

A SIMULATION OF REGIONAL DEVELOPMENT
IN THE
INTERLAKE REGION OF MANITOBA

by

Norman S. Howe

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A SIMULATION OF REGIONAL DEVELOPMENT
IN THE
INTERLAKE REGION OF MANITOBA

By
NORMAN S. HOWE

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ABSTRACT

In recent years, the related techniques of Simulation and Gaming have become popular for studying social and economic phenomena. One use of simulation is to evaluate the qualitative and quantitative aspects of a problem by reproducing the problem environment on a small scale and allowing people to react to this environment as though it were real. This practicum contains two simulations which use the above technique to study regional development.

Both exercises are loosely based on the F.R.E.D. and A.R.D.A. programs which provided extensive aid to Manitoba's Interlake in the 1960s. Factors selected for simulation included climate, agriculture, education, commercial interests, minority groups, unionism, and local government. Each exercise reproduces the major events occurring in a large community over a period of several years.

The Interlake Management Simulation is intended for use by large groups of people. Participants are assigned roles in a community of 100 people, and must solve problems of unemployment, resource depletion, and lack of education. The exercise is structured so that decisions made by participants have both short and long term effects on the simulation.

The Regional Development Simulation may be used by very small groups of people. A grid map and counters present an abstract model of a large rural area in need of development. The model is used as a focus for decision-making concerning development programs. Because the attributes of the model are easily modified, the simulation can reproduce a wide variety of situations and environments. The exercise may be performed in a short period of time, and can be utilized to stimulate discussion of problems in planning and development.

The Regional Development Simulation and the Interlake Management Simulation have potential uses in teaching students about resource planning and development. As well, they could be utilized to test proposed development programs in a simulated environment before implementing the real programs.

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CHAPTER I

INTRODUCTION

A. Statement of the Problem.

Planning for regional development is a complex process of experimentation. A planner may spend years studying an area to discover the needs, wishes, and possible reactions of its inhabitants. He may then construct elaborate models of the social, political, and economic systems of the region. He may review the results of similar projects in similar regions and implement prototype programs. Despite all preparations, the success of a regional development program will involve a process of adjustment. A program which succeeded in one place may fail miserably in another, unless the plan and the people it affects can adapt to one another.

The human element in any problem is very difficult to predict, because the thoughts and actions of a human being involve thousands of variables. In constructing a model of regional development, a planner has no difficulty in identifying environmental or economic factors which will increase or decrease the standard of living in an area. Empirical models of human reactions

to a project are much more difficult to construct, because of the large numbers of possible reactions. In recent years, the techniques of simulation have been used to introduce the human element into a model.

A simulation is a small-scale model which abstracts some of the elements of a more complex, real-life situation.¹ The purpose of this practicum is to produce a simulation training device which reflects the actions and reactions of people in the Interlake region of Manitoba during the 1960s. There were several reasons for choosing the Interlake Region. The most important factor was the amount of useful data available on the subject. Government departments and the University of Manitoba have studied the Interlake for several years, and information has been compiled on the area. Secondly, the Interlake was used as a test region for programs during the 1960s. Because of its relative isolation between Lake Winnipeg and Lake Manitoba, the region was a somewhat "closed" system. Government officials decided to channel funds from the F.R.E.D. and A.R.D.A. programs to the Interlake rather than elsewhere, to learn more about regional development for future application.² Finally, the Interlake Plan has succeeded in its aims of enlightening planners. Development criteria for the Interlake indicate positive results in many cases, and planners are studying to learn more

about the plans that worked. The Interlake Management Simulation is one method of exploring the difficult aspects of that problem.

B. Research Objectives:

The main objective of this practicum is to provide planners with a management simulation device based on regional development in Manitoba's Interlake. On a broader perspective, there are four objectives:

1. To produce a teaching device which would include factors of administration, planning, economics, and social interaction.
2. To produce a generalized simulation which could be used to model a variety of community interactions.
3. To produce a specific application of the general simulation for Manitoba's Interlake.
4. To design a tool to evaluate the results and impacts of regional development programs.

C. Methodology.

The Interlake Simulation began in the summer of 1974, when Dr. T. F. Carney of the Natural Resource Institute designed "Similak"³. This simulation was tested at St. Laurent on August 8, 1974, using students from the LIP summer program, and again at the Natural Resource

Institute at the University of Manitoba on September 13, 1974, with the aid of the Institute's students and staff. Following these sessions, Dr. Carney began to re-design the simulation for publication by the Natural Resource Institute. During the process of revision, the simulation became this practicum.

