,D0703=26.3,D0704=34.9,D0705=13
15610 NOTE
15620 NOTE
15630 A RM1.K=CLIP(RM01.K,1200,RM01.K,1200)
15640 A RM2.K=CLIP(RM02.K,1200,RM02.K,1200)
15650 A RM3.K=CLIP(RM03.K,1200,RM03.K,1200)
15660 A RM4.K=CLIP(RM04.K,1200,RM04.K,1200)
15670 A RM5.K=CLIP(RM05.K,1200,RM05.K,1200)
15680 A RM6.K=CLIP(RM06.K,1200,RM06.K,1200)
15690 A RM7.K=CLIP(RM07.K,1200,RM07.K,1200)
15700 NOTE
15710 NOTE
15720 A RL1.K=SWITCH(0,1,TE01.K)
15730 A RL2.K=SWITCH(0,1,TE02.K)
15740 A RL3.K=SWITCH(0,1,TE03.K)
15750 A RL4.K=SWITCH(0,1,TE04.K)
15760 A RL5.K=SWITCH(0,1,TE05.K)
15770 A RL6.K=SWITCH(0,1,TE06.K)
15780 A RL7.K=SWITCH(0,1,TE07.K)
15790 NOTE
15800 NOTE   CAPITAL COSTS
15810 NOTE
15820 A GPFCST.K=CIF*ICIFG*SXS*GPFTOT.K
15830 A RLMCST.K=CIF*ICIFR*RLM*RMTOT.K+GSCRLM*
15840 X (PULSE(RM1.K/1200,OVER01,100)*RL1.K
15850 X +PULSE(RM2.K/1200,OVER02,100)*RL2.K+PULSE(RM3.K/1200,OVER03,100)*RL3.K
15860 X +PULSE(RM4.K/1200,OVER04,100)*RL4.K+PULSE(RM5.K/1200,OVER05,100)*RL5.K
15870 X +PULSE(RM6.K/1200,OVER06,100)*RL6.K
15880 X +PULSE(RM7.K/1200,OVER07,100)*RL7.K)
15890 NOTE
15900 A BLDCST.K=CIF*ICIFB*(BLDA*GPFTOT.K+BLDR*RMTOT.K+BLDD*DMSTOT.K)
15910 A TRKCST.K=CIF*ICIFT*((TRKDIG*TODTRK.K)+(TRKANA*TOATRK.K))
15920 A DMSCST.K=DMS*CIF*ICIFD*DMSTOT.K
15930 A DMEXCT.K=DMSCST.K*PEREXP
15940 C PEREXP=.05
15950 C GSCRLM=240000
15960 C DE3=500
15970 C PCM=250
15980 C SXS=200
15990 C RLM=200
16000 C DMS=300
16010 C TRKDIG=225
16020 C TRKANA=1200
16030 C BLDA=32
16040 C BLDR=12

READY.
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16050 C BLDD=8
16060 C CIF=1
16070 C ICIFFD=1
16080 C ICIFB=1
16090 C ICIFT=1
16100 C ICIFG=1
16110 C ICIFD=1
16120 C ICIFR=1
16130 C ICIFF=1
16140 NOTE
16150 NOTE                MAINTENANCE COSTS
16160 NOTE
16170 A GPFMST.K=CIF*MIF*MSXS*LIN.K
16180 A RLMMST.K=CIF*MIF*MRLM*TRLM.K
16190 A DMSMST.K=CIF*MIF*MDMS*TLIN.K
16200 A BLDMST.K=CIF*MIF*(MBLDA*LIN.K+MBLDR*TRLM.K+MBLDD*TLIN.K)
16210 A TRTMST.K=CIF*MIF*(((MRKDIG+(TRKSOF/MIF))*TODTRK.K)+(MRKANA*TOATRK.K))
16220 A FATMST.K=FAXMAN*FAXCST.K
16230 N TRKMST=0
16240 L TRKMST.K=TRKMST.J+DT*TRTMST.J
16250 N FAXMST=0
16260 L FAXMST.K=FAXMST.J+DT*FATMST.J
16270 NOTE
16280 NOTE  TOTAL DIGITAL SWITCH GET STARTED COSTS
16290 NOTE
16300 A DMSGSC.K=GSCOST*(SWITCH(1,0,TE01.K)*PULSE(1,RE01,100)
16310 X +SWITCH(1,0,TE02.K)*PULSE(1,RE02,100)
16320 X +SWITCH(1,0,TE04.K)*PULSE(1,RE04,100)
16330 X +SWITCH(1,0,TE05.K)*PULSE(1,RE05,100)
16340 X +SWITCH(1,0,TE06.K)*PULSE(1,RE06,100)
16350 X +SWITCH(1,0,TE07.K)*PULSE(1,RE07,100))
16360 NOTE
16370 C GSCOST=650000
16380 NOTE
16390 NOTE TOTAL DIGITAL SOFTWARE COSTS
16400 NOTE
16410 A DMSSOF.K=GSSOFT*(SWITCH(1,0,TE01.K)*PULSE(1,RE01,100)
16420 X +SWITCH(1,0,TE02.K)*PULSE(1,RE02,100)
16430 X +SWITCH(1,0,TE03.K)*PULSE(1,RE03,100)
16440 X +SWITCH(1,0,TE04.K)*PULSE(1,RE04,100)
16450 X +SWITCH(1,0,TE05.K)*PULSE(1,RE05,100)
16460 X +SWITCH(1,0,TE06.K)*PULSE(1,RE06,100)
16470 X +SWITCH(1,0,TE07.K)*PULSE(1,RE07,100))
16480 C GSSOFT=185000
16490 NOTE
16500 NOTE
16510 NOTE
16520 C FAXMAN=.05
16530 C MIF=1
16540 C TRKSOF=100
16550 C MSXS=10
16560 C MRLM=7
16570 C MDMS=5
16580 C MBLDA=3
16590 C MBLDD=1

READY.
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16600 C MBLDR=1.5
16610 C MRKDIG=20
16620 C MRKAMA=60
16630 NOTE
16640 NOTE
16650 NOTE
16660 NOTE
16670 A CAPTX1.K=(FNG.K-SALV*FNH.K+REMOV*FNI.K)*FNB.K
16680 A CAPTX2.K=(FNG2.K-SALV*FNH2.K+REMOV*FNI2.K)*FNB.K
16690 A CAPTX3.K=(FNG3.K-SALV*FNH3.K+REMOV*FNI3.K)*FNB.K
16700 C SALV=.1,REMOV=.05
16710 NOTE
16720 NOTE                  ECONOMIC EVALUATION MODEL
16730 NOTE
16740 NOTE              DEFINITION OF ECONOMIC VARIABLES
16750 NOTE
16760 NOTE
16770 NOTE       FNA.K = FUTURE WORTH OF PRESENT AMOUNT
16780 NOTE       FNB.K = PRESENT WORTH OF FUTURE AMOUNT
16790 NOTE       FNC.K = FUTURE WORTH OF AN ANNUITY
16800 NOTE       FNE.K = PRESENT WORTH OF AN ANNUITY
16810 NOTE       FNG.K = CONTINUOUS ANNUAL CAPITAL EXPENDITURE
16820 NOTE       FNH.K = CONTINUOUS ANNUAL GROSS SALVAGE
16830 NOTE       FNI.K = CONTINUOUS ANNUAL COST OF REMOVAL
16840 NOTE       FNJ.K = CONTINUOUS ANNUAL TOTAL (CE-GS+RC)
16850 NOTE       FNK.K = CONTINUOUS ANNUITY FROM A PRESENT AMOUNT
16860 NOTE       FNN.K = CONTINUOUS PRESENT WORTH OF FUTURE AMOUNT
16870 NOTE
16880 A JAY.K=LOGN(1+INT)
16890 A JAYD.K=LOGN(1+INTD)
16900 A FI.K=(TAX/(1-TAX))*(1-RATIO*(JAYD.K/JAY.K))
16910 A FIA.K=TAX*(1+FI.K)
16920 A INTT.K=(INT-INTF)/(1+INTF)
16930 NOTE
16940 NOTE               ECONOMIC EVALUATION CONSTANT PARAMETERS
16950 NOTE
16960 NOTE
16970 C RATIO=.5
16980 C CCA=.08
16990 C CCA2=.1
17000 C CCA3=.2
17010 C ASL011=25
17020 C ASL02=40
17030 C ASL03=15
17040 C TAX=.51
17050 C INT=.135
17060 C INTD=.14
17070 C INTF=0
17080 NOTE
17090 NOTE                    ECONOMIC EVALUATION EQUATIONS
17100 NOTE
17110 A FNA.K=EXP(TIME.K*LOGN(1+INT))
17120 A FNB.K=EXP(-TIME.K*LOGN(1+INT))
17130 A FNC.K=(EXP(TIME.K*LOGN(1+INT))-1)/INT
17140 A FNE.K=FNC.K/FNA.K

READY.
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17150 A FNG.K=FNK.K*(1+FI.K-((CCA/(CCA+INTT.K))*(INTT.K/JAY.K))*FIA.K)+
17160 X FNK.K*((FIA.K-FI.K)/((FNK.K*ASLØ11)))
17170 A FNG2.K=FNK2.K*(1+FI.K-((CCA2/(CCA2+INTT.K))*(INTT.K/JAY.K))*FIA.K)+
17180 X FNK2.K*((FIA.K-FI.K)/((FNK2.K*ASLØ2)))
17190 A FNG3.K=FNK3.K*(1+FI.K-((CCA3/(CCA3+INTT.K))*(INTT.K/JAY.K))*FIA.K)+
17200 X FNK3.K*((FIA.K-FI.K)/((FNK3.K*ASLØ3)))
17210 A FNH.K=FNK.K*((1+FI.K-((CCA/(CCA+INTT.K))*(INTT.K/JAY.K))*FIA.K)/
17220 X EXP(JAY.K*ASLØ11)+(FIA.K-FI.K)/(FNK.K*ASLØ11))
17230 A FNH2.K=FNK2.K*((1+FI.K-((CCA2/(CCA2+INTT.K))*(INTT.K/JAY.K))*FIA.K)/
17240 X EXP(JAY.K*ASLØ2)+(FIA.K-FI.K)/(FNK2.K*ASLØ2))
17250 A FNH3.K=FNK3.K*((1+FI.K-((CCA3/(CCA3+INTT.K))*(INTT.K/JAY.K))*FIA.K)/
17260 X EXP(JAY.K*ASLØ3)+(FIA.K-FI.K)/(FNK3.K*ASLØ3))
17270 A FNI.K=FNK.K*((1+FI.K-(1/(1+INTT.K))*(INTT.K/JAY.K)*FIA.K)/
17280 X EXP(JAY.K*ASLØ11)+(FIA.K-FI.K)/(FNK.K*ASLØ11))
17290 A FNI2.K=FNK2.K*((1+FI.K-(1/(1+INTT.K))*(INTT.K/JAY.K)*FIA.K)/
17300 X EXP(JAY.K*ASLØ2)+(FIA.K-FI.K)/(FNK2.K*ASLØ2))
17310 A FNI3.K=FNK3.K*((1+FI.K-(1/(1+INTT.K))*(INTT.K/JAY.K)*FIA.K)/
17320 X EXP(JAY.K*ASLØ3)+(FIA.K-FI.K)/(FNK3.K*ASLØ3))
17330 A FNK.K=(JAY.K*EXP(JAY.K*ASLØ11))/(((EXP(JAY.K*ASLØ11))-1))
17340 A FNK2.K=(JAY.K*EXP(JAY.K*ASLØ2))/(((EXP(JAY.K*ASLØ2))-1))
17350 A FNK3.K=(JAY.K*EXP(JAY.K*ASLØ3))/(((EXP(JAY.K*ASLØ3))-1))
17360 A FNN.K=FNB.K*INTT.K/JAY.K
17370 NOTE
17380 NOTE                PW AND AEC CALCULATIONS
17390 NOTE
17400 A ANCGPF.K=CAPTX1.K*GPFCST.K/FNK.K
17410 A ANCRLM.K=CAPTX1.K*RLMCST.K/FNK.K
17420 A ANCDMS.K=CAPTX1.K*DMSCST.K/FNK.K
17430 A ANCBLD.K=CAPTX2.K*BLDCST.K/FNK2.K
17440 A ANCTRK.K=CAPTX1.K*TRKCST.K/FNK.K
17450 A ANCFAX.K=CAPTX3.K*FAXCST.K/FNK3.K
17460 NOTE
17470 NOTE
17480 A ANCGSC.K=CAPTX1.K*DMSGSC.K/FNK.K
17490 A ANMSOF.K=DMSSOF.K*(FNB.K-TAX*FNN.K/(1+INTT.K))
17500 A AEEDMS.K=DMEXCT.K*(FNB.K-(TAX*FNB.K/(1+INTT.K)))
17510 NOTE
17520 NOTE
17530 A ANMGPF.K=GPFMST.K*(FNB.K-TAX*FNN.K/(1+INTT.K))
17540 A ANMRLM.K=RLMMST.K*(FNB.K-TAX*FNN.K/(1+INTT.K))
17550 A ANMDMS.K=DMSMST.K*(FNB.K-TAX*FNN.K/(1+INTT.K))
17560 A ANMBLD.K=BLDMST.K*(FNB.K-TAX*FNN.K/(1+INTT.K))
17570 A ANMTRK.K=TRKMST.K*(FNB.K-TAX*FNN.K/(1+INTT.K))
17580 A ANMFAX.K=FAXMST.K*(FNB.K-TAX*FNN.K/(1+INTT.K))
17590 NOTE
17600 NOTE
17610 NOTE TOTAL ANNUAL CHARGES
17620 NOTE
17630 A TANGPF.K=ANCGPF.K+ANMGPF.K
17640 A TANRLM.K=ANCRLM.K+ANMRLM.K
17650 A TANDMS.K=ANCDMS.K+ANMDMS.K+AEEDMS.K+ANCGSC.K+ANMSOF.K
17660 A TANBLD.K=ANCBLD.K+ANMBLD.K
17670 A TANTRK.K=ANCTRK.K+ANMTRK.K
17680 A TANFAX.K=ANCFAX.K+ANMFAX.K
17690 NOTE

READY.
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17700 A TOTTAN.K=TANGPF.K+TANRLM.K+TANDMS.K+TANBLD.K+TANTRK.K+TANFAX.K
17710 NOTE
17720 NOTE
17730 L PWAC=0
17740 L PWAC.K=PWAC.J+DT*TOTTAN.J
17750 NOTE
17760 NOTE
17770 NOTE
17780 NOTE        CCS'S BETWEEN OFFICES -- DIGITAL ONLY
17790 NOTE
17800 NOTE
17810 A DC0201.K=(INTRAM*CCSPL*TLIN01.K*TLIN02.K)/(TLIN01.K+TLIN02.K+.1)
17820 A DC0301.K=(INTRAM*CCSPL*TLIN01.K*TLIN03.K)/(TLIN01.K+TLIN03.K+.1)
17830 A DC0401.K=(INTRAM*CCSPL*TLIN01.K*TLIN04.K)/(TLIN01.K+TLIN04.K+.1)
17840 A DC0501.K=(INTRAM*CCSPL*TLIN01.K*TLIN05.K)/(TLIN01.K+TLIN05.K+.1)
17850 A DC0601.K=(INTRAM*CCSPL*TLIN01.K*TLIN06.K)/(TLIN01.K+TLIN06.K+.1)
17860 A DC0701.K=(INTRAM*CCSPL*TLIN01.K*TLIN07.K)/(TLIN01.K+TLIN07.K+.1)
17870 NOTE
17880 NOTE
17890 A DC0302.K=(INTRAM*CCSPL*TLIN02.K*TLIN03.K)/(TLIN02.K+TLIN03.K+.1)
17900 A DC0402.K=(INTRAM*CCSPL*TLIN02.K*TLIN04.K)/(TLIN02.K+TLIN04.K+.1)
17910 A DC0502.K=(INTRAM*CCSPL*TLIN02.K*TLIN05.K)/(TLIN02.K+TLIN05.K+.1)
17920 A DC0602.K=(INTRAM*CCSPL*TLIN02.K*TLIN06.K)/(TLIN02.K+TLIN06.K+.1)
17930 A DC0702.K=(INTRAM*CCSPL*TLIN02.K*TLIN07.K)/(TLIN02.K+TLIN07.K+.1)
17940 NOTE
17950 NOTE
17960 A DC0403.K=(INTRAM*CCSPL*TLIN03.K*TLIN04.K)/(TLIN03.K+TLIN04.K+.1)
17970 A DC0503.K=(INTRAM*CCSPL*TLIN03.K*TLIN05.K)/(TLIN03.K+TLIN05.K+.1)
17980 A DC0603.K=(INTRAM*CCSPL*TLIN03.K*TLIN06.K)/(TLIN03.K+TLIN06.K+.1)
17990 A DC0703.K=(INTRAM*CCSPL*TLIN03.K*TLIN07.K)/(TLIN03.K+TLIN07.K+.1)
18000 NOTE
18010 NOTE
18020 A DC0504.K=(INTRAM*CCSPL*TLIN04.K*TLIN05.K)/(TLIN04.K+TLIN05.K+.1)
18030 A DC0604.K=(INTRAM*CCSPL*TLIN04.K*TLIN06.K)/(TLIN04.K+TLIN06.K+.1)
18040 A DC0704.K=(INTRAM*CCSPL*TLIN04.K*TLIN07.K)/(TLIN04.K+TLIN07.K+.1)
18050 NOTE
18060 A DC0605.K=(INTRAM*CCSPL*TLIN05.K+TLIN06.K)/(TLIN05.K+TLIN06.K+.1)
18070 A DC0705.K=(INTRAM*CCSPL*TLIN05.K*TLIN07.K)/(TLIN05.K+TLIN07.K+.1)
18080 NOTE
18090 NOTE
18100 A DC0607.K=(INTRAM*CCSPL*TLIN06.K*TLIN07.K)/(TLIN06.K+TLIN07.K+.1)
18110 NOTE
18120 NOTE
18130 NOTE              TRUNKS  CALCULATED FROM CCS'S --- DIGITAL
18140 NOTE
18150 NOTE
18160 A DT0201.K=(DC0201.K/36)+CCSCOE*SQRT(DC0201.K/36)
18170 A DT0301.K=(DC0301.K/36)+CCSCOE*SQRT(DC0301.K/36)
18180 A DT0401.K=(DC0401.K/36)+CCSCOE*SQRT(DC0401.K/36)
18190 A DT0501.K=(DC0501.K/36)+CCSCOE*SQRT(DC0501.K/36)
18200 A DT0601.K=(DC0601.K/36)+CCSCOE*SQRT(DC0601.K/36)
18210 A DT0701.K=(DC0701.K/36)+CCSCOE*SQRT(DC0701.K/36)
18220 NOTE
18230 NOTE
18240 A DT0302.K=(DC0302.K/36)+CCSCOE*SQRT(DC0302.K/36)

READY.
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18250 A DT0402.K=(DC0402.K/36)+CCSCOE*SQRT(DC0402.K/36)
18260 A DT0502.K=(DC0502.K/36)+CCSCOE*SQRT(DC0502.K/36)
18270 A DT0602.K=(DC0602.K/36)+CCSCOE*SQRT(DC0602.K/36)
18280 A DT0702.K=(DC0702.K/36)+CCSCOE*SQRT(DC0702.K/36)
18290 NOTE
18300 NOTE
18310 A DT0403.K=(DC0403.K/36)+CCSCOE*SQRT(DC0403.K/36)
18320 A DT0503.K=(DC0503.K/36)+CCSCOE*SQRT(DC0503.K/36)
18330 A DT0603.K=(DC0603.K/36)+CCSCOE*SQRT(DC0603.K/36)
18340 A DT0703.K=(DC0703.K/36)+CCSCOE*SQRT(DC0703.K/36)
18350 NOTE
18360 NOTE
18370 A DT0504.K=(DC0504.K/36)+CCSCOE*SQRT(DC0504.K/36)
18380 A DT0604.K=(DC0604.K/36)+CCSCOE*SQRT(DC0604.K/36)
18390 A DT0704.K=(DC0704.K/36)+CCSCOE*SQRT(DC0704.K/36)
18400 NOTE
18410 NOTE
18420 NOTE
18430 A DT0605.K=(DC0605.K/36)+CCSCOE*SQRT(DC0605.K/36)
18440 A DT0705.K=(DC0705.K/36)+CCSCOE*SQRT(DC0705.K/36)
18450 NOTE
18460 A DT0607.K=(DC0607.K/36)+CCSCOE*SQRT(DC0607.K/36)
18470 NOTE
18480 NOTE
18490 NOTE  ANALOG TRUNKS
18500 NOTE
18510 A AT0201.K=RR0201.K-DT0201.K
18520 A AT0301.K=RR0301.K-DT0301.K
18530 A AT0401.K=RR0401.K-DT0401.K
18540 A AT0501.K=RR0501.K-DT0501.K
18550 A AT0601.K=RR0601.K-DT0601.K
18560 A AT0701.K=RR0701.K-DT0701.K
18570 A AT0302.K=RR0302.K-DT0302.K
18580 A AT0402.K=RR0402.K-DT0402.K
18590 A AT0502.K=RR0502.K-DT0502.K
18600 A AT0602.K=RR0602.K-DT0602.K
18610 A AT0702.K=RR0702.K-DT0702.K
18620 A AT0403.K=RR0403.K-DT0403.K
18630 A AT0503.K=RR0503.K-DT0503.K
18640 A AT0603.K=RR0603.K-DT0603.K
18650 A AT0703.K=RR0703.K-DT0703.K
18660 A AT0504.K=RR0504.K-DT0504.K
18670 A AT0604.K=RR0604.K-DT0604.K
18680 A AT0704.K=RR0704.K-DT0704.K
18690 NOTE
18700 A AT0605.K=RR0605.K-DT0605.K
18710 A AT0705.K=RR0705.K-DT0705.K
18720 A AT0607.K=RR0607.K-DT0607.K
18730 NOTE
18740 NOTE
18750 NOTE              ANALOG AND DIGITAL TRUNK GROWTHS
18760 NOTE
18770 A AF0201.K=DELAY1(AT0201.K,1)
18780 A AF0301.K=DELAY1(AT0301,K,1)
18790 A AF0401.K=DELAY1(AT0401.K,1)

READY.
```

```
18800 A AFØ5Ø1.K=DELAY1(ATØ5Ø1.K,1)
18810 A AFØ6Ø1.K=DELAY1(ATØ6Ø1.K,1)
18820 A AFØ7Ø1.K=DELAY1(ATØ7Ø1.K,1)
18830 A AFØ6Ø2.K=DELAY1(ATØ6Ø2.K,1)
18840 A AFØ7Ø2.K=DELAY1(ATØ7Ø2.K,1)
18850 A AFØ6Ø3.K=DELAY1(ATØ6Ø3.K,1)
18860 A AFØ7Ø3.K=DELAY1(ATØ7Ø3.K,1)
18870 A AFØ6Ø4.K=DELAY1(ATØ6Ø4.K,1)
18880 A AFØ7Ø4.K=DELAY1(ATØ7Ø4.K,1)
18890 A AFØ6Ø5.K=DELAY1(ATØ6Ø5.K,1)
18900 A AFØ7Ø5.K=DELAY1(ATØ7Ø5.K,1)
18910 A AFØ6Ø7.K=DELAY1(ATØ6Ø7.K,1)
18920 A AFØ3Ø2.K=DELAY1(ATØ3Ø2.K,1)
18930 A AFØ4Ø2.K=DELAY1(ATØ4Ø2.K,1)
18940 A AFØ5Ø2.K=DELAY1(ATØ5Ø2.K,1)
18950 A AFØ4Ø3.K=DELAY1(ATØ4Ø3.K,1)
18960 A AFØ5Ø3.K=DELAY1(ATØ5Ø3.K,1)
18970 A AFØ5Ø4.K=DELAY1(ATØ5Ø4.K,1)
18980 NOTE
18990 A AGØ2Ø1.K=MAX(ATØ2Ø1.K-AFØ2Ø1.K,Ø)
19000 A AGØ3Ø1.K=MAX(ATØ3Ø1.K-AFØ3Ø1.K,Ø)
19010 A AGØ4Ø1.K=MAX(ATØ4Ø1.K-AFØ4Ø1.K,Ø)
19020 A AGØ5Ø1.K=MAX(ATØ5Ø1.K-AFØ5Ø1.K,Ø)
19030 A AGØ6Ø1.K=MAX(ATØ6Ø1.K-AFØ6Ø1.K,Ø)
19040 A AGØ7Ø1.K=MAX(ATØ7Ø1.K-AFØ7Ø1.K,Ø)
19050 A AGØ6Ø2.K=MAX(ATØ6Ø2.K-AFØ6Ø2.K,Ø)
19060 A AGØ7Ø2.K=MAX(ATØ7Ø2.K-AFØ7Ø2.K,Ø)
19070 A AGØ6Ø3.K=MAX(ATØ6Ø3.K-AFØ6Ø3.K,Ø)
19080 A AGØ7Ø3.K=MAX(ATØ7Ø3.K-AFØ7Ø3.K,Ø)
19090 A AGØ6Ø4.K=MAX(ATØ6Ø4.K-AFØ6Ø4.K,Ø)
19100 A AGØ7Ø4.K=MAX(ATØ7Ø4.K-AFØ7Ø4.K,Ø)
19110 A AGØ6Ø5.K=MAX(ATØ6Ø5.K-AFØ6Ø5.K,Ø)
19120 A AGØ7Ø5.K=MAX(ATØ7Ø5.K-AFØ7Ø5.K,Ø)
19130 A AGØ6Ø7.K=MAX(ATØ6Ø7.K-AFØ6Ø7.K,Ø)
19140 A AGØ3Ø2.K=MAX(ATØ3Ø2.K-AFØ3Ø2.K,Ø)
19150 A AGØ4Ø2.K=MAX(ATØ4Ø2.K-AFØ4Ø2.K,Ø)
19160 A AGØ5Ø3.K=MAX(ATØ5Ø3.K-AFØ5Ø3.K,Ø)
19170 A AGØ4Ø3.K=MAX(ATØ4Ø3.K-AFØ4Ø3.K,Ø)
19180 A AGØ5Ø2.K=MAX(ATØ5Ø2.K-AFØ5Ø2.K,Ø)
19190 A AGØ5Ø4.K=MAX(ATØ5Ø4.K-AFØ5Ø4.K,Ø)
19200 NOTE
19210 NOTE
19220 NOTE
19230 A TOATRK.K=AGØ2Ø1.K+AGØ3Ø1.K+AGØ4Ø1.K+AGØ3Ø2.K+AGØ4Ø2.K+AGØ4Ø3.K
19240 X +AGØ6Ø1.K+AGØ6Ø2.K+AGØ6Ø3.K+AGØ6Ø4.K+AGØ6Ø5.K+AGØ6Ø7.K+AGØ7Ø1.K
19250 X +AGØ7Ø3.K+AGØ7Ø4.K+AGØ7Ø5.K+AGØ7Ø2.K
19260 X +AGØ5Ø1.K+AGØ5Ø2.K+AGØ5Ø3.K+AGØ5Ø4.K
19270 NOTE
19280 NOTE  DIGITAL TRUNK GROWTHS
19290 NOTE
19300 NOTE
19310 A DFØ2Ø1.K=DELAY1(DTØ2Ø1.K,1)
19320 A DFØ3Ø1.K=DELAY1(DTØ3Ø1.K,1)
19330 A DFØ4Ø1.K=DELAY1(DTØ4Ø1.K,1)
19340 A DFØ5Ø1.K=DELAY1(DTØ5Ø1.K,1)

READY.
```

```
19350 A DFØ3Ø2.K=DELAY1(DTØ3Ø2.K,1)
19360 A DFØ4Ø2.K=DELAY1(DTØ4Ø2.K,1)
19370 A DFØ5Ø2.K=DELAY1(DTØ5Ø2.K,1)
19380 A DFØ4Ø3.K=DELAY1(DTØ4Ø3.K,1)
19390 A DFØ5Ø3.K=DELAY1(DTØ5Ø3.K,1)
19400 A DFØ5Ø4.K=DELAY1(DTØ5Ø4.K,1)
19410 A DFØ6Ø1.K=DELAY1(DTØ6Ø1.K,1)
19420 A DFØ6Ø2.K=DELAY1(DTØ6Ø2.K,1)
19430 A DFØ6Ø3.K=DELAY1(DTØ6Ø3.K,1)
19440 A DFØ6Ø4.K=DELAY1(DTØ6Ø4.K,1)
19450 A DFØ6Ø5.K=DELAY1(DTØ6Ø5.K,1)
19460 A DFØ6Ø7.K=DELAY1(DTØ6Ø7.K,1)
19470 A DFØ7Ø1.K=DELAY1(DTØ7Ø1.K,1)
19480 A DFØ7Ø2.K=DELAY1(DTØ7Ø2.K,1)
19490 A DFØ7Ø3.K=DELAY1(DTØ7Ø3.K,1)
19500 A DFØ7Ø4.K=DELAY1(DTØ7Ø4.K,1)
19510 A DFØ7Ø5.K=DELAY1(DTØ7Ø5.K,1)
19520 NOTE
19530 NOTE
19540 A DGØ2Ø1.K=MAX(DTØ2Ø1.K-DFØ2Ø1.K,Ø)
19550 A DGØ3Ø1.K=MAX(DTØ3Ø1.K-DFØ3Ø1.K,Ø)
19560 A DGØ4Ø1.K=MAX(DTØ4Ø1.K-DFØ4Ø1.K,Ø)
19570 A DGØ5Ø1.K=MAX(DTØ5Ø1.K-DFØ5Ø1.K,Ø)
19580 A DGØ3Ø2.K=MAX(DTØ3Ø2.K-DFØ3Ø2.K,Ø)
19590 A DGØ4Ø2.K=MAX(DTØ4Ø2.K-DFØ4Ø2.K,Ø)
19600 A DGØ5Ø2.K=MAX(DTØ5Ø2.K-DFØ5Ø2.K,Ø)
19610 A DGØ4Ø3.K=MAX(DTØ4Ø3.K-DFØ4Ø3.K,Ø)
19620 A DGØ5Ø3.K=MAX(DTØ5Ø3.K-DFØ5Ø3.K,Ø)
19630 A DGØ5Ø4.K=MAX(DTØ5Ø4.K-DFØ5Ø4.K,Ø)
19640 A DGØ6Ø1.K=MAX(DTØ6Ø1.K-DFØ6Ø1.K,Ø)
19650 A DGØ6Ø2.K=MAX(DTØ6Ø2.K-DFØ6Ø2.K,Ø)
19660 A DGØ6Ø3.K=MAX(DTØ6Ø3.K-DFØ6Ø3.K,Ø)
19670 A DGØ6Ø4.K=MAX(DTØ6Ø4.K-DFØ6Ø4.K,Ø)
19680 A DGØ6Ø5.K=MAX(DTØ6Ø5.K-DFØ6Ø5.K,Ø)
19690 A DGØ6Ø7.K=MAX(DTØ6Ø7.K-DFØ6Ø7.K,Ø)
19700 A DGØ7Ø1.K=MAX(DTØ7Ø1.K-DFØ7Ø1.K,Ø)
19710 A DGØ7Ø2.K=MAX(DTØ7Ø2.K-DFØ7Ø2.K,Ø)
19720 A DGØ7Ø3.K=MAX(DTØ7Ø3.K-DFØ7Ø3.K,Ø)
19730 A DGØ7Ø4.K=MAX(DTØ7Ø4.K-DFØ7Ø4.K,Ø)
19740 A DGØ7Ø5.K=MAX(DTØ7Ø5.K-DFØ7Ø5.K,Ø)
19750 NOTE
19760 NOTE
19770 A TODTRK.K=DGØ2Ø1.K+DGØ3Ø1.K+DGØ4Ø1.K+DGØ3Ø2.K+DGØ4Ø2.K+DGØ4Ø3.K
19780 X +DGØ6Ø1.K+DGØ6Ø2.K+DGØ6Ø3.K+DGØ6Ø4.K+DGØ6Ø5.K+DGØ6Ø7.K
19790 X +DGØ7Ø1.K+DGØ7Ø2.K+DGØ7Ø3.K+DGØ7Ø4.K+DGØ7Ø5.K
19800 X +DGØ5Ø1.K+DGØ5Ø2.K+DGØ5Ø3.K+DGØ5Ø4.K
19810 NOTE
19820 SAVE TTØ2Ø1,TTØ3Ø1,TTØ4Ø1,TTØ5Ø1,TTØ3Ø2,TTØ4Ø2
19830 SAVE TTØ5Ø2,TTØ4Ø3,TTØ5Ø3,TTØ5Ø4,TOTFAX
19840 SAVE RMTOT
19850 SAVE DCØ2Ø1,DCØ3Ø1,DCØ4Ø1,DCØ5Ø1,DCØ3Ø2,DCØ4Ø2,DCØ5Ø2,DCØ4Ø3
19860 SAVE DCØ5Ø3,DCØ5Ø4,DTØ2Ø1,DTØ3Ø1,DTØ4Ø1,DTØ5Ø1,DTØ3Ø2,DTØ4Ø2
19870 SAVE DTØ5Ø2,DTØ4Ø3,DTØ5Ø3,DTØ5Ø4
19880 SAVE DCØ6Ø1,DCØ7Ø1,DCØ6Ø2,DCØ6Ø3,DCØ7Ø2,DCØ7Ø3,DCØ6Ø4,DCØ7Ø4
19890 SAVE DCØ6Ø5,DCØ7Ø5,DCØ6Ø7,DTØ6Ø1,DTØ7Ø1,DTØ6Ø2,DTØ7Ø2,DTØ6Ø3

READY.
```

```
19900 SAVE DT0703,DT0604,DT0605,DT0705,DT0607,DT0704
19910 SAVE AT0201,AT0301,AT0401,AT0302,AT0402,AT0403
19920 SAVE AT0501,AT0502,AT0503,AT0504
19930 SAVE AT0601,AT0701,AT0602,AT0702,AT0603,AT0604,AT0703,AT0704
19940 SAVE AT0605,AT0705,AT0607
19950 SAVE AG0201,AG0301,AG0401,AG0302,AG0402,AG0403
19960 SAVE AG0501,AG0502,AG0503,AG0504
19970 SAVE AG0601,AG0602,AG0603,AG0604,AG0605,AG0607
19980 SAVE AG0701,AG0702,AG0703,AG0704,AG0705
19990 SAVE DG0201,DG0301,DG0401,DG0302,DG0402,DG0403
20000 SAVE DG0501,DG0502,DG0503,DG0504
20010 SAVE TODTRK,DMSTOT,FAXAST,FAXDST,DMEXCT,TOATRK,DMSSOF,DMSGSC
20020 SAVE TT0201,TT0301,TT0401,TT0501,TT0302,TT0402
20030 SAVE TT0502,TT0403,TT0503,TT0504,TOTFAX
20040 SAVE RMTOT
20050 SAVE GPFCST,RLMCST,DMSCST,TRKCST,BLDCST,FAXCST
20060 SAVE GPFMST,RLMMST,DMSMST,BLDMST,TRKMST,FAXMST
20070 SAVE CAPTX1,CAPTX2,CAPTX3
20080 SAVE FNA,FNB,FNC,FNG,FNH,FNI,FNE
20090 SAVE FNK,FNN,FNG2,FNG3,FNH2,FNH3,FNI2,FNI3
20100 PRINT GPF01,GPF02,GPF03,GPF04,GPF05,GPF06,GPF07
20110 PRINT LIN01,LIN02,LIN03,LIN04,LIN05,LIN06,LIN07
20120 PRINT GPFA01,GPFA02,GPFA03,GPFA04,GPFA05,GPFA06,GPFA07
20130 PRINT LLIN01,LLIN02,LLIN03,LLIN04,LLIN05,LLIN06,LLIN07,LIN
20140 PRINT LRIN01,LRIN02,LRIN03,LRIN04,LRIN05,LRIN06,LRIN07,LRIN
20150 PRINT GPFCST,RLMCST,DMSCST,TRKCST,BLDCST,FAXCST,DMSGSC
20160 PRINT GPFMST,RLMMST,DMSMST,TRKMST,BLDMST,FAXMST
20170 PRINT ANCGPF,ANCRLM,ANCDMS,ANCBLD,ANCTRK,ANCFAX,ANCGSC
20180 PRINT ANMGPF,ANMRLM,ANMDMS,ANMBLD,ANMTRK,ANMFAX,AEEDMS,ANMSOF
20190 PRINT TANGPF,TANRLM,TANDMS,TANBLD,TANTRK,TANFAX,TOTTAN,PWAC
20200 PRINT DT0201,DT0301,DT0401,DT0501,DT0601,DT0701,DT0605
20210 PRINT DT0302,DT0402,DT0502,DT0602,DT0702,DT0403,DT0705
20220 PRINT DT0503,DT0603,DT0703,DT0504,DT0604,DT0704,DT0607
20230 PRINT AT0201,AT0301,AT0401,AT0501,AT0601,AT0701,AT0302
20240 PRINT AT0402,AT0502,AT0602,AT0702,AT0403,AT0503,AT0603
20250 PRINT AT0703,AT0504,AT0604,AT0704,AT0605,AT0705,AT0607
20260 PRINT RM0201,RM0301,RM0401,RM0501,RM0601,RM0701,RM0107
20270 PRINT RM0102,RM0302,RM0402,RM0502,RM0602,RM0702,RM0207
20280 PRINT RM0103,RM0203,RM0403,RM0503,RM0603,RM0703,RM0307
20290 PRINT RM0104,RM0204,RM0304,RM0504,RM0604,RM0704,RM0407
20300 PRINT RM0105,RM0205,RM0305,RM0405,RM0605,RM0705,RM0507
20310 PRINT RM0106,RM0206,RM0306,RM0406,RM0506,RM0706,RM0607
20320 PRINT TLIN,TRLM,LIN,RMTOT,DMSTOT,FAXAST,FAXDST,GPFTOT
20330 SAVE GPFA01,GPFA02,GPFA03,GPFA04,GPFA05,GPFA06,GPFA07,GPFTOT
20340 SAVE TT0601,TT0701,TT0602,TT0702,TT0603,TT0703,TT0604,TT0704
20350 SAVE TT0605,TT0705,TT0607,TRLM,LIN,TLIN
20360 SAVE LLIN01,LLIN02,LLIN03,LLIN04,LLIN05,LLIN06,LLIN07,LIN
20370 SAVE QLIN01,QLIN02,QLIN03,QLIN04,QLIN05,QLIN06,QLIN07
20380 SAVE LRIN01,LRIN02,LRIN03,LRIN04,LRIN05,LRIN06,LRIN07,LRIN
20390 SAVE TLIN01,TLIN02,TLIN03,TLIN04,TLIN05,TLIN06,TLIN07
20400 SAVE RS0201,RS0301,RS0401,RS0501,RS0302,RS0402,RS0502
20410 SAVE RS0403,RS0503,RS0504,RR0201,RR0301,RR0401,RR0501
20420 SAVE RS0601,RS0701,RS0602,RS0702,RS0603,RS0703
20430 SAVE RS0604,RS0704,RS0605,RS0705,RS0607
20440 SAVE RR0302,RR0402,RR0502,RR0403,RR0503,RR0504

READY.
```

Appendix B

A Brief Review of DYNAMO

APPENDIX B

A BRIEF REVIEW OF DYNAMO

1. Introduction

This section will briefly describe the DYNAMO computer language. Although it is not possible to discuss DYNAMO fully in this paper, the following paragraphs should give a general overview of the logic and the system of equations used by this language.

The concept of DYNAMO requires the development of a model which describes a system. DYNAMO uses a standard system of symbols to represent the interrelationships within the system. A short discussion on model development follows.

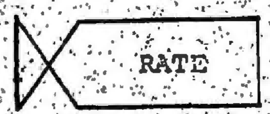
2. SYSTEM MODEL

a) LEVELS

A LEVEL is defined as an accumulation within the system and is represented by a rectangle. Examples of LEVELS are the number of lines in a telephone exchange, the amount of inventory in a warehouse and the volume of water in a lake. In each of these examples it should be noted that there are both inflows and outflows associated with the level. The LEVEL therefore is the integral of the flow rates plus the initial accumulation.

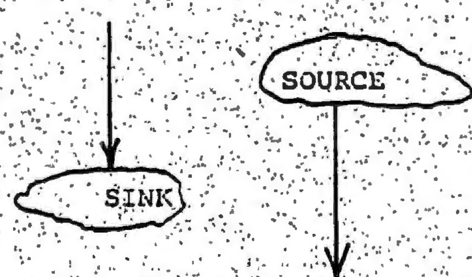
b) RATES

A RATE is a decision function which describes the rate of flow. A RATE for instance would be the rate of flow of a river into a lake. A RATE may be used as a decision function by either setting the rate at a finite amount or by setting the rate to zero.



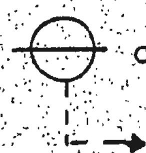
c) SINKS and SOURCES

SINKS and SOURCES may be considered as the outputs or the inputs of rates in the system. A SINK, for instance, could be the representation that a particular function has completed, such as the completion of the manufacture of a product in a factory. A SOURCE would be the representation of the initiation of a rate, such as the receipt of customer orders for a product.



d) CONSTANTS

A CONSTANT is the representation of a constant or a parameter within the system. Examples of CONSTANTS would be the unit cost of material, or the cost of capital. CONSTANTS do not change in any one simulation.



CONSTANT

e) FLOWS

A FLOW is a representation of the interrelationship between model components. In the standard DYNAMO model, there are six different types of flows, and the graphic representations are given below.

Information

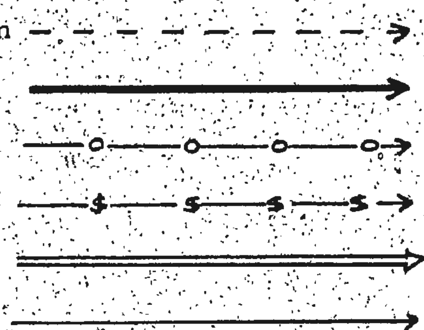
Material

Orders

Money

People

Equipment



3. SYSTEM of EQUATIONS

There are seven different types of equations in the DYNAMO computer language. They are as follows:

a) LEVEL (L)

The level equation establishes the relationship between a current quantity and the previous quantity relative to the change in rates of flows over the time interval of interest.

ie. L LEVEL.K=LEVEL.J+DT*(RATE1.JK=RATE2.JK)

b) INITIAL VALUES (N)

The initial value equation describes the initial value of a LEVEL

ie. N=1000

c) RATE (R)

The rate equation describes the rate of flow into a level.

ie. R RATE1.KL=10

d) AUXILIARY (A)

An auxiliary equation is one which describe the relationships between two or more variables at the same time instant.

ie. A AUX.K=1.5*RATE.K

e) CONSTANT (C)

A constant equation is one which represents a constant variable.

ie. C CONSTANT=2

f) SUPPLEMENTARY (S)

Supplementary equations are similar to auxiliary equations, but are only used to provide an output and are not further used in any other equations.

ie. S OUTPUT.K=LEVEL.K/2

g) TABLE (T)

A table equation is an array of constants which is referred to in the table function.

ie. T TABLE=10/20/30

4. SUBSCRIPT CONVENTION

The DYNAMO computer language requires strict adherence to a subscript convention which must be followed by all equations. These conventions are indicated below:

	Quantity Type on Left of Equation	Subscript on Left	Subscripts on Quantities on Right if Quantity is					
			L	A	R	S	C	N
L	LEVEL	K	J	J	JK	np	none	none
A	AUXILIARY	K	K	K	JK	np	none	none
R	RATE	KL	K	K	JK	np	none	none
S	SUPPLEMENTARY	K	K	K	JK	K	none	none
C	CONSTANT	none	np	np	np	np	np	np
N	INITIAL VALUE	none	none	none	none	none	none	none

np=not permitted

5. FUNCTIONS

Not all the functions in DYNAMO will be reviewed. There are several functions which are very commonly used in this language and which will be described below:

a) Transcendental Functions

DYNAMO SPELLING	FUNCTION
EXP(A)	Exponential(A)
LOGN(A)	Natural log(A)
SQRT(A)	Square root of A
SIN(A)	Sine of A
COS(A)	Cosine of A

b) CLIP

```
CLIP(P,Q,R,S) = P        if R>=S
CLIP(P,Q,R,S) = Q        if R<s
```

c) DELAY

```
DELAY1(IN,DEL)
     IN     -input to the delay
     DEL    -magnitude of the delay
```

d) MAXIMUM

```
MAX(P,Q) = P             if P>=Q
MAX(P,Q) = Q             if P<Q
```

e) MINIMUM

```
MIN(P,Q) = P             if P<Q
MIN(P,Q) = Q             if P>=Q
```

f) SWITCH

```
SWITCH(P,Q,R) = P        if R=Ø
SWITCH(P,Q,R) = Q        if R<>Ø
```

g) STEP

```
STEP(HGHT,STTM)=Ø        if TIME<STTM
STEP(HGHT,STTM)=HGHT     if TIME>=STTM
```

h) PULSE

```
PULSE(HGHT,FRST,INTVL)
      HGHT -pulse height
```

FRST -TIME of first pulse

INTVL-interval between pulses

i) RAMP

RAMP(SLP,STRT) = Ø if TIME<=STRT

RAMP(SLP,STRT) = SLP*DT if TIME>STRT

The above functions, of course, belong on the right hand side of the equations and may be used in describing relationships in the model.

6. DIRECTIONS

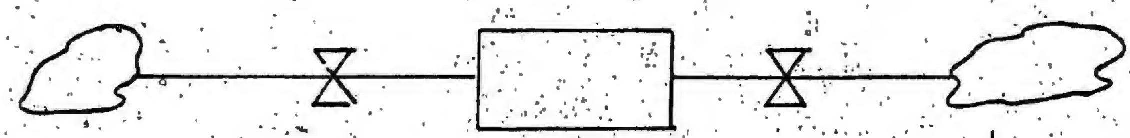
The principal direction commands avaiable with DYNAMO are SPEC, PRINT and PLOT. The PRINT and PLOT directions are self explanatory. The SPEC card requires some discussion. The SPEC card takes the form as follows:

SPEC LENGTH=2Ø,DT=1,PRTPER=1,PLTPER=1

The LENGTH=2Ø component instructs the model to perform the simulation for 2Ø time periods. DT=1 instructs the program to integrate the results over a time difference of 1. The PRTPER=1 and PLTPER=1 components instruct the model to both print and plot the output results. Setting either PRTPER or PLTPER to Ø, produces neither print or plot outputs.

There are other DYNAMO functions, conventions, instruction inputs and output commands, details on which may be obtained from Pugh(1973).

Below is a short example of a simulation of water running into and out of a lake using DYNAMO along with a diagram of the model.




```
N LEVEL=1000
R RATE1.KL=50
R RATE2.KL=40
L LEVEL.K=LEVEL.J+DT*(RATE2?JK-RATE1.JK)
PRINT TIME.K,RATE1,RATE2,LEVEL
SPEC LENGTH=5,DT=1,PLTPER=0,PRTPER=1

P-  1 RUN-        MINI-DYNAMO  * VERSION 1.00
   COMPILED - 18-MAY-82

P-  2 RUN-        EXAMPLE OF A LAKE USING DYNAMO
  TIME     TIME    RATE1    RATE2    LEVEL
   E 00     E 00     E 00     E 00     E 00

  0.000    0.000   50.000   40.000   1000.0
  1.000    1.000   50.000   40.000    990.0
  2.000    2.000   50.000   40.000    980.0
  3.000    3.000   50.000   40.000    970.0
  4.000    4.000   50.000   40.000    960.0
  5.000    5.000   50.000   40.000    950.0
  6.000    6.000   50.000   40.000    940.0
  7.000    7.000   50.000   40.000    930.0
  8.000    8.000   50.000   40.000    920.0
  9.000    9.000   50.000   40.000    910.0
 10.000   10.000   50.000   40.000    900.0
```

OVERVIEW of COMPUTER PRINTOUTS

OVERVIEW of COMPUTER PRINTOUTS

The computer printouts in the following appendices were generated by Mini-Dynamo, a minicomputer version of DYNAMO. The simulations were performed on the Memorial University of Newfoundland PDP 11/70 RSTS/E computing facility. The actual computer program for the following simulations was given in Appendix A.

The variables and equations were explained in the text of the paper and will not be further discussed. It may be appropriate, however, to elaborate on the computer printouts.

It can be observed from the printouts that the Mini-Dynamo output is in the form of a table, with the output variables occupying the columns and the time variable the rows. This is the only type of tabular output available with Mini-Dynamo.

For the majority of variables, the interpretation of the output reports is straightforward. For instance, the main station growth (GPFØ1) during time period 5 is found by reading under the GPFØ1 column for time period 5.

For the present worth variables, such as ANCGPF, close attention must be given to the results because of the way that the model was set up. The logic of the model is set up such that the present worth of analog line costs, for instance, is developed for each of the time periods that an expenditure for analog lines was incurred. For example, in Appendix C, page 151, the value for ANCGPF for time period 7 is $4Ø,433. This figure is interpreted as the present worth (ie. in Time Ø), of the costs associated with installing the equipment in year 7. Similarly, the equations beginning in AHM and TAN require similar interpretation.

The PWAC output is the one of most significance in these outputs and again further explanation is required. The model is designed such that a PWAC value is developed for all time periods. The PWAC value at time period 2, for instance, gives a two year PWAC for the two years worth of capital injected into the network. This, of course, is not very useful and a longer term PWAC value should be observed for meaningful results. In all computer printouts, the value of PWAC for a twenty year study is most valid and all these results have been highlighted in the results.

The variables in the following printouts are by no means complete. In the development of the model, many auxiliary equations were developed which might present useful information for certain applications. The values of CCS developed for the determination of trunks are cases in point.

For completeness, the same printouts are included for all scenarios. It will therefore be found that under certain simulations, many of the variables are zero for all time periods. An example of this would be the outputs involving facilities for RLM's in the scenarios where RLM's do not exist.

Appendix C

Computer Printouts for Alternative 1

Status Quo

MINI-DYNAMO * VERSION 1.00

TIME E 00	GPF01 E 00	GPF02 E 00	GPF03 E 00	GPF04 E 00	GPF05 E 00	GPF06 E 00	GPF07 E 00
0.000	39.00	123.00	39.000	27.000	18.000	14.000	9.000
1.000	157.00	137.00	37.000	38.000	23.000	18.000	17.000
2.000	168.00	162.00	36.000	40.000	25.000	18.000	18.000
3.000	200.00	171.00	37.000	41.000	28.000	18.000	20.000
4.000	199.00	170.00	37.000	44.000	28.000	18.000	20.000
5.000	210.00	180.00	38.000	47.000	31.000	19.000	21.000
6.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
7.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
8.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
9.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
10.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
11.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
12.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
13.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
14.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
15.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
16.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
17.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
18.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
19.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
20.000	0.00	0.00	0.000	0.000	0.000	0.000	0.000

MINI-DYNAMO * VERSION 1.00

TIME E 00	LIN01 E 00	LIN02 E 00	LIN03 E 00	LIN04 E 00	LIN05 E 00	LIN06 E 00	LIN07 E 00
0.000	3794.0	3409.0	732.0	934.0	605.0	474.00	399.00
1.000	3833.0	3532.0	771.0	961.0	623.0	488.00	408.00
2.000	3990.0	3669.0	808.0	999.0	646.0	506.00	425.00
3.000	4158.0	3831.0	844.0	1039.0	671.0	524.00	443.00
4.000	4358.0	4002.0	881.0	1080.0	699.0	542.00	463.00
5.000	4557.0	4172.0	918.0	1124.0	727.0	560.00	483.00
6.000	4767.0	4352.0	956.0	1171.0	758.0	579.00	504.00
7.000	4987.0	4527.0	995.0	1221.0	791.0	601.00	526.00
8.000	5207.0	4702.0	1034.0	1271.0	824.0	623.00	548.00
9.000	5427.0	4877.0	1073.0	1321.0	857.0	645.00	570.00
10.000	5647.0	5052.0	1112.0	1371.0	890.0	667.00	592.00
11.000	5867.0	5227.0	1151.0	1421.0	923.0	689.00	614.00
12.000	6087.0	5402.0	1190.0	1471.0	956.0	711.00	636.00
13.000	6307.0	5577.0	1229.0	1521.0	989.0	733.00	658.00
14.000	6527.0	5752.0	1268.0	1571.0	1022.0	755.00	680.00
15.000	6747.0	5927.0	1307.0	1621.0	1055.0	777.00	702.00
16.000	6967.0	6102.0	1346.0	1671.0	1088.0	799.00	724.00
17.000	7187.0	6277.0	1385.0	1721.0	1121.0	821.00	746.00
18.000	7407.0	6452.0	1424.0	1771.0	1154.0	843.00	768.00
19.000	7627.0	6627.0	1463.0	1821.0	1187.0	865.00	790.00
20.000	7847.0	6802.0	1502.0	1871.0	1220.0	887.00	812.00

MINI-DYNAMO * VERSION 1.00

TIME	GPFA01	GPFA02	GPFA03	GPFA04	GPFA05	GPFA06	GPFA07
E 00	E 00	E 00	E 00	E 00	E 00	E 00	E 00
0.000	0.00	0.00	0.000	0.000	0.000	0.000	0.000
1.000	0.00	0.00	0.000	0.000	0.000	0.000	0.000
2.000	0.00	0.00	0.000	0.000	0.000	0.000	0.000
3.000	0.00	0.00	0.000	0.000	0.000	0.000	0.000
4.000	0.00	0.00	0.000	0.000	0.000	0.000	20.000
5.000	0.00	0.00	0.000	47.000	0.000	19.000	21.000
6.000	220.00	0.00	39.000	50.000	33.000	22.000	22.000
7.000	220.00	0.00	39.000	50.000	33.000	22.000	22.000
8.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
9.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
10.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
11.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
12.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
13.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
14.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
15.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
16.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
17.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
18.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
19.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
20.000	0.00	0.00	0.000	0.000	0.000	0.000	0.000

MINI-DYNAMO * VERSION 1.00

TIME E 00	LLIN01 E 00	LLIN02 E 00	LLIN03 E 00	LLIN04 E 00	LLIN05 E 00	LLIN06 E 00	LLIN07 E 00	LIN E 03
0.000	3794.0	3409.0	732.0	934.0	605.0	474.00	399.00	10.347
1.000	3833.0	3532.0	771.0	961.0	623.0	488.00	408.00	10.616
2.000	3990.0	3669.0	808.0	999.0	646.0	506.00	425.00	11.043
3.000	4158.0	3831.0	844.0	1039.0	671.0	524.00	443.00	11.510
4.000	4358.0	4002.0	881.0	1080.0	699.0	542.00	463.00	12.025
5.000	4557.0	4172.0	918.0	1124.0	727.0	560.00	483.00	12.541
6.000	4767.0	4352.0	956.0	1171.0	758.0	579.00	504.00	13.087
7.000	4987.0	4527.0	995.0	1221.0	791.0	601.00	526.00	13.648
8.000	5207.0	4702.0	1034.0	1271.0	824.0	623.00	548.00	14.209
9.000	5427.0	4877.0	1073.0	1321.0	857.0	645.00	570.00	14.770
10.000	5647.0	5052.0	1112.0	1371.0	890.0	667.00	592.00	15.331
11.000	5867.0	5227.0	1151.0	1421.0	923.0	689.00	614.00	15.892
12.000	6087.0	5402.0	1190.0	1471.0	956.0	711.00	636.00	16.453
13.000	6307.0	5577.0	1229.0	1521.0	989.0	733.00	658.00	17.014
14.000	6527.0	5752.0	1268.0	1571.0	1022.0	755.00	680.00	17.575
15.000	6747.0	5927.0	1307.0	1621.0	1055.0	777.00	702.00	18.136
16.000	6967.0	6102.0	1346.0	1671.0	1088.0	799.00	724.00	18.697
17.000	7187.0	6277.0	1385.0	1721.0	1121.0	821.00	746.00	19.258
18.000	7407.0	6452.0	1424.0	1771.0	1154.0	843.00	768.00	19.819
19.000	7627.0	6627.0	1463.0	1821.0	1187.0	865.00	790.00	20.380
20.000	7847.0	6802.0	1502.0	1871.0	1220.0	887.00	812.00	20.941

MINI-DYNAMO * VERSION 1.00

TIME	LRIN01	LRIN02	LRIN03	LRIN04	LRIN05	LRIN06	LRIN07	LRIN
E 00	E 00	E 00	E 00	E 00	E 00	E 00	E 00	E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	GPFCST E 03	RLMCST E 00	DMSCST E 00	TRKCST E 03	BLDCST E 03	FAXCST E 03	DMSGSC E 00
0.000	0.00	0.0000	0.0000	0.000	0.000	0.000	0.0000
1.000	0.00	0.0000	0.0000	19.050	0.000	19.283	0.0000
2.000	0.00	0.0000	0.0000	25.417	0.000	25.810	0.0000
3.000	0.00	0.0000	0.0000	26.655	0.000	27.026	0.0000
4.000	4.00	0.0000	0.0000	28.392	0.640	28.747	0.0000
5.000	17.40	0.0000	0.0000	28.575	2.784	28.942	0.0000
6.000	77.20	0.0000	0.0000	30.197	12.352	30.580	0.0000
7.000	77.20	0.0000	0.0000	31.750	12.352	32.222	0.0000
8.000	112.20	0.0000	0.0000	31.646	17.952	32.116	0.0000
9.000	112.20	0.0000	0.0000	31.548	17.952	32.016	0.0000
10.000	112.20	0.0000	0.0000	31.456	17.952	31.922	0.0000
11.000	112.20	0.0000	0.0000	31.369	17.952	31.833	0.0000
12.000	112.20	0.0000	0.0000	31.286	17.952	31.749	0.0000
13.000	112.20	0.0000	0.0000	31.208	17.952	31.669	0.0000
14.000	112.20	0.0000	0.0000	31.134	17.952	31.593	0.0000
15.000	112.20	0.0000	0.0000	31.063	17.952	31.520	0.0000
16.000	112.20	0.0000	0.0000	30.996	17.952	31.452	0.0000
17.000	112.20	0.0000	0.0000	30.931	17.952	31.386	0.0000
18.000	112.20	0.0000	0.0000	30.870	17.952	31.323	0.0000
19.000	112.20	0.0000	0.0000	30.811	17.952	31.262	0.0000
20.000	0.00	0.0000	0.0000	30.754	0.000	31.205	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	GFFMST E 03	RLMMST E 00	DMSMST E 00	TRKMST E 03	BLDMST E 03	FAXMST E 03
0.000	103.47	0.0000	0.0000	0.000	31.041	0.000
1.000	106.16	0.0000	0.0000	0.000	31.848	0.000
2.000	110.43	0.0000	0.0000	0.952	33.129	0.964
3.000	115.10	0.0000	0.0000	2.223	34.530	2.255
4.000	120.25	0.0000	0.0000	3.556	36.075	3.606
5.000	125.41	0.0000	0.0000	4.976	37.623	5.043
6.000	130.87	0.0000	0.0000	6.404	39.261	6.490
7.000	136.48	0.0000	0.0000	7.914	40.944	8.019
8.000	142.09	0.0000	0.0000	9.502	42.627	9.631
9.000	147.70	0.0000	0.0000	11.084	44.310	11.236
10.000	153.31	0.0000	0.0000	12.662	45.993	12.837
11.000	158.92	0.0000	0.0000	14.234	47.676	14.433
12.000	164.53	0.0000	0.0000	15.803	49.359	16.025
13.000	170.14	0.0000	0.0000	17.367	51.042	17.612
14.000	175.75	0.0000	0.0000	18.927	52.725	19.196
15.000	181.36	0.0000	0.0000	20.484	54.408	20.775
16.000	186.97	0.0000	0.0000	22.037	56.091	22.351
17.000	192.58	0.0000	0.0000	23.587	57.774	23.924
18.000	198.19	0.0000	0.0000	25.134	59.457	25.493
19.000	203.80	0.0000	0.0000	26.677	61.140	27.059
20.000	209.41	0.0000	0.0000	28.218	62.823	28.623

MINI-DYNAMO * VERSION 1.00

TIME	ANCGPF	ANCRLM	ANCDMS	ANCBLD	ANCTRK	ANCFAX	ANCGSC
E 00	E 03	E 00	E 00	E 00	E 03	E 03	E 00
0.000	0.000	0.0000	0.0000	0.0	0.000	0.000	0.0000
1.000	0.000	0.0000	0.0000	0.0	21.330	18.987	0.0000
2.000	0.000	0.0000	0.0000	0.0	25.074	22.391	0.0000
3.000	0.000	0.0000	0.0000	0.0	23.168	20.657	0.0000
4.000	3.063	0.0000	0.0000	464.1	21.742	19.359	0.0000
5.000	11.740	0.0000	0.0000	1778.8	19.279	17.172	0.0000
6.000	45.892	0.0000	0.0000	6953.8	17.951	15.986	0.0000
7.000	40.433	0.0000	0.0000	6126.3	16.629	14.841	0.0000
8.000	51.775	0.0000	0.0000	7844.7	14.603	13.033	0.0000
9.000	45.617	0.0000	0.0000	6911.6	12.826	11.447	0.0000
10.000	40.191	0.0000	0.0000	6089.5	11.268	10.056	0.0000
11.000	35.410	0.0000	0.0000	5365.2	9.900	8.835	0.0000
12.000	31.199	0.0000	0.0000	4727.1	8.700	7.763	0.0000
13.000	27.488	0.0000	0.0000	4164.8	7.646	6.823	0.0000
14.000	24.218	0.0000	0.0000	3669.4	6.720	5.997	0.0000
15.000	21.338	0.0000	0.0000	3233.0	5.907	5.271	0.0000
16.000	18.800	0.0000	0.0000	2848.4	5.193	4.634	0.0000
17.000	16.564	0.0000	0.0000	2509.6	4.566	4.075	0.0000
18.000	14.593	0.0000	0.0000	2211.1	4.015	3.583	0.0000
19.000	12.858	0.0000	0.0000	1948.1	3.531	3.150	0.0000
20.000	0.000	0.0000	0.0000	0.0	3.105	2.771	0.0000

MINI-DYNAMO * VERSION 1.00

TIME	ANMGPF	ANMRLM	ANMDMS	ANMBLD	ANMTRK	ANMFAX	AEEDMS	ANMSOF
E 00	E 03	E 00	E 00	E 03	E 00	E 00	E 00	E 00
0.000	53.905	0.0000	0.0000	16.171	0.0	0.0	0.0000	0.0000
1.000	48.728	0.0000	0.0000	14.618	0.0	0.0	0.0000	0.0000
2.000	44.659	0.0000	0.0000	13.398	385.2	389.9	0.0000	0.0000
3.000	41.011	0.0000	0.0000	12.303	792.2	803.4	0.0000	0.0000
4.000	37.750	0.0000	0.0000	11.325	1116.4	1132.0	0.0000	0.0000
5.000	34.687	0.0000	0.0000	10.406	1376.2	1394.9	0.0000	0.0000
6.000	31.892	0.0000	0.0000	9.568	1560.7	1581.6	0.0000	0.0000
7.000	29.303	0.0000	0.0000	8.791	1699.2	1721.8	0.0000	0.0000
8.000	26.879	0.0000	0.0000	8.064	1797.4	1821.8	0.0000	0.0000
9.000	24.617	0.0000	0.0000	7.385	1847.4	1872.7	0.0000	0.0000
10.000	22.513	0.0000	0.0000	6.754	1859.3	1885.0	0.0000	0.0000
11.000	20.561	0.0000	0.0000	6.168	1841.6	1867.3	0.0000	0.0000
12.000	18.755	0.0000	0.0000	5.626	1801.3	1826.7	0.0000	0.0000
13.000	17.087	0.0000	0.0000	5.126	1744.2	1768.8	0.0000	0.0000
14.000	15.551	0.0000	0.0000	4.665	1674.8	1698.5	0.0000	0.0000
15.000	14.139	0.0000	0.0000	4.242	1597.0	1619.7	0.0000	0.0000
16.000	12.843	0.0000	0.0000	3.853	1513.7	1535.3	0.0000	0.0000
17.000	11.655	0.0000	0.0000	3.496	1427.4	1447.8	0.0000	0.0000
18.000	10.567	0.0000	0.0000	3.170	1340.1	1359.3	0.0000	0.0000
19.000	9.574	0.0000	0.0000	2.872	1253.2	1271.2	0.0000	0.0000
20.000	8.667	0.0000	0.0000	2.600	1167.9	1184.7	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	TANGPF E 03	TANRLM E 00	TANDMS E 00	TANBLD E 03	TANTRK E 03	TANFAX E 03	TOTTAN E 03	PWAC E 03
0.000	53.905	0.0000	0.0000	16.171	0.000	0.000	70.08	0.0
1.000	48.728	0.0000	0.0000	14.618	21.330	18.987	103.66	70.1
2.000	44.659	0.0000	0.0000	13.398	25.460	22.781	106.30	173.7
3.000	41.011	0.0000	0.0000	12.303	23.960	21.460	98.73	280.0
4.000	40.813	0.0000	0.0000	11.789	22.858	20.491	95.95	378.8
5.000	46.427	0.0000	0.0000	12.185	20.656	18.567	97.83	474.7
6.000	77.783	0.0000	0.0000	16.521	19.512	17.568	131.38	572.6
7.000	69.736	0.0000	0.0000	14.917	18.328	16.563	119.54	703.9
8.000	78.654	0.0000	0.0000	15.908	16.400	14.854	125.82	823.5
9.000	70.233	0.0000	0.0000	14.297	14.674	13.320	112.52	949.3
10.000	62.703	0.0000	0.0000	12.843	13.127	11.941	100.61	1061.8
11.000	55.971	0.0000	0.0000	11.533	11.742	10.702	89.95	1162.4
12.000	49.953	0.0000	0.0000	10.353	10.501	9.590	80.40	1252.4
13.000	44.575	0.0000	0.0000	9.291	9.390	8.592	71.85	1332.8
14.000	39.770	0.0000	0.0000	8.335	8.395	7.695	64.19	1404.6
15.000	35.477	0.0000	0.0000	7.475	7.504	6.891	57.35	1468.8
16.000	31.642	0.0000	0.0000	6.701	6.707	6.170	51.22	1526.2
17.000	28.218	0.0000	0.0000	6.006	5.994	5.522	45.74	1577.4
18.000	25.161	0.0000	0.0000	5.381	5.355	4.942	40.84	1623.1
19.000	22.432	0.0000	0.0000	4.820	4.784	4.422	36.46	1664.0
20.000	8.667	0.0000	0.0000	2.600	4.273	3.955	19.50	$\boxed{1700.4}$

MINI-DYNAMO * VERSION 1.00

TIME E 00	DT0201 E 00	DT0301 E 00	DT0401 E 00	DT0501 E 00	DT0601 E 00	DT0701 E 00	DT0605 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	DT0302 E 00	DT0402 E 00	DT0502 E 00	DT0602 E 00	DT0702 E 00	DT0403 E 00	DT0705 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	DT0503 E 00	DT0603 E 00	DT0703 E 00	DT0504 E 00	DT0604 E 00	DT0704 E 00	DT0607 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	AT0201 E 00	AT0301 E 00	AT0401 E 00	AT0501 E 00	AT0601 E 00	AT0701 E 00	AT0302 E 00
0.000	92.12	35.679	42.405	31.066	25.936	22.800	35.130
1.000	94.09	37.088	43.331	31.779	26.530	23.204	36.638
2.000	97.49	38.579	44.829	32.792	27.361	24.004	38.095
3.000	101.31	40.046	46.406	33.886	28.196	24.849	39.554
4.000	105.57	41.586	48.073	35.118	29.048	25.790	41.055
5.000	109.80	43.121	49.825	36.346	29.896	26.727	42.549
6.000	114.26	44.699	51.686	37.690	30.788	27.708	44.088
7.000	118.76	46.320	53.654	39.113	31.803	28.730	45.647
8.000	123.24	47.936	55.616	40.531	32.814	29.749	47.202
9.000	127.72	49.547	57.572	41.944	33.822	30.764	48.752
10.000	132.18	51.153	59.524	43.354	34.826	31.776	50.299
11.000	136.64	52.756	61.471	44.759	35.828	32.784	51.841
12.000	141.09	54.355	63.414	46.161	36.827	33.789	53.380
13.000	145.53	55.949	65.352	47.559	37.823	34.791	54.916
14.000	149.97	57.541	67.286	48.953	38.816	35.791	56.449
15.000	154.40	59.129	69.216	50.345	39.807	36.787	57.978
16.000	158.82	60.714	71.143	51.733	40.796	37.782	59.504
17.000	163.24	62.295	73.066	53.119	41.782	38.773	61.028
18.000	167.65	63.874	74.986	54.501	42.767	39.763	62.549
19.000	172.06	65.450	76.903	55.881	43.749	40.750	64.067
20.000	176.46	67.023	78.816	57.258	44.729	41.735	65.582

MINI-DYNAMO * VERSION 1.00

TIME E 00	AT0402 E 00	AT0502 E 00	AT0602 E 00	AT0702 E 00	AT0403 E 00	AT0503 E 00	AT0603 E 00
0.000	41.600	30.662	25.667	22.598	25.368	21.230	18.911
1.000	42.697	31.460	26.318	23.047	26.267	21.934	19.508
2.000	44.156	32.454	27.136	23.837	27.240	22.692	20.164
3.000	45.726	33.546	27.971	24.680	28.213	23.467	20.809
4.000	47.342	34.753	28.809	25.607	29.208	24.298	21.459
5.000	49.041	35.954	29.643	26.530	30.230	25.126	22.105
6.000	50.847	37.270	30.520	27.496	31.294	26.009	22.776
7.000	52.727	38.649	31.510	28.497	32.401	26.930	23.513
8.000	54.602	40.023	32.496	29.494	33.503	27.848	24.247
9.000	56.472	41.393	33.479	30.487	34.602	28.762	24.978
10.000	58.337	42.758	34.460	31.477	35.698	29.673	25.706
11.000	60.198	44.120	35.437	32.463	36.790	30.582	26.433
12.000	62.054	45.478	36.412	33.447	37.879	31.487	27.156
13.000	63.907	46.833	37.384	34.427	38.965	32.389	27.878
14.000	65.756	48.185	38.354	35.405	40.049	33.289	28.598
15.000	67.601	49.533	39.322	36.380	41.130	34.187	29.315
16.000	69.443	50.878	40.288	37.353	42.208	35.082	30.031
17.000	71.281	52.221	41.251	38.323	43.284	35.975	30.745
18.000	73.117	53.561	42.213	39.291	44.357	36.866	31.457
19.000	74.949	54.898	43.172	40.256	45.428	37.754	32.167
20.000	76.778	56.232	44.130	41.220	46.498	38.641	32.876

MINI-DYNAMO * VERSION 1.00

TIME E 00	AT0703 E 00	AT0504 E 00	AT0604 E 00	AT0704 E 00	AT0605 E 00	AT0705 E 00	AT0607 E 00
0.000	19.932	23.120	20.339	18.474	17.728	16.347	15.034
1.000	20.588	23.684	20.829	18.841	18.154	16.681	15.343
2.000	21.249	24.431	21.476	19.471	18.698	17.216	15.828
3.000	21.884	25.230	22.132	20.134	19.261	17.786	16.326
4.000	22.497	26.090	22.791	20.851	19.852	18.417	16.854
5.000	23.108	26.971	23.466	21.579	20.440	19.045	17.378
6.000	23.745	27.929	24.178	22.343	21.073	19.715	17.927
7.000	24.475	28.944	24.973	23.144	21.773	20.418	18.524
8.000	25.203	29.956	25.766	23.942	22.470	21.118	19.117
9.000	25.929	30.964	26.556	24.736	23.165	21.815	19.708
10.000	26.652	31.969	27.343	25.528	23.856	22.510	20.297
11.000	27.374	32.970	28.127	26.316	24.545	23.201	20.883
12.000	28.093	33.969	28.909	27.102	25.232	23.890	21.466
13.000	28.810	34.964	29.688	27.886	25.916	24.577	22.048
14.000	29.526	35.957	30.465	28.667	26.598	25.262	22.628
15.000	30.240	36.947	31.240	29.445	27.278	25.944	23.205
16.000	30.952	37.935	32.013	30.222	27.956	26.624	23.781
17.000	31.662	38.920	32.784	30.996	28.633	27.302	24.355
18.000	32.371	39.903	33.553	31.768	29.307	27.979	24.928
19.000	33.078	40.884	34.320	32.539	29.979	28.653	25.498
20.000	33.784	41.863	35.086	33.307	30.650	29.326	26.068

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MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0201 E 00	RM0301 E 00	RM0401 E 00	RM0501 E 00	RM0601 E 00	RM0701 E 00	RM0107 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0102 E 00	RM0302 E 00	RM0402 E 00	RM0502 E 00	RM0602 E 00	RM0702 E 00	RM0207 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0103 E 00	RM0203 E 00	RM0403 E 00	RM0503 E 00	RM0603 E 00	RM0703 E 00	RM0307 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0104 E 00	RM0204 E 00	RM0304 E 00	RM0504 E 00	RM0604 E 00	RM0704 E 00	RM0407 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0105 E 00	RM0205 E 00	RM0305 E 00	RM0405 E 00	RM0605 E 00	RM0705 E 00	RM0507 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0106 E 00	RM0206 E 00	RM0306 E 00	RM0406 E 00	RM0506 E 00	RM0706 E 00	RM0607 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	TLIN E 00	TRLM E 00	LIN E 03	RMTOT E 00	DMSTOT E 00	FAXAST E 03	FAXDST E 00	GPFTOT E 00
0.000	0.0000	0.0000	10.347	0.0000	0.0000	0.000	0.0000	0.00
1.000	0.0000	0.0000	10.616	0.0000	0.0000	19.283	0.0000	0.00
2.000	0.0000	0.0000	11.043	0.0000	0.0000	25.810	0.0000	0.00
3.000	0.0000	0.0000	11.510	0.0000	0.0000	27.026	0.0000	0.00
4.000	0.0000	0.0000	12.025	0.0000	0.0000	28.747	0.0000	20.00
5.000	0.0000	0.0000	12.541	0.0000	0.0000	28.942	0.0000	87.00
6.000	0.0000	0.0000	13.087	0.0000	0.0000	30.580	0.0000	386.00
7.000	0.0000	0.0000	13.648	0.0000	0.0000	32.222	0.0000	386.00
8.000	0.0000	0.0000	14.209	0.0000	0.0000	32.116	0.0000	561.00
9.000	0.0000	0.0000	14.770	0.0000	0.0000	32.016	0.0000	561.00
10.000	0.0000	0.0000	15.331	0.0000	0.0000	31.922	0.0000	561.00
11.000	0.0000	0.0000	15.892	0.0000	0.0000	31.833	0.0000	561.00
12.000	0.0000	0.0000	16.453	0.0000	0.0000	31.749	0.0000	561.00
13.000	0.0000	0.0000	17.014	0.0000	0.0000	31.669	0.0000	561.00
14.000	0.0000	0.0000	17.575	0.0000	0.0000	31.593	0.0000	561.00
15.000	0.0000	0.0000	18.136	0.0000	0.0000	31.520	0.0000	561.00
16.000	0.0000	0.0000	18.697	0.0000	0.0000	31.452	0.0000	561.00
17.000	0.0000	0.0000	19.258	0.0000	0.0000	31.386	0.0000	561.00
18.000	0.0000	0.0000	19.819	0.0000	0.0000	31.323	0.0000	561.00
19.000	0.0000	0.0000	20.380	0.0000	0.0000	31.262	0.0000	561.00
20.000	0.0000	0.0000	20.941	0.0000	0.0000	31.205	0.0000	0.00

Appendix D

Computer Printouts for Alternative 2

Carbonear Overlay

MINI-DYNAMO * VERSION 1.00

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ENTER RERUN CHANGES

C RE0201=1
C RE0301=1
C RE0401=1
C RE0501=1
C RE0601=1
C RE0701=1

RUN

 ILLEGAL CARD TYPE
 ON PREVIOUS CARD
 RUN
```

CHANGES FOR RERUN -

	OVER01	OVER02	OVER03	OVER04	OVER05	OVER06
PRESENT	2.0000	7.0000	5.0000	4.0000	5.0000	4.0000
ORIGINAL	99.000	99.000	99.000	99.000	99.000	99.000

	OVER07	RE0201	RE0301	RE0401	RE0501	RE0601
PRESENT	3.0000	1.0000	1.0000	1.0000	1.0000	1.0000
ORIGINAL	99.000	0.0000	0.0000	0.0000	0.0000	0.0000

	RE0701	RE01
PRESENT	1.0000	2.0000
ORIGINAL	0.0000	100.00

MINI-DYNAMO * VERSION 1.00

TIME E 00	GPF01 E 00	GPF02 E 00	GPF03 E 00	GPF04 E 00	GPF05 E 00	GPF06 E 00	GPF07 E 00
0.000	39.00	123.00	39.000	27.000	18.000	14.000	9.000
1.000	157.00	137.00	37.000	38.000	23.000	18.000	17.000
2.000	168.00	162.00	36.000	40.000	25.000	18.000	18.000
3.000	200.00	171.00	37.000	41.000	28.000	18.000	20.000
4.000	199.00	170.00	37.000	44.000	28.000	18.000	20.000
5.000	210.00	180.00	38.000	47.000	31.000	19.000	21.000
6.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
7.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
8.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
9.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
10.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
11.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
12.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
13.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
14.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
15.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
16.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
17.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
18.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
19.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
20.000	0.00	0.00	0.000	0.000	0.000	0.000	0.000