The following concepts were incorporated into the Interlake Management Simulation:

1. The simulation creates a simple community which is small enough to be seen in its entirety. The real Interlake Region is an enormous area which includes nearly 50,000 people.⁴ Few people possess the information or the inclination to understand how the Interlake Plan affected so many people. The simulation illustrates the effects of programs on a small number of people who represent a cross-section of the Interlake's population. Analysis of the simulation may help users to understand the actual reactions to the Interlake Plan.

2. All of the factors in the Interlake Management Simulation are under the control of its users. Constraints, roles, and environmental factors may be modified as the user sees fit, to test hypotheses, and to simulate different social and economic systems. In the real world, planners do not have these options; nor could they use such options, for ethical reasons.

3. The simulation may be stopped at any time, and

may be repeated many times. If something "goes wrong", no permanent harm is done, and the participants may begin afresh, having learned from their mistakes. This is nearly always impossible in the real world, and the time needed to simulate a program several times is only a few days. Development plans often continue for years before concrete results are visible.

Background research was the first stage in designing the Interlake Management Simulation. Information was needed concerning the environment of the Interlake before, during, and after the initiation of the F.R.E.D. and A.R.D.A. programs. Reports on the events which occurred and reactions to these events were examined. This information was used to build a simplified model of the Interlake Region, the second stage in the design process.

The third stage was to translate the model into a working simulation. Two different simulations were developed at this stage. One was a revised version of Similak, which incorporated new information about the Interlake. The second simulation concentrated on the large-scale aspects of regional planning, and could be operated by a small group of people. Both simulations are included in this practicum.

The first three stages, described above, were actually performed twice, once in the original construction of Similak, and again during the redesigning process. The various stages gradually reduced the model of the Interlake to an abstraction. The municipalities were reduced in number, and populations were altered in size and form to maintain a coherent structure. Names were assigned to places and people, and complex rules were devised to simulate travel, communication, industry, and economic conditions.

The fourth stage was production and testing of the simulation. When Similak was tested, one hundred rule manuals were printed, and the simulation was run twice. The Interlake Management Simulation has not been tested in its revised form.

The fifth stage was to redesign the simulation. The steps involved were identical to those involved in designing Similak, but with the added knowledge of the pitfalls encountered in the first version. The Interlake Management Simulation will probably be revised, not because it a faulty simulation, but because new knowledge becomes available every time a simulation is designed and tested. Each new version of the simulation will depict a more appropriate model of the Interlake, until a sufficiently accurate model is devised.

CHAPTER II

THE INTERLAKE MODEL

This chapter depicts the results of the first two stages of simulation design: data collection and model construction. The first three sections present the Interlake Region in terms of its economy, its people, and the political decisions which affected the region during the 1960s. Although these sections are based on actual data,⁵ the conclusions drawn from them are personal interpretations, and are thus subject to bias.

A. Manitoba's Interlake.

The Interlake is an area approximately 100 miles wide from east to west and 150 miles long from north to south. It is bounded in the east and west by Lake Winnipeg and Lake Manitoba. The region contains 10 Rural Municipalities and 3 Local Government Districts, which have a population of about 50,000 people. Over half of the regional work-force is employed in agriculture, despite the general poorness of the soil. Small pockets of excellent soil do exist, but most of the region is covered by poorly drained soil which contains an unfavourable amount of lime and rock. The region is unsuitable for grain farming, but could easily support livestock.

Although 2/3 of Manitoba's fish are produced in the Interlake, the value of the resource is fixed, and cannot be expanded. Overfishing and pollution have added to the problems facing the region's fishermen. Prospects for developing mining, forestry, or trapping appear poor. Recreation appears to be the most promising industry in the Interlake, while the abundant wildlife represent the only untapped natural resource.

The marginal resource base is reflected in incomes. In 1962, the average income in the region was \$3060, as compared to a provincial average of \$3989. Surveys showed that only 17% of the people in an Interlake census division had secondary education. This was the lowest percentage in the province. The dropout rate from high schools was high, and most of the schools were too small to maintain an adequate quality of teaching.

Houses tended to be small and in need of repairs. Flush toilets, indoor plumbing, and other amenities were scarce. All studies pointed to the conclusion that not enough capital was being invested in the Interlake.

B. A.R.D.A. and F.R.E.D.

In 1961, the federal government of Canada passed the Agricultural Rehabilitation and Development Act, also

known as A.R.D.A. This act permitted the federal government to make financial agreements with provincial governments to undertake research concerning alternate uses for land, soil and water conservation, and the development of income and employment opportunities in rural agricultural areas. The act defined responsibilities in very broad terms, which proved to be advantageous. A provincial government could use the act to adapt its own programs for federal funding.

In Manitoba, programs valued at \$3 million were conceived. It was realized that a small area would be needed to produce a visible effect with these funds, and the Interlake was chosen for the purpose.

Research in the Interlake and elsewhere revealed that agriculture was not the only sector of rural industry in need of assistance. Thus, in 1966, the Fund for Rural Economic Development was created. The original budget was \$50 million, and it increased to \$390 million in 1967. \$85 million of this was allocated to the Interlake Region.

The F.R.E.D. agreement was considered unusual, due to its long-term duration of 10 years. Normally, a government is unwilling to make long range plans because of the short interval between elections. The

agreement overcame these constraints in several ways:

1. In cases where tangible, visible projects were included in a plan, the agreement specified that these would be completed first. Immediate results would lessen the chances that a program would be abandoned and the funds reallocated.

2. Wherever possible, funds were allocated to projects already planned by provincial governments. This overcame objections that the government was wasting money on unwanted programs.

3. Local participation in planning and implementing programs was encouraged, to reassure people that the programs were for their benefit, and were not being forced upon them.

Most of the funds allocated to the Interlake were spent on education and manpower training programs. \$27 million was spent on consolidation and operation of schools, including a residential vocational school. \$28 million was spent on adult education and vocational training.

\$9 million was spent on road construction, and an industrial park was built in Selkirk. Over \$14 million was expended on agricultural development, including land acquisition, drainage, and clearing programs. \$500,000 was allocated to fisheries improvement, and fishermen

were made eligible for manpower training. Almost \$3 million was spent on recreation, to be used for game resorts and beach and camping facilities. Research and administration consumed \$2,250,000.

C. Evaluation of Programs.

Detailed evaluations have been made of several of the Interlake Programs.⁶ The manpower and education programs showed high benefit-cost ratios, and the high school dropout rates are much lower. Highway construction had little effect on income and employment, but it is felt to have indirect benefits to the education programs. Drainage programs showed considerable benefits, which aided the owners of large farms to the greatest extent.

Other programs appear less successful. Although few favourable results were found in the agricultural programs, it is possible that benefits will appear in the future, as farming is a long-term industry. Fisheries programs cannot be evaluated with any certainty, due to the recent disruption of fisheries by mercury pollution.

The construction of recreation areas provided many jobs for the Manpower programs. The value of the parks will depend on the numbers of visitors over the lives of the parks. The industrial park program cannot be

evaluated objectively because of a change of the Area Development Incentives plan to include Winnipeg.

Contradictory policies of federal and provincial governments caused problems in implementing some programs. Conflicts between towns also caused difficulty, because the municipalities were not accustomed to presenting their needs as a united region. A regional identity is beginning to develop. It was found that migration is not a viable solution to unemployment, and that it was expensive to create jobs for people. Finally, it was found that people in the Interlake distrusted make-work jobs, and preferred useful work within their own areas.

The programs in the Interlake will not be completed until 1977. Continuous evaluation will show which programs were successful in the long run, and which projects failed in their aims.

D. The Interlake Model.

This section analyses the data collected from the Interlake region, and converts it into a model of the Interlake as it was perceived when the simulations were designed.

1. The Region: The Interlake is large and diverse. Its soil is poor for crops, but could support livestock. Forestry, fishing, quarries, and trapping can all be performed on a very small scale. The best use of the Interlake's resources would be to support a large tourist and recreation industry.

2. The People: Over half of the Interlake's workforce is involved in farming. Few industries are found in the region, and most of these are based in towns. Fishermen and Indians are two identifiable subgroups of the population. The remainder of the population is involved in supporting or participating in the agricultural or industrial sectors of employment.