MINI-DYNAMO * VERSION 1.00

TIME E 00	LIN01 E 00	LIN02 E 00	LIN03 E 00	LIN04 E 00	LIN05 E 00	LIN06 E 00	LIN07 E 00
0.000	3794.0	3409.0	732.0	934.0	605.0	474.00	399.00
1.000	3833.0	3532.0	771.0	961.0	623.0	488.00	408.00
2.000	3990.0	3669.0	808.0	999.0	646.0	506.00	425.00
3.000	4158.0	3831.0	844.0	1039.0	671.0	524.00	443.00
4.000	4358.0	4002.0	881.0	1080.0	699.0	542.00	463.00
5.000	4557.0	4172.0	918.0	1124.0	727.0	560.00	483.00
6.000	4767.0	4352.0	956.0	1171.0	758.0	579.00	504.00
7.000	4987.0	4527.0	995.0	1221.0	791.0	601.00	526.00
8.000	5207.0	4702.0	1034.0	1271.0	824.0	623.00	548.00
9.000	5427.0	4877.0	1073.0	1321.0	857.0	645.00	570.00
10.000	5647.0	5052.0	1112.0	1371.0	890.0	667.00	592.00
11.000	5867.0	5227.0	1151.0	1421.0	923.0	689.00	614.00
12.000	6087.0	5402.0	1190.0	1471.0	956.0	711.00	636.00
13.000	6307.0	5577.0	1229.0	1521.0	989.0	733.00	658.00
14.000	6527.0	5752.0	1268.0	1571.0	1022.0	755.00	680.00
15.000	6747.0	5927.0	1307.0	1621.0	1055.0	777.00	702.00
16.000	6967.0	6102.0	1346.0	1671.0	1088.0	799.00	724.00
17.000	7187.0	6277.0	1385.0	1721.0	1121.0	821.00	746.00
18.000	7407.0	6452.0	1424.0	1771.0	1154.0	843.00	768.00
19.000	7627.0	6627.0	1463.0	1821.0	1187.0	865.00	790.00
20.000	7847.0	6802.0	1502.0	1871.0	1220.0	887.00	812.00

MINI-DYNAMO * VERSION 1.00

TIME E 00	GPFA01 E 00	GPFA02 E 00	GPFA03 E 00	GPFA04 E 00	GPFA05 E 00	GPFA06 E 00	GPFA07 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME	LLIN01	LLIN02	LLIN03	LLIN04	LLIN05	LLIN06	LLIN07	LIN
E 00	E 00	E 00	E 00	E 00	E 00	E 00	E 00	E 03
0.000	3794.0	3409.0	732.00	934.0	605.00	474.00	399.00	10.347
1.000	3833.0	3532.0	771.00	961.0	623.00	488.00	408.00	10.616
2.000	3990.0	3669.0	808.00	999.0	646.00	506.00	425.00	11.043
3.000	0.0	3831.0	844.00	1039.0	671.00	524.00	443.00	7.352
4.000	0.0	4002.0	881.00	1080.0	699.00	542.00	443.00	7.647
5.000	0.0	4172.0	918.00	1080.0	727.00	542.00	443.00	7.882
6.000	0.0	4352.0	918.00	1080.0	727.00	542.00	443.00	8.062
7.000	0.0	4527.0	918.00	1080.0	727.00	542.00	443.00	8.237
8.000	0.0	4527.0	918.00	1080.0	727.00	542.00	443.00	8.237
9.000	0.0	4527.0	918.00	1080.0	727.00	542.00	443.00	8.237
10.000	0.0	4527.0	918.00	1080.0	727.00	542.00	443.00	8.237
11.000	0.0	4527.0	918.00	1080.0	727.00	542.00	443.00	8.237
12.000	0.0	4527.0	918.00	1080.0	727.00	542.00	443.00	8.237
13.000	0.0	4527.0	918.00	1080.0	727.00	542.00	443.00	8.237
14.000	0.0	4527.0	918.00	1080.0	727.00	542.00	443.00	8.237
15.000	0.0	4527.0	918.00	1080.0	727.00	542.00	443.00	8.237
16.000	0.0	4527.0	918.00	1080.0	727.00	542.00	443.00	8.237
17.000	0.0	4527.0	918.00	1080.0	727.00	542.00	443.00	8.237
18.000	0.0	4527.0	918.00	1080.0	727.00	542.00	443.00	8.237
19.000	0.0	4527.0	918.00	1080.0	727.00	542.00	443.00	8.237
20.000	0.0	4527.0	918.00	1080.0	727.00	542.00	443.00	8.237

MINI-DYNAMO * VERSION 1.00

TIME E 00	LRINO1 E 00	LRINO2 E 00	LRINO3 E 00	LRINO4 E 00	LRINO5 E 00	LRINO6 E 00	LRINO7 E 00	LRIN E 00
0.000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0
1.000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0
2.000	4158.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	4158.0
3.000	220.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	220.0
4.000	281.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	281.0
5.000	366.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	366.0
6.000	386.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	386.0
7.000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
8.000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
9.000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
10.000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
11.000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
12.000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
13.000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
14.000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
15.000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
16.000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
17.000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
18.000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
19.000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
20.000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0

MINI-DYNAMO * VERSION 1.00

TIME E 00	GPFCST E 00	RLMCST E 03	DMSCST E 03	TRKCST E 03	BLDCST E 03	FAXCST E 03	DMSGSC E 03
0.000	0.0000	0.00	0.0	0.000	0.000	0.000	0.00
1.000	0.0000	0.00	0.0	19.050	0.000	19.283	0.00
2.000	0.0000	0.00	1247.4	25.417	33.264	25.810	650.00
3.000	0.0000	244.00	60.0	26.655	1.840	28.202	0.00
4.000	0.0000	496.40	59.7	25.589	2.576	30.542	0.00
5.000	0.0000	511.20	63.0	18.028	3.552	25.025	0.00
6.000	0.0000	33.20	66.0	10.480	3.752	18.212	0.00
7.000	0.0000	308.20	66.0	10.285	5.852	22.174	0.00
8.000	0.0000	68.20	66.0	8.386	5.852	20.425	0.00
9.000	0.0000	68.20	66.0	7.406	5.852	19.451	0.00
10.000	0.0000	68.20	66.0	6.594	5.852	18.646	0.00
11.000	0.0000	68.20	66.0	5.912	5.852	17.972	0.00
12.000	0.0000	68.20	66.0	5.334	5.852	17.401	0.00
13.000	0.0000	68.20	66.0	4.838	5.852	16.912	0.00
14.000	0.0000	68.20	66.0	4.410	5.852	16.490	0.00
15.000	0.0000	68.20	66.0	4.037	5.852	16.123	0.00
16.000	0.0000	68.20	66.0	3.711	5.852	15.802	0.00
17.000	0.0000	68.20	66.0	3.423	5.852	15.519	0.00
18.000	0.0000	68.20	66.0	3.167	5.852	15.269	0.00
19.000	0.0000	68.20	66.0	2.940	5.852	15.046	0.00
20.000	0.0000	0.00	0.0	2.737	0.000	2.668	0.00

MINI-DYNAMO * VERSION 1.00

TIME E 00	GPFMST E 03	RLMMST E 03	DMSMST E 03	TRKMST E 00	BLDMST E 03	FAXMST E 03
0.000	103.47	0.000	0.000	0.0	31.041	0.000
1.000	106.16	0.000	0.000	0.0	31.848	0.000
2.000	110.43	0.000	0.000	952.5	33.129	0.964
3.000	73.52	0.000	20.790	2223.4	26.214	2.255
4.000	76.47	0.140	21.790	3556.1	27.329	3.665
5.000	78.82	0.714	22.785	4835.6	28.356	5.192
6.000	80.62	1.806	23.835	5737.0	29.340	6.443
7.000	82.37	2.968	24.935	6261.0	30.334	7.354
8.000	82.37	5.355	26.035	6775.2	31.066	8.462
9.000	82.37	7.742	27.135	7194.5	31.797	9.484
10.000	82.37	10.129	28.235	7564.8	32.529	10.456
11.000	82.37	12.516	29.335	7894.5	33.260	11.389
12.000	82.37	14.903	30.435	8190.1	33.991	12.287
13.000	82.37	17.290	31.535	8456.8	34.723	13.157
14.000	82.37	19.677	32.635	8698.8	35.455	14.003
15.000	82.37	22.064	33.735	8919.3	36.186	14.827
16.000	82.37	24.451	34.835	9121.1	36.918	15.633
17.000	82.37	26.838	35.935	9306.7	37.649	16.424
18.000	82.37	29.225	37.035	9477.8	38.380	17.199
19.000	82.37	31.612	38.135	9636.2	39.112	17.963
20.000	82.37	33.999	39.235	9783.2	39.844	18.715

MINI-DYNAMO * VERSION 1.00

TIME E 00	ANCGPF E 00	ANCRLM E 03	ANCDMS E 03	ANCBLD E 03	ANCTRK E 03	ANCFAX E 03	ANCGSC E 03
0.000	0.0000	0.00	0.0	0.000	0.000	0.000	0.00
1.000	0.0000	0.00	0.0	0.000	21.330	18.987	0.00
2.000	0.0000	0.00	1230.6	31.075	25.074	22.391	641.23
3.000	0.0000	212.08	52.2	1.514	23.168	21.556	0.00
4.000	0.0000	380.14	45.7	1.868	19.596	20.568	0.00
5.000	0.0000	344.91	42.5	2.269	12.163	14.848	0.00
6.000	0.0000	19.74	39.2	2.112	6.230	9.520	0.00
7.000	0.0000	161.42	34.6	2.902	5.386	10.213	0.00
8.000	0.0000	31.47	30.5	2.557	3.870	8.288	0.00
9.000	0.0000	27.73	26.8	2.253	3.011	6.954	0.00
10.000	0.0000	24.43	23.6	1.985	2.362	5.874	0.00
11.000	0.0000	21.52	20.8	1.749	1.866	4.988	0.00
12.000	0.0000	18.96	18.4	1.541	1.483	4.255	0.00
13.000	0.0000	16.71	16.2	1.358	1.185	3.644	0.00
14.000	0.0000	14.72	14.2	1.196	0.952	3.130	0.00
15.000	0.0000	12.97	12.6	1.054	0.768	2.696	0.00
16.000	0.0000	11.43	11.1	0.929	0.622	2.328	0.00
17.000	0.0000	10.07	9.7	0.818	0.505	2.015	0.00
18.000	0.0000	8.87	8.6	0.721	0.412	1.746	0.00
19.000	0.0000	7.82	7.6	0.635	0.337	1.516	0.00
20.000	0.0000	0.00	0.0	0.000	0.276	0.237	0.00

MINI-DYNAMO * VERSION 1.00

TIME E 00	ANMGPF E 03	ANMRLM E 00	ANMDMS E 00	ANMBLD E 03	ANMTRK E 00	ANMFAX E 00	AEEDMS E 03	ANMSOF E 03
0.000	53.905	0.0	0.0	16.171	0.0	0.0	0.000	0.000
1.000	48.728	0.0	0.0	14.618	0.0	0.0	0.000	0.000
2.000	44.659	0.0	0.0	13.398	385.2	389.9	26.660	74.816
3.000	26.196	0.0	7407.6	9.340	792.2	803.4	1.130	0.000
4.000	24.006	43.9	6840.5	8.579	1116.4	1150.5	0.990	0.000
5.000	21.801	197.5	6302.1	7.843	1337.5	1436.0	0.921	0.000
6.000	19.646	440.1	5808.4	7.150	1398.0	1570.1	0.850	0.000
7.000	17.685	637.2	5353.7	6.513	1344.3	1578.9	0.749	0.000
8.000	15.582	1013.0	4925.0	5.877	1281.6	1600.8	0.660	0.000
9.000	13.728	1290.3	4522.5	5.300	1199.1	1580.6	0.581	0.000
10.000	12.095	1487.4	4146.1	4.777	1110.8	1535.4	0.512	0.000
11.000	10.657	1619.3	3795.3	4.303	1021.4	1473.4	0.451	0.000
12.000	9.389	1698.8	3469.3	3.875	933.6	1400.6	0.398	0.000
13.000	8.272	1736.4	3167.1	3.487	849.3	1321.4	0.350	0.000
14.000	7.289	1741.1	2887.7	3.137	769.7	1239.0	0.309	0.000
15.000	6.422	1720.1	2630.0	2.821	695.4	1155.9	0.272	0.000
16.000	5.658	1679.5	2392.7	2.536	626.5	1073.8	0.240	0.000
17.000	4.985	1624.2	2174.7	2.278	563.2	993.9	0.211	0.000
18.000	4.392	1558.3	1974.7	2.046	505.4	917.1	0.186	0.000
19.000	3.870	1485.1	1791.5	1.837	452.7	843.9	0.164	0.000
20.000	3.409	1407.2	1623.9	1.649	404.9	774.6	0.000	0.000

MINI-DYNAMO * VERSION 1.00

TIME E 00	TANGPF E 03	TANRLM E 03	TANDMS E 03	TANBLD E 03	TANTRK E 03	TANFAX E 03	TOTTAN E 03	PWAC E 03
0.000	53.905	0.00	0.0	16.171	0.000	0.000	70.1	0.0
1.000	48.728	0.00	0.0	14.618	21.330	18.987	103.7	70.1
2.000	44.659	0.00	1973.3	44.473	25.460	22.781	2110.6	173.7
3.000	26.196	212.08	60.7	10.855	23.960	22.359	356.1	2284.4
4.000	24.006	380.18	53.5	10.447	20.712	21.718	510.6	2640.5
5.000	21.801	345.11	49.7	10.112	13.501	16.284	456.5	3151.1
6.000	19.646	20.18	45.9	9.262	7.628	11.090	113.7	3607.7
7.000	17.685	162.06	40.7	9.415	6.731	11.792	248.3	3721.4
8.000	15.582	32.48	36.0	8.434	5.152	9.889	107.6	3969.7
9.000	13.728	29.02	31.9	7.553	4.210	8.535	95.0	4077.3
10.000	12.095	25.92	28.3	6.762	3.473	7.409	84.0	4172.3
11.000	10.657	23.14	25.1	6.052	2.887	6.461	74.3	4256.2
12.000	9.389	20.66	22.2	5.416	2.417	5.65[illegible]	65.8	4330.5
13.000	8.272	18.44	19.7	4.845	2.035	4.965	58.2	4396.3
14.000	7.289	16.46	17.4	4.333	1.722	4.369	51.6	4454.5
15.000	6.422	14.69	15.5	3.875	1.463	3.852	45.8	4506.1
16.000	5.658	13.11	13.7	3.464	1.248	3.402	40.6	4551.9
17.000	4.985	11.69	12.1	3.097	1.069	3.009	36.0	4592.5
18.000	4.392	10.43	10.7	2.767	0.917	2.664	31.9	4628.4
19.000	3.870	9.30	9.5	2.472	0.790	2.360	28.3	4660.4
20.000	3.409	1.41	1.6	1.649	0.681	1.011	9.8	$\boxed{4688.7}$

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MINI-DYNAMO * VERSION 1.00

TIME E 00	DT0201 E 00	DT0301 E 00	DT0401 E 00	DT0501 E 00	DT0601 E 00	DT0701 E 00	DT0605 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	DT0302 E 00	DT0402 E 00	DT0502 E 00	DT0602 E 00	DT0702 E 00	DT0403 E 00	DT0705 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	DT0503 E 00	DT0603 E 00	DT0703 E 00	DT0504 E 00	DT0604 E 00	DT0704 E 00	DT0607 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	AT0201 E 00	AT0301 E 00	AT0401 E 00	AT0501 E 00	AT0601 E 00	AT0701 E 00	AT0302 E 00
0.000	92.12	35.679	42.405	31.066	25.936	22.800	35.130
1.000	94.09	37.088	43.331	31.779	26.530	23.204	36.638
2.000	97.49	38.579	44.829	32.792	27.361	24.004	38.095
3.000	101.31	40.046	46.406	33.886	28.196	24.849	39.554
4.000	105.78	41.614	48.111	35.137	29.061	24.950	41.055
5.000	110.86	43.259	48.619	36.440	29.225	25.066	42.549
6.000	116.89	43.715	49.211	36.751	29.414	25.200	42.827
7.000	122.97	44.138	49.762	37.038	29.588	25.322	43.079
8.000	128.01	44.669	50.454	37.397	29.804	25.474	43.079
9.000	132.53	45.119	51.044	37.700	29.986	25.601	43.079
10.000	136.61	45.506	51.552	37.959	30.141	25.709	43.079
11.000	140.30	45.842	51.995	38.183	30.275	25.803	43.079
12.000	143.67	46.137	52.384	38.379	30.391	25.884	43.079
13.000	146.75	46.397	52.729	38.552	30.493	25.955	43.079
14.000	149.58	46.629	53.037	38.706	30.584	26.018	43.079
15.000	152.19	46.836	53.312	38.843	30.665	26.074	43.079
16.000	154.60	47.023	53.561	38.967	30.738	26.124	43.079
17.000	156.83	47.193	53.787	39.078	30.804	26.170	43.079
18.000	158.91	47.347	53.993	39.180	30.863	26.211	43.079
19.000	160.84	47.488	54.181	39.272	30.917	26.249	43.079
20.000	162.65	47.617	54.354	39.357	30.967	26.283	43.079

MINI-DYNAMO * VERSION 1.00

TIME E 00	AT0402 E 00	AT0502 E 00	AT0602 E 00	AT0702 E 00	AT0403 E 00	AT0503 E 00	AT0603 E 00
0.000	41.600	30.662	25.667	22.598	25.368	21.230	18.911
1.000	42.697	31.460	26.318	23.047	26.267	21.934	19.508
2.000	44.156	32.454	27.136	23.837	27.240	22.692	20.164
3.000	45.726	33.546	27.971	24.680	28.213	23.467	20.809
4.000	47.342	34.753	28.809	24.771	29.208	24.298	21.459
5.000	47.703	35.954	28.928	24.856	29.769	25.126	21.735
6.000	48.061	36.145	29.044	24.939	29.769	25.126	21.735
7.000	48.387	36.317	29.150	25.013	29.769	25.126	21.735
8.000	48.387	36.317	29.150	25.013	29.769	25.126	21.735
9.000	48.387	36.317	29.150	25.013	29.769	25.126	21.735
10.000	48.387	36.317	29.150	25.013	29.769	25.126	21.735
11.000	48.387	36.317	29.150	25.013	29.769	25.126	21.735
12.000	48.387	36.317	29.150	25.013	29.769	25.126	21.735
13.000	48.387	36.317	29.150	25.013	29.769	25.126	21.735
14.000	48.387	36.317	29.150	25.013	29.769	25.126	21.735
15.000	48.387	36.317	29.150	25.013	29.769	25.126	21.735
16.000	48.387	36.317	29.150	25.013	29.769	25.126	21.735
17.000	48.387	36.317	29.150	25.013	29.769	25.126	21.735
18.000	48.387	36.317	29.150	25.013	29.769	25.126	21.735
19.000	48.387	36.317	29.150	25.013	29.769	25.126	21.735
20.000	48.387	36.317	29.150	25.013	29.769	25.126	21.735

MINI-DYNAMO * VERSION 1.00

TIME E 00	AT0703 E 00	AT0504 E 00	AT0604 E 00	AT0704 E 00	AT0605 E 00	AT0705 E 00	AT0607 E 00
0.000	19.932	23.120	20.339	18.474	17.728	16.347	15.034
1.000	20.588	23.684	20.829	18.841	18.154	16.681	15.343
2.000	21.249	24.431	21.476	19.471	18.698	17.216	15.828
3.000	21.884	25.230	22.132	20.134	19.261	17.786	16.326
4.000	22.779	26.090	22.791	20.324	19.852	18.019	16.529
5.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
6.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
7.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
8.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
9.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
10.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
11.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
12.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
13.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
14.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
15.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
16.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
17.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
18.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
19.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
20.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0201 E 00	RM0301 E 00	RM0401 E 00	RM0501 E 00	RM0601 E 00	RM0701 E 00	RM0107 E 00
0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.0000
1.000	0.00	0.000	0.000	0.000	0.000	0.000	0.0000
2.000	0.00	0.000	0.000	0.000	0.000	0.000	0.0000
3.000	0.00	0.000	0.000	0.000	0.000	20.000	0.0000
4.000	0.00	0.000	44.000	0.000	18.000	20.000	0.0000
5.000	0.00	38.000	47.000	31.000	19.000	21.000	0.0000
6.000	0.00	39.000	50.000	33.000	22.000	22.000	0.0000
7.000	175.00	39.000	50.000	33.000	22.000	22.000	0.0000
8.000	175.00	39.000	50.000	33.000	22.000	22.000	0.0000
9.000	175.00	39.000	50.000	33.000	22.000	22.000	0.0000
10.000	175.00	39.000	50.000	33.000	22.000	22.000	0.0000
11.000	175.00	39.000	50.000	33.000	22.000	22.000	0.0000
12.000	175.00	39.000	50.000	33.000	22.000	22.000	0.0000
13.000	175.00	39.000	50.000	33.000	22.000	22.000	0.0000
14.000	175.00	39.000	50.000	33.000	22.000	22.000	0.0000
15.000	175.00	39.000	50.000	33.000	22.000	22.000	0.0000
16.000	175.00	39.000	50.000	33.000	22.000	22.000	0.0000
17.000	175.00	39.000	50.000	33.000	22.000	22.000	0.0000
18.000	175.00	39.000	50.000	33.000	22.000	22.000	0.0000
19.000	175.00	39.000	50.000	33.000	22.000	22.000	0.0000
20.000	0.00	0.000	0.000	0.000	0.000	0.000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0102 E 00	RM0302 E 00	RM0402 E 00	RM0502 E 00	RM0602 E 00	RM0702 E 00	RM0207 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0103 E 00	RM0203 E 00	RM0403 E 00	RM0503 E 00	RM0603 E 00	RM0703 E 00	RM0307 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0104 E 00	RM0204 E 00	RM0304 E 00	RM0504 E 00	RM0604 E 00	RM0704 E 00	RM0407 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0105 E 00	RM0205 E 00	RM0305 E 00	RM0405 E 00	RM0605 E 00	RM0705 E 00	RM0507 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0106 E 00	RM0206 E 00	RM0306 E 00	RM0406 E 00	RM0506 E 00	RM0706 E 00	RM0607 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	TLIN E 00	TRLM E 00	LIN E 03	RMTOT E 00	DMSTOT E 00	FAXAST E 03	FAXDST E 03	GPFTOT E 00
0.000	0.0	0.0	10.347	0.00	0.0	0.000	0.000	0.0000
1.000	0.0	0.0	10.616	0.00	0.0	19.283	0.000	0.0000
2.000	0.0	0.0	11.043	0.00	4158.0	25.810	0.000	0.0000
3.000	4158.0	0.0	7.352	20.00	200.0	27.026	1.176	0.0000
4.000	4358.0	20.0	7.647	82.00	199.0	25.798	4.744	0.0000
5.000	4557.0	102.0	7.882	156.00	210.0	17.556	7.470	0.0000
6.000	4767.0	258.0	8.062	166.00	220.0	10.198	8.014	0.0000
7.000	4987.0	424.0	8.237	341.00	220.0	9.995	12.179	0.0000
8.000	5207.0	765.0	8.237	341.00	220.0	8.246	12.179	0.0000
9.000	5427.0	1106.0	8.237	341.00	220.0	7.273	12.179	0.0000
10.000	5647.0	1447.0	8.237	341.00	220.0	6.468	12.179	0.0000
11.000	5867.0	1788.0	8.237	341.00	220.0	5.793	12.179	0.0000
12.000	6087.0	2129.0	8.237	341.00	220.0	5.222	12.179	0.0000
13.000	6307.0	2470.0	8.237	341.00	220.0	4.733	12.179	0.0000
14.000	6527.0	2811.0	8.237	341.00	220.0	4.311	12.179	0.0000
15.000	6747.0	3152.0	8.237	341.00	220.0	3.945	12.179	0.0000
16.000	6967.0	3493.0	8.237	341.00	220.0	3.623	12.179	0.0000
17.000	7187.0	3834.0	8.237	341.00	220.0	3.341	12.179	0.0000
18.000	7407.0	4175.0	8.237	341.00	220.0	3.090	12.179	0.0000
19.000	7627.0	4516.0	8.237	341.00	220.0	2.867	12.179	0.0000
20.000	7847.0	4857.0	8.237	0.00	0.0	2.668	0.000	0.0000

Appendix E

Computer Printouts for Alternative 3

Carbonear Replace

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                    MINI-DYNAMO  * VERSION 1.00

ENTER RERUN CHANGES

C RE01=2,RE02=7,RE03=5,RE04=4,RE05=5,RE06=4,RE07=3
C RE0201=1,RE0301=1,RE0401=1,RE0501=1,RE0601=1,RE0701=1
C OVER01=2,OVER02=7,OVER03=5,OVER04=4,OVER05=5,OVER06=4,OVER07=3
RUN
```

CHANGES FOR RERUN -

	OVER01	OVER02	OVER03	OVER04	OVER05	OVER06
PRESENT	2.0000	7.0000	5.0000	4.0000	5.0000	4.0000
ORIGINAL	99.000	99.000	99.000	99.000	99.000	99.000

	OVER07	RE0201	RE0301	RE0401	RE0501	RE0601
PRESENT	3.0000	1.0000	1.0000	1.0000	1.0000	1.0000
ORIGINAL	99.000	0.0000	0.0000	0.0000	0.0000	0.0000

	RE0701	RE01	RE02	RE03	RE04	RE05
PRESENT	1.0000	2.0000	7.0000	5.0000	4.0000	5.0000
ORIGINAL	0.0000	100.00	100.00	100.00	100.00	100.00

	RE06	RE07
PRESENT	4.0000	3.0000
ORIGINAL	100.00	100.00

MINI-DYNAMO * VERSION 1.00

TIME E 00	GPF01 E 00	GPF02 E 00	GPF03 E 00	GPF04 E 00	GPF05 E 00	GPF06 E 00	GPF07 E 00
0.000	39.00	123.00	39.000	27.000	18.000	14.000	9.000
1.000	157.00	137.00	37.000	38.000	23.000	18.000	17.000
2.000	168.00	162.00	36.000	40.000	25.000	18.000	18.000
3.000	200.00	171.00	37.000	41.000	28.000	18.000	20.000
4.000	199.00	170.00	37.000	44.000	28.000	18.000	20.000
5.000	210.00	180.00	38.000	47.000	31.000	19.000	21.000
6.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
7.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
8.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
9.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
10.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
11.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
12.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
13.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
14.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
15.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
16.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
17.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
18.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
19.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
20.000	0.00	0.00	0.000	0.000	0.000	0.000	0.000

MINI-DYNAMO * VERSION 1.00

TIME E 00	LIN01 E 00	LIN02 E 00	LIN03 E 00	LIN04 E 00	LIN05 E 00	LIN06 E 00	LIN07 E 00
0.000	3794.0	3409.0	732.0	934.0	605.0	474.00	399.00
1.000	3833.0	3532.0	771.0	961.0	623.0	488.00	408.00
2.000	3990.0	3669.0	808.0	999.0	646.0	506.00	425.00
3.000	4158.0	3831.0	844.0	1039.0	671.0	524.00	443.00
4.000	4358.0	4002.0	881.0	1080.0	699.0	542.00	463.00
5.000	4557.0	4172.0	918.0	1124.0	727.0	560.00	483.00
6.000	4767.0	4352.0	956.0	1171.0	758.0	579.00	504.00
7.000	4987.0	4527.0	995.0	1221.0	791.0	601.00	526.00
8.000	5207.0	4702.0	1034.0	1271.0	824.0	623.00	548.00
9.000	5427.0	4877.0	1073.0	1321.0	857.0	645.00	570.00
10.000	5647.0	5052.0	1112.0	1371.0	890.0	667.00	592.00
11.000	5867.0	5227.0	1151.0	1421.0	923.0	689.00	614.00
12.000	6087.0	5402.0	1190.0	1471.0	956.0	711.00	636.00
13.000	6307.0	5577.0	1229.0	1521.0	989.0	733.00	658.00
14.000	6527.0	5752.0	1268.0	1571.0	1022.0	755.00	680.00
15.000	6747.0	5927.0	1307.0	1621.0	1055.0	777.00	702.00
16.000	6967.0	6102.0	1346.0	1671.0	1088.0	799.00	724.00
17.000	7187.0	6277.0	1385.0	1721.0	1121.0	821.00	746.00
18.000	7407.0	6452.0	1424.0	1771.0	1154.0	843.00	768.00
19.000	7627.0	6627.0	1463.0	1821.0	1187.0	865.00	790.00
20.000	7847.0	6802.0	1502.0	1871.0	1220.0	887.00	812.00

MINI-DYNAMO * VERSION 1.00

TIME E 00	GPFA01 E 00	GPFA02 E 00	GPFA03 E 00	GPFA04 E 00	GPFA05 E 00	GPFA06 E 00	GPFA07 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	LLINO1 E 00	LLINO2 E 00	LLINO3 E 00	LLINO4 E 00	LLINO5 E 00	LLINO6 E 00	LLINO7 E 00	LIN E 03
0.000	3794.0	3409.0	732.00	934.0	605.00	474.00	399.00	10.347
1.000	3833.0	3532.0	771.00	961.0	623.00	488.00	408.00	10.616
2.000	3990.0	3669.0	808.00	999.0	646.00	506.00	425.00	11.043
3.000	0.0	3831.0	844.00	1039.0	671.00	524.00	443.00	7.352
4.000	0.0	4002.0	881.00	1080.0	699.00	542.00	0.00	7.204
5.000	0.0	4172.0	918.00	0.0	727.00	0.00	0.00	5.817
6.000	0.0	4352.0	0.00	0.0	0.00	0.00	0.00	4.352
7.000	0.0	4527.0	0.00	0.0	0.00	0.00	0.00	4.527
8.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
9.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
10.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
11.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
12.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
13.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
14.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
15.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
16.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
17.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
18.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
19.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
20.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000

MINI-DYNAMO * VERSION 1.00

TIME E 00	LRIN01 E 00	LRIN02 E 00	LRIN03 E 00	LRIN04 E 00	LRIN05 E 00	LRIN06 E 00	LRIN07 E 00	LRIN E 00
0.000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0
1.000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0
2.000	4158.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	4158.0
3.000	663.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	663.0
4.000	1903.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1903.0
5.000	2011.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2011.0
6.000	386.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	386.0
7.000	5088.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	5088.0
8.000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
9.000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
10.000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
11.000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
12.000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
13.000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
14.000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
15.000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
16.000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
17.000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
18.000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
19.000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
20.000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0

MINI-DYNAMO * VERSION 1.00

TIME E 00	GPFCST E 00	RLMCST E 03	DMSCST E 03	TRKCST E 03	BLDCST E 03	FAXCST E 03	DMSGSC E 03
0.000	0.0000	0.0	0.0	0.000	0.000	0.00	0.00
1.000	0.0000	0.0	0.0	19.050	0.000	19.28	0.00
2.000	0.0000	0.0	1247.4	25.417	33.264	25.81	650.00
3.000	0.0000	332.6	60.0	26.655	7.156	54.25	0.00
4.000	0.0000	820.8	59.7	43.456	22.040	144.19	0.00
5.000	0.0000	840.2	63.0	31.986	23.292	96.25	0.00
6.000	0.0000	33.2	66.0	18.056	3.752	25.19	0.00
7.000	0.0000	1213.6	66.0	6.575	60.176	126.18	0.00
8.000	0.0000	68.2	66.0	0.000	5.852	12.18	0.00
9.000	0.0000	68.2	66.0	0.000	5.852	12.18	0.00
10.000	0.0000	68.2	66.0	0.000	5.852	12.18	0.00
11.000	0.0000	68.2	66.0	0.000	5.852	12.18	0.00
12.000	0.0000	68.2	66.0	0.000	5.852	12.18	0.00
13.000	0.0000	68.2	66.0	0.000	5.852	12.18	0.00
14.000	0.0000	68.2	66.0	0.000	5.852	12.18	0.00
15.000	0.0000	68.2	66.0	0.000	5.852	12.18	0.00
16.000	0.0000	68.2	66.0	0.000	5.852	12.18	0.00
17.000	0.0000	68.2	66.0	0.000	5.852	12.18	0.00
18.000	0.0000	68.2	66.0	0.000	5.852	12.18	0.00
19.000	0.0000	68.2	66.0	0.000	5.852	12.18	0.00
20.000	0.0000	0.0	0.0	0.000	0.000	0.00	0.00

MINI-DYNAMO * VERSION 1.00

TIME E 00	GPFMST E 03	RLMMST E 03	DMSMST E 03	TRKMST E 00	BLDMST E 03	FAXMST E 03
0.000	103.47	0.000	0.000	0.0	31.041	0.000
1.000	106.16	0.000	0.000	0.0	31.848	0.000
2.000	110.43	0.000	0.000	952.5	33.129	0.964
3.000	73.52	0.000	20.790	2223.4	26.214	2.255
4.000	72.04	3.241	21.790	3556.1	26.665	4.967
5.000	58.17	15.169	22.785	5728.9	25.259	12.177
6.000	43.52	27.776	23.835	7328.3	23.775	16.989
7.000	45.27	28.938	24.935	8231.1	24.769	18.249
8.000	0.00	63.014	26.035	8559.8	18.710	24.558
9.000	0.00	65.401	27.135	8559.8	19.441	25.167
10.000	0.00	67.788	28.235	8559.8	20.173	25.776
11.000	0.00	70.175	29.335	8559.8	20.905	26.385
12.000	0.00	72.562	30.435	8559.8	21.636	26.993
13.000	0.00	74.949	31.535	8559.8	22.367	27.602
14.000	0.00	77.336	32.635	8559.8	23.099	28.211
15.000	0.00	79.723	33.735	8559.8	23.831	28.820
16.000	0.00	82.110	34.835	8559.8	24.562	29.429
17.000	0.00	84.497	35.935	8559.8	25.294	30.038
18.000	0.00	86.884	37.035	8559.8	26.025	30.647
19.000	0.00	89.271	38.135	8559.8	26.756	31.256
20.000	0.00	91.658	39.235	8559.8	27.488	31.865

MINI-DYNAMO * VERSION 1.00

TIME E 00	ANCGPF E 00	ANCRLM E 03	ANCDMS E 03	ANCBLD E 03	ANCTRK E 03	ANCFAX E 03	ANCGSC E 03
0.000	0.0000	0.00	0.0	0.000	0.000	0.000	0.00
1.000	0.0000	0.00	0.0	0.000	21.330	18.987	0.00
2.000	0.0000	0.00	1230.6	31.075	25.074	22.391	641.23
3.000	0.0000	289.09	52.2	5.890	23.168	41.466	0.00
4.000	0.0000	628.56	45.7	15.983	33.278	97.105	0.00
5.000	0.0000	566.89	42.5	14.882	21.581	57.107	0.00
6.000	0.0000	19.74	39.2	2.112	10.733	13.169	0.00
7.000	0.0000	635.62	34.6	29.846	[illegible]3.443	58.114	0.00
8.000	0.0000	31.47	30.5	2.557	0.000	4.942	0.00
9.000	0.0000	27.73	26.8	2.253	0.000	4.354	0.00
10.000	0.0000	24.43	23.6	1.985	0.000	3.836	0.00
11.000	0.0000	21.52	20.8	1.749	0.000	3.380	0.00
12.000	0.0000	18.96	18.4	1.541	0.000	2.978	0.00
13.000	0.0000	16.71	16.2	1.358	0.000	2.624	0.00
14.000	0.0000	14.72	14.2	1.196	0.000	2.312	0.00
15.000	0.0000	12.97	12.6	1.054	0.000	2.037	0.00
16.000	0.0000	11.43	11.1	0.929	0.000	1.795	0.00
17.000	0.0000	10.07	9.7	0.818	0.000	1.581	0.00
18.000	0.0000	8.87	8.6	0.721	0.000	1.393	0.00
19.000	0.0000	7.82	7.6	0.635	0.000	1.227	0.00
20.000	0.0000	0.00	0.0	0.000	0.000	0.000	0.00

MINI-DYNAMO * VERSION 1.00

TIME E 00	ANMBPF E 03	ANMRLM E 03	ANMDMS E 00	ANMBLD E 03	ANMTRK E 00	ANMFAX E 00	AEEDMS E 03	ANMSOF E 03
0.000	53.905	0.000	0.0	16.171	0.0	0.0	0.000	0.000
1.000	48.728	0.000	0.0	14.618	0.0	0.0	0.000	0.000
2.000	44.659	0.000	0.0	13.398	385.2	389.9	26.660	74.816
3.000	26.196	0.000	7407.6	9.340	792.2	803.4	1.130	0.000
4.000	22.615	1.017	6840.5	8.371	1116.4	1559.3	0.990	0.000
5.000	16.089	4.196	6302.1	6.986	1584.6	3368.0	0.921	0.000
6.000	10.605	6.769	5808.4	5.794	1785.8	4140.1	0.850	0.000
7.000	9.720	6.213	5353.7	5.318	1767.2	3918.1	0.749	0.000
8.000	0.000	11.920	4925.0	3.539	1619.2	4645.5	0.660	0.000
9.000	0.000	10.900	4522.5	3.240	1426.6	4194.5	0.581	0.000
10.000	0.000	9.954	4146.1	2.962	1256.9	3785.0	0.512	0.000
11.000	0.000	9.079	3795.3	2.705	1107.4	3413.6	0.451	0.000
12.000	0.000	8.271	3469.3	2.466	975.7	3077.0	0.398	0.000
13.000	0.000	7.527	3167.1	2.246	859.7	2772.1	0.350	0.000
14.000	0.000	6.843	2887.7	2.044	757.4	2496.3	0.309	0.000
15.000	0.000	6.215	2630.0	1.858	667.3	2246.8	0.272	0.000
16.000	0.000	5.640	2392.7	1.687	588.0	2021.4	0.240	0.000
17.000	0.000	5.114	2174.7	1.531	518.0	1817.8	0.211	0.000
18.000	0.000	4.633	1974.7	1.388	456.4	1634.1	0.186	0.000
19.000	0.000	4.194	1791.5	1.257	402.1	1468.3	0.164	0.000
20.000	0.000	3.794	1623.9	1.138	354.3	1318.9	0.000	0.000

MINI-DYNAMO * VERSION 1.00

TIME E 00	TANGPF E 03	TANRLM E 03	TANDMS E 03	TANBLD E 03	TANTRK E 03	TANFAX E 03	TOTTAN E 03	PWAC E 03
0.000	53.905	0.00	0.0	16.171	0.000	0.000	70.1	0.0
1.000	48.728	0.00	0.0	14.618	21.330	18.987	103.7	70.1
2.000	44.659	0.00	1973.3	44.473	25.460	22.781	2110.6	173.7
3.000	26.196	289.09	60.7	15.230	23.960	42.269	457.4	2284.4
4.000	22.615	629.58	53.5	24.354	34.394	98.665	863.2	2741.8
5.000	16.089	571.08	49.7	21.868	23.166	60.475	742.4	3605.0
6.000	10.605	26.50	45.9	7.906	12.519	17.309	120.7	4347.4
7.000	9.720	641.83	40.7	35.164	5.211	62.033	794.6	4468.1
8.000	0.000	43.39	36.0	6.097	1.619	9.588	96.7	5262.7
9.000	0.000	38.63	31.9	5.493	1.427	8.549	86.0	5359.5
10.000	0.000	34.38	28.3	4.947	1.257	7.621	76.5	5445.5
11.000	0.000	30.60	25.1	4.454	1.107	6.794	68.0	5522.0
12.000	0.000	27.24	22.2	4.007	0.976	6.055	60.5	5590.1
13.000	0.000	24.24	19.7	3.604	0.860	5.396	53.8	5650.5
14.000	0.000	21.56	17.4	3.240	0.757	4.808	47.8	5704.3
15.000	0.000	19.19	15.5	2.912	0.667	4.284	42.5	5752.1
16.000	0.000	17.07	13.7	2.616	0.588	3.816	37.8	5794.6
17.000	0.000	15.18	12.1	2.349	0.518	3.399	33.6	5832.4
18.000	0.000	13.50	10.7	2.108	0.456	3.027	29.8	5866.0
19.000	0.000	12.01	9.5	1.892	0.402	2.696	26.5	5895.8
20.000	0.000	3.79	1.6	1.138	0.354	1.319	8.2	$\boxed{5922.4}$

MINI-DYNAMO * VERSION 1.00

TIME E 00	DT0201 E 00	DT0301 E 00	DT0401 E 00	DT0501 E 00	DT0601 E 00	DT0701 E 00	DT0605 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME	DT0302	DT0402	DT0502	DT0602	DT0702	DT0403	DT0705
E 00	E 00	E 00	E 00	E 00	E 00	E 00	E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	DT0503 E 00	DT0603 E 00	DT0703 E 00	DT0504 E 00	DT0604 E 00	DT0704 E 00	DT0607 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	AT0201 E 00	AT0301 E 00	AT0401 E 00	AT0501 E 00	AT0601 E 00	AT0701 E 00	AT0302 E 00
0.000	92.12	35.679	42.405	31.066	25.936	22.800	35.130
1.000	94.09	37.088	43.331	31.779	26.530	23.204	36.638
2.000	97.49	38.579	44.829	32.792	27.361	24.004	38.095
3.000	101.31	40.046	46.406	33.886	28.196	24.849	39.554
4.000	110.20	42.178	48.890	35.523	29.312	0.000	41.055
5.000	127.99	45.257	0.000	37.792	0.000	0.000	42.549
6.000	143.03	0.000	0.000	0.000	0.000	0.000	0.000
7.000	148.51	0.000	0.000	0.000	0.000	0.000	0.000
8.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
9.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
10.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
11.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
12.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
13.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
14.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
15.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
16.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
17.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
18.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
19.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
20.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000

MINI-DYNAMO * VERSION 1.00

TIME E 00	AT0402 E 00	AT0502 E 00	AT0602 E 00	AT0702 E 00	AT0403 E 00	AT0503 E 00	AT0603 E 00
0.000	41.600	30.662	25.667	22.598	25.368	21.230	18.911
1.000	42.697	31.460	26.318	23.047	26.267	21.934	19.508
2.000	44.156	32.454	27.136	23.837	27.240	22.692	20.164
3.000	45.726	33.546	27.971	24.680	28.213	23.467	20.809
4.000	47.342	34.753	28.809	0.000	29.208	24.298	21.459
5.000	0.000	35.954	0.000	0.000	0.000	25.126	0.000
6.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
7.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
9.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
11.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
12.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
13.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
14.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
15.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
16.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
17.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
18.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
19.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

MINI-DYNAMO * VERSION 1.00

TIME E 00	AT0703 E 00	AT0504 E 00	AT0604 E 00	AT0704 E 00	AT0605 E 00	AT0705 E 00	AT0607 E 00
0.000	19.932	23.120	20.339	18.474	17.728	16.347	15.034
1.000	20.588	23.684	20.829	18.841	18.154	16.681	15.343
2.000	21.249	24.431	21.476	19.471	18.698	17.216	15.828
3.000	21.884	25.230	22.132	20.134	19.261	17.786	16.326
4.000	32.085	26.090	22.791	0.000	9.852	0.000	0.000
5.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
7.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
9.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
11.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
12.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
13.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
14.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
15.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
16.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
17.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
18.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
19.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0201 E 00	RM0301 E 00	RM0401 E 00	RM0501 E 00	RM0601 E 00	RM0701 E 00	RM0107 E 00
0.000	0.0	0.00	0.0	0.00	0.00	0.00	0.0000
1.000	0.0	0.00	0.0	0.00	0.00	0.00	0.0000
2.000	0.0	0.00	0.0	0.00	0.00	0.00	0.0000
3.000	0.0	0.00	0.0	0.00	0.00	463.00	0.0000
4.000	0.0	0.00	1124.0	0.00	560.00	20.00	0.0000
5.000	0.0	956.00	47.0	758.00	19.00	21.00	0.0000
6.000	0.0	39.00	50.0	33.00	22.00	22.00	0.0000
7.000	4702.0	39.00	50.0	33.00	22.00	22.00	0.0000
8.000	175.0	39.00	50.0	33.00	22.00	22.00	0.0000
9.000	175.0	39.00	50.0	33.00	22.00	22.00	0.0000
10.000	175.0	39.00	50.0	33.00	22.00	22.00	0.0000
11.000	175.0	39.00	50.0	33.00	22.00	22.00	0.0000
12.000	175.0	39.00	50.0	33.00	22.00	22.00	0.0000
13.000	175.0	39.00	50.0	33.00	22.00	22.00	0.0000
14.000	175.0	39.00	50.0	33.00	22.00	22.00	0.0000
15.000	175.0	39.00	50.0	33.00	22.00	22.00	0.0000
16.000	175.0	39.00	50.0	33.00	22.00	22.00	0.0000
17.000	175.0	39.00	50.0	33.00	22.00	22.00	0.0000
18.000	175.0	39.00	50.0	33.00	22.00	22.00	0.0000
19.000	175.0	39.00	50.0	33.00	22.00	22.00	0.0000
20.000	0.0	0.00	0.0	0.00	0.00	0.00	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0102 E 00	RM0302 E 00	RM0402 E 00	RM0502 E 00	RM0602 E 00	RM0702 E 00	RM0207 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0103 E 00	RM0203 E 00	RM0403 E 00	RM0503 E 00	RM0603 E 00	RM0703 E 00	RM0307 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0104 E 00	RM0204 E 00	RM0304 E 00	RM0504 E 00	RM0604 E 00	RM0704 E 00	RM0407 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0105 E 00	RM0205 E 00	RM0305 E 00	RM0405 E 00	RM0605 E 00	RM0705 E 00	RM0507 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0106 E 00	RM0206 E 00	RM0306 E 00	RM0406 E 00	RM0506 E 00	RM0706 E 00	RM0607 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	TLIN E 00	TRLM E 03	LIN E 03	RMTOT E 00	DMSTOT E 00	FAXAST E 03	FAXDST E 03	GPFTOT E 00
0.000	0.0	0.000	10.347	0.0	0.0	0.000	0.00	0.0000
1.000	0.0	0.000	10.616	0.0	0.0	19.283	0.00	0.0000
2.000	0.0	0.000	11.043	0.0	4158.0	25.810	0.00	0.0000
3.000	4158.0	0.000	7.352	463.0	200.0	27.026	27.22	0.0000
4.000	4358.0	0.463	7.204	1704.0	199.0	44.231	99.96	0.0000
5.000	4557.0	2.167	5.817	1801.0	210.0	30.600	65.65	0.0000
6.000	4767.0	3.968	4.352	166.0	220.0	17.178	8.01	0.0000
7.000	4987.0	4.134	4.527	4868.0	220.0	6.255	119.92	0.0000
8.000	5207.0	9.002	0.000	341.0	220.0	0.000	12.18	0.0000
9.000	5427.0	9.343	0.000	341.0	220.0	0.000	12.18	0.0000
10.000	5647.0	9.684	0.000	341.0	220.0	0.000	12.18	0.0000
11.000	5867.0	10.025	0.000	341.0	220.0	0.000	12.18	0.0000
12.000	6087.0	10.366	0.000	341.0	220.0	0.000	12.18	0.0000
13.000	6307.0	10.707	0.000	341.0	220.0	0.000	12.18	0.0000
14.000	6527.0	11.048	0.000	341.0	220.0	0.000	12.18	0.0000
15.000	6747.0	11.389	0.000	341.0	220.0	0.000	12.18	0.0000
16.000	6967.0	11.730	0.000	341.0	220.0	0.000	12.18	0.0000
17.000	7187.0	12.071	0.000	341.0	220.0	0.000	12.18	0.0000
18.000	7407.0	12.412	0.000	341.0	220.0	0.000	12.18	0.0000
19.000	7627.0	12.753	0.000	341.0	220.0	0.000	12.18	0.0000
20.000	7847.0	13.094	0.000	0.0	0.0	0.000	0.00	0.0000

Appendix F

Computer Printouts for Alternative 4

Bay Roberts Overlay

MINI-DYNAMO * VERSION 1.00

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ENTER RERUN CHANGES

C OVER01=5,OVER02=2,OVER03=5,OVER04=4,OVER05=5,OVER06=4,OVER07=3
C RE0102=1,RE0302=1,RE0402=1,RE0502=1,RE0602=1,RE0702=1
C RE02=2
RUN
```