3. Government and Infrastructure: The Interlake is an artificial grouping of 10 municipalities and 3 Local Government Districts. The region does not have a central government of its own, but must depend on the provincial government for large-scale action. This government is responsible for schools, roads, and many public services. Until 1960, the Interlake was low on its list of priorities. Schools were small and underdeveloped, so that education was a sad process for many. Roads were inadequate in many areas, and public utilities were not expanded. Municipal competition was to blame for many of these difficulties.

4. Federal Programs: The federal government organized a funding program which would permit provincial governments to aid underdeveloped regions such as the Interlake. The agreement specified that the people of the regions must be involved in the planning process. All funds were allocated on a cost-sharing basis.

These were the major components of the model of the Interlake phenomenon. The next step was to combine and develop these components into a simulation.

CHAPTER III

SIMULATION DESIGN

A. Techniques of Simulation:

In its purest form, a simulation is a simplified model of reality. The degree of realism or simplification is controlled to the extent that the designer selects or excludes elements of reality from his simulation.⁷

As finished devices, simulations may take many forms, and can be adapted to the needs of different kinds of users. The orbital flight simulators used by NASA's astronaut training program are mechanical simulation devices. They can produce most of the contingencies which might be found in space, without the dangers. Simulations may be completely abstract in form, as in some computer programs, or they may be hard to distinguish from their real-life analogues, as is a wilderness survival course.

The greatest advantage of simulation is its selectivity as a learning and teaching method. A simulation designer can include in his models every factor he feels is relevant, and can omit factors he believes are extraneous. In this way, he focuses attention on specific details, which are not obscured by irrelevant

distractions.

Simulations are of necessity unrealistic. A model which successfully reproduced every facet of a real event would not be a simulation, but the event itself. Simulation designers strive to approach this perfection, and it is during their search for reality that simulation users reap the greatest benefits. A simulation may also become too realistic, by introducing factors which detract from the learning process. It would serve no purpose, for example, if a course in first aid started by allowing inexperienced students to participate in a real emergency. The simulation must be adapted to the level of competence of the user, as well as the general intent of the model. Thus, a simulation designer may strive for realism in one sense while avoiding it in another.

Constructing a simulation is a parallel process to conventional problem-solving techniques. It has one additional advantage: the simulation is an experiment which may be performed repeatedly by designer and user alike, to solve the original "problem" over and over in a myriad ways. Each time a new simulation is used, more is learned about the processes behind it.

Simulations which allow groups of people to inter-

act in a realistic fashion are becoming popular in the fields of business and education.⁸ Interactive simulations emphasize social processes rather than physical reality. Because human interactions are the important factors in such exercises, little is lost by abstracting or simplifying the physical environment in which the real-world analogue of the simulation occurs. The same effects may be obtained at a small expense. The Interlake Management Simulation operates on this principle.

As a learning device, simulation is an unique process. Knowledge gained through participation in a simulation exercise is learned experientially rather than linearly, as in a lecture.⁹ Because information is acquired in context, rather than as a stream of facts, relationships can be easily understood, and parallel processes can be observed simultaneously. A simulation can be used to place an entire system in perspective, whereas a book or a lecture might emphasize one facet out of proportion to its real importance.

B. The Interlake Simulation:

A thousand different simulations could be built from the model of the Interlake described in chapter II, and each simulation would be valid. Additional constraints are needed to determine what kind of simulation to build.

The primary constraint for the Interlake Simulations was the needs of the potential users of the devices. As the simulation would be used as a teaching device for planners and concerned citizens, Similak and later the Interlake Management Simulation were designed to maximize the potential number of participants in a single exercise. After testing Similak twice, it was suggested that a second exercise be devised which could be used by a small number of people to plan and execute large-scale regional development programs. Thus, two completely different training devices were constructed.

The Interlake Management Simulation is concerned with the people of the Interlake, and the completed simulation reflects this. As over 90 people may participate in the exercise, physical requirements for each person are minimized. Although many physical structures are included in the simulation, they are, for the most part, conceptual, or represented as a slip of paper. Each participant in an exercise represents an inhabitant of the "Interlake Area", which only superficially resembles the actual Interlake. In addition to the farmers, fishermen, workers in industry, and Indians mentioned in chapter II, there are also support services (represented by Vendors) and a large number of government employees. The latter were found to be necessary to

simulate the F.R.E.D. programs adequately. This placed a strong emphasis on the governmental aspect of the simulation, which was partly the intent of the exercise.