CHANGES FOR RERUN -

	OVER01	OVER02	OVER03	OVER04	OVER05	OVER06
PRESENT	5.0000	2.0000	5.0000	4.0000	5.0000	4.0000
ORIGINAL	99.000	99.000	99.000	99.000	99.000	99.000

	OVER07	RE0102	RE0302	RE0402	RE0502	RE0602
PRESENT	3.0000	1.0000	1.0000	1.0000	1.0000	1.0000
ORIGINAL	99.000	0.0000	0.0000	0.0000	0.0000	0.0000

	RE0702	RE02
PRESENT	1.0000	2.0000
ORIGINAL	0.0000	100.00

MINI-DYNAMO * VERSION 1.00

TIME E 00	GPF01 E 00	GPF02 E 00	GPF03 E 00	GPF04 E 00	GPF05 E 00	GPF06 E 00	GPF07 E 00
0.000	39.00	123.00	39.000	27.000	18.000	14.000	9.000
1.000	157.00	137.00	37.000	38.000	23.000	18.000	17.000
2.000	168.00	162.00	36.000	40.000	25.000	18.000	18.000
3.000	200.00	171.00	37.000	41.000	28.000	18.000	20.000
4.000	199.00	170.00	37.000	44.000	28.000	18.000	20.000
5.000	210.00	180.00	38.000	47.000	31.000	19.000	21.000
6.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
7.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
8.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
9.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
10.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
11.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
12.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
13.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
14.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
15.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
16.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
17.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
18.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
19.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
20.000	0.00	0.00	0.000	0.000	0.000	0.000	0.000

MINI-DYNAMO * VERSION 1.00

TIME E 00	LIN01 E 00	LIN02 E 00	LIN03 E 00	LIN04 E 00	LIN05 E 00	LIN06 E 00	LIN07 E 00
0.000	3794.0	3409.0	732.0	934.0	605.0	474.00	399.00
1.000	3833.0	3532.0	771.0	961.0	623.0	488.00	408.00
2.000	3990.0	3669.0	808.0	999.0	646.0	506.00	425.00
3.000	4158.0	3831.0	844.0	1039.0	671.0	524.00	443.00
4.000	4358.0	4002.0	881.0	1080.0	699.0	542.00	463.00
5.000	4557.0	4172.0	918.0	1124.0	727.0	560.00	483.00
6.000	4767.0	4352.0	956.0	1171.0	758.0	579.00	504.00
7.000	4987.0	4527.0	995.0	1221.0	791.0	601.00	526.00
8.000	5207.0	4702.0	1034.0	1271.0	824.0	623.00	548.00
9.000	5427.0	4877.0	1073.0	1321.0	857.0	645.00	570.00
10.000	5647.0	5052.0	1112.0	1371.0	890.0	667.00	592.00
11.000	5867.0	5227.0	1151.0	1421.0	923.0	689.00	614.00
12.000	6087.0	5402.0	1190.0	1471.0	956.0	711.00	636.00
13.000	6307.0	5577.0	1229.0	1521.0	989.0	733.00	658.00
14.000	6527.0	5752.0	1268.0	1571.0	1022.0	755.00	680.00
15.000	6747.0	5927.0	1307.0	1621.0	1055.0	777.00	702.00
16.000	6967.0	6102.0	1346.0	1671.0	1088.0	799.00	724.00
17.000	7187.0	6277.0	1385.0	1721.0	1121.0	821.00	746.00
18.000	7407.0	6452.0	1424.0	1771.0	1154.0	843.00	768.00
19.000	7627.0	6627.0	1463.0	1821.0	1187.0	865.00	790.00
20.000	7847.0	6802.0	1502.0	1871.0	1220.0	887.00	812.00

MINI-DYNAMO * VERSION 1.00

TIME E 00	GPFA01 E 00	GPFA02 E 00	GPFA03 E 00	GPFA04 E 00	GPFA05 E 00	GPFA06 E 00	GPFA07 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	LLIN01 E 00	LLIN02 E 00	LLIN03 E 00	LLIN04 E 00	LLIN05 E 00	LLIN06 E 00	LLIN07 E 00	LIN E 03
0.000	3794.0	3409.0	732.00	934.0	605.00	474.00	399.00	10.347
1.000	3833.0	3532.0	771.00	961.0	623.00	488.00	408.00	10.616
2.000	3990.0	3669.0	808.00	999.0	646.00	506.00	425.00	11.043
3.000	4158.0	0.0	844.00	1039.0	671.00	524.00	443.00	7.679
4.000	4358.0	0.0	881.00	1080.0	699.00	542.00	443.00	8.003
5.000	4557.0	0.0	918.00	1080.0	727.00	542.00	443.00	8.267
6.000	4557.0	0.0	918.00	1080.0	727.00	542.00	443.00	8.267
7.000	4557.0	0.0	918.00	1080.0	727.00	542.00	443.00	8.267
8.000	4557.0	0.0	918.00	1080.0	727.00	542.00	443.00	8.267
9.000	4557.0	0.0	918.00	1080.0	727.00	542.00	443.00	8.267
10.000	4557.0	0.0	918.00	1080.0	727.00	542.00	443.00	8.267
11.000	4557.0	0.0	918.00	1080.0	727.00	542.00	443.00	8.267
12.000	4557.0	0.0	918.00	1080.0	727.00	542.00	443.00	8.267
13.000	4557.0	0.0	918.00	1080.0	727.00	542.00	443.00	8.267
14.000	4557.0	0.0	918.00	1080.0	727.00	542.00	443.00	8.267
15.000	4557.0	0.0	918.00	1080.0	727.00	542.00	443.00	8.267
16.000	4557.0	0.0	918.00	1080.0	727.00	542.00	443.00	8.267
17.000	4557.0	0.0	918.00	1080.0	727.00	542.00	443.00	8.267
18.000	4557.0	0.0	918.00	1080.0	727.00	542.00	443.00	8.267
19.000	4557.0	0.0	918.00	1080.0	727.00	542.00	443.00	8.267
20.000	4557.0	0.0	918.00	1080.0	727.00	542.00	443.00	8.267

MINI-DYNAMO * VERSION 1.00

TIME E 00	LRIN01 E 00	LRIN02 E 00	LRIN03 E 00	LRIN04 E 00	LRIN05 E 00	LRIN06 E 00	LRIN07 E 00	LRIN E 00
0.000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0
1.000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0
2.000	0.0000	3831.0	0.0000	0.0000	0.0000	0.0000	0.0000	3831.0
3.000	0.0000	191.0	0.0000	0.0000	0.0000	0.0000	0.0000	191.0
4.000	0.0000	252.0	0.0000	0.0000	0.0000	0.0000	0.0000	252.0
5.000	0.0000	546.0	0.0000	0.0000	0.0000	0.0000	0.0000	546.0
6.000	0.0000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
7.000	0.0000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
8.000	0.0000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
9.000	0.0000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
10.000	0.0000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
11.000	0.0000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
12.000	0.0000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
13.000	0.0000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
14.000	0.0000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
15.000	0.0000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
16.000	0.0000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
17.000	0.0000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
18.000	0.0000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
19.000	0.0000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
20.000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0

MINI-DYNAMO * VERSION 1.00

TIME E 00	GPFCST E 00	RLMCST E 03	DMSCST E 03	TRKCST E 03	BLDCST E 03	FAXCST E 03	DMSGSC E 03
0.000	0.0000	0.00	0.0	0.000	0.000	0.000	0.00
1.000	0.0000	0.00	0.0	19.050	0.000	19.283	0.00
2.000	0.0000	0.00	1149.3	25.417	30.648	25.810	650.00
3.000	0.0000	244.00	51.3	26.655	1.608	27.726	0.00
4.000	0.0000	496.40	51.0	25.656	2.344	28.638	0.00
5.000	0.0000	793.20	54.0	18.304	5.832	26.516	0.00
6.000	0.0000	77.20	52.5	10.904	6.032	19.662	0.00
7.000	0.0000	77.20	52.5	9.706	6.032	18.523	0.00
8.000	0.0000	77.20	52.5	8.488	6.032	17.366	0.00
9.000	0.0000	77.20	52.5	7.495	6.032	16.422	0.00
10.000	0.0000	77.20	52.5	6.672	6.032	15.640	0.00
11.000	0.0000	77.20	52.5	5.982	6.032	14.984	0.00
12.000	0.0000	77.20	52.5	5.396	6.032	14.427	0.00
13.000	0.0000	77.20	52.5	4.894	6.032	13.951	0.00
14.000	0.0000	77.20	52.5	4.461	6.032	13.539	0.00
15.000	0.0000	77.20	52.5	4.084	6.032	13.180	0.00
16.000	0.0000	77.20	52.5	3.753	6.032	12.866	0.00
17.000	0.0000	77.20	52.5	3.462	6.032	12.589	0.00
18.000	0.0000	77.20	52.5	3.204	6.032	12.344	0.00
19.000	0.0000	77.20	52.5	2.974	6.032	12.125	0.00
20.000	0.0000	0.00	0.0	2.768	0.000	2.631	0.00

MINI-DYNAMO * VERSION 1.00

TIME E 00	GPFMST E 03	RLMMST E 03	DMSMST E 03	TRKMST E 00	BLDMST E 03	FAXMST E 03
0.000	103.47	0.000	0.000	0.0	31.041	0.000
1.000	106.16	0.000	0.000	0.0	31.848	0.000
2.000	110.43	0.000	0.000	952.5	33.129	0.964
3.000	76.79	0.000	19.155	2223.4	26.868	2.255
4.000	80.03	0.140	20.010	3556.1	28.041	3.641
5.000	82.67	0.714	20.860	4838.9	29.126	5.073
6.000	82.67	3.276	21.760	5754.1	29.855	6.399
7.000	82.67	5.978	22.635	6299.3	30.609	7.382
8.000	82.67	8.680	23.510	6784.6	31.363	8.308
9.000	82.67	11.382	24.385	7209.0	32.117	9.176
10.000	82.67	14.084	25.260	7583.8	32.871	9.997
11.000	82.67	16.786	26.135	7917.4	33.625	10.779
12.000	82.67	19.488	27.010	8216.5	34.379	11.529
13.000	82.67	22.190	27.885	8486.3	35.133	12.250
14.000	82.67	24.892	28.760	8731.0	35.887	12.947
15.000	82.67	27.594	29.635	8954.1	36.641	13.624
16.000	82.67	30.296	30.510	9158.2	37.395	14.283
17.000	82.67	32.998	31.385	9345.9	38.149	14.927
18.000	82.67	35.700	32.260	9519.0	38.903	15.556
19.000	82.67	38.402	33.135	9679.2	39.657	16.173
20.000	82.67	41.104	34.010	9827.9	40.411	16.780

MINI-DYNAMO * VERSION 1.00

TIME E 00	ANCGPF E 00	ANCRLM E 03	ANCDMS E 03	ANCBLD E 03	ANCTRK E 03	ANCFAX E 03	ANCGSC E 03
0.000	0.0000	0.00	0.0	0.000	0.000	0.000	0.00
1.000	0.0000	0.00	0.0	0.000	21.330	18.987	0.00
2.000	0.0000	0.00	1133.8	28.631	25.074	22.391	641.23
3.000	0.0000	212.08	44.6	1.324	23.168	21.192	0.00
4.000	0.0000	380.14	39.1	1.700	19.647	19.286	0.00
5.000	0.0000	535.17	36.4	3.726	12.350	15.733	0.00
6.000	0.0000	45.89	31.2	3.396	6.482	10.279	0.00
7.000	0.0000	40.43	27.5	2.992	5.084	8.532	0.00
8.000	0.0000	35.62	24.2	2.636	3.917	7.047	0.00
9.000	0.0000	31.39	21.3	2.322	3.047	5.871	0.00
10.000	0.0000	27.65	18.8	2.046	2.390	4.927	0.00
11.000	0.0000	24.36	16.6	1.803	1.888	4.159	0.00
12.000	0.0000	21.47	14.6	1.588	1.500	3.528	0.00
13.000	0.0000	18.91	12.9	1.399	1.199	3.006	0.00
14.000	0.0000	16.66	11.3	1.233	0.963	2.570	0.00
15.000	0.0000	14.68	10.0	1.086	0.777	2.204	0.00
16.000	0.0000	12.94	8.8	0.957	0.629	1.896	0.00
17.000	0.0000	11.40	7.8	0.843	0.511	1.634	0.00
18.000	0.0000	10.04	6.8	0.743	0.417	1.412	0.00
19.000	0.0000	8.85	6.0	0.655	0.341	1.222	0.00
20.000	0.0000	0.00	0.0	0.000	0.279	0.234	0.00

MINI-DYNAMO * VERSION 1.00

TIME E 00	ANMGPF E 03	ANMRLM E 00	ANMDMS E 00	ANMBLD E 03	ANMTRK E 00	ANMFAX E 00	AEEDMS E 03	ANMSOF E 03
0.000	53.905	0.0	0.0	16.171	0.0	0.0	0.000	0.000
1.000	48.728	0.0	0.0	14.618	0.0	0.0	0.000	0.000
2.000	44.659	0.0	0.0	13.398	385.2	389.9	24.564	74.816
3.000	27.361	0.0	6825.1	9.573	792.2	803.4	0.966	0.000
4.000	25.124	43.9	6281.7	8.803	1116.4	1143.0	0.846	0.000
5.000	22.866	197.5	5769.6	8.056	1338.4	1403.1	0.789	0.000
6.000	20.146	798.3	5302.7	7.275	1402.2	1559.3	0.676	0.000
7.000	17.750	1283.5	4859.8	6.572	1352.5	1584.9	0.596	0.000
8.000	15.638	1642.0	4447.3	5.933	1283.4	1571.6	0.525	0.000
9.000	13.778	1897.0	4064.2	5.353	1201.5	1529.4	0.462	0.000
10.000	12.140	2068.1	3709.3	4.827	1113.6	1468.0	0.407	0.000
11.000	10.696	2171.7	3381.3	4.350	1024.3	1394.6	0.359	0.000
12.000	9.423	2221.4	3078.8	3.919	936.6	1314.1	0.316	0.000
13.000	8.303	2228.6	2800.5	3.528	852.3	1230.3	0.279	0.000
14.000	7.315	2202.6	2544.8	3.175	772.6	1145.7	0.246	0.000
15.000	6.445	2151.2	2310.4	2.857	698.1	1062.2	0.216	0.000
16.000	5.678	2081.0	2095.7	2.569	629.1	981.1	0.191	0.000
17.000	5.003	1997.0	1899.4	2.309	565.6	903.3	0.168	0.000
18.000	4.408	1903.5	1720.1	2.074	507.5	829.4	0.148	0.000
19.000	3.884	1804.0	1556.6	1.863	454.7	759.8	0.130	0.000
20.000	3.422	1701.3	1407.7	1.673	406.8	694.5	0.000	0.000

MINI-DYNAMO * VERSION 1.00

TIME E 00	TANGPF E 03	TANRLM E 03	TANDMS E 03	TANBLD E 03	TANTRK E 03	TANFAX E 03	TOTTAN E 03	PWAC E 03
0.000	53.905	0.00	0.0	16.171	0.000	0.000	70.1	0.0
1.000	48.728	0.00	0.0	14.618	21.330	18.987	103.7	70.1
2.000	44.659	0.00	1874.4	42.029	25.460	22.781	2009.3	173.7
3.000	27.361	212.08	52.4	10.897	23.960	21.995	348.7	2183.1
4.000	25.124	380.18	46.2	10.503	20.763	20.429	503.2	2531.7
5.000	22.866	535.37	43.0	11.782	13.688	17.136	643.8	3034.9
6.000	20.146	46.69	37.2	10.671	7.884	11.838	134.4	3678.8
7.000	17.750	41.72	33.0	9.564	6.436	10.116	118.5	3813.2
8.000	15.638	37.27	29.2	8.569	5.200	8.619	104.5	3931.7
9.000	13.778	33.28	25.9	7.675	4.249	7.401	92.3	4036.2
10.000	12.140	29.72	22.9	6.873	3.504	6.395	81.6	4128.5
11.000	10.696	26.54	20.3	6.153	2.912	5.553	72.2	4210.0
12.000	9.423	23.69	18.0	5.507	2.437	4.842	63.9	4282.2
13.000	8.303	21.14	15.9	4.928	2.051	4.236	56.6	4346.1
14.000	7.315	18.87	14.1	4.408	1.735	3.716	50.2	4402.7
15.000	6.445	16.83	12.5	3.943	1.475	3.266	44.5	4452.8
16.000	5.678	15.02	11.1	3.526	1.258	2.877	39.4	4497.3
17.000	5.003	13.39	9.8	3.152	1.077	2.538	35.0	4536.7
18.000	4.408	11.94	8.7	2.817	0.924	2.241	31.0	4571.7
19.000	3.884	10.65	7.7	2.518	0.795	1.982	27.5	4602.7
20.000	3.422	1.70	1.4	1.673	0.686	0.928	9.8	$\boxed{4630.3}$

MINI-DYNAMO * VERSION 1.00

TIME	DT0201	DT0301	DT0401	DT0501	DT0601	DT0701	DT0605
E 00	E 00	E 00	E 00	E 00	E 00	E 00	E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	DT0302 E 00	DT0402 E 00	DT0502 E 00	DT0602 E 00	DT0702 E 00	DT0403 E 00	DT0705 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	DT0503 E 00	DT0603 E 00	DT0703 E 00	DT0504 E 00	DT0604 E 00	DT0704 E 00	DT0607 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	AT0201 E 00	AT0301 E 00	AT0401 E 00	AT0501 E 00	AT0601 E 00	AT0701 E 00	AT0302 E 00
0.000	92.12	35.679	42.405	31.066	25.936	22.800	35.130
1.000	94.09	37.088	43.331	31.779	26.530	23.204	36.638
2.000	97.49	38.579	44.829	32.792	27.361	24.004	38.095
3.000	101.31	40.046	46.406	33.886	28.196	24.849	39.554
4.000	105.82	41.586	48.073	35.118	29.048	24.941	41.087
5.000	111.07	43.121	48.441	36.346	29.167	25.026	42.709
6.000	117.36	43.121	48.441	36.346	29.167	25.026	43.467
7.000	123.09	43.121	48.441	36.346	29.167	25.026	44.107
8.000	128.19	43.121	48.441	36.346	29.167	25.026	44.643
9.000	132.77	43.121	48.441	36.346	29.167	25.026	45.097
10.000	136.90	43.121	48.441	36.346	29.167	25.026	45.487
11.000	140.65	43.121	48.441	36.346	29.167	25.026	45.825
12.000	144.06	43.121	48.441	36.346	29.167	25.026	46.122
13.000	147.18	43.121	48.441	36.346	29.167	25.026	46.384
14.000	150.05	43.121	48.441	36.346	29.167	25.026	46.617
15.000	152.69	43.121	48.441	36.346	29.167	25.026	46.826
16.000	155.13	43.121	48.441	36.346	29.167	25.026	47.014
17.000	157.39	43.121	48.441	36.346	29.167	25.026	47.184
18.000	159.50	43.121	48.441	36.346	29.167	25.026	47.339
19.000	161.46	43.121	48.441	36.346	29.167	25.026	47.481
20.000	163.29	43.121	48.441	36.346	29.167	25.026	47.611

MINI-DYNAMO * VERSION 1.00

TIME E 00	AT0402 E 00	AT0502 E 00	AT0602 E 00	AT0702 E 00	AT0403 E 00	AT0503 E 00	AT0603 E 00
0.000	41.600	30.662	25.667	22.598	25.368	21.230	18.911
1.000	42.697	31.460	26.318	23.047	26.267	21.934	19.508
2.000	44.156	32.454	27.136	23.837	27.240	22.692	20.164
3.000	45.726	33.546	27.971	24.680	28.213	23.467	20.809
4.000	47.386	34.775	28.823	24.782	29.208	24.298	21.459
5.000	47.909	36.064	28.995	24.904	29.769	25.126	21.735
6.000	48.888	36.582	29.311	25.127	29.769	25.126	21.735
7.000	49.721	37.017	29.575	25.313	29.769	25.126	21.735
8.000	50.420	37.379	29.794	25.467	29.769	25.126	21.735
9.000	51.015	37.685	29.977	25.595	29.769	25.126	21.735
10.000	51.527	37.946	30.133	25.704	29.769	25.126	21.735
11.000	51.973	38.172	30.268	25.798	29.769	25.126	21.735
12.000	52.365	38.370	30.385	25.880	29.769	25.126	21.735
13.000	52.712	38.544	30.488	25.951	29.769	25.126	21.735
14.000	53.021	38.698	30.580	26.015	29.769	25.126	21.735
15.000	53.298	38.836	30.661	26.071	29.769	25.126	21.735
16.000	53.549	38.960	30.734	26.122	29.769	25.126	21.735
17.000	53.776	39.073	30.800	26.168	29.769	25.126	21.735
18.000	53.982	39.175	30.860	26.209	29.769	25.126	21.735
19.000	54.171	39.268	30.915	26.247	29.769	25.126	21.735
20.000	54.345	39.353	30.964	26.281	29.769	25.126	21.735

MINI-DYNAMO * VERSION 1.00

TIME	AT0703	AT0504	AT0604	AT0704	AT0605	AT0705	AT0607
E 00	E 00	E 00	E 00	E 00	E 00	E 00	E 00
0.000	19.932	23.120	20.339	18.474	17.728	16.347	15.034
1.000	20.588	23.684	20.829	18.841	18.154	16.681	15.343
2.000	21.249	24.431	21.476	19.471	18.698	17.216	15.828
3.000	21.884	25.230	22.132	20.134	19.261	17.786	16.326
4.000	22.779	26.090	22.791	20.324	19.852	18.019	16.529
5.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
6.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
7.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
8.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
9.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
10.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
11.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
12.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
13.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
14.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
15.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
16.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
17.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
18.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
19.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
20.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0201 E 00	RM0301 E 00	RM0401 E 00	RM0501 E 00	RM0601 E 00	RM0701 E 00	RM0107 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0102 E 00	RM0302 E 00	RM0402 E 00	RM0502 E 00	RM0602 E 00	RM0702 E 00	RM0207 E 00
0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.0000
1.000	0.00	0.000	0.000	0.000	0.000	0.000	0.0000
2.000	0.00	0.000	0.000	0.000	0.000	0.000	0.0000
3.000	0.00	0.000	0.000	0.000	0.000	20.000	0.0000
4.000	0.00	0.000	44.000	0.000	18.000	20.000	0.0000
5.000	210.00	38.000	47.000	31.000	19.000	21.000	0.0000
6.000	220.00	39.000	50.000	33.000	22.000	22.000	0.0000
7.000	220.00	39.000	50.000	33.000	22.000	22.000	0.0000
8.000	220.00	39.000	50.000	33.000	22.000	22.000	0.0000
9.000	220.00	39.000	50.000	33.000	22.000	22.000	0.0000
10.000	220.00	39.000	50.000	33.000	22.000	22.000	0.0000
11.000	220.00	39.000	50.000	33.000	22.000	22.000	0.0000
12.000	220.00	39.000	50.000	33.000	22.000	22.000	0.0000
13.000	220.00	39.000	50.000	33.000	22.000	22.000	0.0000
14.000	220.00	39.000	50.000	33.000	22.000	22.000	0.0000
15.000	220.00	39.000	50.000	33.000	22.000	22.000	0.0000
16.000	220.00	39.000	50.000	33.000	22.000	22.000	0.0000
17.000	220.00	39.000	50.000	33.000	22.000	22.000	0.0000
18.000	220.00	39.000	50.000	33.000	22.000	22.000	0.0000
19.000	220.00	39.000	50.000	33.000	22.000	22.000	0.0000
20.000	0.00	0.000	0.000	0.000	0.000	0.000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0103 E 00	RM0203 E 00	RM0403 E 00	RM0503 E 00	RM0603 E 00	RM0703 E 00	RM0307 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0104 E 00	RM0204 E 00	RM0304 E 00	RM0504 E 00	RM0604 E 00	RM0704 E 00	RM0407 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0105 E 00	RM0205 E 00	RM0305 E 00	RM0405 E 00	RM0605 E 00	RM0705 E 00	RM0507 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME	RM0106	RM0206	RM0306	RM0406	RM0506	RM0706	RM0607
E 00	E 00	E 00	E 00	E 00	E 00	E 00	E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	TLIN E 00	TRLM E 00	LIN E 03	RMTOT E 00	DMSTOT E 00	FAXAST E 03	FAXDST E 00	GPFTOT E 00
0.000	0.0	0.0	10.347	0.00	0.0	0.000	0.0	0.0000
1.000	0.0	0.0	10.616	0.00	0.0	19.283	0.0	0.0000
2.000	0.0	0.0	11.043	0.00	3831.0	25.810	0.0	0.0000
3.000	3831.0	0.0	7.679	20.00	171.0	27.026	700.0	0.0000
4.000	4002.0	20.0	8.003	82.00	170.0	25.846	2792.3	0.0000
5.000	4172.0	102.0	8.267	366.00	180.0	17.761	8754.7	0.0000
6.000	4352.0	468.0	8.267	386.00	175.0	10.363	9299.0	0.0000
7.000	4527.0	854.0	8.267	386.00	175.0	9.224	9299.0	0.0000
8.000	4702.0	1240.0	8.267	386.00	175.0	8.067	9299.0	0.0000
9.000	4877.0	1626.0	8.267	386.00	175.0	7.123	9299.0	0.0000
10.000	5052.0	2012.0	8.267	386.00	175.0	6.341	9299.0	0.0000
11.000	5227.0	2398.0	8.267	386.00	175.0	5.685	9299.0	0.0000
12.000	5402.0	2784.0	8.267	386.00	175.0	5.128	9299.0	0.0000
13.000	5577.0	3170.0	8.267	386.00	175.0	4.652	9299.0	0.0000
14.000	5752.0	3556.0	8.267	386.00	175.0	4.240	9299.0	0.0000
15.000	5927.0	3942.0	8.267	386.00	175.0	3.881	9299.0	0.0000
16.000	6102.0	4328.0	8.267	386.00	175.0	3.567	9299.0	0.0000
17.000	6277.0	4714.0	8.267	386.00	175.0	3.290	9299.0	0.0000
18.000	6452.0	5100.0	8.267	386.00	175.0	3.045	9299.0	0.0000
19.000	6627.0	5486.0	8.267	386.00	175.0	2.826	9299.0	0.0000
20.000	6802.0	5872.0	8.267	0.00	0.0	2.631	0.0	0.0000

Appendix G

Computer Printouts for Alternative 5

Bay Roberts Replace

MINI-DYNAMO * VERSION 1.00

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ENTER RERUN CHANGES

C RE01=5,RE02=2,RE03=3,RE04=4,RE05=5,RE06=4,RE07=3
C OVER01=5,OVER02=2,OVER03=5,OVER04=4,OVER05=5,OVER06=4,OVER07=3
C RE0102=1,RE0302=1,RE0402=1,RE0502=1,RE0602=1,RE0702=1
RUN
```

CHANGES FOR RERUN -

	OVER01	OVER02	OVER03	OVER04	OVER05	OVER06
PRESENT	5.0000	2.0000	5.0000	4.0000	5.0000	4.0000
ORIGINAL	99.000	99.000	99.000	99.000	99.000	99.000

	OVER07	RE0102	RE0302	RE0402	RE0502	RE0602
PRESENT	3.0000	1.0000	1.0000	1.0000	1.0000	1.0000
ORIGINAL	99.000	0.0000	0.0000	0.0000	0.0000	0.0000

	RE0702	RE01	RE02	RE03	RE04	RE05
PRESENT	1.0000	5.0000	2.0000	3.0000	4.0000	5.0000
ORIGINAL	0.0000	100.00	100.00	100.00	100.00	100.00

	RE06	RE07
PRESENT	4.0000	3.0000
ORIGINAL	100.00	100.00

MINI-DYNAMO * VERSION 1.00

TIME	GPF01	GPF02	GPF03	GPF04	GPF05	GPF06	GPF07
E 00	E 00	E 00	E 00	E 00	E 00	E 00	E 00
0.000	39.00	123.00	39.000	27.000	18.000	14.000	9.000
1.000	157.00	137.00	37.000	38.000	23.000	18.000	17.000
2.000	188.00	162.00	36.000	40.000	25.000	18.000	18.000
3.000	200.00	171.00	37.000	41.000	28.000	18.000	20.000
4.000	199.00	170.00	37.000	44.000	28.000	18.000	20.000
5.000	210.00	180.00	38.000	47.000	31.000	19.000	21.000
6.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
7.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
8.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
9.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
10.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
11.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
12.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
13.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
14.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
15.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
16.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
17.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
18.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
19.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
20.000	0.00	0.00	0.000	0.000	0.000	0.000	0.000

MINI-DYNAMO * VERSION 1.00

TIME E 00	LIN01 E 00	LIN02 E 00	LIN03 E 00	LIN04 E 00	LIN05 E 00	LIN06 E 00	LIN07 E 00
0.000	3794.0	3409.0	732.0	934.0	605.0	474.00	399.00
1.000	3833.0	3532.0	771.0	961.0	623.0	488.00	408.00
2.000	3990.0	3669.0	808.0	999.0	646.0	506.00	425.00
3.000	4158.0	3831.0	844.0	1039.0	671.0	524.00	443.00
4.000	4358.0	4002.0	881.0	1080.0	699.0	542.00	463.00
5.000	4557.0	4172.0	918.0	1124.0	727.0	560.00	483.00
6.000	4767.0	4352.0	956.0	1171.0	758.0	579.00	504.00
7.000	4987.0	4527.0	995.0	1221.0	791.0	601.00	526.00
8.000	5207.0	4702.0	1034.0	1271.0	824.0	623.00	548.00
9.000	5427.0	4877.0	1073.0	1321.0	857.0	645.00	570.00
10.000	5647.0	5052.0	1112.0	1371.0	890.0	667.00	592.00
11.000	5867.0	5227.0	1151.0	1421.0	923.0	689.00	614.00
12.000	6087.0	5402.0	1190.0	1471.0	956.0	711.00	636.00
13.000	6307.0	5577.0	1229.0	1521.0	989.0	733.00	658.00
14.000	6527.0	5752.0	1268.0	1571.0	1022.0	755.00	680.00
15.000	6747.0	5927.0	1307.0	1621.0	1055.0	777.00	702.00
16.000	6967.0	6102.0	1346.0	1671.0	1088.0	799.00	724.00
17.000	7187.0	6277.0	1385.0	1721.0	1121.0	821.00	746.00
18.000	7407.0	6452.0	1424.0	1771.0	1154.0	843.00	768.00
19.000	7627.0	6627.0	1463.0	1821.0	1187.0	865.00	790.00
20.000	7847.0	6802.0	1502.0	1871.0	1220.0	887.00	812.00

MINI-DYNAMO * VERSION 1.00

TIME E 00	GPFA01 E 00	GPFA02 E 00	GPFA03 E 00	GPFA04 E 00	GPFA05 E 00	GPFA06 E 00	GPFA07 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME	LLINO1	LLINO2	LLINO3	LLINO4	LLINO5	LLINO6	LLINO7	LIN
E 00	E 00	E 00	E 00	E 00	E 00	E 00	E 00	E 03
0.000	3794.0	3409.0	732.00	934.0	605.00	474.00	399.00	10.347
1.000	3833.0	3532.0	771.00	961.0	623.00	488.00	408.00	10.616
2.000	3990.0	3669.0	808.00	999.0	646.00	506.00	425.00	11.043
3.000	4158.0	0.0	844.00	1039.0	671.00	524.00	443.00	7.679
4.000	4358.0	0.0	0.00	1080.0	699.00	542.00	0.00	6.679
5.000	4557.0	0.0	0.00	0.0	727.00	0.00	0.00	5.284
6.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
7.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
8.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
9.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
10.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
11.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
12.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
13.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
14.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
15.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
16.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
17.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
18.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
19.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
20.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000

MINI-DYNAMO * VERSION 1.00

TIME E 00	LRIN01 E 00	LRIN02 E 00	LRIN03 E 00	LRIN04 E 00	LRIN05 E 00	LRIN06 E 00	LRIN07 E 00	LRIN E 00
0.000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0
1.000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0
2.000	0.0000	3831.0	0.0000	0.0000	0.0000	0.0000	0.0000	3831.0
3.000	0.0000	1478.0	0.0000	0.0000	0.0000	0.0000	0.0000	1478.0
4.000	0.0000	1874.0	0.0000	0.0000	0.0000	0.0000	0.0000	1874.0
5.000	0.0000	5830.0	0.0000	0.0000	0.0000	0.0000	0.0000	5830.0
6.000	0.0000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
7.000	0.0000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
8.000	0.0000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
9.000	0.0000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
10.000	0.0000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
11.000	0.0000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
12.000	0.0000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
13.000	0.0000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
14.000	0.0000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
15.000	0.0000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
16.000	0.0000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
17.000	0.0000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
18.000	0.0000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
19.000	0.0000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
20.000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0

MINI-DYNAMO * VERSION 1.00

TIME E 00	GPFCST E 00	RLMCST E 03	DMSCST E 03	TRKCST E 03	BLDCST E 03	FAXCST E 03	DMSGSC E 03
0.000	0.0000	0.0	0.0	0.000	0.000	0.00	0.00
1.000	0.0000	0.0	0.0	19.050	0.000	19.28	0.00
2.000	0.0000	0.0	1149.3	25.417	30.648	25.81	650.00
3.000	0.0000	501.4	51.3	26.655	17.052	52.54	0.00
4.000	0.0000	820.8	51.0	38.466	21.808	97.13	0.00
5.000	0.0000	1850.0	54.0	25.651	69.240	150.47	0.00
6.000	0.0000	77.2	52.5	0.000	6.032	9.30	0.00
7.000	0.0000	77.2	52.5	0.000	6.032	9.30	0.00
8.000	0.0000	77.2	52.5	0.000	6.032	9.30	0.00
9.000	0.0000	77.2	52.5	0.000	6.032	9.30	0.00
10.000	0.0000	77.2	52.5	0.000	6.032	9.30	0.00
11.000	0.0000	77.2	52.5	0.000	6.032	9.30	0.00
12.000	0.0000	77.2	52.5	0.000	6.032	9.30	0.00
13.000	0.0000	77.2	52.5	0.000	6.032	9.30	0.00
14.000	0.0000	77.2	52.5	0.000	6.032	9.30	0.00
15.000	0.0000	77.2	52.5	0.000	6.032	9.30	0.00
16.000	0.0000	77.2	52.5	0.000	6.032	9.30	0.00
17.000	0.0000	77.2	52.5	0.000	6.032	9.30	0.00
18.000	0.0000	77.2	52.5	0.000	6.032	9.30	0.00
19.000	0.0000	77.2	52.5	0.000	6.032	9.30	0.00
20.000	0.0000	0.0	0.0	0.000	0.000	0.00	0.00

MINI-DYNAMO * VERSION 1.00

TIME E 00	GPFMST E 03	RLMMST E 03	DMSMST E 03	TRKMST E 00	BLDMST E 03	FAXMST E 03
0.000	103.47	0.000	0.000	0.0	31.041	0.000
1.000	106.16	0.000	0.000	0.0	31.848	0.000
2.000	110.43	0.000	0.000	952.5	33.129	0.964
3.000	76.79	0.000	19.155	2223.4	26.868	2.255
4.000	66.79	9.149	20.010	3556.1	26.000	4.881
5.000	52.84	21.077	20.860	5479.4	24.541	9.738
6.000	0.00	60.627	21.760	6762.0	17.343	17.261
7.000	0.00	63.329	22.635	6762.0	18.097	17.726
8.000	0.00	66.031	23.510	6762.0	18.851	18.191
9.000	0.00	68.733	24.385	6762.0	19.605	18.656
10.000	0.00	71.435	25.260	6762.0	20.360	19.121
11.000	0.00	74.137	26.135	6762.0	21.114	19.586
12.000	0.00	76.839	27.010	6762.0	21.868	20.051
13.000	0.00	79.541	27.885	6762.0	22.622	20.516
14.000	0.00	82.243	28.760	6762.0	23.375	20.981
15.000	0.00	84.945	29.635	6762.0	24.130	21.446
16.000	0.00	87.647	30.510	6762.0	24.883	21.911
17.000	0.00	90.349	31.385	6762.0	25.638	22.376
18.000	0.00	93.051	32.260	6762.0	26.391	22.840
19.000	0.00	95.753	33.135	6762.0	27.146	23.305
20.000	0.00	98.455	34.010	6762.0	27.899	23.770

MINI-DYNAMO * VERSION 1.00

TIME	ANCGPF	ANCRLM	ANCDMS	ANCBLD	ANCTRK	ANCFAX	ANCGSC
E 00	E 00	E 03	E 03	E 03	E 03	E 03	E 03
0.000	0.0000	0.0	0.0	0.000	0.000	0.000	0.00
1.000	0.0000	0.0	0.0	0.000	21.330	18.987	0.00
2.000	0.0000	0.0	1133.8	28.631	25.074	22.391	641.23
3.000	0.0000	435.8	44.6	14.035	23.168	40.155	0.00
4.000	0.0000	628.6	39.1	15.815	29.457	65.409	0.00
5.000	0.0000	1248.2	36.4	44.239	17.307	89.276	0.00
6.000	0.0000	45.9	31.2	3.396	0.000	4.861	0.00
7.000	0.0000	40.4	27.5	2.992	0.000	4.283	0.00
8.000	0.0000	35.6	24.2	2.636	0.000	3.774	0.00
9.000	0.0000	31.4	21.3	2.322	0.000	3.325	0.00
10.000	0.0000	27.7	18.8	2.046	0.000	2.929	0.00
11.000	0.0000	24.4	16.6	1.803	0.000	2.581	0.00
12.000	0.0000	21.5	14.6	1.588	0.000	2.274	0.00
13.000	0.0000	18.9	12.9	1.399	0.000	2.003	0.00
14.000	0.0000	16.7	11.3	1.233	0.000	1.765	0.00
15.000	0.0000	14.7	10.0	1.086	0.000	1.555	0.00
16.000	0.0000	12.9	8.8	0.957	0.000	1.370	0.00
17.000	0.0000	11.4	7.8	0.843	0.000	1.207	0.00
18.000	0.0000	10.0	6.8	0.743	0.000	1.064	0.00
19.000	0.0000	8.8	6.0	0.655	0.000	0.937	0.00
20.000	0.0000	0.0	0.0	0.000	0.000	0.000	0.00

MINI-DYNAMO * VERSION 1.00

TIME E 00	ANMGPF E 03	ANMRLM E 03	ANMDMS E 00	ANMBLD E 03	ANMTRK E 00	ANMFAX E 00	AEEDMS E 03	ANMSOF E 03
0.000	53.905	0.000	0.0	16.171	0.0	0.0	0.000	0.000
1.000	48.728	0.000	0.0	14.618	0.0	0.0	0.000	0.000
2.000	44.659	0.000	0.0	13.398	385.2	389.9	24.564	74.816
3.000	27.361	0.000	6825.1	9.573	792.2	803.4	0.966	0.000
4.000	20.967	2.872	6281.7	8.162	1116.4	1532.4	0.846	0.000
5.000	14.615	5.830	5769.6	6.788	1515.5	2693.4	0.789	0.000
6.000	0.000	14.774	5302.7	4.226	1647.8	4206.4	0.676	0.000
7.000	0.000	13.597	4859.8	3.886	1451.8	3805.9	0.596	0.000
8.000	0.000	12.491	4447.3	3.566	1279.1	3441.1	0.525	0.000
9.000	0.000	11.456	4064.2	3.268	1127.0	3109.3	0.462	0.000
10.000	0.000	10.490	3709.3	2.990	993.0	2807.8	0.407	0.000
11.000	0.000	9.592	3381.3	2.732	874.8	2534.0	0.359	0.000
12.000	0.000	8.759	3078.8	2.493	770.8	2285.6	0.316	0.000
13.000	0.000	7.988	2800.5	2.272	679.1	2060.4	0.279	0.000
14.000	0.000	7.277	2544.8	2.068	598.3	1856.5	0.246	0.000
15.000	0.000	6.622	2310.4	1.881	527.2	1671.9	0.216	0.000
16.000	0.000	6.020	2095.7	1.709	464.5	1505.0	0.191	0.000
17.000	0.000	5.468	1899.4	1.552	409.2	1354.1	0.168	0.000
18.000	0.000	4.961	1720.1	1.407	360.5	1217.8	0.148	0.000
19.000	0.000	4.498	1556.6	1.275	317.7	1094.8	0.130	0.000
20.000	0.000	4.075	1407.7	1.155	279.9	983.9	0.000	0.000

MINI-DYNAMO * VERSION 1.00

TIME E 00	TANGPF E 03	TANRLM E 03	TANDMS E 03	TANBLD E 03	TANTRK E 03	TANFAX E 03	TOTTAN E 03	PWAC E 03
0.000	53.905	0.0	0.0	16.171	0.000	0.000	70.1	0.0
1.000	48.728	0.0	0.0	14.618	21.330	18.987	103.7	70.1
2.000	44.659	0.0	1874.4	42.029	25.460	22.781	2009.3	173.7
3.000	27.361	435.8	52.4	23.608	23.960	40.959	604.1	2183.1
4.000	20.967	631.4	46.2	23.977	30.573	66.941	820.1	2787.1
5.000	14.615	1254.0	43.0	51.027	18.822	91.969	1473.5	3607.2
6.000	0.000	60.7	37.2	7.622	1.648	9.067	116.2	5080.7
7.000	0.000	54.0	33.0	6.877	1.452	8.089	103.4	5196.9
8.000	0.000	48.1	29.2	6.202	1.279	7.215	92.0	5300.3
9.000	0.000	42.8	25.9	5.590	1.127	6.434	81.9	5392.3
10.000	0.000	38.1	22.9	5.036	0.993	5.737	72.8	5474.1
11.000	0.000	34.0	20.3	4.534	0.875	5.115	64.8	5547.0
12.000	0.000	30.2	18.0	4.081	0.771	4.559	57.6	5611.8
13.000	0.000	26.9	15.9	3.671	0.679	4.064	51.3	5669.4
14.000	0.000	23.9	14.1	3.301	0.598	3.622	45.6	5720.6
15.000	0.000	21.3	12.5	2.967	0.527	3.227	40.5	5766.2
16.000	0.000	19.0	11.1	2.666	0.464	2.875	36.0	5806.8
17.000	0.000	16.9	9.8	2.395	0.409	2.561	32.0	5842.8
18.000	0.000	15.0	8.7	2.150	0.361	2.281	28.5	5874.9
19.000	0.000	13.3	7.7	1.930	0.318	2.032	25.3	5903.3
20.000	0.000	4.1	1.4	1.155	0.280	0.984	7.9	$\boxed{5928.7}$

MINI-DYNAMO * VERSION 1.00

TIME	DT0201	DT0301	DT0401	DT0501	DT0601	DT0701	DT0605
E 00	E 00	E 00	E 00	E 00	E 00	E 00	E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	DT0302 E 00	DT0402 E 00	DT0502 E 00	DT0602 E 00	DT0702 E 00	DT0403 E 00	DT0705 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	DT0503 E 00	DT0603 E 00	DT0703 E 00	DT0504 E 00	DT0604 E 00	DT0704 E 00	DT0607 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	AT0201 E 00	AT0301 E 00	AT0401 E 00	AT0501 E 00	AT0601 E 00	AT0701 E 00	AT0302 E 00
0.000	92.12	35.679	42.405	31.066	25.936	22.800	35.130
1.000	94.09	37.088	43.331	31.779	26.530	23.204	36.638
2.000	97.49	38.579	44.829	32.792	27.361	24.004	38.095
3.000	101.31	40.046	46.406	33.886	28.196	24.849	39.554
4.000	119.69	0.000	48.073	35.118	29.048	0.000	0.000
5.000	137.73	0.000	0.000	36.346	0.000	0.000	0.000
6.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
7.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
8.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
9.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
10.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
11.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
12.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
13.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
14.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
15.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
16.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
17.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
18.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
19.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
20.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000

MINI-DYNAMO * VERSION 1.00

TIME E 00	AT0402 E 00	AT0502 E 00	AT0602 E 00	AT0702 E 00	AT0403 E 00	AT0503 E 00	AT0603 E 00
0.000	41.600	30.662	25.667	22.598	25.368	21.230	18.911
1.000	42.697	31.460	26.318	23.047	26.267	21.934	19.508
2.000	44.156	32.454	27.136	23.837	27.240	22.692	20.164
3.000	45.726	33.546	27.971	24.680	28.213	23.467	20.809
4.000	49.622	35.882	29.544	0.000	0.000	0.000	0.000
5.000	0.000	37.997	0.000	0.000	0.000	0.000	0.000
6.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
7.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
9.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
11.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
12.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
13.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
14.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
15.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
16.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
17.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
18.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
19.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

MINI-DYNAMO * VERSION 1.00

TIME E 00	AT0703 E 00	AT0504 E 00	AT0604 E 00	AT0704 E 00	AT0605 E 00	AT0705 E 00	AT0607 E 00
0.000	19.932	23.120	20.339	18.474	17.728	16.347	15.034
1.000	20.588	23.684	20.829	18.841	18.154	16.681	15.343
2.000	21.249	24.431	21.476	19.471	18.698	17.216	15.828
3.000	21.884	25.230	22.132	20.134	19.261	17.786	16.326
4.000	0.000	26.090	22.791	0.000	19.852	0.000	0.000
5.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
7.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
9.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
11.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
12.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
13.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
14.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
15.000	0.000	0.000	0.000	0.000	0.000	0.000	-0.000
16.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
17.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
18.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
19.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0201 E 00	RM0301 E 00	RM0401 E 00	RM0501 E 00	RM0601 E 00	RM0701 E 00	RM0107 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0102 E 00	RM0302 E 00	RM0402 E 00	RM0502 E 00	RM0602 E 00	RM0702 E 00	RM0207 E 00
0.000	0.0	0.00	0.0	0.00	0.00	0.00	0.0000
1.000	0.0	0.00	0.0	0.00	0.00	0.00	0.0000
2.000	0.0	0.00	0.0	0.00	0.00	0.00	0.0000
3.000	0.0	844.00	0.0	0.00	0.00	463.00	0.0000
4.000	0.0	0.00	1124.0	0.00	560.00	20.00	0.0000
5.000	4767.0	38.00	47.0	758.00	19.00	21.00	0.0000
6.000	220.0	39.00	50.0	33.00	22.00	22.00	0.0000
7.000	220.0	39.00	50.0	33.00	22.00	22.00	0.0000
8.000	220.0	39.00	50.0	33.00	22.00	22.00	0.0000
9.000	220.0	39.00	50.0	33.00	22.00	22.00	0.0000
10.000	220.0	39.00	50.0	33.00	22.00	22.00	0.0000
11.000	220.0	39.00	50.0	33.00	22.00	22.00	0.0000
12.000	220.0	39.00	50.0	33.00	22.00	22.00	0.0000
13.000	220.0	39.00	50.0	33.00	22.00	22.00	0.0000
14.000	220.0	39.00	50.0	33.00	22.00	22.00	0.0000
15.000	220.0	39.00	50.0	33.00	22.00	22.00	0.0000
16.000	220.0	39.00	50.0	33.00	22.00	22.00	0.0000
17.000	220.0	39.00	50.0	33.00	22.00	22.00	0.0000
18.000	220.0	39.00	50.0	33.00	22.00	22.00	0.0000
19.000	220.0	39.00	50.0	33.00	22.00	22.00	0.0000
20.000	0.0	0.00	0.0	0.00	0.00	0.00	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0103 E 00	RM0203 E 00	RM0403 E 00	RM0503 E 00	RM0603 E 00	RM0703 E 00	RM0307 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0104 E 00	RM0204 E 00	RM0304 E 00	RM0504 E 00	RM0604 E 00	RM0704 E 00	RM0407 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0105 E 00	RM0205 E 00	RM0305 E 00	RM0405 E 00	RM0605 E 00	RM0705 E 00	RM0507 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0106 E 00	RM0206 E 00	RM0306 E 00	RM0406 E 00	RM0506 E 00	RM0706 E 00	RM0607 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	TLIN E 00	TRLM E 03	LIN E 03	RMTOT E 00	DMSTOT E 00	FAXAST E 03	FAXDST E 03	GPFTOT E 00
0.000	0.0	0.000	10.347	0.0	0.0	0.000	0.00	0.0000
1.000	0.0	0.000	10.616	0.0	0.0	19.283	0.00	0.0000
2.000	0.0	0.000	11.043	0.0	3831.0	25.810	0.00	0.0000
3.000	3831.0	0.000	7.679	1307.0	171.0	27.026	25.51	0.0000
4.000	4002.0	1.307	6.679	1704.0	170.0	37.719	59.41	0.0000
5.000	4172.0	3.011	5.284	5650.0	180.0	24.348	126.12	0.0000
6.000	4352.0	8.661	0.000	386.0	175.0	0.000	9.30	0.0000
7.000	4527.0	9.047	0.000	386.0	175.0	0.000	9.30	0.0000
8.000	4702.0	9.433	0.000	386.0	175.0	0.000	9.30	0.0000
9.000	4877.0	9.819	0.000	386.0	175.0	0.000	9.30	0.0000
10.000	5052.0	10.205	0.000	386.0	175.0	0.000	9.30	0.0000
11.000	5227.0	10.591	0.000	386.0	175.0	0.000	9.30	0.0000
12.000	5402.0	10.977	0.000	386.0	175.0	0.000	9.30	0.0000
13.000	5577.0	11.363	0.000	386.0	175.0	0.000	9.30	0.0000
14.000	5752.0	11.749	0.000	386.0	175.0	0.000	9.30	0.0000
15.000	5927.0	12.135	0.000	386.0	175.0	0.000	9.30	0.0000
16.000	6102.0	12.521	0.000	386.0	175.0	0.000	9.30	0.0000
17.000	6277.0	12.907	0.000	386.0	175.0	0.000	9.30	0.0000
18.000	6452.0	13.293	0.000	386.0	175.0	0.000	9.30	0.0000
19.000	6627.0	13.679	0.000	386.0	175.0	0.000	9.30	0.0000
20.000	6802.0	14.065	0.000	0.0	0.0	0.000	0.00	0.0000

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Appendix II

Computer Printouts for Alternative 6

Bay Roberts/Carbonear Overlay

MINI-DYNAMO * VERSION 1.00

ENTER RERUN CHANGES

```
C RE01=2,RE02=3
C OVER01=2,OVER02=3,OVER03=5,OVER04=4,OVER05=5,OVER06=4,OVER07=3
C RE0601=1,RE0701=1,RE0302=1,RE0402=1,RE0502=1
RUN
```

CHANGES FOR RERUN -

	OVER01	OVER02	OVER03	OVER04	OVER05	OVER06
PRESENT	2.0000	3.0000	5.0000	4.0000	5.0000	4.0000
ORIGINAL	99.000	99.000	99.000	99.000	99.000	99.000

	OVER07	RE0601	RE0701	RE0302	RE0402	RE0502
PRESENT	3.0000	1.0000	1.0000	1.0000	1.0000	1.0000
ORIGINAL	99.000	0.0000	0.0000	0.0000	0.0000	0.0000

	RE01	RE02
PRESENT	2.0000	3.0000
ORIGINAL	100.00	100.00

MINI-DYNAMO * VERSION 1.00

TIME E 00	GPF01 E 00	GPF02 E 00	GPF03 E 00	GPF04 E 00	GPF05 E 00	GPF06 E 00	GPF07 E 00
0.000	39.00	123.00	39.000	27.000	18.000	14.000	9.000
1.000	157.00	137.00	37.000	38.000	23.000	18.000	17.000
2.000	168.00	162.00	36.000	40.000	25.000	18.000	18.000
3.000	200.00	171.00	37.000	41.000	28.000	18.000	20.000
4.000	199.00	170.00	37.000	44.000	28.000	18.000	20.000
5.000	210.00	180.00	38.000	47.000	31.000	19.000	21.000
6.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
7.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
8.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
9.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
10.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
11.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
12.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
13.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
14.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
15.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
16.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
17.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
18.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
19.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
20.000	0.00	0.00	0.000	0.000	0.000	0.000	0.000

MINI-DYNAMO * VERSION 1.00

TIME E 00	LIN01 E 00	LIN02 E 00	LIN03 E 00	LIN04 E 00	LIN05 E 00	LIN06 E 00	LIN07 E 00
0.000	3794.0	3409.0	732.0	934.0	605.0	474.00	399.00
1.000	3833.0	3532.0	771.0	961.0	623.0	488.00	408.00
2.000	3990.0	3669.0	808.0	999.0	646.0	506.00	425.00
3.000	4158.0	3831.0	844.0	1039.0	671.0	524.00	443.00
4.000	4358.0	4002.0	881.0	1080.0	699.0	542.00	463.00
5.000	4557.0	4172.0	918.0	1124.0	727.0	560.00	483.00
6.000	4767.0	4352.0	956.0	1171.0	758.0	579.00	504.00
7.000	4987.0	4527.0	995.0	1221.0	791.0	601.00	526.00
8.000	5207.0	4702.0	1034.0	1271.0	824.0	623.00	548.00
9.000	5427.0	4877.0	1073.0	1321.0	857.0	645.00	570.00
10.000	5647.0	5052.0	1112.0	1371.0	890.0	667.00	592.00
11.000	5867.0	5227.0	1151.0	1421.0	923.0	689.00	614.00
12.000	6087.0	5402.0	1190.0	1471.0	956.0	711.00	636.00
13.000	6307.0	5577.0	1229.0	1521.0	989.0	733.00	658.00
14.000	6527.0	5752.0	1268.0	1571.0	1022.0	755.00	680.00
15.000	6747.0	5927.0	1307.0	1621.0	1055.0	777.00	702.00
16.000	6967.0	6102.0	1346.0	1671.0	1088.0	799.00	724.00
17.000	7187.0	6277.0	1385.0	1721.0	1121.0	821.00	746.00
18.000	7407.0	6452.0	1424.0	1771.0	1154.0	843.00	768.00
19.000	7627.0	6627.0	1463.0	1821.0	1187.0	865.00	790.00
20.000	7847.0	6802.0	1502.0	1871.0	1220.0	887.00	812.00

MINI-DYNAMO * VERSION 1.00

TIME E 00	GPFA01 E 00	GPFA02 E 00	GPFA03 E 00	GPFA04 E 00	GPFA05 E 00	GPFA06 E 00	GPFA07 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	LLIN01 E 00	LLIN02 E 00	LLIN03 E 00	LLIN04 E 00	LLIN05 E 00	LLIN06 E 00	LLIN07 E 00	LIN E 03
0.000	3794.0	3409.0	732.00	934.0	605.00	474.00	399.00	10.347
1.000	3833.0	3532.0	771.00	961.0	623.00	488.00	408.00	10.616
2.000	3990.0	3669.0	808.00	999.0	646.00	506.00	425.00	11.043
3.000	0.0	3831.0	844.00	1039.0	671.00	524.00	443.00	7.352
4.000	0.0	0.0	881.00	1080.0	699.00	542.00	443.00	3.645
5.000	0.0	0.0	918.00	1080.0	727.00	542.00	443.00	3.710
6.000	0.0	0.0	918.00	1080.0	727.00	542.00	443.00	3.710
7.000	0.0	0.0	918.00	1080.0	727.00	542.00	443.00	3.710
8.000	0.0	0.0	918.00	1080.0	727.00	542.00	443.00	3.710
9.000	0.0	0.0	918.00	1080.0	727.00	542.00	443.00	3.710
10.000	0.0	0.0	918.00	1080.0	727.00	542.00	443.00	3.710
11.000	0.0	0.0	918.00	1080.0	727.00	542.00	443.00	3.710
12.000	0.0	0.0	918.00	1080.0	727.00	542.00	443.00	3.710
13.000	0.0	0.0	918.00	1080.0	727.00	542.00	443.00	3.710
14.000	0.0	0.0	918.00	1080.0	727.00	542.00	443.00	3.710
15.000	0.0	0.0	918.00	1080.0	727.00	542.00	443.00	3.710
16.000	0.0	0.0	918.00	1080.0	727.00	542.00	443.00	3.710
17.000	0.0	0.0	918.00	1080.0	727.00	542.00	443.00	3.710
18.000	0.0	0.0	918.00	1080.0	727.00	542.00	443.00	3.710
19.000	0.0	0.0	918.00	1080.0	727.00	542.00	443.00	3.710
20.000	0.0	0.0	918.00	1080.0	727.00	542.00	443.00	3.710

MINI-DYNAMO * VERSION 1.00

TIME	LRIN01	LRIN02	LRIN03	LRIN04	LRIN05	LRIN06	LRIN07	LRIN
E 00	E 00	E 00	E 00	E 00	E 00	E 00	E 00	E 00
0.000	0.0	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0
1.000	0.0	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0
2.000	4158.0	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	4158.0
3.000	220.0	4002.0	0.0000	0.0000	0.0000	0.0000	0.0000	4222.0
4.000	237.0	214.0	0.0000	0.0000	0.0000	0.0000	0.0000	451.0
5.000	250.0	296.0	0.0000	0.0000	0.0000	0.0000	0.0000	546.0
6.000	264.0	297.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
7.000	264.0	297.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
8.000	264.0	297.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
9.000	264.0	297.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
10.000	264.0	297.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
11.000	264.0	297.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
12.000	264.0	297.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
13.000	264.0	297.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
14.000	264.0	297.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
15.000	264.0	297.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
16.000	264.0	297.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
17.000	264.0	297.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
18.000	264.0	297.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
19.000	264.0	297.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
20.000	0.0	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0

MINI-DYNAMO * VERSION 1.00

TIME E 00	GPFCST E 00	RLMCST E 03	DMSCST E 03	TRKCST E 03	BLDCST E 03	FAXCST E 03	DMSGSC E 03
0.000	0.0000	0.00	0.0	0.000	0.000	0.000	0.00
1.000	0.0000	0.00	0.0	19.050	0.000	19.283	0.00
2.000	0.0000	0.00	1247.4	25.417	33.264	25.810	650.00
3.000	0.0000	244.00	1260.6	26.655	33.856	28.202	650.00
4.000	0.0000	496.40	110.7	44.021	3.936	38.773	0.00
5.000	0.0000	511.20	117.0	13.146	4.992	17.185	0.00
6.000	0.0000	33.20	118.5	4.798	5.152	9.338	0.00
7.000	0.0000	33.20	118.5	4.578	5.152	9.113	0.00
8.000	0.0000	33.20	118.5	4.281	5.152	8.819	0.00
9.000	0.0000	33.20	118.5	4.023	5.152	8.564	0.00
10.000	0.0000	33.20	118.5	3.799	5.152	8.342	0.00
11.000	0.0000	33.20	118.5	3.602	5.152	8.147	0.00
12.000	0.0000	33.20	118.5	3.428	5.152	7.975	0.00
13.000	0.0000	33.20	118.5	3.275	5.152	7.823	0.00
14.000	0.0000	33.20	118.5	3.137	5.152	7.687	0.00
15.000	0.0000	33.20	118.5	3.015	5.152	7.565	0.00
16.000	0.0000	33.20	118.5	2.904	5.152	7.456	0.00
17.000	0.0000	33.20	118.5	2.805	5.152	7.358	0.00
18.000	0.0000	33.20	118.5	2.715	5.152	7.269	0.00
19.000	0.0000	33.20	118.5	2.633	5.152	7.188	0.00
20.000	0.0000	0.00	0.0	2.559	0.000	2.004	0.00

MINI-DYNAMO * VERSION 1.00

TIME E 00	GPFMST E 03	RLMMST E 03	DMSMST E 03	TRKMST E 03	BLDMST E 03	FAXMST E 03
0.000	103.47	0.000	0.000	0.000	31.041	0.000
1.000	106.16	0.000	0.000	0.000	31.848	0.000
2.000	110.43	0.000	0.000	0.952	33.129	0.964
3.000	73.52	0.000	20.790	2.223	26.214	2.255
4.000	36.45	0.140	41.800	3.556	19.325	3.665
5.000	37.10	0.714	43.645	17.261	20.012	5.603
6.000	37.10	1.806	45.595	18.482	20.636	6.463
7.000	37.10	2.968	47.570	19.410	21.280	6.930
8.000	37.10	4.130	49.545	20.341	21.924	7.385
9.000	37.10	5.292	51.520	21.255	22.568	7.826
10.000	37.10	6.454	53.495	22.155	23.212	8.254
11.000	37.10	7.616	55.470	23.041	23.856	8.671
12.000	37.10	8.778	57.445	23.915	24.500	9.079
13.000	37.10	9.940	59.420	24.779	25.144	9.478
14.000	37.10	11.102	61.395	25.634	25.788	9.869
15.000	37.10	12.264	63.370	26.480	26.432	10.253
16.000	37.10	13.426	65.345	27.319	27.076	10.631
17.000	37.10	14.588	67.320	28.151	27.720	11.004
18.000	37.10	15.750	69.295	28.978	28.364	11.372
19.000	37.10	16.912	71.270	29.798	29.008	11.735
20.000	37.10	18.074	73.245	30.614	29.652	12.095

MINI-DYNAMO * VERSION 1.00

TIME	ANCGPF	ANCRLM	ANCDMS	ANCBLD	ANCTRK	ANCFAX	ANCGSC
E 00	E 00	E 03	E 03	E 03	E 03	E 03	E 03
0.000	0.0000	0.00	0.0	0.000	0.000	0.000	0.00
1.000	0.0000	0.00	0.0	0.000	21.330	18.987	0.00
2.000	0.0000	0.00	1230.6	31.075	25.074	22.391	641.23
3.000	0.0000	212.08	1095.7	27.866	23.168	21.556	564.96
4.000	0.0000	380.14	84.8	2.854	33.711	26.111	0.00
5.000	0.0000	344.91	78.9	3.190	8.870	10.196	0.00
6.000	0.0000	19.74	70.4	2.900	2.852	4.882	0.00
7.000	0.0000	17.39	62.1	2.555	2.398	4.197	0.00
8.000	0.0000	15.32	54.7	2.251	1.975	3.579	0.00
9.000	0.0000	13.50	48.2	1.984	1.636	3.062	0.00
10.000	0.0000	11.89	42.4	1.748	1.361	2.628	0.00
11.000	0.0000	10.48	37.4	1.540	1.137	2.261	0.00
12.000	0.0000	9.23	33.0	1.357	0.953	1.950	0.00
13.000	0.0000	8.13	29.0	1.195	0.802	1.685	0.00
14.000	0.0000	7.17	25.6	1.053	0.677	1.459	0.00
15.000	0.0000	6.31	22.5	0.928	0.573	1.265	0.00
16.000	0.0000	5.56	19.9	0.817	0.487	1.099	0.00
17.000	0.0000	4.90	17.5	0.720	0.414	0.955	0.00
18.000	0.0000	4.32	15.4	0.635	0.353	0.831	0.00
19.000	0.0000	3.80	13.6	0.559	0.302	0.724	0.00
20.000	0.0000	0.00	0.0	0.000	0.258	0.178	0.00

MINI-DYNAMO * VERSION 1.00

TIME E 00	ANMGPF E 03	ANMRLM E 00	ANMDMS E 03	ANMBLD E 03	ANMTRK E 00	ANMFAX E 00	AEEDMS E 03	ANMSOF E 03
0.000	53.905	0.0	0.000	16.171	0.0	0.0	0.000	0.000
1.000	48.728	0.0	0.000	14.618	0.0	0.0	0.000	0.000
2.000	44.659	0.0	0.000	13.398	385.2	389.9	26.660	74.816
3.000	26.196	0.0	7.408	9.340	792.2	803.4	23.738	65.917
4.000	11.443	43.9	13.122	6.067	1116.4	1150.5	1.837	0.000
5.000	10.261	197.5	12.072	5.535	4774.2	1549.8	1.710	0.000
6.000	9.041	440.1	11.111	5.029	4503.8	1574.9	1.526	0.000
7.000	7.966	637.2	10.214	4.569	4167.3	1487.8	1.345	0.000
8.000	7.018	781.3	9.372	4.147	3847.9	1397.0	1.185	0.000
9.000	6.183	882.0	8.587	3.761	3542.6	1304.4	1.044	0.000
10.000	5.448	947.7	7.855	3.409	3253.3	1212.1	0.920	0.000
11.000	4.800	985.3	7.177	3.086	2980.9	1121.9	0.810	0.000
12.000	4.229	1000.6	6.548	2.793	2726.0	1034.9	0.714	0.000
13.000	3.726	998.3	5.968	2.525	2488.6	951.8	0.629	0.000
14.000	3.283	982.4	5.433	2.282	2268.2	873.2	0.554	0.000
15.000	2.892	956.1	4.940	2.061	2064.4	799.3	0.488	0.000
16.000	2.548	922.2	4.488	1.860	1876.5	730.2	0.430	0.000
17.000	2.245	882.8	4.074	1.678	1703.7	665.9	0.379	0.000
18.000	1.978	839.8	3.695	1.512	1545.1	606.4	0.334	0.000
19.000	1.743	794.5	3.348	1.363	1399.8	551.3	0.294	0.000
20.000	1.536	748.1	3.032	1.227	1267.1	500.6	0.000	0.000

MINI-DYNAMO * VERSION 1.00

TIME E 00	TANGPF E 03	TANRLM E 03	TANDMS E 03	TANBLD E 03	TANTRK E 03	TANFAX E 03	TOTTAN E 03	PWAC E 03
0.000	53.905	0.00	0.0	16.171	0.000	-0.000	70.1	0.0
1.000	48.728	0.00	0.0	14.618	21.330	18.987	103.7	70.1
2.000	44.659	0.00	1973.3	44.473	25.460	22.781	2110.6	173.7
3.000	26.196	212.08	1757.7	37.206	23.960	22.359	2079.5	2284.4
4.000	11.443	380.18	99.7	8.921	34.827	27.261	562.4	4363.9
5.000	10.261	345.11	92.7	8.725	13.644	11.746	482.2	4926.2
6.000	9.041	20.18	83.1	7.929	7.356	6.457	134.0	5408.5
7.000	7.966	18.03	73.6	7.124	6.565	5.685	119.0	5542.5
8.000	7.018	16.10	65.2	6.399	5.823	4.976	105.6	5661.5
9.000	6.183	14.38	57.8	5.745	5.178	4.366	93.7	5767.0
10.000	5.448	12.84	51.2	5.156	4.614	3.840	83.1	5860.7
11.000	4.800	11.46	45.4	4.626	4.118	3.383	73.8	5943.8
12.000	4.229	10.23	40.2	4.149	3.679	2.985	65.5	6017.6
13.000	3.726	9.13	35.6	3.720	3.291	2.637	58.1	6083.1
14.000	3.283	8.15	31.6	3.335	2.945	2.332	51.6	6141.2
15.000	2.892	7.27	28.0	2.988	2.638	2.065	45.8	6192.8
16.000	2.548	6.49	24.8	2.677	2.363	1.829	40.7	6238.6
17.000	2.245	5.78	21.9	2.398	2.118	1.621	36.1	6279.3
18.000	1.978	5.16	19.4	2.147	1.898	1.438	32.1	6315.4
19.000	1.743	4.60	17.2	1.922	1.702	1.276	28.5	6347.5
20.000	1.536	0.75	3.0	1.227	1.525	0.678	8.7	$\boxed{6375.9}$

MINI-DYNAMO * VERSION 1.00

TIME E 00	DT0201 E 00	DT0301 E 00	DT0401 E 00	DT0501 E 00	DT0601 E 00	DT0701 E 00	DT0605 E 00
0.000	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	105.78	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	110.96	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	117.29	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	123.75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	130.19	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	136.61	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	143.01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	149.39	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	155.76	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	162.11	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	168.46	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	174.78	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	181.10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	187.41	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	193.71	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	200.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	206.28	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

TIME E 00	DT0302 E 00	DT0402 E 00	DT0502 E 00	DT0602 E 00	DT0702 E 00	DT0403 E 00	DT0705 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

TIME E 00	DT0503 E 00	DT0603 E 00	DT0703 E 00	DT0504 E 00	DT0604 E 00	DT0704 E 00	DT0607 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

P- 16 RUN- MINI-DYNAMO * VERSIØN 1.00 09-MAY-8

TIME E 00	AT0201 E 00	AT0301 E 00	AT0401 E 00	AT0501 E 00	AT0601 E 00	AT0701 E 00	AT0302 E 00
0.000	92.12	35.679	42.405	31.066	25.936	22.800	35.130
1.000	94.09	37.088	43.331	31.779	26.530	23.204	36.638
2.000	97.49	38.579	44.829	32.792	27.361	24.004	38.095
3.000	101.31	40.046	46.406	33.886	28.196	24.849	39.554
4.000	0.00	41.614	48.111	35.137	29.061	24.950	41.055
5.000	0.00	43.200	48.543	36.400	29.200	25.049	42.619
6.000	0.00	43.523	48.961	36.620	29.335	25.144	43.058
7.000	0.00	43.834	49.366	36.832	29.463	25.234	43.453
8.000	0.00	44.120	49.737	37.026	29.581	25.317	43.808
9.000	0.00	44.382	50.080	37.203	29.688	25.392	44.130
10.000	0.00	44.624	50.396	37.367	29.786	25.461	44.423
11.000	0.00	44.848	50.689	37.518	29.877	25.525	44.691
12.000	0.00	45.056	50.961	37.657	29.961	25.583	44.936
13.000	0.00	45.250	51.215	37.787	30.038	25.638	45.162
14.000	0.00	45.430	51.452	37.908	30.111	25.688	45.370
15.000	0.00	45.599	51.674	38.021	30.178	25.735	45.564
16.000	0.00	45.757	51.883	38.126	30.241	25.779	45.743
17.000	0.00	45.905	52.078	38.225	30.300	25.820	45.910
18.000	0.00	46.045	52.263	38.318	30.355	25.858	46.067
19.000	0.00	46.176	52.437	38.406	30.407	25.895	46.213
20.000	0.00	46.300	52.601	38.488	30.456	25.929	46.350

TIME E 00	AT0402 E 00	AT0502 E 00	AT0602 E 00	AT0702 E 00	AT0403 E 00	AT0503 E 00	AT0603 E 00
0.000	41.600	30.662	25.667	22.598	25.368	21.230	18.911
1.000	42.697	31.460	26.318	23.047	26.267	21.934	19.508
2.000	44.156	32.454	27.136	23.837	27.240	22.692	20.164
3.000	45.726	33.546	27.971	24.680	28.213	23.467	20.809
4.000	47.342	34.753	28.809	24.771	29.208	24.298	21.459
5.000	47.793	36.002	28.957	24.877	29.769	25.126	21.735
6.000	48.360	36.303	29.141	25.007	29.769	25.126	21.735
7.000	48.871	36.570	29.306	25.123	29.769	25.126	21.735
8.000	49.332	36.814	29.453	25.227	29.769	25.126	21.735
9.000	49.751	37.033	29.585	25.320	29.769	25.126	21.735
10.000	50.133	37.231	29.704	25.404	29.769	25.126	21.735
11.000	50.482	37.412	29.813	25.480	29.769	25.126	21.735
12.000	50.804	37.577	29.912	25.550	29.769	25.126	21.735
13.000	51.100	37.728	30.003	25.613	29.769	25.126	21.735
14.000	51.374	37.868	30.087	25.672	29.769	25.126	21.735
15.000	51.628	37.998	30.164	25.725	29.769	25.126	21.735
16.000	51.865	38.117	30.235	25.775	29.769	25.126	21.735
17.000	52.086	38.229	30.302	25.821	29.769	25.126	21.735
18.000	52.292	38.333	30.363	25.864	29.769	25.126	21.735
19.000	52.485	38.430	30.421	25.905	29.769	25.126	21.735
20.000	52.666	38.521	30.475	25.942	29.769	25.126	21.735

TIME E 00	AT0703 E 00	AT0504 E 00	AT0604 E 00	AT0704 E 00	AT0605 E 00	AT0705 E 00	AT0607 E 00
0.000	19.932	23.120	20.339	18.474	17.728	16.347	15.034
1.000	20.588	23.684	20.829	18.841	18.154	16.681	15.343
2.000	21.249	24.431	21.476	19.471	18.698	17.216	15.828
3.000	21.884	25.230	22.132	20.134	19.261	17.786	16.326
4.000	22.779	26.090	22.791	20.324	19.852	18.019	16.529
5.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
6.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
7.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
8.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
9.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
10.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
11.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
12.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
13.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
14.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
15.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
16.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
17.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
18.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
19.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
20.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529

TIME E 00	RM0201 E 00	RM0301 E 00	RM0401 E 00	RM0501 E 00	RM0601 E 00	RM0701 E 00	RM0107 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.000	0.000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.000	0.000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.000	0.000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.000	20.000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	18.000	20.000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	19.000	21.000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	22.000	22.000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	22.000	22.000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	22.000	22.000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	22.000	22.000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	22.000	22.000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	22.000	22.000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	22.000	22.000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	22.000	22.000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	22.000	22.000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	22.000	22.000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	22.000	22.000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	22.000	22.000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	22.000	22.000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	22.000	22.000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.000	0.000	0.0000

P- 20 RUN- MINI-DYNAMO * VERSION 1.00 09-MAY-8

TIME E 00	RM0102 E 00	RM0302 E 00	RM0402 E 00	RM0502 E 00	RM0602 E 00	RM0702 E 00	RM0207 E 00
0.000	0.0000	0.000	0.000	0.000	0.0000	0.0000	0.0000
1.000	0.0000	0.000	0.000	0.000	0.0000	0.0000	0.0000
2.000	0.0000	0.000	0.000	0.000	0.0000	0.0000	0.0000
3.000	0.0000	0.000	0.000	0.000	0.0000	0.0000	0.0000
4.000	0.0000	0.000	44.000	0.000	0.0000	0.0000	0.0000
5.000	0.0000	38.000	47.000	31.000	0.0000	0.0000	0.0000
6.000	0.0000	39.000	50.000	33.000	0.0000	0.0000	0.0000
7.000	0.0000	39.000	50.000	33.000	0.0000	0.0000	0.0000
8.000	0.0000	39.000	50.000	33.000	0.0000	0.0000	0.0000
9.000	0.0000	39.000	50.000	33.000	0.0000	0.0000	0.0000
10.000	0.0000	39.000	50.000	33.000	0.0000	0.0000	0.0000
11.000	0.0000	39.000	50.000	33.000	0.0000	0.0000	0.0000
12.000	0.0000	39.000	50.000	33.000	0.0000	0.0000	0.0000
13.000	0.0000	39.000	50.000	33.000	0.0000	0.0000	0.0000
14.000	0.0000	39.000	50.000	33.000	0.0000	0.0000	0.0000
15.000	0.0000	39.000	50.000	33.000	0.0000	0.0000	0.0000
16.000	0.0000	39.000	50.000	33.000	0.0000	0.0000	0.0000
17.000	0.0000	39.000	50.000	33.000	0.0000	0.0000	0.0000
18.000	0.0000	39.000	50.000	33.000	0.0000	0.0000	0.0000
19.000	0.0000	39.000	50.000	33.000	0.0000	0.0000	0.0000
20.000	0.0000	0.000	0.000	0.000	0.0000	0.0000	0.0000

P- 21 RUN-   MINI-DYNAMO * VERSION 1.00   09-MAY-8

TIME E 00	RM0103 E 00	RM0203 E 00	RM0403 E 00	RM0503 E 00	RM0603 E 00	RM0703 E 00	RM0307 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

TIME E 00	RM0104 E 00	RM0204 E 00	RM0304 E 00	RM0504 E 00	RM0604 E 00	RM0704 E 00	RM0407 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

TIME E 00	RM0105 E 00	RM0205 E 00	RM0305 E 00	RM0405 E 00	RM0605 E 00	RM0705 E 00	RM0507 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

TIME E 00	RM0106 E 00	RM0206 E 00	RM0306 E 00	RM0406 E 00	RM0506 E 00	RM0706 E 00	RM0607 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

P- 25 RUN-   MINI-DYNAMO * VERSION 1.00   09-MAY-8

TIME E 00	TLIN E 03	TRLM E 00	LIN E 03	RMTOT E 00	DMSTOT E 00	FAXAST E 03	FAXDST E 03	GPFTOT E 00
0.000	0.000	0.0	10.347	0.00	0.0	0.000	0.000	0.0000
1.000	0.000	0.0	10.616	0.00	0.0	19.283	0.000	0.0000
2.000	0.000	0.0	11.043	0.00	4158.0	25.810	0.000	0.0000
3.000	4.158	0.0	7.352	20.00	4202.0	27.026	1.176	0.0000
4.000	8.360	20.0	3.645	82.00	369.0	20.690	18.083	0.0000
5.000	8.729	102.0	3.710	156.00	390.0	11.771	5.413	0.0000
6.000	9.119	258.0	3.710	166.00	395.0	3.368	5.971	0.0000
7.000	9.514	424.0	3.710	166.00	395.0	3.125	5.989	0.0000
8.000	9.909	590.0	3.710	166.00	395.0	2.833	5.986	0.0000
9.000	10.304	756.0	3.710	166.00	395.0	2.581	5.983	0.0000
10.000	10.699	922.0	3.710	166.00	395.0	2.361	5.981	0.0000
11.000	11.094	1088.0	3.710	166.00	395.0	2.169	5.978	0.0000
12.000	11.489	1254.0	3.710	166.00	395.0	1.999	5.976	0.0000
13.000	11.884	1420.0	3.710	166.00	395.0	1.848	5.974	0.0000
14.000	12.279	1586.0	3.710	166.00	395.0	1.714	5.973	0.0000
15.000	12.674	1752.0	3.710	166.00	395.0	1.595	5.971	0.0000
16.000	13.069	1918.0	3.710	166.00	395.0	1.487	5.969	0.0000
17.000	13.464	2084.0	3.710	166.00	395.0	1.390	5.968	0.0000
18.000	13.859	2250.0	3.710	166.00	395.0	1.302	5.967	0.0000
19.000	14.254	2416.0	3.710	166.00	395.0	1.222	5.965	0.0000
20.000	14.649	2582.0	3.710	0.00	0.0	1.150	0.854	0.0000

Appendix I

Computer Printouts for Alternative 7

Bay Roberts/Carbonear Replace

MINI-DYNAMO * VERSION 1.00

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ENTER RERUN CHANGES

C RE01=2,RE02=3,RE03=5,RE04=4,RE05=5,RE06=4,RE07=3
C OVER01=2,OVER02=3,OVER03=5,OVER04=4,OVER05=5,OVER06=4,OVER07=3
C RE0601=1,RE0701=1,RE0302=1,RE0402=1,RE0502=1
RUN
```