Geographically, the Interlake Area was divided into four regions to simulate the different municipalities of the Interlake. The regions are differentiated in their abilities to support agriculture and industry. Environmental factors were introduced to simulate climatic changes and resource depletion and pollution. Economic fluctuations occur for individual industries and on an area-wide basis.

The objective of the simulation is defined for the participants. They must maximize the physical and social well-being of the people they represent. To guide them through the exercise, an event structure was devised. Each stage in the exercise represented a year of real time. The participants must work, pay taxes, and maintain a standard of living. It soon becomes apparent that there is not enough money to go around unless corrective measures are introduced quickly.

The participants' rule manual for the Interlake Management Simulation is large. Its complexity is due to the number of different kinds of role and event in the simulation. It was found that detailed rules were needed to simulate communication and travel, and that

many factors which had been seen as extraneous were very important indeed.

The Regional Development Simulation examines the Interlake from a different viewpoint. Users are placed in the roles of development planners who must decide how to improve the standard of living in an underdeveloped region. Moveable counters are placed on a map to represent populations, structures, and programs, and the planners must operate within a set of time and budget constraints to achieve specified goals. The community and region can be altered easily to produce almost any kind of development situation.

The following chapters contain the rules and components of the simulations themselves.

CHAPTER IV

THE INTERLAKE MANAGEMENT SIMULATION

Preface.

Although the following portion of this practicum is called a chapter for consistency, its contents are a separate entity, the simulation, which could easily be published alone. Therefore, this "chapter" contains a table of contents, several subdivisions which qualify as chapters in their own right, and an appendix consisting of the Instructor's manual and additional components of the simulation.

The Interlake Management Simulation can be used by groups of people who have had no contact with the device previously. The instructions are laid out in a logical fashion to enable participants to learn their roles without reading large sections of the rules which need not apply to them.

The first part of the Rule Manual provides a framework for the rest of the simulation. A diagram shows how the rules are interrelated, while the numbered sections and subsections allow easy cross-referencing. The second part contains the system rules which apply to all participants and roles. The third part contains

detailed subsystem rules which are of limited application to most participants.

The Instructor's Manual is a separate segment of the simulation. The organizers of a simulation exercise will use it to operate the simulation smoothly, and to deal with problems which may arise. It also contains suggestions for evaluating a particular exercise for the benefit of participant and organizer alike.

THE INTERLAKE MANAGEMENT SIMULATION

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PART I: INTRODUCTION AND SIMULATION FRAMEWORK.

1.0 Introduction:

1.0.1 The Interlake Management Simulation is based on events in an imaginary Canadian community. Although it is named after Manitoba's Interlake, and recreates some of the conditions which existed in that region in the 1960s, none of the companies, roles, or places depicted in this simulation are intended to correspond with real people, places, or things in the Interlake.

1.1 General course of action: The Interlake Management Simulation is designed to be operated by thirty or more people. Each person, or role-player, takes the part of one or more of the inhabitants of the Interlake Area. The simulation is performed over several stages, each representing a year of real time. Each player must attempt to improve the standard of living of his roles by ensuring that they obtain enough food, shelter, and money to remain active throughout the simulation. Players may choose to combat pollution, resource depletion, and unemployment in order to maintain industry at full operating standards. Elections allow changes in government, while chance events simulate natural or economic factors.

1.2 Reading the rules: The rules to this exercise are divided into three parts. Part I presents a general

overview of the simulation, describes the physical components which will be used, and explains the framework of the Interlake Community. Part II describes the general System Rules which apply to all players. Part III describes the Subsystem Rules which apply to specific roles or segments of the simulation.

1.2.1 These rules are presented in a legalistic format, i.e. the wording of each rule is specific. To avoid misinterpretation, each rule should be taken as literally as possible. To aid cross-referencing, rule sections and subsections have been numbered.

1.3 Definitions: Certain words used in the Interlake Simulation have limited meanings which are different from their common dictionary definitions:

1.3.1 Area means the Interlake Area in which the simulation occurs, and includes all four regions A, B, C, and D.

1.3.2 Contingency means any unscheduled special event added to the simulation by the Organizer.

1.3.3 Organizer means the person who is controlling and operating the simulation; the instructor.

1.3.4 Phase means one of the scheduled events which subdivide each stage of the simulation.

1.3.5 Player or Role-Player means an actual person who is participating in the Interlake Simulation. A Player may occupy one or more roles.