CHANGES FOR RERUN -

	OVER01	OVER02	OVER03	OVER04	OVER05	OVER06
PRESENT	2.0000	3.0000	5.0000	4.0000	5.0000	4.0000
ORIGINAL	99.000	99.000	99.000	99.000	99.000	99.000

	OVER07	RE0601	RE0701	RE0302	RE0402	RE0502
PRESENT	3.0000	1.0000	1.0000	1.0000	1.0000	1.0000
ORIGINAL	99.000	0.0000	0.0000	0.0000	0.0000	0.0000

	RE01	RE02	RE03	RE04	RE05	RE06
PRESENT	2.0000	3.0000	5.0000	4.0000	5.0000	4.0000
ORIGINAL	100.00	100.00	100.00	100.00	100.00	100.00

	RE07
PRESENT	3.0000
ORIGINAL	100.00

MINI-DYNAMO * VERSION 1.00

TIME E 00	GPF01 E 00	GPF02 E 00	GPF03 E 00	GPF04 E 00	GPF05 E 00	GPF06 E 00	GPF07 E 00
0.000	39.00	123.00	39.000	27.000	18.000	14.000	9.000
1.000	157.00	137.00	37.000	38.000	23.000	18.000	17.000
2.000	168.00	162.00	36.000	40.000	25.000	18.000	18.000
3.000	200.00	171.00	37.000	41.000	28.000	18.000	20.000
4.000	199.00	170.00	37.000	44.000	28.000	18.000	20.000
5.000	210.00	180.00	38.000	47.000	31.000	19.000	21.000
6.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
7.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
8.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
9.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
10.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
11.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
12.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
13.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
14.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
15.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
16.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
17.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
18.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
19.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
20.000	0.00	0.00	0.000	0.000	0.000	0.000	0.000

MINI-DYNAMO * VERSION 1.00

TIME E.00	LIN01 E 00	LIN02 E 00	LIN03 E 00	LIN04 E 00	LIN05 E 00	LIN06 E 00	LIN07 E 00
0.000	3794.0	3409.0	732.0	934.0	605.0	474.00	399.00
1.000	3833.0	3532.0	771.0	961.0	623.0	488.00	408.00
2.000	3990.0	3669.0	808.0	999.0	646.0	506.00	425.00
3.000	4158.0	3831.0	844.0	1039.0	671.0	524.00	443.00
4.000	4358.0	4002.0	881.0	1080.0	699.0	542.00	463.00
5.000	4557.0	4172.0	918.0	1124.0	727.0	560.00	483.00
6.000	4767.0	4352.0	956.0	1171.0	758.0	579.00	504.00
7.000	4987.0	4527.0	995.0	1221.0	791.0	601.00	526.00
8.000	5207.0	4702.0	1034.0	1271.0	824.0	623.00	548.00
9.000	5427.0	4877.0	1073.0	1321.0	857.0	645.00	570.00
10.000	5647.0	5052.0	1112.0	1371.0	890.0	667.00	592.00
11.000	5867.0	5227.0	1151.0	1421.0	923.0	689.00	614.00
12.000	6087.0	5402.0	1190.0	1471.0	956.0	711.00	636.00
13.000	6307.0	5577.0	1229.0	1521.0	989.0	733.00	658.00
14.000	6527.0	5752.0	1268.0	1571.0	1022.0	755.00	680.00
15.000	6747.0	5927.0	1307.0	1621.0	1055.0	777.00	702.00
16.000	6967.0	6102.0	1346.0	1671.0	1088.0	799.00	724.00
17.000	7187.0	6277.0	1385.0	1721.0	1121.0	821.00	746.00
18.000	7407.0	6452.0	1424.0	1771.0	1154.0	843.00	768.00
19.000	7627.0	6627.0	1463.0	1821.0	1187.0	865.00	790.00
20.000	7847.0	6802.0	1502.0	1871.0	1220.0	887.00	812.00

MINI-DYNAMO * VERSION 1.00

TIME E 00	GPFA01 E 00	GPFA02 E 00	GPFA03 E 00	GPFA04 E 00	GPFA05 E 00	GPFA06 E 00	GPFA07 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME	LLIN01	LLIN02	LLIN03	LLIN04	LLIN05	LLIN06	LLIN07	LIN
E 00	E 00	E 00	E 00	E 00	E 00	E 00	E 00	E 03
0.000	3794.0	3409.0	732.00	934.0	605.00	474.00	399.00	10.347
1.000	3833.0	3532.0	771.00	961.0	623.00	488.00	408.00	10.616
2.000	3990.0	3669.0	808.00	999.0	646.00	506.00	425.00	11.043
3.000	0.0	3831.0	844.00	1039.0	671.00	524.00	443.00	7.352
4.000	0.0	0.0	881.00	1080.0	699.00	542.00	0.00	3.202
5.000	0.0	0.0	918.00	0.0	727.00	0.00	0.00	1.645
6.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
7.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
8.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
9.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
10.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
11.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
12.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
13.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
14.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
15.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
16.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
17.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
18.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
19.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
20.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000

MINI-DYNAMO * VERSION 1.00

TIME E 00	LRIN01 E 00	LRIN02 E 00	LRIN03 E 00	LRIN04 E 00	LRIN05 E 00	LRIN06 E 00	LRIN07 E 00	LRIN E 00
0.000	0.0	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0
1.000	0.0	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0
2.000	4158.0	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	4158.0
3.000	663.0	4002.0	0.0000	0.0000	0.0000	0.0000	0.0000	4665.0
4.000	779.0	1294.0	0.0000	0.0000	0.0000	0.0000	0.0000	2073.0
5.000	250.0	1941.0	0.0000	0.0000	0.0000	0.0000	0.0000	2191.0
6.000	264.0	297.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
7.000	264.0	297.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
8.000	264.0	297.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
9.000	264.0	297.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
10.000	264.0	297.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
11.000	264.0	297.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
12.000	264.0	297.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
13.000	264.0	297.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
14.000	264.0	297.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
15.000	264.0	297.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
16.000	264.0	297.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
17.000	264.0	297.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
18.000	264.0	297.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
19.000	264.0	297.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
20.000	0.0	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0

MINI-DYNAMO * VERSION 1.00

TIME	GPFCST	RLMCST	DMSCST	TRKCST	BLDCST	[illegible]CST	DMSGSC
E 00	E 00	E 03	E 03	E 03	E 03	E 03	E 03
0.000	0.0000	0.00	0.0	0.000	0.000	0.00	0.00
1.000	0.0000	0.00	0.0	19.050	0.000	19.28	0.00
2.000	0.0000	0.00	1247.4	25.417	33.264	25.81	650.00
3.000	0.0000	332.60	1260.6	26.655	39.172	54.25	650.00
4.000	0.0000	820.80	110.7	57.576	23.400	122.27	0.00
5.000	0.0000	840.20	117.0	17.259	24.732	38.12	0.00
6.000	0.0000	33.20	118.5	5.243	5.152	8.28	0.00
7.000	0.0000	33.20	118.5	1.425	5.152	5.97	0.00
8.000	0.0000	33.20	118.5	1.422	5.152	5.97	0.00
9.000	0.0000	33.20	118.5	1.420	5.152	5.97	0.00
10.000	0.0000	33.20	118.5	1.418	5.152	5.97	0.00
11.000	0.0000	33.20	118.5	1.416	5.152	5.97	0.00
12.000	0.0000	33.20	118.5	1.414	5.152	5.96	0.00
13.000	0.0000	33.20	118.5	1.412	5.152	5.96	0.00
14.000	0.0000	33.20	118.5	1.410	5.152	5.96	0.00
15.000	0.0000	33.20	118.5	1.408	5.152	5.96	0.00
16.000	0.0000	33.20	118.5	1.407	5.152	5.96	0.00
17.000	0.0000	33.20	118.5	1.405	5.152	5.96	0.00
18.000	0.0000	33.20	118.5	1.404	5.152	5.96	0.00
19.000	0.0000	33.20	118.5	1.403	5.152	5.96	0.00
20.000	0.0000	0.00	0.0	1.401	0.000	0.85	0.00

MINI-DYNAMO * VERSION 1.00

TIME E 00	GPFMST E 03	RLMMST E 03	DMSMST E 03	TRKMST E 03	BLDMST E 03	FAXMST E 03
0.000	103.47	0.000	0.000	0.000	31.041	0.000
1.000	106.16	0.000	0.000	0.000	31.848	0.000
2.000	110.43	0.000	0.000	0.952	33.129	0.964
3.000	73.52	0.000	20.790	2.223	26.214	2.255
4.000	32.02	3.241	41.800	3.556	18.660	4.967
5.000	16.45	15.169	43.645	18.420	16.914	11.081
6.000	0.00	27.776	45.595	21.948	15.071	12.987
7.000	0.00	28.938	47.570	24.744	15.715	13.401
8.000	0.00	30.100	49.545	25.504	16.359	13.700
9.000	0.00	31.262	51.520	26.262	17.003	13.998
10.000	0.00	32.424	53.495	27.020	17.647	14.297
11.000	0.00	33.586	55.470	27.776	18.291	14.595
12.000	0.00	34.748	57.445	28.531	18.935	14.893
13.000	0.00	35.910	59.420	29.285	19.579	15.191
14.000	0.00	37.072	61.395	30.038	20.223	15.490
15.000	0.00	38.234	63.370	30.790	20.867	15.788
16.000	0.00	39.396	65.345	31.541	21.511	16.086
17.000	0.00	40.558	67.320	32.292	22.155	16.384
18.000	0.00	41.720	69.295	33.041	22.799	16.682
19.000	0.00	42.882	71.270	33.790	23.443	16.980
20.000	0.00	44.044	73.245	34.538	24.087	17.278

MINI-DYNAMO * VERSION 1.00

TIME	ANCGPF	ANCRLM	ANCDMS	ANCBLD	ANCTRK	ANCFAX	ANCOSC
E 00	E 00	E 03	E 03	E 03	E 03	E 03	E 03
0.000	0.0000	0.00	0.0	0.000	0.000	0.000	0.00
1.000	0.0000	0.00	0.0	0.000	21.330	18.987	0.00
2.000	0.0000	0.00	1230.6	31.075	25.074	22.391	641.23
3.000	0.0000	289.09	1095.7	32.242	23.168	41.466	564.96
4.000	0.0000	628.56	84.8	16.969	44.091	82.344	0.00
5.000	0.0000	566.89	78.9	15.802	11.645	22.620	0.00
6.000	0.0000	19.74	70.4	2.900	3.117	4.328	0.00
7.000	0.0000	17.39	62.1	2.555	0.746	2.750	0.00
8.000	0.0000	15.32	54.7	2.251	0.656	2.423	0.00
9.000	0.0000	13.50	48.2	1.984	0.577	2.134	0.00
10.000	0.0000	11.89	42.4	1.748	0.508	1.880	0.00
11.000	0.0000	10.48	37.4	1.540	0.447	1.656	0.00
12.000	0.0000	9.23	33.0	1.357	0.393	1.459	0.00
13.000	0.0000	8.13	29.0	1.195	0.346	1.285	0.00
14.000	0.0000	7.17	25.6	1.053	0.304	1.132	0.00
15.000	0.0000	6.31	22.5	0.928	0.268	0.997	0.00
16.000	0.0000	5.56	19.9	0.817	0.236	0.878	0.00
17.000	0.0000	4.90	17.5	0.720	0.207	0.774	0.00
18.000	0.0000	4.32	15.4	0.635	0.183	0.682	0.00
19.000	0.0000	3.80	13.6	0.559	0.161	0.600	0.00
20.000	0.0000	0.00	0.0	0.000	0.141	0.075	0.00

MINI-DYNAMO * VERSION 1.00

TIME E 00	ANMGPF E 03	ANMRLM E 00	ANMDMS E 03	ANMBLD E 03	ANMTRK E 00	ANMFAX E 00	AEEDMS E 03	ANMSOF E 03
0.000	53.905	0.0	0.000	16.171	0.0	0.0	0.000	0.000
1.000	48.728	0.0	0.000	14.618	0.0	0.0	0.000	0.000
2.000	44.659	0.0	0.000	13.398	385.2	389.9	26.660	74.816
3.000	26.196	0.0	7.408	9.340	792.2	803.4	23.738	65.917
4.000	10.052	1017.4	13.122	5.858	1116.4	1559.3	1.837	0.000
5.000	4.550	4195.6	12.072	4.678	5094.7	3064.9	1.710	0.000
6.000	0.000	6768.7	11.111	3.673	5348.4	3164.8	1.526	0.000
7.000	0.000	6213.1	10.214	3.374	5312.6	2877.3	1.345	0.000
8.000	0.000	5693.9	9.372	3.095	4824.5	2591.5	1.185	0.000
9.000	0.000	5210.4	8.587	2.834	4377.1	2333.0	1.044	0.000
10.000	0.000	4761.2	7.855	2.591	3967.7	2099.4	0.920	0.000
11.000	0.000	4345.3	7.177	2.366	3593.6	1888.3	0.810	0.000
12.000	0.000	3960.9	6.548	2.158	3252.2	1697.7	0.714	0.000
13.000	0.000	3606.5	5.968	1.966	2941.1	1525.7	0.629	0.000
14.000	0.000	3280.3	5.433	1.789	2657.9	1370.6	0.554	0.000
15.000	0.000	2980.7	4.940	1.627	2400.4	1230.8	0.488	0.000
16.000	0.000	2706.0	4.488	1.478	2166.5	1104.9	0.430	0.000
17.000	0.000	2454.5	4.074	1.341	1954.2	991.5	0.379	0.000
18.000	0.000	2224.5	3.695	1.216	1761.7	889.5	0.334	0.000
19.000	0.000	2014.5	3.348	1.101	1587.4	797.7	0.294	0.000
20.000	0.000	1823.0	3.032	0.997	1429.5	715.1	0.000	0.000

MINI-DYNAMO * VERSION 1.00

TIME E 00	TANGPF E 03	TANRLM E 03	TANDMS E 03	TANBLD E 03	TANTRK E 03	TANFAX E 03	TOTTAN E 03	PWAC E 03
0.000	53.905	0.00	0.0	16.171	0.000	0.000	70.1	0.0
1.000	48.728	0.00	0.0	14.618	21.330	18.987	103.7	70.1
2.000	44.659	0.00	1973.3	44.473	25.460	22.781	2110.6	173.7
3.000	26.196	289.09	1757.7	41.582	23.960	42.269	2180.8	2284.4
4.000	10.052	629.58	99.7	22.827	45.208	83.903	891.3	4465.2
5.000	4.550	571.08	92.7	20.480	16.739	25.685	731.3	5356.5
6.000	0.000	26.50	83.1	6.573	8.465	7.493	132.1	6087.7
7.000	0.000	23.60	73.6	5.929	6.059	5.628	114.8	6219.8
8.000	0.000	21.01	65.2	5.346	5.481	5.014	102.1	6334.7
9.000	0.000	18.71	57.8	4.817	4.954	4.467	90.8	6436.8
10.000	0.000	16.65	51.2	4.339	4.476	3.979	80.7	6527.5
11.000	0.000	14.82	45.4	3.906	4.040	3.544	71.7	6608.2
12.000	0.000	13.19	40.2	3.515	3.645	3.156	63.7	6679.9
13.000	0.000	11.74	35.6	3.162	3.287	2.811	56.6	6743.6
14.000	0.000	10.45	31.6	2.843	2.962	2.502	50.3	6800.3
15.000	0.000	9.29	28.0	2.555	2.668	2.228	44.7	6850.6
16.000	0.000	8.27	24.8	2.295	2.402	1.983	39.7	6895.3
17.000	0.000	7.36	21.9	2.061	2.162	1.765	35.3	6935.0
18.000	0.000	6.54	19.4	1.850	1.944	1.571	31.3	6970.3
19.000	0.000	5.82	17.2	1.660	1.748	1.398	27.8	7001.6
20.000	0.000	1.82	3.0	0.997	1.571	0.790	8.2	$\boxed{7029.5}$

MINI-DYNAMO * VERSION 1.00

TIME E 00	DT0201 E 00	DT0301 E 00	DT0401 E 00	DT0501 E 00	DT0601 E 00	DT0701 E 00	DT0605 E 00
0.000	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	110.20	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	134.71	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	158.01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	164.34	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	170.67	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	176.98	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	183.28	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	189.57	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	195.85	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	202.13	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	208.40	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	214.66	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	220.91	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	227.16	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	233.40	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	239.63	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	245.86	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	DT0302 E 00	DT0402 E 00	DT0502 E 00	DT0602 E 00	DT0702 E 00	DT0403 E 00	DT0705 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	DT0503 E 00	DT0603 E 00	DT0703 E 00	DT0504 E 00	DT0604 E 00	DT0704 E 00	DT0607 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	AT0201 E 00	AT0301 E 00	AT0401 E 00	AT0501 E 00	AT0601 E 00	AT0701 E 00	AT0302 E 00
0.000	92.12	35.679	42.405	31.066	25.936	22.800	35.130
1.000	94.09	37.088	43.331	31.779	26.530	23.204	36.638
2.000	97.49	38.579	44.829	32.792	27.361	24.004	38.095
3.000	101.31	40.046	46.406	33.886	28.196	24.849	39.554
4.000	0.00	42.178	48.890	35.523	29.312	0.000	41.055
5.000	0.00	44.327	0.000	37.166	0.000	0.000	44.018
6.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
7.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
8.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
9.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
10.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
11.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
12.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
13.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
14.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
15.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
16.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
17.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
18.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
19.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
20.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000

MINI-DYNAMO * VERSION 1.00

TIME E 00	AT0402 E 00	AT0502 E 00	AT0602 E 00	AT0702 E 00	AT0403 E 00	AT0503 E 00	AT0603 E 00
0.000	41.600	30.662	25.667	22.598	25.368	21.230	18.911
1.000	42.697	31.460	26.318	23.047	26.267	21.934	19.508
2.000	44.156	32.454	27.136	23.837	27.240	22.692	20.164
3.000	45.726	33.546	27.971	24.680	28.213	23.467	20.809
4.000	47.342	34.753	28.809	0.000	29.208	24.298	21.459
5.000	0.000	36.957	0.000	0.000	0.000	25.126	0.000
6.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
7.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
9.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
11.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
12.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
13.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
14.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
15.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
16.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
17.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
18.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
19.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

MINI-DYNAMO * VERSION 1.00

TIME E 00	AT0703 E 00	AT0504 E 00	AT0604 E 00	AT0704 E 00	AT0605 E 00	AT0705 E 00	AT0607 E 00
0.000	19.932	23.120	20.339	18.474	17.728	16.347	15.034
1.000	20.588	23.684	20.829	18.841	18.154	16.681	15.343
2.000	21.249	24.431	21.476	19.471	18.698	17.216	15.828
3.000	21.884	25.230	22.132	20.134	19.261	17.786	16.326
4.000	32.085	26.090	22.791	0.000	19.852	0.000	0.000
5.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
7.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
9.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
11.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
12.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
13.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
14.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
15.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
16.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
17.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
18.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
19.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0201 E 00	RM0301 E 00	RM0401 E 00	RM0501 E 00	RM0601 E 00	RM0701 E 00	RM0107 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.00	463.00	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	560.00	20.00	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	19.00	21.00	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	22.00	22.00	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	22.00	22.00	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	22.00	22.00	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	22.00	22.00	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	22.00	22.00	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	22.00	22.00	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	22.00	22.00	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	22.00	22.00	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	22.00	22.00	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	22.00	22.00	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	22.00	22.00	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	22.00	22.00	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	22.00	22.00	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	22.00	22.00	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0102 E 00	RM0302 E 00	RM0402 E 00	RM0502 E 00	RM0602 E 00	RM0702 E 00	RM0207 E 00
0.000	0.0000	0.00	0.0	0.00	0.0000	0.0000	0.0000
1.000	0.0000	0.00	0.0	0.00	0.0000	0.0000	0.0000
2.000	0.0000	0.00	0.0	0.00	0.0000	0.0000	0.0000
3.000	0.0000	0.00	0.0	0.00	0.0000	0.0000	0.0000
4.000	0.0000	0.00	1124.0	0.00	0.0000	0.0000	0.0000
5.000	0.0000	956.00	47.0	758.00	0.0000	0.0000	0.0000
6.000	0.0000	39.00	50.0	33.00	0.0000	0.0000	0.0000
7.000	0.0000	39.00	50.0	33.00	0.0000	0.0000	0.0000
8.000	0.0000	39.00	50.0	33.00	0.0000	0.0000	0.0000
9.000	0.0000	39.00	50.0	33.00	0.0000	0.0000	0.0000
10.000	0.0000	39.00	50.0	33.00	0.0000	0.0000	0.0000
11.000	0.0000	39.00	50.0	33.00	0.0000	0.0000	0.0000
12.000	0.0000	39.00	50.0	33.00	0.0000	0.0000	0.0000
13.000	0.0000	39.00	50.0	33.00	0.0000	0.0000	0.0000
14.000	0.0000	39.00	50.0	33.00	0.0000	0.0000	0.0000
15.000	0.0000	39.00	50.0	33.00	0.0000	0.0000	0.0000
16.000	0.0000	39.00	50.0	33.00	0.0000	0.0000	0.0000
17.000	0.0000	39.00	50.0	33.00	0.0000	0.0000	0.0000
18.000	0.0000	39.00	50.0	33.00	0.0000	0.0000	0.0000
19.000	0.0000	39.00	50.0	33.00	0.0000	0.0000	0.0000
20.000	0.0000	0.00	0.0	0.00	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0103 E 00	RM0203 E 00	RM0403 E 00	RM0503 E 00	RM0603 E 00	RM0703 E 00	RM0307 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0104 E 00	RM0204 E 00	RM0304 E 00	RM0504 E 00	RM0604 E 00	RM0704 E 00	RM0407 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0105 E 00	RM0205 E 00	RM0305 E 00	RM0405 E 00	RM0605 E 00	RM0705 E 00	RM0507 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0106 E 00	RM0206 E 00	RM0306 E 00	RM0406 E 00	RM0506 E 00	RM0706 E 00	RM0607 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	TLIN E 03	TRLM E 00	LIN E 03	RMTOT E 00	DMSTOT E 00	FAXAST E 03	FAXDST E 03	GPFTOT E 00
0.000	0.000	0.0	10.347	0.0	0.0	0.000	0.000	0.0000
1.000	0.000	0.0	10.616	0.0	0.0	19.283	0.000	0.0000
2.000	0.000	0.0	11.043	0.0	4158.0	25.810	0.000	0.0000
3.000	4.158	0.0	7.352	463.0	4202.0	27.026	27.224	0.0000
4.000	8.360	463.0	3.202	1704.0	369.0	34.075	88.200	0.0000
5.000	8.729	2167.0	1.645	1801.0	390.0	11.055	27.068	0.0000
6.000	9.119	3968.0	0.000	166.0	395.0	0.000	8.279	0.0000
7.000	9.514	4134.0	0.000	166.0	395.0	0.000	5.972	0.0000
8.000	9.909	4300.0	0.000	166.0	395.0	0.000	5.970	0.0000
9.000	10.304	4466.0	0.000	166.0	395.0	0.000	5.969	0.0000
10.000	10.699	4632.0	0.000	166.0	395.0	0.000	5.967	0.0000
11.000	11.094	4798.0	0.000	166.0	395.0	0.000	5.966	0.0000
12.000	11.489	4964.0	0.000	166.0	395.0	0.000	5.965	0.0000
13.000	11.884	5130.0	0.000	166.0	395.0	0.000	5.964	0.0000
14.000	12.279	5296.0	0.000	166.0	395.0	0.000	5.963	0.0000
15.000	12.674	5462.0	0.000	166.0	395.0	0.000	5.962	0.0000
16.000	13.069	5628.0	0.000	166.0	395.0	0.000	5.961	0.0000
17.000	13.464	5794.0	0.000	166.0	395.0	0.000	5.960	0.0000
18.000	13.859	5960.0	0.000	166.0	395.0	0.000	5.959	0.0000
19.000	14.254	6126.0	0.000	166.0	395.0	0.000	5.958	0.0000
20.000	14.649	6292.0	0.000	0.0	0.0	0.000	0.847	0.0000

Appendix J

Computer Printouts for Alternative 9

All Digital Replace

ENTER RERUN CHANGES

```
C OVER01=2,OVER02=3,OVER03=5,OVER04=4,OVER05=5,OVER06=4,OVER07=3
C RE01=2,RE02=3,RE04=4,RE05=5,RE06=4,RE07=3,RE03=5
RUN
```

CHANGES FOR RERUN -

	OVER01	OVER02	OVER03	OVER04	OVER05	OVER06
PRESENT	2.0000	3.0000	5.0000	4.0000	5.0000	4.0000
ORIGINAL	99.000	99.000	99.000	99.000	99.000	99.000

	OVER07	RE01	RE02	RE03	RE04	RE05
PRESENT	3.0000	2.0000	3.0000	5.0000	4.0000	5.0000
ORIGINAL	99.000	100.00	100.00	100.00	100.00	100.00

	RE06	RE07
PRESENT	4.0000	3.0000
ORIGINAL	100.00	100.00

MINI-DYNAMO * VERSION 1.00

TIME E 00	GPF01 E 00	GPF02 E 00	GPF03 E 00	GPF04 E 00	GPF05 E 00	GPF06 E 00	GPF07 E 00
0.000	39.00	123.00	39.000	27.000	18.000	14.000	9.000
1.000	157.00	137.00	37.000	38.000	23.000	18.000	17.000
2.000	168.00	162.00	36.000	40.000	25.000	18.000	18.000
3.000	200.00	171.00	37.000	41.000	28.000	18.000	20.000
4.000	199.00	170.00	37.000	44.000	28.000	18.000	20.000
5.000	210.00	180.00	38.000	47.000	31.000	19.000	21.000
6.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
7.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
8.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
9.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
10.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
11.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
12.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
13.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
14.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
15.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
16.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
17.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
18.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
19.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
20.000	0.00	0.00	0.000	0.000	0.000	0.000	0.000

MINI-DYNAMO * VERSION 1.00

TIME E 00	LIN01 E 00	LIN02 E 00	LIN03 E 00	LIN04 E 00	LIN05 E 00	LIN06 E 00	LIN07 E 00
0.000	3794.0	3409.0	732.0	934.0	605.0	474.00	399.00
1.000	3833.0	3532.0	771.0	961.0	623.0	488.00	408.00
2.000	3990.0	3669.0	808.0	999.0	646.0	506.00	425.00
3.000	4158.0	3831.0	844.0	1039.0	671.0	524.00	443.00
4.000	4358.0	4002.0	881.0	1080.0	699.0	542.00	463.00
5.000	4557.0	4172.0	918.0	1124.0	727.0	560.00	483.00
6.000	4767.0	4352.0	956.0	1171.0	758.0	579.00	504.00
7.000	4987.0	4527.0	995.0	1221.0	791.0	601.00	526.00
8.000	5207.0	4702.0	1034.0	1271.0	824.0	623.00	548.00
9.000	5427.0	4877.0	1073.0	1321.0	857.0	645.00	570.00
10.000	5647.0	5052.0	1112.0	1371.0	890.0	667.00	592.00
11.000	5867.0	5227.0	1151.0	1421.0	923.0	689.00	614.00
12.000	6087.0	5402.0	1190.0	1471.0	956.0	711.00	636.00
13.000	6307.0	5577.0	1229.0	1521.0	989.0	733.00	658.00
14.000	6527.0	5752.0	1268.0	1571.0	1022.0	755.00	680.00
15.000	6747.0	5927.0	1307.0	1621.0	1055.0	777.00	702.00
16.000	6967.0	6102.0	1346.0	1671.0	1088.0	799.00	724.00
17.000	7187.0	6277.0	1385.0	1721.0	1121.0	821.00	746.00
18.000	7407.0	6452.0	1424.0	1771.0	1154.0	843.00	768.00
19.000	7627.0	6627.0	1463.0	1821.0	1187.0	865.00	790.00
20.000	7847.0	6802.0	1502.0	1871.0	1220.0	887.00	812.00

MINI-DYNAMO * VERSION 1.00

TIME	GPFA01	GPFA02	GPFA03	GPFA04	GPFA05	GPFA06	GPFA07
E 00	E 00	E 00	E 00	E 00	E 00	E 00	E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME	LLIN01	LLIN02	LLIN03	LLIN04	LLIN05	LLIN06	LLIN07	LIN
E 00	E 00	E 00	E 00	E 00	E 00	E 00	E 00	E 03
0.000	3794.0	3409.0	732.00	934.0	605.00	474.00	399.00	10.347
1.000	3833.0	3532.0	771.00	961.0	623.00	488.00	408.00	10.616
2.000	3990.0	3669.0	808.00	999.0	646.00	506.00	425.00	11.043
3.000	0.0	3831.0	844.00	1039.0	671.00	524.00	443.00	7.352
4.000	0.0	0.0	881.00	1080.0	699.00	542.00	0.00	3.202
5.000	0.0	0.0	918.00	0.0	727.00	0.00	0.00	1.645
6.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
7.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
8.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
9.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
10.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
11.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
12.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
13.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
14.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
15.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
16.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
17.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
18.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
19.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000
20.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.000

MINI-DYNAMO * VERSION 1.00

TIME E 00	LRIN01 E 00	LRIN02 E 00	LRIN03 E 00	LRIN04 E 00	LRIN05 E 00	LRIN06 E 00	LRIN07 E 00	LRIN E 00
0.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.0
1.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.0
2.000	4158.0	0.0	0.00	0.0	0.00	0.00	0.00	4158.0
3.000	200.0	4002.0	0.00	0.0	0.00	0.00	463.00	4665.0
4.000	199.0	170.0	0.00	1124.0	0.00	560.00	20.00	2073.0
5.000	210.0	180.0	956.00	47.0	758.00	19.00	21.00	2191.0
6.000	220.0	175.0	39.00	50.0	33.00	22.00	22.00	561.0
7.000	220.0	175.0	39.00	50.0	33.00	22.00	22.00	561.0
8.000	220.0	175.0	39.00	50.0	33.00	22.00	22.00	561.0
9.000	220.0	175.0	39.00	50.0	33.00	22.00	22.00	561.0
10.000	220.0	175.0	39.00	50.0	33.00	22.00	22.00	561.0
11.000	220.0	175.0	39.00	50.0	33.00	22.00	22.00	561.0
12.000	220.0	175.0	39.00	50.0	33.00	22.00	22.00	561.0
13.000	220.0	175.0	39.00	50.0	33.00	22.00	22.00	561.0
14.000	220.0	175.0	39.00	50.0	33.00	22.00	22.00	561.0
15.000	220.0	175.0	39.00	50.0	33.00	22.00	22.00	561.0
16.000	220.0	175.0	39.00	50.0	33.00	22.00	22.00	561.0
17.000	220.0	175.0	39.00	50.0	33.00	22.00	22.00	561.0
18.000	220.0	175.0	39.00	50.0	33.00	22.00	22.00	561.0
19.000	220.0	175.0	39.00	50.0	33.00	22.00	22.00	561.0
20.000	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.0

MINI-DYNAMO * VERSION 1.00

TIME	GPFCST	RLMCST	DMSCST	TRKCST	BLDCST	FAXCST	DMSGSC
E 00	E 00	E 00	E 03	E 03	E 03	E 03	E 03
0.000	0.0000	0.0000	0.0	0.000	0.000	0.000	0.0
1.000	0.0000	0.0000	0.0	19.050	0.000	19.283	0.0
2.000	0.0000	0.0000	1247.4	25.417	33.264	25.810	650.0
3.000	0.0000	0.0000	1399.5	26.655	37.320	27.026	1300.0
4.000	0.0000	0.0000	621.9	56.351	16.584	49.633	1300.0
5.000	0.0000	0.0000	657.3	63.498	17.528	76.558	650.0
6.000	0.0000	0.0000	168.3	74.172	4.488	58.607	0.0
7.000	0.0000	0.0000	168.3	6.639	4.488	6.244	0.0
8.000	0.0000	0.0000	168.3	6.616	4.488	6.222	0.0
9.000	0.0000	0.0000	168.3	6.595	4.488	6.201	0.0
10.000	0.0000	0.0000	168.3	6.575	4.488	6.181	0.0
11.000	0.0000	0.0000	168.3	6.556	4.488	6.163	0.0
12.000	0.0000	0.0000	168.3	6.538	4.488	6.145	0.0
13.000	0.0000	0.0000	168.3	6.521	4.488	6.129	0.0
14.000	0.0000	0.0000	168.3	6.504	4.488	6.113	0.0
15.000	0.0000	0.0000	168.3	6.489	4.488	6.098	0.0
16.000	0.0000	0.0000	168.3	6.474	4.488	6.084	0.0
17.000	0.0000	0.0000	168.3	6.460	4.488	6.070	0.0
18.000	0.0000	0.0000	168.3	6.447	4.488	6.057	0.0
19.000	0.0000	0.0000	168.3	6.434	4.488	6.044	0.0
20.000	0.0000	0.0000	0.0	6.422	0.000	6.032	0.0

MINI-DYNAMO * VERSION 1.00

TIME E 00	GPFMST E 03	RLMMST E 00	DMSMST E 03	TRKMST E 03	BLDMST E 03	FAXMST E 03
0.000	103.47	0.0000	0.00	0.00	31.041	0.000
1.000	106.16	0.0000	0.00	0.00	31.848	0.000
2.000	110.43	0.0000	0.00	0.95	33.129	0.964
3.000	73.52	0.0000	20.79	2.22	26.214	2.255
4.000	32.02	0.0000	44.12	3.56	18.429	3.606
5.000	16.45	0.0000	54.48	23.44	15.831	6.088
6.000	0.00	0.0000	65.44	51.34	13.087	9.915
7.000	0.00	0.0000	68.24	90.56	13.648	12.846
8.000	0.00	0.0000	71.05	93.69	14.209	13.158
9.000	0.00	0.0000	73.85	96.82	14.770	13.469
10.000	0.00	0.0000	76.66	99.93	15.331	13.779
11.000	0.00	0.0000	79.46	103.04	15.892	14.088
12.000	0.00	0.0000	82.27	106.13	16.453	14.396
13.000	0.00	0.0000	85.07	109.22	17.014	14.704
14.000	0.00	0.0000	87.88	112.30	17.575	15.010
15.000	0.00	0.0000	90.68	115.38	18.136	15.316
16.000	0.00	0.0000	93.48	118.44	18.697	15.621
17.000	0.00	0.0000	96.29	121.50	19.258	15.925
18.000	0.00	0.0000	99.09	124.56	19.819	16.228
19.000	0.00	0.0000	101.90	127.60	20.380	16.531
20.000	0.00	0.0000	104.70	130.64	20.941	16.833

MINI-DYNAMO * VERSION 1.00

TIME E 00	ANCGPF E 00	ANCRLM E 00	ANCDMS E 03	ANCBLD E 03	ANCTRK E 03	ANCFAX E 03	ANCGSC E 03
0.000	0.0000	0.0000	0.0	0.000	0.000	0.000	0.0
1.000	0.0000	0.0000	0.0	0.000	21.330	18.987	0.0
2.000	0.0000	0.0000	1230.6	31.075	25.074	22.391	641.2
3.000	0.0000	0.0000	1216.4	30.717	23.168	20.657	1129.9
4.000	0.0000	0.0000	476.2	12.026	43.153	33.424	995.5
5.000	0.0000	0.0000	443.5	11.199	42.843	45.424	438.6
6.000	0.0000	0.0000	100.0	2.526	44.092	30.637	0.0
7.000	0.0000	0.0000	88.1	2.226	3.477	2.876	0.0
8.000	0.0000	0.0000	77.7	1.961	3.053	2.525	0.0
9.000	0.0000	0.0000	68.4	1.728	2.681	2.217	0.0
10.000	0.0000	0.0000	60.3	1.522	2.355	1.947	0.0
11.000	0.0000	0.0000	53.1	1.341	2.069	1.710	0.0
12.000	0.0000	0.0000	46.8	1.182	1.818	1.503	0.0
13.000	0.0000	0.0000	41.2	1.041	1.597	1.320	0.0
14.000	0.0000	0.0000	36.3	0.917	1.404	1.160	0.0
15.000	0.0000	0.0000	32.0	0.808	1.234	1.020	0.0
16.000	0.0000	0.0000	28.2	0.712	1.085	0.896	0.0
17.000	0.0000	0.0000	24.8	0.627	0.954	0.788	0.0
18.000	0.0000	0.0000	21.9	0.553	0.839	0.693	0.0
19.000	0.0000	0.0000	19.3	0.487	0.737	0.609	0.0
20.000	0.0000	0.0000	0.0	0.000	0.648	0.536	0.0

MINI-DYNAMO * VERSION 1.00

TIME E 00	ANMGPF E 03	ANMRLM E 00	ANMDMS E 03	ANMBLD E 03	ANMTRK E 03	ANMFAX E 00	AEEDMS E 03	ANMSOF E 03
0.000	53.905	0.0000	0.000	16.171	0.000	0.0	0.000	0.00
1.000	48.728	0.0000	0.000	14.618	0.000	0.0	0.000	0.00
2.000	44.659	0.0000	0.000	13.398	0.385	389.9	26.660	74.82
3.000	26.196	0.0000	7.408	9.340	0.792	803.4	26.354	131.83
4.000	10.052	0.0000	13.849	5.785	1.116	1132.0	10.318	116.15
5.000	4.550	0.0000	15.069	4.379	6.484	1683.8	9.608	102.34
6.000	0.000	0.0000	15.946	3.189	12.510	2416.3	2.168	0.00
7.000	0.000	0.0000	14.651	2.930	19.443	2758.1	1.910	0.00
8.000	0.000	0.0000	13.439	2.688	17.723	2489.1	1.683	0.00
9.000	0.000	0.0000	12.308	2.462	16.136	2244.9	1.482	0.00
10.000	0.000	0.0000	11.256	2.251	14.674	2023.4	1.306	0.00
11.000	0.000	0.0000	10.280	2.056	13.331	1822.7	1.151	0.00
12.000	0.000	0.0000	9.377	1.875	12.098	1641.0	1.014	0.00
13.000	0.000	0.0000	8.544	1.709	10.969	1476.7	0.893	0.00
14.000	0.000	0.0000	7.776	1.555	9.937	1328.2	0.787	0.00
15.000	0.000	0.0000	7.069	1.414	8.995	1194.0	0.693	0.00
16.000	0.000	0.0000	6.421	1.284	8.136	1072.9	0.611	0.00
17.000	0.000	0.0000	5.827	1.165	7.353	963.7	0.538	0.00
18.000	0.000	0.0000	5.284	1.057	6.641	865.3	0.474	0.00
19.000	0.000	0.0000	4.787	0.957	5.994	776.6	0.418	0.00
20.000	0.000	0.0000	4.334	0.867	5.407	696.7	0.000	0.00

MINI-DYNAMO * VERSION 1.00

TIME E 00	TANGPF E 03	TANRLM E 00	TANDMS E 03	TANBLD E 03	TANTRK E 03	TANFAX E 03	TOTTAN E 03	PWAC E 03
0.000	53.905	0.0000	0.0	16.171	0.000	0.000	70.1	0.0
1.000	48.728	0.0000	0.0	14.618	21.330	18.987	103.7	70.1
2.000	44.659	0.0000	1973.3	44.473	25.460	22.781	2110.6	173.7
3.000	26.196	0.0000	2511.9	40.058	23.960	21.460	2623.6	2284.4
4.000	10.052	0.0000	1612.1	17.812	44.269	34.556	1718.8	4908.0
5.000	4.550	0.0000	1009.1	15.578	49.327	47.108	1125.6	6626.8
6.000	0.000	0.0000	118.2	5.716	56.602	33.054	213.5	7752.4
7.000	0.000	0.0000	104.7	5.156	22.920	5.634	138.4	7965.9
8.000	0.000	0.0000	92.8	4.649	20.776	5.014	123.2	8104.3
9.000	0.000	0.0000	82.2	4.190	18.817	4.462	109.7	8227.5
10.000	0.000	0.0000	72.8	3.774	17.029	3.971	97.6	8337.2
11.000	0.000	0.0000	64.5	3.397	15.400	3.533	86.9	8434.8
12.000	0.000	0.0000	57.2	3.057	13.916	3.144	77.3	8521.7
13.000	0.000	0.0000	50.7	2.750	12.567	2.797	68.8	8599.0
14.000	0.000	0.0000	44.9	2.472	11.341	2.489	61.2	8667.8
15.000	0.000	0.0000	39.8	2.222	10.229	2.214	54.4	8729.0
16.000	0.000	0.0000	35.2	1.996	9.220	1.969	48.4	8783.4
17.000	0.000	0.0000	31.2	1.793	8.307	1.752	43.1	8831.9
18.000	0.000	0.0000	27.6	1.610	7.480	1.558	38.3	8874.9
19.000	0.000	0.0000	24.5	1.444	6.732	1.386	34.1	8913.2
20.000	0.000	0.0000	4.3	0.867	6.056	1.232	12.5	$\boxed{8947.3}$

MINI-DYNAMO * VERSION 1.00

TIME E 00	DT0201 E 00	DT0301 E 00	DT0401 E 00	DT0501 E 00	DT0601 E 00	DT0701 E 00	DT0605 E 00
0.000	0.00	0.000	0.000	0.000	0.000	0.000	.00000
1.000	0.00	0.000	0.000	0.000	0.000	0.000	.00000
2.000	0.00	0.000	0.000	0.000	0.000	0.000	.00000
3.000	0.00	0.000	0.000	0.000	0.000	0.000	.00000
4.000	105.57	0.000	0.000	0.000	0.000	25.790	.00000
5.000	109.80	0.000	49.825	0.000	29.896	26.727	.36108
6.000	114.26	44.699	51.686	37.690	30.788	27.708	.41327
7.000	118.76	46.320	53.654	39.113	31.803	28.730	.41338
8.000	123.24	47.936	55.616	40.531	32.814	29.749	.41349
9.000	127.72	49.547	57.572	41.944	33.822	30.764	.41359
10.000	132.18	51.153	59.524	43.354	34.826	31.776	.41368
11.000	136.64	52.756	61.471	44.759	35.828	32.784	.41377
12.000	141.09	54.355	63.414	46.161	36.827	33.789	.41385
13.000	145.53	55.949	65.352	47.559	37.823	34.791	.41392
14.000	149.97	57.541	67.286	48.953	38.816	35.791	.41399
15.000	154.40	59.129	69.216	50.345	39.807	36.787	.41405
16.000	158.82	60.714	71.143	51.733	40.796	37.782	.41412
17.000	163.24	62.295	73.066	53.119	41.782	38.773	.41417
18.000	167.65	63.874	74.986	54.501	42.767	39.763	.41423
19.000	172.06	65.450	76.903	55.881	43.749	40.750	.41428
20.000	176.46	67.023	78.816	57.258	44.729	41.735	.41433

MINI-DYNAMO * VERSION 1.00

TIME E 00	DT0302 E 00	DT0402 E 00	DT0502 E 00	DT0602 E 00	DT0702 E 00	DT0403 E 00	DT0705 E 00
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4.000	0.000	0.000	0.000	0.000	25.607	0.000	0.000
5.000	0.000	49.041	0.000	29.643	26.530	0.000	0.000
6.000	44.088	50.847	37.270	30.520	27.496	31.294	19.715
7.000	45.647	52.727	38.649	31.510	28.497	32.401	20.418
8.000	47.202	54.602	40.023	32.496	29.494	33.503	21.118
9.000	48.752	56.472	41.393	33.479	30.487	34.602	21.815
10.000	50.299	58.337	42.758	34.460	31.477	35.698	22.510
11.000	51.841	60.198	44.120	35.437	32.463	36.790	23.201
12.000	53.380	62.054	45.478	36.412	33.447	37.879	23.890
13.000	54.916	63.907	46.833	37.384	34.427	38.965	24.577
14.000	56.449	65.756	48.185	38.354	35.405	40.049	25.262
15.000	57.978	67.601	49.533	39.322	36.380	41.130	25.944
16.000	59.504	69.443	50.878	40.288	37.353	42.208	26.624
17.000	61.028	71.281	52.221	41.251	38.323	43.284	27.302
18.000	62.549	73.117	53.561	42.213	39.291	44.357	27.979
19.000	64.067	74.949	54.898	43.172	40.256	45.428	28.653
20.000	65.582	76.778	56.232	44.130	41.220	46.498	29.326

MINI-DYNAMO * VERSION 1.00

TIME E 00	DT0503 E 00	DT0603 E 00	DT0703 E 00	DT0504 E 00	DT0604 E 00	DT0704 E 00	DT0607 E 00
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5.000	0.000	0.000	0.000	0.000	23.466	21.579	17.378
6.000	26.009	22.776	21.166	27.929	24.178	22.343	17.927
7.000	26.930	23.513	21.909	28.944	24.973	23.144	18.524
8.000	27.848	24.247	22.649	29.956	25.766	23.942	19.117
9.000	28.762	24.978	23.386	30.964	26.556	24.736	19.708
10.000	29.673	25.706	24.120	31.969	27.343	25.528	20.297
11.000	30.582	26.433	24.851	32.970	28.127	26.316	20.883
12.000	31.487	27.156	25.580	33.969	28.909	27.102	21.466
13.000	32.389	27.878	26.307	34.964	29.688	27.886	22.048
14.000	33.289	28.598	27.031	35.957	30.465	28.667	22.628
15.000	34.187	29.315	27.753	36.947	31.240	29.445	23.205
16.000	35.082	30.031	28.472	37.935	32.013	30.222	23.781
17.000	35.975	30.745	29.190	38.920	32.784	30.996	24.355
18.000	36.866	31.457	29.906	39.903	33.553	31.768	24.928
19.000	37.754	32.167	30.620	40.884	34.320	32.539	25.498
20.000	38.641	32.876	31.332	41.863	35.086	33.307	26.068

MINI-DYNAMO * VERSION 1.00

TIME E 00	AT0201 E 00	AT0301 E 00	AT0401 E 00	AT0501 E 00	AT0601 E 00	AT0701 E 00	AT0302 E 00
0.000	92.12	35.679	42.405	31.066	25.936	22.800	35.130
1.000	94.09	37.088	43.331	31.779	26.530	23.204	36.638
2.000	97.49	38.579	44.829	32.792	27.361	24.004	38.095
3.000	101.31	40.046	46.406	33.886	28.196	24.849	39.554
4.000	0.00	41.586	48.073	35.118	29.048	0.000	41.055
5.000	0.00	43.121	0.000	36.346	0.000	0.000	42.549
6.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
7.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
8.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
9.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
10.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
11.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
12.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
13.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
14.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
15.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
16.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
17.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
18.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
19.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000
20.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000

MINI-DYNAMO * VERSION 1.00

TIME E 00	AT0402 E 00	AT0502 E 00	AT0602 E 00	AT0702 E 00	AT0403 E 00	AT0503 E 00	AT0603 E 00
0.000	41.600	30.662	25.667	22.598	25.368	21.230	18.911
1.000	42.697	31.460	26.318	23.047	26.267	21.934	19.508
2.000	44.156	32.454	27.136	23.837	27.240	22.692	20.164
3.000	45.726	33.546	27.971	24.680	28.213	23.467	20.809
4.000	47.342	34.753	28.809	0.000	29.208	24.298	21.459
5.000	0.000	35.954	0.000	0.000	30.230	25.126	22.105
6.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
7.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
9.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
11.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
12.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
13.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
14.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
15.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
16.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
17.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
18.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
19.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

MINI-DYNAMO * VERSION 1.00

TIME	AT0703	AT0504	AT0604	AT0704	AT0605	AT0705	AT0607
E 00	E 00	E 00	E 00	E 00	E 00	E 00	E 00
0.000	19.932	23.120	20.339	18.474	17.728	16.347	15.034
1.000	20.588	23.684	20.829	18.841	18.154	16.681	15.343
2.000	21.249	24.431	21.476	19.471	18.698	17.216	15.828
3.000	21.884	25.230	22.132	20.134	19.261	17.786	16.326
4.000	22.497	26.090	22.791	20.851	19.852	18.417	16.854
5.000	23.108	26.971	0.000	0.000	20.079	19.045	0.000
6.000	2.579	0.000	0.000	0.000	20.659	0.000	0.000
7.000	2.566	0.000	0.000	0.000	21.360	0.000	0.000
8.000	2.554	0.000	0.000	0.000	22.057	0.000	0.000
9.000	2.543	0.000	0.000	0.000	22.751	0.000	0.000
10.000	2.532	0.000	0.000	0.000	23.443	0.000	0.000
11.000	2.522	0.000	0.000	0.000	24.132	0.000	0.000
12.000	2.513	0.000	0.000	0.000	24.818	0.000	0.000
13.000	2.504	0.000	0.000	0.000	25.502	0.000	0.000
14.000	2.495	0.000	0.000	0.000	26.184	0.000	0.000
15.000	2.487	0.000	0.000	0.000	26.864	0.000	0.000
16.000	2.479	0.000	0.000	0.000	27.542	0.000	0.000
17.000	2.472	0.000	0.000	0.000	28.218	0.000	0.000
18.000	2.465	0.000	0.000	0.000	28.893	0.000	0.000
19.000	2.458	0.000	0.000	0.000	29.565	0.000	0.000
20.000	2.452	0.000	0.000	0.000	30.236	0.000	0.000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0201 E 00	RM0301 E 00	RM0401 E 00	RM0501 E 00	RM0601 E 00	RM0701 E 00	RM0107 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0102 E 00	RM0302 E 00	RM0402 E 00	RM0502 E 00	RM0602 E 00	RM0702 E 00	RM0207 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0103 E 00	RM0203 E 00	RM0403 E 00	RM0503 E 00	RM0603 E 00	RM0703 E 00	RM0307 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0104 E 00	RM0204 E 00	RM0304 E 00	RM0504 E 00	RM0604 E 00	RM0704 E 00	RM0407 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0105 E 00	RM0205 E 00	RM0305 E 00	RM0405 E 00	RM0605 E 00	RM0705 E 00	RM0507 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0106 E 00	RM0206 E 00	RM0306 E 00	RM0406 E 00	RM0506 E 00	RM0706 E 00	RM0607 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	TLIN E 03	TRLM E 00	LIN E 03	RMTOT E 00	DMSTOT E 00	FAXAST E 03	FAXDST E 03	GPFTOT E 00
0.000	0.000	0.0000	10.347	0.0000	0.0	0.000	0.000	0.0000
1.000	0.000	0.0000	10.616	0.0000	0.0	19.283	0.000	0.0000
2.000	0.000	0.0000	11.043	0.0000	4158.0	25.810	0.000	0.0000
3.000	4.158	0.0000	7.352	0.0000	4665.0	27.026	0.000	0.0000
4.000	8.823	0.0000	3.202	0.0000	2073.0	21.488	28.145	0.0000
5.000	10.896	0.0000	1.645	0.0000	2191.0	12.160	64.397	0.0000
6.000	13.087	0.0000	0.000	0.0000	561.0	0.719	57.888	0.0000
7.000	13.648	0.0000	0.000	0.0000	561.0	0.868	5.376	0.0000
8.000	14.209	0.0000	0.000	0.0000	561.0	0.864	5.358	0.0000
9.000	14.770	0.0000	0.000	0.0000	561.0	0.861	5.340	0.0000
10.000	15.331	0.0000	0.000	0.0000	561.0	0.857	5.324	0.0000
11.000	15.892	0.0000	0.000	0.0000	561.0	0.854	5.309	0.0000
12.000	16.453	0.0000	0.000	0.0000	561.0	0.851	5.294	0.0000
13.000	17.014	0.0000	0.000	0.0000	561.0	0.848	5.281	0.0000
14.000	17.575	0.0000	0.000	0.0000	561.0	0.845	5.267	0.0000
15.000	18.136	0.0000	0.000	0.0000	561.0	0.843	5.255	0.0000
16.000	18.697	0.0000	0.000	0.0000	561.0	0.840	5.243	0.0000
17.000	19.258	0.0000	0.000	0.0000	561.0	0.838	5.232	0.0000
18.000	19.819	0.0000	0.000	0.0000	561.0	0.836	5.221	0.0000
19.000	20.380	0.0000	0.000	0.0000	561.0	0.834	5.211	0.0000
20.000	20.941	0.0000	0.000	0.0000	0.0	0.832	5.201	0.0000

Appendix K

Computer Printouts for Alternative 10

100% increase in RLM costs (Alternative 2 Overlay)

MINI-DYNAMO * VERSION 1.00

ENTER RERUN CHANGES

```
C ICIFR=2,RE01=2
C OVER01=2,OVER02=7,OVER03=5,OVER04=4,OVER05=5
C OVER06=4,OVER07=3
C RE0201=1,RE0301=1,RE0401=1,RE0501=1,RE0601=1,RE0701=1
RUN
```

CHANGES FOR RERUN -

	OVER01	OVER02	OVER03	OVER04	OVER05	OVER06
PRESENT	2.0000	7.0000	5.0000	4.0000	5.0000	4.0000
ORIGINAL	99.000	99.000	99.000	99.000	99.000	99.000

	OVER07	RE0201	RE0301	RE0401	RE0501	RE0601
PRESENT	3.0000	1.0000	1.0000	1.0000	1.0000	1.0000
ORIGINAL	99.000	0.0000	0.0000	0.0000	0.0000	0.0000

	RE0701	RE01	ICIFR
PRESENT	1.0000	2.0000	2.0000
ORIGINAL	0.0000	100.00	1.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	GPF01 E 00	GPF02 E 00	GPF03 E 00	GPF04 E 00	GPF05 E 00	GPF06 E 00	GPF07 E 00
0.000	39.00	123.00	39.000	27.000	18.000	14.000	9.000
1.000	157.00	137.00	37.000	38.000	23.000	18.000	17.000
2.000	168.00	162.00	36.000	40.000	25.000	18.000	18.000
3.000	200.00	171.00	37.000	41.000	28.000	18.000	20.000
4.000	199.00	170.00	37.000	44.000	28.000	18.000	20.000
5.000	210.00	180.00	38.000	47.000	31.000	19.000	21.000
6.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
7.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
8.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
9.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
10.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
11.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
12.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
13.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
14.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
15.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
16.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
17.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
18.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
19.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
20.000	0.00	0.00	0.000	0.000	0.000	0.000	0.000

MINI-DYNAMO * VERSION 1.00

TIME E 00	LIN01 E 00	LIN02 E 00	LIN03 E 00	LIN04 E 00	LIN05 E 00	LIN06 E 00	LIN07 E 00
0.000	3794.0	3409.0	732.0	934.0	605.0	474.00	399.00
1.000	3833.0	3532.0	771.0	961.0	623.0	488.00	408.00
2.000	3990.0	3669.0	808.0	999.0	646.0	506.00	425.00
3.000	4158.0	3831.0	844.0	1039.0	671.0	524.00	443.00
4.000	4358.0	4002.0	881.0	1080.0	699.0	542.00	463.00
5.000	4557.0	4172.0	918.0	1124.0	727.0	560.00	483.00
6.000	4767.0	4352.0	956.0	1171.0	758.0	579.00	504.00
7.000	4987.0	4527.0	995.0	1221.0	791.0	601.00	526.00
8.000	5207.0	4702.0	1034.0	1271.0	824.0	623.00	548.00
9.000	5427.0	4877.0	1073.0	1321.0	857.0	645.00	570.00
10.000	5647.0	5052.0	1112.0	1371.0	890.0	667.00	592.00
11.000	5867.0	5227.0	1151.0	1421.0	923.0	689.00	614.00
12.000	6087.0	5402.0	1190.0	1471.0	956.0	711.00	636.00
13.000	6307.0	5577.0	1229.0	1521.0	989.0	733.00	658.00
14.000	6527.0	5752.0	1268.0	1571.0	1022.0	755.00	680.00
15.000	6747.0	5927.0	1307.0	1621.0	1055.0	777.00	702.00
16.000	6967.0	6102.0	1346.0	1671.0	1088.0	799.00	724.00
17.000	7187.0	6277.0	1385.0	1721.0	1121.0	821.00	746.00
18.000	7407.0	6452.0	1424.0	1771.0	1154.0	843.00	768.00
19.000	7627.0	6627.0	1463.0	1821.0	1187.0	865.00	790.00
20.000	7847.0	6802.0	1502.0	1871.0	1220.0	887.00	812.00

MINI-DYNAMO * VERSION 1.00

TIME E 00	GPFA01 E 00	GPFA02 E 00	GPFA03 E 00	GPFA04 E 00	GPFA05 E 00	GPFA06 E 00	GPFA07 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	LLIN01 E 00	LLIN02 E 00	LLIN03 E 00	LLIN04 E 00	LLIN05 E 00	LLIN06 E 00	LLIN07 E 00	LIN E 03
0.000	3794.0	3409.0	732.00	934.0	605.00	474.00	399.00	10.347
1.000	3833.0	3532.0	771.00	961.0	623.00	488.00	408.00	10.616
2.000	3990.0	3669.0	808.00	999.0	646.00	506.00	425.00	11.043
3.000	0.0	3831.0	844.00	1039.0	671.00	524.00	443.00	7.352
4.000	0.0	4002.0	881.00	1080.0	699.00	542.00	443.00	7.647
5.000	0.0	4172.0	918.00	1080.0	727.00	542.00	443.00	7.882
6.000	0.0	4352.0	918.00	1080.0	727.00	542.00	443.00	8.062
7.000	0.0	4527.0	918.00	1080.0	727.00	542.00	443.00	8.237
8.000	0.0	4527.0	918.00	1080.0	727.00	542.00	443.00	8.237
9.000	0.0	4527.0	918.00	1080.0	727.00	542.00	443.00	8.237
10.000	0.0	4527.0	918.00	1080.0	727.00	542.00	443.00	8.237
11.000	0.0	4527.0	918.00	1080.0	727.00	542.00	443.00	8.237
12.000	0.0	4527.0	918.00	1080.0	727.00	542.00	443.00	8.237
13.000	0.0	4527.0	918.00	1080.0	727.00	542.00	443.00	8.237
14.000	0.0	4527.0	918.00	1080.0	727.00	542.00	443.00	8.237
15.000	0.0	4527.0	918.00	1080.0	727.00	542.00	443.00	8.237
16.000	0.0	4527.0	918.00	1080.0	727.00	542.00	443.00	8.237
17.000	0.0	4527.0	918.00	1080.0	727.00	542.00	443.00	8.237
18.000	0.0	4527.0	918.00	1080.0	727.00	542.00	443.00	8.237
19.000	0.0	4527.0	918.00	1080.0	727.00	542.00	443.00	8.237
20.000	0.0	4527.0	918.00	1080.0	727.00	542.00	443.00	8.237

MINI-DYNAMO * VERSION 1.00

TIME E 00	LRIN01 E 00	LRIN02 E 00	LRIN03 E 00	LRIN04 E 00	LRIN05 E 00	LRIN06 E 00	LRIN07 E 00	LRIN E 00
0.000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0
1.000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0
2.000	4158.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	4158.0
3.000	220.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	220.0
4.000	281.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	281.0
5.000	366.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	366.0
6.000	386.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	386.0
7.000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
8.000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
9.000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
10.000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
11.000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
12.000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
13.000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
14.000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
15.000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
16.000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
17.000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
18.000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
19.000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
20.000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0

MINI-DYNAMO * VERSION 1.00

TIME E 00	GPFCST E 00	RLMCST E 03	DMSCST E 03	TRKCST E 03	BLDCST E 03	FAXCST E 03	DMSGSC E 03
0.000	0.0000	0.00	0.0	0.000	0.000	0.000	0.00
1.000	0.0000	0.00	0.0	19.050	0.000	19.283	0.00
2.000	0.0000	0.00	1247.4	25.417	33.264	25.810	650.00
3.000	0.0000	248.00	60.0	26.655	1.840	28.202	0.00
4.000	0.0000	512.80	59.7	25.589	2.576	30.542	0.00
5.000	0.0000	542.40	63.0	18.028	3.552	25.025	0.00
6.000	0.0000	66.40	66.0	10.480	3.752	18.212	0.00
7.000	0.0000	376.40	66.0	10.285	5.852	22.174	0.00
8.000	0.0000	136.40	66.0	8.386	5.852	20.425	0.00
9.000	0.0000	136.40	66.0	7.406	5.852	19.451	0.00
10.000	0.0000	136.40	66.0	6.594	5.852	18.646	0.00
11.000	0.0000	136.40	66.0	5.912	5.852	17.972	0.00
12.000	0.0000	136.40	66.0	5.334	5.852	17.401	0.00
13.000	0.0000	136.40	66.0	4.838	5.852	16.912	0.00
14.000	0.0000	136.40	66.0	4.410	5.852	16.490	0.00
15.000	0.0000	136.40	66.0	4.037	5.852	16.123	0.00
16.000	0.0000	136.40	66.0	3.711	5.852	15.802	0.00
17.000	0.0000	136.40	66.0	3.423	5.852	15.519	0.00
18.000	0.0000	136.40	66.0	3.167	5.852	15.269	0.00
19.000	0.0000	136.40	66.0	2.940	5.852	15.046	0.00
20.000	0.0000	0.00	0.0	2.737	0.000	2.668	0.00

MINI-DYNAMO * VERSION 1.00

TIME E 00	GPFMST E 03	RLMMST E 03	DMSMST E 03	TRKMST E 00	BLDMST E 03	FAXMST E 03
0.000	103.47	0.000	0.000	0.0	31.041	0.000
1.000	106.16	0.000	0.000	0.0	31.848	0.000
2.000	110.43	0.000	0.000	952.5	33.129	0.964
3.000	73.52	0.000	20.790	2223.4	26.214	2.255
4.000	76.47	0.140	21.790	3556.1	27.329	3.665
5.000	78.82	0.714	22.785	4835.6	28.356	5.192
6.000	80.62	1.806	23.835	5737.0	29.340	6.443
7.000	82.37	2.968	24.935	6261.0	30.334	7.354
8.000	82.37	5.355	26.035	6775.2	31.066	8.462
9.000	82.37	7.742	27.135	7194.5	31.797	9.484
10.000	82.37	10.129	28.235	7564.8	32.529	10.456
11.000	82.37	12.516	29.335	7894.5	33.260	11.389
12.000	82.37	14.903	30.435	8190.1	33.991	12.287
13.000	82.37	17.290	31.535	8456.8	34.723	13.157
14.000	82.37	19.677	32.635	8698.8	35.455	14.003
15.000	82.37	22.064	33.735	8919.3	36.186	14.827
16.000	82.37	24.451	34.835	9121.1	36.918	15.633
17.000	82.37	26.838	35.935	9306.7	37.649	16.424
18.000	82.37	29.225	37.035	9477.8	38.380	17.199
19.000	82.37	31.612	38.135	9636.2	39.112	17.963
20.000	82.37	33.999	39.235	9783.2	39.844	18.715

MINI-DYNAMO * VERSION 1.00

TIME E 00	ANCGPF E 00	ANCRLM E 03	ANCDMS E 03	ANCBLD E 03	ANCTRK E 03	ANCFAX E 03	ANCGSC E 03
0.000	0.0000	0.00	0.0	0.000	0.000	0.000	0.00
1.000	0.0000	0.00	0.0	0.000	21.330	18.987	0.00
2.000	0.0000	0.00	1230.6	31.075	25.074	22.391	641.23
3.000	0.0000	215.55	52.2	1.514	23.168	21.556	0.00
4.000	0.0000	392.70	45.7	1.868	19.596	20.568	0.00
5.000	0.0000	365.96	42.5	2.269	12.163	14.848	0.00
6.000	0.0000	39.47	39.2	2.112	6.230	9.520	0.00
7.000	0.0000	197.14	34.6	2.902	5.386	10.213	0.00
8.000	0.0000	62.94	30.5	2.557	3.870	8.288	0.00
9.000	0.0000	55.46	26.8	2.253	3.011	6.954	0.00
10.000	0.0000	48.86	23.6	1.985	2.362	5.874	0.00
11.000	0.0000	43.05	20.8	1.749	1.866	4.988	0.00
12.000	0.0000	37.93	18.4	1.541	1.483	4.255	0.00
13.000	0.0000	33.42	16.2	1.358	1.185	3.644	0.00
14.000	0.0000	29.44	14.2	1.196	0.952	3.130	0.00
15.000	0.0000	25.94	12.6	1.054	0.768	2.696	0.00
16.000	0.0000	22.85	11.1	0.929	0.622	2.328	0.00
17.000	0.0000	20.14	9.7	0.818	0.505	2.015	0.00
18.000	0.0000	17.74	8.6	0.721	0.412	1.746	0.00
19.000	0.0000	15.63	7.6	0.635	0.337	1.516	0.00
20.000	0.0000	0.00	0.0	0.000	0.276	0.237	0.00

MINI-DYNAMO * VERSION 1.00

TIME E 00	ANMGPF E 03	ANMRLM E 00	ANMDMS E 00	ANMBLD E 03	ANMTRK E 00	ANMFAX E 00	AEEDMS E 03	ANMSDF E 03
0.000	53.905	0.0	0.0	16.171	0.0	0.0	0.000	0.000
1.000	48.728	0.0	0.0	14.618	0.0	0.0	0.000	0.000
2.000	44.659	0.0	0.0	13.398	385.2	389.9	26.660	74.816
3.000	26.196	0.0	7407.6	9.340	792.2	803.4	1.130	0.000
4.000	24.006	43.9	6840.5	8.579	1116.4	1150.5	0.990	0.000
5.000	21.801	197.5	6302.1	7.843	1337.5	1436.0	0.921	0.000
6.000	19.646	440.1	5808.4	7.150	1398.0	1570.1	0.850	0.000
7.000	17.685	637.2	5353.7	6.513	1344.3	1578.9	0.749	0.000
8.000	15.582	1013.0	4925.0	5.877	1281.6	1600.8	0.660	0.000
9.000	13.728	1290.3	4522.5	5.300	1199.1	1580.6	0.581	0.000
10.000	12.095	1487.4	4146.1	4.777	1110.8	1535.4	0.512	0.000
11.000	10.657	1619.3	3795.3	4.303	1021.4	1473.4	0.451	0.000
12.000	9.389	1698.8	3469.3	3.875	933.6	1400.6	0.398	0.000
13.000	8.272	1736.4	3167.1	3.487	849.3	1321.4	0.350	0.000
14.000	7.289	1741.1	2887.7	3.137	769.7	1239.0	0.309	0.000
15.000	6.422	1720.1	2630.0	2.821	695.4	1155.9	0.272	0.000
16.000	5.658	1679.5	2392.7	2.536	626.5	1073.8	0.240	0.000
17.000	4.985	1624.2	2174.7	2.278	563.2	993.9	0.211	0.000
18.000	4.392	1558.3	1974.7	2.046	505.4	917.1	0.186	0.000
19.000	3.870	1485.1	1791.5	1.837	452.7	843.9	0.164	0.000
20.000	3.409	1407.2	1623.9	1.649	404.9	774.6	0.000	0.000

MINI-DYNAMO * VERSION 1.00

TIME E 00	TANGPF E 03	TANRLM E 03	TANDMS E 03	TANBLD E 03	TANTRK E 03	TANFAX E 03	TOTTAN E 03	PWAC E 03
0.000	53.905	0.00	0.0	16.171	0.000	0.000	70.1	0.0
1.000	48.728	0.00	0.0	14.618	21.330	18.987	103.7	70.1
2.000	44.659	0.00	1973.3	44.473	25.460	22.781	2110.6	173.7
3.000	26.196	215.55	60.7	10.855	23.960	22.359	359.6	2284.4
4.000	24.006	392.74	53.5	10.447	20.712	21.718	523.2	2644.0
5.000	21.801	366.16	49.7	10.112	13.501	16.284	477.6	3167.2
6.000	19.646	39.91	45.9	9.262	7.628	11.090	133.4	3644.8
7.000	17.685	197.78	40.7	9.415	6.731	11.792	284.1	3778.2
8.000	15.582	63.95	36.0	8.434	5.152	9.889	139.1	4062.3
9.000	13.728	56.75	31.9	7.553	4.210	8.535	122.7	4201.3
10.000	12.095	50.35	28.3	6.762	3.473	7.409	108.4	4324.0
11.000	10.657	44.67	25.1	6.052	2.887	6.461	95.8	4432.4
12.000	9.389	39.63	22.2	5.416	2.417	5.656	84.7	4528.2
13.000	8.272	35.15	19.7	4.845	2.035	4.965	75.0	4612.9
14.000	7.289	31.18	17.4	4.333	1.722	4.369	66.3	4687.9
15.000	6.422	27.66	15.5	3.875	1.463	3.852	58.7	4754.2
16.000	5.658	24.53	13.7	3.464	1.248	3.402	52.0	4812.9
17.000	4.985	21.76	12.1	3.097	1.069	3.009	46.0	4864.9
18.000	4.392	19.30	10.7	2.767	0.917	2.664	40.8	4911.0
19.000	3.870	17.12	9.5	2.472	0.790	2.360	36.1	4951.8
20.000	3.409	1.41	1.6	1.649	0.681	1.011	9.8	$\boxed{4987.9}$

MINI-DYNAMO * VERSION 1.00

TIME E 00	DT0201 E 00	DT0301 E 00	DT0401 E 00	DT0501 E 00	DT0601 E 00	DT0701 E 00	DT0605 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	DT0302 E 00	DT0402 E 00	DT0502 E 00	DT0602 E 00	DT0702 E 00	DT0403 E 00	DT0705 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	DT0503 E 00	DT0603 E 00	DT0703 E 00	DT0504 E 00	DT0604 E 00	DT0704 E 00	DT0607 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	AT0201 E 00	AT0301 E 00	AT0401 E 00	AT0501 E 00	AT0601 E 00	AT0701 E 00	AT0302 E 00
0.000	92.12	35.679	42.405	31.066	25.936	22.800	35.130
1.000	94.09	37.088	43.331	31.779	26.530	23.204	36.638
2.000	97.49	38.579	44.829	32.792	27.361	24.004	38.095
3.000	101.31	40.046	46.406	33.886	28.196	24.849	39.554
4.000	105.78	41.614	48.111	35.137	29.061	24.950	41.055
5.000	110.86	43.259	48.619	36.440	29.225	25.066	42.549
6.000	116.89	43.715	49.211	36.751	29.414	25.200	42.827
7.000	122.97	44.138	49.762	37.038	29.588	25.322	43.079
8.000	128.01	44.669	50.454	37.397	29.804	25.474	43.079
9.000	132.53	45.119	51.044	37.700	29.986	25.601	43.079
10.000	136.61	45.506	51.552	37.959	30.141	25.709	43.079
11.000	140.30	45.842	51.995	38.183	30.275	25.803	43.079
12.000	143.67	46.137	52.384	38.379	30.391	25.884	43.079
13.000	146.75	46.397	52.729	38.552	30.493	25.955	43.079
14.000	149.58	46.629	53.037	38.706	30.584	26.018	43.079
15.000	152.19	46.836	53.312	38.843	30.665	26.074	43.079
16.000	154.60	47.023	53.561	38.967	30.738	26.124	43.079
17.000	156.83	47.193	53.787	39.078	30.804	26.170	43.079
18.000	158.91	47.347	53.993	39.180	30.863	26.211	43.079
19.000	160.84	47.488	54.181	39.272	30.917	26.249	43.079
20.000	162.65	47.617	54.354	39.357	30.967	26.283	43.079

MINI-DYNAMO * VERSION 1.00

TIME E 00	AT0402 E 00	AT0502 E 00	AT0602 E 00	AT0702 E 00	AT0403 E 00	AT0503 E 00	AT0603 E 00
0.000	41.600	30.662	25.667	22.598	25.368	21.230	18.911
1.000	42.697	31.460	26.318	23.047	26.267	21.934	19.508
2.000	44.156	32.454	27.136	23.837	27.240	22.692	20.164
3.000	45.726	33.546	27.971	24.680	28.213	23.467	20.809
4.000	47.342	34.753	28.809	24.771	29.208	24.298	21.459
5.000	47.703	35.954	28.928	24.856	29.769	25.126	21.735
6.000	48.061	36.145	29.044	24.939	29.769	25.126	21.735
7.000	48.387	36.317	29.150	25.013	29.769	25.126	21.735
8.000	48.387	36.317	29.150	25.013	29.769	25.126	21.735
9.000	48.387	36.317	29.150	25.013	29.769	25.126	21.735
10.000	48.387	36.317	29.150	25.013	29.769	25.126	21.735
11.000	48.387	36.317	29.150	25.013	29.769	25.126	21.735
12.000	48.387	36.317	29.150	25.013	29.769	25.126	21.735
13.000	48.387	36.317	29.150	25.013	29.769	25.126	21.735
14.000	48.387	36.317	29.150	25.013	29.769	25.126	21.735
15.000	48.387	36.317	29.150	25.013	29.769	25.126	21.735
16.000	48.387	36.317	29.150	25.013	29.769	25.126	21.735
17.000	48.387	36.317	29.150	25.013	29.769	25.126	21.735
18.000	48.387	36.317	29.150	25.013	29.769	25.126	21.735
19.000	48.387	36.317	29.150	25.013	29.769	25.126	21.735
20.000	48.387	36.317	29.150	25.013	29.769	25.126	21.735

MINI-DYNAMO * VERSION 1.00

TIME E 00	AT0703 E 00	AT0504 E 00	AT0604 E 00	AT0704 E 00	AT0605 E 00	AT0705 E 00	AT0607 E 00
0.000	19.932	23.120	20.339	18.474	17.728	16.347	15.034
1.000	20.588	23.684	20.829	18.841	18.154	16.681	15.343
2.000	21.249	24.431	21.476	19.471	18.698	17.216	15.828
3.000	21.884	25.230	22.132	20.134	19.261	17.786	16.326
4.000	22.779	26.090	22.791	20.324	19.852	18.019	16.529
5.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
6.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
7.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
8.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
9.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
10.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
11.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
12.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
13.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
14.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
15.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
16.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
17.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
18.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
19.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
20.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529

MINI-DYNAMO * VERSION 1.00

TIME	RM0201	RM0301	RM0401	RM0501	RM0601	RM0701	RM0107
E 00	E 00	E 00	E 00	E 00	E 00	E 00	E 00
0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.0000
1.000	0.00	0.000	0.000	0.000	0.000	0.000	0.0000
2.000	0.00	0.000	0.000	0.000	0.000	0.000	0.0000
3.000	0.00	0.000	0.000	0.000	0.000	20.000	0.0000
4.000	0.00	0.000	44.000	0.000	18.000	20.000	0.0000
5.000	0.00	38.000	47.000	31.000	19.000	21.000	0.0000
6.000	0.00	39.000	50.000	33.000	22.000	22.000	0.0000
7.000	175.00	39.000	50.000	33.000	22.000	22.000	0.0000
8.000	175.00	39.000	50.000	33.000	22.000	22.000	0.0000
9.000	175.00	39.000	50.000	33.000	22.000	22.000	0.0000
10.000	175.00	39.000	50.000	33.000	22.000	22.000	0.0000
11.000	175.00	39.000	50.000	33.000	22.000	22.000	0.0000
12.000	175.00	39.000	50.000	33.000	22.000	22.000	0.0000
13.000	175.00	39.000	50.000	33.000	22.000	22.000	0.0000
14.000	175.00	39.000	50.000	33.000	22.000	22.000	0.0000
15.000	175.00	39.000	50.000	33.000	22.000	22.000	0.0000
16.000	175.00	39.000	50.000	33.000	22.000	22.000	0.0000
17.000	175.00	39.000	50.000	33.000	22.000	22.000	0.0000
18.000	175.00	39.000	50.000	33.000	22.000	22.000	0.0000
19.000	175.00	39.000	50.000	33.000	22.000	22.000	0.0000
20.000	0.00	0.000	0.000	0.000	0.000	0.000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0102 E 00	RM0302 E 00	RM0402 E 00	RM0502 E 00	RM0602 E 00	RM0702 E 00	RM0207 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0103 E 00	RM0203 E 00	RM0403 E 00	RM0503 E 00	RM0603 E 00	RM0703 E 00	RM0307 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0104 E 00	RM0204 E 00	RM0304 E 00	RM0504 E 00	RM0604 E 00	RM0704 E 00	RM0407 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0105 E 00	RM0205 E 00	RM0305 E 00	RM0405 E 00	RM0605 E 00	RM0705 E 00	RM0507 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0106 E 00	RM0206 E 00	RM0306 E 00	RM0406 E 00	RM0506 E 00	RM0706 E 00	RM0607 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	TLIN E 00	TRLM E 00	LIN E 03	RMTOT E 00	DMSTOT E 00	FAXAST E 03	FAXDST E 03	GPFTOT E 00
0.000	0.0	0.0	10.347	0.00	0.0	0.000	0.000	0.0000
1.000	0.0	0.0	10.616	0.00	0.0	19.283	0.000	0.0000
2.000	0.0	0.0	11.043	0.00	4158.0	25.810	0.000	0.0000
3.000	4158.0	0.0	7.352	20.00	200.0	27.026	1.176	0.0000
4.000	4358.0	20.0	7.647	82.00	199.0	25.798	4.744	0.0000
5.000	4557.0	102.0	7.882	156.00	210.0	17.556	7.470	0.0000
6.000	4767.0	258.0	8.062	166.00	220.0	10.198	8.014	0.0000
7.000	4987.0	424.0	8.237	341.00	220.0	9.995	12.179	0.0000
8.000	5207.0	765.0	8.237	341.00	220.0	8.246	12.179	0.0000
9.000	5427.0	1106.0	8.237	341.00	220.0	7.273	12.179	0.0000
10.000	5647.0	1447.0	8.237	341.00	220.0	6.468	12.179	0.0000
11.000	5867.0	1788.0	8.237	341.00	220.0	5.793	12.179	0.0000
12.000	6087.0	2129.0	8.237	341.00	220.0	5.222	12.179	0.0000
13.000	6307.0	2470.0	8.237	341.00	220.0	4.733	12.179	0.0000
14.000	6527.0	2811.0	8.237	341.00	220.0	4.311	12.179	0.0000
15.000	6747.0	3152.0	8.237	341.00	220.0	3.945	12.179	0.0000
16.000	6967.0	3493.0	8.237	341.00	220.0	3.623	12.179	0.0000
17.000	7187.0	3834.0	8.237	341.00	220.0	3.341	12.179	0.0000
18.000	7407.0	4175.0	8.237	341.00	220.0	3.090	12.179	0.0000
19.000	7627.0	4516.0	8.237	341.00	220.0	2.867	12.179	0.0000
20.000	7847.0	4857.0	8.237	0.00	0.0	2.668	0.000	0.0000

Appendix L

Computer Printouts for Alternative 11

100% increase in RLM costs (Alternative 4 Overlay)

MINI-DYNAMO * VERSION 1.00

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ENTER RERUN CHANGES

C RE02=2,ICIFR=2
C OVER01=5,OVER02=2,OVER03=5,OVER04=4,OVER05=5
C OVER06=4,OVER07=3
C RE0102=1,RE0302=1,RE0402=1,RE0502=1,RE0602=1,RE0702=1
RUN
```

CHANGES FOR RERUN -

	OVER01	OVER02	OVER03	OVER04	OVER05	OVER06
PRESENT	5.0000	2.0000	5.0000	4.0000	5.0000	4.0000
ORIGINAL	99.000	99.000	99.000	99.000	99.000	99.000

	OVER07	RE0102	RE0302	RE0402	RE0502	RE0602
PRESENT	3.0000	1.0000	1.0000	1.0000	1.0000	1.0000
ORIGINAL	99.000	0.0000	0.0000	0.0000	0.0000	0.0000

	RE0702	RE02	ICIFR
PRESENT	1.0000	2.0000	2.0000
ORIGINAL	0.0000	100.00	1.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	GPF01 E 00	GPF02 E 00	GPF03 E 00	GPF04 E 00	GPF05 E 00	GPF06 E 00	GPF07 E 00
0.000	39.00	123.00	39.000	27.000	18.000	14.000	9.000
1.000	157.00	137.00	37.000	38.000	23.000	18.000	17.000
2.000	168.00	162.00	36.000	40.000	25.000	18.000	18.000
3.000	200.00	171.00	37.000	41.000	28.000	18.000	20.000
4.000	199.00	170.00	37.000	44.000	28.000	18.000	20.000
5.000	210.00	180.00	38.000	47.000	31.000	19.000	21.000
6.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
7.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
8.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
9.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
10.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
11.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
12.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
13.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
14.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
15.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
16.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
17.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
18.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
19.000	220.00	175.00	39.000	50.000	33.000	22.000	22.000
20.000	0.00	0.00	0.000	0.000	0.000	0.000	0.000

MINI-DYNAMO * VERSION 1.00

TIME E 00	LIN01 E 00	LIN02 E 00	LIN03 E 00	LIN04 E 00	LIN05 E 00	LIN06 E 00	LIN07 E 00
0.000	3794.0	3409.0	732.0	934.0	605.0	474.00	399.00
1.000	3833.0	3532.0	771.0	961.0	623.0	488.00	408.00
2.000	3990.0	3669.0	808.0	999.0	646.0	506.00	425.00
3.000	4158.0	3831.0	844.0	1039.0	671.0	524.00	443.00
4.000	4358.0	4002.0	881.0	1080.0	699.0	542.00	463.00
5.000	4557.0	4172.0	918.0	1124.0	727.0	560.00	483.00
6.000	4767.0	4352.0	956.0	1171.0	758.0	579.00	504.00
7.000	4987.0	4527.0	995.0	1221.0	791.0	601.00	526.00
8.000	5207.0	4702.0	1034.0	1271.0	824.0	623.00	548.00
9.000	5427.0	4877.0	1073.0	1321.0	857.0	645.00	570.00
10.000	5647.0	5052.0	1112.0	1371.0	890.0	667.00	592.00
11.000	5867.0	5227.0	1151.0	1421.0	923.0	689.00	614.00
12.000	6087.0	5402.0	1190.0	1471.0	956.0	711.00	636.00
13.000	6307.0	5577.0	1229.0	1521.0	989.0	733.00	658.00
14.000	6527.0	5752.0	1268.0	1571.0	1022.0	755.00	680.00
15.000	6747.0	5927.0	1307.0	1621.0	1055.0	777.00	702.00
16.000	6967.0	6102.0	1346.0	1671.0	1088.0	799.00	724.00
17.000	7187.0	6277.0	1385.0	1721.0	1121.0	821.00	746.00
18.000	7407.0	6452.0	1424.0	1771.0	1154.0	843.00	768.00
19.000	7627.0	6627.0	1463.0	1821.0	1187.0	865.00	790.00
20.000	7847.0	6802.0	1502.0	1871.0	1220.0	887.00	812.00

MINI-DYNAMO * VERSION 1.00

TIME E 00	GPFA01 E 00	GPFA02 E 00	GPFA03 E 00	GPFA04 E 00	GPFA05 E 00	GPFA06 E 00	GPFA07 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	LLIN01 E 00	LLIN02 E 00	LLIN03 E 00	LLIN04 E 00	LLIN05 E 00	LLIN06 E 00	LLIN07 E 00	LIN E 03
0.000	3794.0	3409.0	732.00	934.0	605.00	474.00	399.00	10.347
1.000	3833.0	3532.0	771.00	961.0	623.00	488.00	408.00	10.616
2.000	3990.0	3669.0	808.00	999.0	646.00	506.00	425.00	11.043
3.000	4158.0	0.0	844.00	1039.0	671.00	524.00	443.00	7.679
4.000	4358.0	0.0	881.00	1080.0	699.00	542.00	443.00	8.003
5.000	4557.0	0.0	918.00	1080.0	727.00	542.00	443.00	8.267
6.000	4557.0	0.0	918.00	1080.0	727.00	542.00	443.00	8.267
7.000	4557.0	0.0	918.00	1080.0	727.00	542.00	443.00	8.267
8.000	4557.0	0.0	918.00	1080.0	727.00	542.00	443.00	8.267
9.000	4557.0	0.0	918.00	1080.0	727.00	542.00	443.00	8.267
10.000	4557.0	0.0	918.00	1080.0	727.00	542.00	443.00	8.267
11.000	4557.0	0.0	918.00	1080.0	727.00	542.00	443.00	8.267
12.000	4557.0	0.0	918.00	1080.0	727.00	542.00	443.00	8.267
13.000	4557.0	0.0	918.00	1080.0	727.00	542.00	443.00	8.267
14.000	4557.0	0.0	918.00	1080.0	727.00	542.00	443.00	8.267
15.000	4557.0	0.0	918.00	1080.0	727.00	542.00	443.00	8.267
16.000	4557.0	0.0	918.00	1080.0	727.00	542.00	443.00	8.267
17.000	4557.0	0.0	918.00	1080.0	727.00	542.00	443.00	8.267
18.000	4557.0	0.0	918.00	1080.0	727.00	542.00	443.00	8.267
19.000	4557.0	0.0	918.00	1080.0	727.00	542.00	443.00	8.267
20.000	4557.0	0.0	918.00	1080.0	727.00	542.00	443.00	8.267

MINI-DYNAMO * VERSION 1.00

TIME E 00	LRIN01 E 00	LRIN02 E 00	LRIN03 E 00	LRIN04 E 00	LRIN05 E 00	LRIN06 E 00	LRIN07 E 00	LRIN E 00
0.000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0
1.000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0
2.000	0.0000	3831.0	0.0000	0.0000	0.0000	0.0000	0.0000	3831.0
3.000	0.0000	191.0	0.0000	0.0000	0.0000	0.0000	0.0000	191.0
4.000	0.0000	252.0	0.0000	0.0000	0.0000	0.0000	0.0000	252.0
5.000	0.0000	546.0	0.0000	0.0000	0.0000	0.0000	0.0000	546.0
6.000	0.0000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
7.000	0.0000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
8.000	0.0000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
9.000	0.0000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
10.000	0.0000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
11.000	0.0000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
12.000	0.0000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
13.000	0.0000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
14.000	0.0000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
15.000	0.0000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
16.000	0.0000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
17.000	0.0000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
18.000	0.0000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
19.000	0.0000	561.0	0.0000	0.0000	0.0000	0.0000	0.0000	561.0
20.000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0

MINI-DYNAMO * VERSION 1.00

TIME E 00	GPFCST E 00	RLMCST E 03	DMSCST E 03	TRKCST E 03	BLDCST E 03	FAXCST E 03	DMSGSC E 03
0.000	0.0000	0.00	0.0	0.000	0.000	0.000	0.00
1.000	0.0000	0.00	0.0	19.050	0.000	19.283	0.00
2.000	0.0000	0.00	1149.3	25.417	30.648	25.810	650.00
3.000	0.0000	248.00	51.3	26.655	1.608	27.726	0.00
4.000	0.0000	512.80	51.0	25.656	2.344	28.638	0.00
5.000	0.0000	866.40	54.0	18.304	5.832	26.516	0.00
6.000	0.0000	154.40	52.5	10.904	6.032	19.662	0.00
7.000	0.0000	154.40	52.5	9.706	6.032	18.523	0.00
8.000	0.0000	154.40	52.5	8.488	6.032	17.366	0.00
9.000	0.0000	154.40	52.5	7.495	6.032	16.422	0.00
10.000	0.0000	154.40	52.5	6.672	6.032	15.640	0.00
11.000	0.0000	154.40	52.5	5.982	6.032	14.984	0.00
12.000	0.0000	154.40	52.5	5.396	6.032	14.427	0.00
13.000	0.0000	154.40	52.5	4.894	6.032	13.951	0.00
14.000	0.0000	154.40	52.5	4.461	6.032	13.539	0.00
15.000	0.0000	154.40	52.5	4.084	6.032	13.180	0.00
16.000	0.0000	154.40	52.5	3.753	6.032	12.866	0.00
17.000	0.0000	154.40	52.5	3.462	6.032	12.589	0.00
18.000	0.0000	154.40	52.5	3.204	6.032	12.344	0.00
19.000	0.0000	154.40	52.5	2.974	6.032	12.125	0.00
20.000	0.0000	0.00	0.0	2.768	0.000	2.631	0.00

MINI-DYNAMO * VERSION 1.00

TIME E 00	OPFMST E 03	RLMMST E 03	DMSMST E 03	TRKMST E 00	BLDMST E 03	FAXMST E 03
0.000	103.47	0.000	0.000	0.0	31.041	0.000
1.000	106.16	0.000	0.000	0.0	31.848	0.000
2.000	110.43	0.000	0.000	952.5	33.129	0.964
3.000	76.79	0.000	19.155	2223.4	26.868	2.255
4.000	80.03	0.140	20.010	3556.1	28.041	3.641
5.000	82.67	0.714	20.860	4838.9	29.126	5.073
6.000	82.67	3.276	21.760	5754.1	29.855	6.399
7.000	82.67	5.978	22.635	6299.3	30.609	7.382
8.000	82.67	8.680	23.510	6784.6	31.363	8.308
9.000	82.67	11.382	24.385	7209.0	32.117	9.176
10.000	82.67	14.084	25.260	7583.8	32.871	9.997
11.000	82.67	16.786	26.135	7917.4	33.625	10.779
12.000	82.67	19.488	27.010	8216.5	34.379	11.529
13.000	82.67	22.190	27.885	8486.3	35.133	12.250
14.000	82.67	24.892	28.760	8731.0	35.887	12.947
15.000	82.67	27.594	29.635	8954.1	36.641	13.624
16.000	82.67	30.296	30.510	9158.2	37.395	14.283
17.000	82.67	32.998	31.385	9345.9	38.149	14.927
18.000	82.67	35.700	32.260	9519.0	38.903	15.556
19.000	82.67	38.402	33.135	9679.2	39.657	16.173
20.000	82.67	41.104	34.010	9827.9	40.411	16.780

MINI-DYNAMO * VERSION 1.00

TIME	ANCOPF	ANCRLM	ANCDMS	ANCBLD	ANCTRK	ANCFAX	ANCGSC
E 00	E 00	E 03	E 03	E 03	E 03	E 03	E 03
0.000	0.0000	0.00	0.0	0.000	0.000	0.000	0.00
1.000	0.0000	0.00	0.0	0.000	21.330	18.987	0.00
2.000	0.0000	0.00	1133.8	28.631	25.074	22.391	641.23
3.000	0.0000	215.55	44.6	1.324	23.168	21.192	0.00
4.000	0.0000	392.70	39.1	1.700	19.647	19.286	0.00
5.000	0.0000	584.56	36.4	3.726	12.350	15.733	0.00
6.000	0.0000	91.78	31.2	3.396	6.482	10.279	0.00
7.000	0.0000	80.87	27.5	2.992	5.084	8.532	0.00
8.000	0.0000	71.25	24.2	2.636	3.917	7.047	0.00
9.000	0.0000	62.77	21.3	2.322	3.047	5.871	0.00
10.000	0.0000	55.31	18.8	2.046	2.390	4.927	0.00
11.000	0.0000	48.73	16.6	1.803	1.888	4.159	0.00
12.000	0.0000	42.93	14.6	1.588	1.500	3.528	0.00
13.000	0.0000	37.83	12.9	1.399	1.199	3.006	0.00
14.000	0.0000	33.33	11.3	1.233	0.963	2.570	0.00
15.000	0.0000	29.36	10.0	1.086	0.777	2.204	0.00
16.000	0.0000	25.87	8.8	0.957	0.629	1.896	0.00
17.000	0.0000	22.79	7.8	0.843	0.511	1.634	0.00
18.000	0.0000	20.08	6.8	0.743	0.417	1.412	0.00
19.000	0.0000	17.69	6.0	0.655	0.341	1.222	0.00
20.000	0.0000	0.00	0.0	0.000	0.279	0.234	0.00

MINI-DYNAMO * VERSION 1.00

TIME E 00	ANMGPF E 03	ANMRLM E 00	ANMDMS E 00	ANMBLD E 03	ANMTRK E 00	ANMFAX E 00	AEEDMS E 03	ANMSOF E 03
0.000	53.905	0.0	0.0	16.171	0.0	0.0	0.000	0.000
1.000	48.728	0.0	0.0	14.618	0.0	0.0	0.000	0.000
2.000	44.659	0.0	0.0	13.398	385.2	389.9	24.564	74.816
3.000	27.361	0.0	6825.1	9.573	792.2	803.4	0.966	0.000
4.000	25.124	43.9	6281.7	8.803	1116.4	1143.0	0.846	0.000
5.000	22.866	197.5	5769.6	8.056	1338.4	1403.1	0.789	0.000
6.000	20.146	798.3	5302.7	7.275	1402.2	1559.3	0.676	0.000
7.000	17.750	1283.5	4859.8	6.572	1352.5	1584.9	0.596	0.000
8.000	15.638	1642.0	4447.3	5.933	1283.4	1571.6	0.525	0.000
9.000	13.778	1897.0	4064.2	5.353	1201.5	1529.4	0.462	0.000
10.000	12.140	2068.1	3709.3	4.827	1113.6	1468.0	0.407	0.000
11.000	10.696	2171.7	3381.3	4.350	1024.3	1394.6	0.359	0.000
12.000	9.423	2221.4	3078.8	3.919	936.6	1314.1	0.316	0.000
13.000	8.303	2228.6	2800.5	3.528	852.3	1230.3	0.279	0.000
14.000	7.315	2202.6	2544.8	3.175	772.6	1145.7	0.246	0.000
15.000	6.445	2151.2	2310.4	2.857	698.1	1062.2	0.216	0.000
16.000	5.678	2081.0	2095.7	2.569	629.1	981.1	0.191	0.000
17.000	5.003	1997.0	1899.4	2.309	565.6	903.3	0.168	0.000
18.000	4.408	1903.5	1720.1	2.074	507.5	829.4	0.148	0.000
19.000	3.884	1804.0	1556.6	1.863	454.7	759.8	0.130	0.000
20.000	3.422	1701.3	1407.7	1.673	406.8	694.5	0.000	0.000

MINI-DYNAMO * VERSION 1.00

TIME E 00	TANGPF E 03	TANRLM E 03	TANDMS E 03	TANBLD E 03	TANTRK E 03	TANFAX E 03	TOTTAN E 03	PWAC E 03
0.000	53.905	0.00	0.0	16.171	0.000	0.000	70.1	0.0
1.000	48.728	0.00	0.0	14.618	21.330	18.987	103.7	70.1
2.000	44.659	0.00	1874.4	42.029	25.460	22.781	2009.3	173.7
3.000	27.361	215.55	52.4	10.897	23.960	21.995	352.1	2183.1
4.000	25.124	392.74	46.2	10.503	20.763	20.429	515.7	2535.2
5.000	22.866	584.76	43.0	11.782	13.688	17.136	693.2	3051.0
6.000	20.146	92.58	37.2	10.671	7.884	11.838	180.3	3744.2
7.000	17.750	82.15	33.0	9.564	6.436	10.116	159.0	3924.5
8.000	15.638	72.89	29.2	8.569	5.200	8.619	140.1	4083.5
9.000	13.778	64.67	25.9	7.675	4.249	7.401	123.6	4223.6
10.000	12.140	57.38	22.9	6.873	3.504	6.395	109.2	4347.2
11.000	10.696	50.90	20.3	6.153	2.912	5.553	96.5	4456.4
12.000	9.423	45.15	18.0	5.507	2.437	4.842	85.4	4552.9
13.000	8.303	40.05	15.9	4.928	2.051	4.236	75.5	4638.3
14.000	7.315	35.53	14.1	4.408	1.735	3.716	66.8	4713.8
15.000	6.445	31.51	12.5	3.943	1.475	3.266	59.2	4780.6
16.000	5.678	27.95	11.1	3.526	1.258	2.877	52.4	4839.8
17.000	5.003	24.79	9.8	3.152	1.077	2.538	46.4	4892.2
18.000	4.408	21.99	8.7	2.817	0.924	2.241	41.1	4938.6
19.000	3.884	19.50	7.7	2.518	0.795	1.982	36.4	4979.6
20.000	3.422	1.70	1.4	1.673	0.686	0.928	9.8	$\boxed{5016.0}$

MINI-DYNAMO * VERSION 1.00

TIME E 00	DT0201 E 00	DT0301 E 00	DT0401 E 00	DT0501 E 00	DT0601 E 00	DT0701 E 00	DT0605 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	DT0302 E 00	DT0402 E 00	DT0502 E 00	DT0602 E 00	DT0702 E 00	DT0403 E 00	DT0705 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	DT0503 E 00	DT0603 E 00	DT0703 E 00	DT0504 E 00	DT0604 E 00	DT0704 E 00	DT0607 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	AT0201 E 00	AT0301 E 00	AT0401 E 00	AT0501 E 00	AT0601 E 00	AT0701 E 00	AT0302 E 00
0.000	92.12	35.679	42.405	31.066	25.936	22.800	35.130
1.000	94.09	37.088	43.331	31.779	26.530	23.204	36.638
2.000	97.49	38.579	44.829	32.792	27.361	24.004	38.095
3.000	101.31	40.046	46.406	33.886	28.196	24.849	39.554
4.000	105.82	41.586	48.073	35.118	29.048	24.941	41.087
5.000	111.07	43.121	48.441	36.346	29.167	25.026	42.709
6.000	117.36	43.121	48.441	36.346	29.167	25.026	43.467
7.000	123.09	43.121	48.441	36.346	29.167	25.026	44.107
8.000	128.19	43.121	48.441	36.346	29.167	25.026	44.643
9.000	132.77	43.121	48.441	36.346	29.167	25.026	45.097
10.000	136.90	43.121	48.441	36.346	29.167	25.026	45.487
11.000	140.65	43.121	48.441	36.346	29.167	25.026	45.825
12.000	144.06	43.121	48.441	36.346	29.167	25.026	46.122
13.000	147.18	43.121	48.441	36.346	29.167	25.026	46.384
14.000	150.05	43.121	48.441	36.346	29.167	25.026	46.617
15.000	152.69	43.121	48.441	36.346	29.167	25.026	46.826
16.000	155.13	43.121	48.441	36.346	29.167	25.026	47.014
17.000	157.39	43.121	48.441	36.346	29.167	25.026	47.184
18.000	159.50	43.121	48.441	36.346	29.167	25.026	47.339
19.000	161.46	43.121	48.441	36.346	29.167	25.026	47.481
20.000	163.29	43.121	48.441	36.346	29.167	25.026	47.611

MINI-DYNAMO * VERSION 1.00

TIME E 00	AT0402 E 00	AT0502 E 00	AT0602 E 00	AT0702 E 00	AT0403 E 00	AT0503 E 00	AT0603 E 00
0.000	41.600	30.662	25.667	22.598	25.368	21.230	18.911
1.000	42.697	31.460	26.318	23.047	26.267	21.934	19.508
2.000	44.156	32.454	27.136	23.837	27.240	22.692	20.164
3.000	45.726	33.546	27.971	24.680	28.213	23.467	20.809
4.000	47.386	34.775	28.823	24.782	29.208	24.298	21.459
5.000	47.909	36.064	28.995	24.904	29.769	25.126	21.735
6.000	48.888	36.582	29.311	25.127	29.769	25.126	21.735
7.000	49.721	37.017	29.575	25.313	29.769	25.126	21.735
8.000	50.420	37.379	29.794	25.467	29.769	25.126	21.735
9.000	51.015	37.685	29.977	25.595	29.769	25.126	21.735
10.000	51.527	37.946	30.133	25.704	29.769	25.126	21.735
11.000	51.973	38.172	30.268	25.798	29.769	25.126	21.735
12.000	52.365	38.370	30.385	25.880	29.769	25.126	21.735
13.000	52.712	38.544	30.488	25.951	29.769	25.126	21.735
14.000	53.021	38.698	30.580	26.015	29.769	25.126	21.735
15.000	53.298	38.836	30.661	26.071	29.769	25.126	21.735
16.000	53.549	38.960	30.734	26.122	29.769	25.126	21.735
17.000	53.776	39.073	30.800	26.168	29.769	25.126	21.735
18.000	53.982	39.175	30.860	26.209	29.769	25.126	21.735
19.000	54.171	39.268	30.915	26.247	29.769	25.126	21.735
20.000	54.345	39.353	30.964	26.281	29.769	25.126	21.735

MINI-DYNAMO * VERSION 1.00

TIME E 00	AT0703 E 00	AT0504 E 00	AT0604 E 00	AT0704 E 00	AT0605 E 00	AT0705 E 00	AT0607 E 00
0.000	19.932	23.120	20.339	18.474	17.728	16.347	15.034
1.000	20.588	23.684	20.829	18.841	18.154	16.681	15.343
2.000	21.249	24.431	21.476	19.471	18.698	17.216	15.828
3.000	21.884	25.230	22.132	20.134	19.261	17.786	16.326
4.000	22.779	26.090	22.791	20.324	19.852	18.019	16.529
5.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
6.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
7.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
8.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
9.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
10.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
11.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
12.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
13.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
14.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
15.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
16.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
17.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
18.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
19.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529
20.000	23.037	26.613	22.791	20.324	20.130	18.241	16.529

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0201 E 00	RM0301 E 00	RM0401 E 00	RM0501 E 00	RM0601 E 00	RM0701 E 00	RM0107 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0102 E 00	RM0302 E 00	RM0402 E 00	RM0502 E 00	RM0602 E 00	RM0702 E 00	RM0207 E 00
0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.0000
1.000	0.00	0.000	0.000	0.000	0.000	0.000	0.0000
2.000	0.00	0.000	0.000	0.000	0.000	0.000	0.0000
3.000	0.00	0.000	0.000	0.000	0.000	20.000	0.0000
4.000	0.00	0.000	44.000	0.000	18.000	20.000	0.0000
5.000	210.00	38.000	47.000	31.000	19.000	21.000	0.0000
6.000	220.00	39.000	50.000	33.000	22.000	22.000	0.0000
7.000	220.00	39.000	50.000	33.000	22.000	22.000	0.0000
8.000	220.00	39.000	50.000	33.000	22.000	22.000	0.0000
9.000	220.00	39.000	50.000	33.000	22.000	22.000	0.0000
10.000	220.00	39.000	50.000	33.000	22.000	22.000	0.0000
11.000	220.00	39.000	50.000	33.000	22.000	22.000	0.0000
12.000	220.00	39.000	50.000	33.000	22.000	22.000	0.0000
13.000	220.00	39.000	50.000	33.000	22.000	22.000	0.0000
14.000	220.00	39.000	50.000	33.000	22.000	22.000	0.0000
15.000	220.00	39.000	50.000	33.000	22.000	22.000	0.0000
16.000	220.00	39.000	50.000	33.000	22.000	22.000	0.0000
17.000	220.00	39.000	50.000	33.000	22.000	22.000	0.0000
18.000	220.00	39.000	50.000	33.000	22.000	22.000	0.0000
19.000	220.00	39.000	50.000	33.000	22.000	22.000	0.0000
20.000	0.00	0.000	0.000	0.000	0.000	0.000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0103 E 00	RM0203 E 00	RM0403 E 00	RM0503 E 00	RM0603 E 00	RM0703 E 00	RM0307 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0104 E 00	RM0204 E 00	RM0304 E 00	RM0504 E 00	RM0604 E 00	RM0704 E 00	RM0407 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0105 E 00	RM0205 E 00	RM0305 E 00	RM0405 E 00	RM0605 E 00	RM0705 E 00	RM0507 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	RM0106 E 00	RM0206 E 00	RM0306 E 00	RM0406 E 00	RM0506 E 00	RM0706 E 00	RM0607 E 00
0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

MINI-DYNAMO * VERSION 1.00

TIME E 00	TLIN E 00	TRLM E 00	LIN E 03	RMTOT E 00	DMSTOT E 00	FAXAST E 03	FAXDST E 00	GPFTOT E 00
0.000	0.0	0.0	10.347	0.00	0.0	0.000	0.0	0.0000
1.000	0.0	0.0	10.616	0.00	0.0	19.283	0.0	0.0000
2.000	0.0	0.0	11.043	0.00	3831.0	25.810	0.0	0.0000
3.000	3831.0	0.0	7.679	20.00	171.0	27.026	700.0	0.0000
4.000	4002.0	20.0	8.003	82.00	170.0	25.846	2792.3	0.0000
5.000	4172.0	102.0	8.267	366.00	180.0	17.761	8754.7	0.0000
6.000	4352.0	468.0	8.267	386.00	175.0	10.363	9299.0	0.0000
7.000	4527.0	854.0	8.267	386.00	175.0	9.224	9299.0	0.0000
8.000	4702.0	1240.0	8.267	386.00	175.0	8.067	9299.0	0.0000
9.000	4877.0	1626.0	8.267	386.00	175.0	7.123	9299.0	0.0000
10.000	5052.0	2012.0	8.267	386.00	175.0	6.341	9299.0	0.0000
11.000	5227.0	2398.0	8.267	386.00	175.0	5.685	9299.0	0.0000
12.000	5402.0	2784.0	8.267	386.00	175.0	5.128	9299.0	0.0000
13.000	5577.0	3170.0	8.267	386.00	175.0	4.652	9299.0	0.0000
14.000	5752.0	3556.0	8.267	386.00	175.0	4.240	9299.0	0.0000
15.000	5927.0	3942.0	8.267	386.00	175.0	3.881	9299.0	0.0000
16.000	6102.0	4328.0	8.267	386.00	175.0	3.567	9299.0	0.0000
17.000	6277.0	4714.0	8.267	386.00	175.0	3.290	9299.0	0.0000
18.000	6452.0	5100.0	8.267	386.00	175.0	3.045	9299.0	0.0000
19.000	6627.0	5486.0	8.267	386.00	175.0	2.826	9299.0	0.0000
20.000	6802.0	5872.0	8.267	0.00	0.0	2.631	0.0	0.0000