1.3.6 Region means one of the four separate subdivisions of the Interlake Area, either A, B, C, or D.

1.3.7 Role means one of the fictional people or occupations in the Interlake Simulation.

1.3.8 Stage means one of the larger time-segments of the Interlake Simulation. Each stage represents one year of real time.

1.4 Simulation Components:

1.4.1 Rules and Tables: Most of the rules for the Interlake Simulation are contained in the Rule Manual. Additional materials required by players will be distributed by the Organizer as needed.

1.4.2 Information Cards will be distributed to role-players at the start of the simulation. There are two different kinds of cards:

a. Role cards contain the special information each player needs to know about his role(s).

Name	George Kotarbinsky		
Address	Region A.	B. Sc.(Econ.)	Education
Occupation(s)	Manager of Unitruck	\$20	Salaries
	Manager of WKZ	\$20	
	Legislative Member for Region D (Independent)	\$20	
Assets: \$50, 1 share in Unitruck, 1 share in WKZ			

Figure 1. Sample role card.

b. Company cards are distributed to Company Managers at the start of the simulation. These provide complete information about specific companies:

Station WKZ				
Region A. News Service.			Revenue at:	
Cost of Shares: \$200	Die	2/3	Full	
Owners: G. Kotarbinsky	Roll	cap.	cap.	
E. Charlesworth	1	\$36	\$51	
Maintenance Costs: \$5	2	\$48	\$68	
Assets: \$50	3	\$72	\$102	
Manager: G. Kotarbinsky \$20	4	\$96	\$136	
Operatives: G. Lewicki \$4	5	\$120	\$170	
F. Browning \$4	6	\$120	\$170	
Announcer: P. Mitchell \$6				
Sales: Announcements and bulletins @ \$5 ea.				

Figure 2. Sample company card.

The information provided by the company cards and role cards will be explained more fully in other sections.

1.4.3 Money, Vouchers, and Assets: Play money is used as currency in the Interlake Simulation. Subsistence Tickets and Certificates represent purchases of food, clothing, and shelter. Other certificates represent more tangible items such as bus tickets and automobiles.

1.4.4 Additional materials will be required during the simulation. Dice will be used in calculating revenue and the effects of Contingencies. Most players will require pencils and paper to write messages and to keep track of changes in their roles and companies.

2.0 Simulation Overview:

2.0.1 The following subsections explain the components and events of the Interlake Management Simulation as they relate to the real world. The rules which represent various factors and events may be found by referring to the simulation flowchart, section 2.6, and the Table of Contents.

2.1 The Environment: The action of the Interlake Simulation occurs in a large, diverse area known as the Interlake Area.

2.1.1 Regions: To simulate the large size of the Interlake, the Area is subdivided into four geographically separate regions, descriptively known as A, B, C, and D. Travel between regions requires the expenditure of funds.

2.1.2 Geography: The regions differ in the amounts and kinds of industry that can be supported. Region A is an urban region, which can support industrial companies but not farms, fisheries or resorts. Regions B, C, and D are rural regions, which support fisheries, resorts, wildlife areas, farms, and industries. Each region has a limited capacity to support any of the above, and may require improvements to enable these occupations to operate at full capacity.

2.1.3 Climate: Natural disasters such as floods and droughts affect occupations in several of the regions.

Such disasters are included in the simulation as Contingencies.

2.1.4 Environmental Limits: Pollution and resource depletion are caused by some occupations and industries. These factors will occasionally affect the simulation.

2.2 The Economy: The people of the Interlake earn money through various occupations. "Real" income enters the Area through the following industries:

2.2.1 Agriculture: There are 30 farms in the Interlake Region. Six of these are successful Large Farms. Their owners earn enough money to hire a Farm Operative. Large farms can support their owners entirely on local produce. Small farms produce no income, but can support their owners for one year in every two.

2.2.2 Companies: Resorts, wildlife areas, and light industries are complex businesses which are assigned Company Cards. Companies are run by Managers, but they also require shareholders and employees. Revenue to companies is variable, which is simulated by the use of dice and the Revenue Tables on each Company Card. The revenues must be used to pay employees' salaries, dividends to shareholders, taxes, and maintenance fees. Companies may expand from 2/3 capacity to full capacity by spending money, obtaining government permission, and hiring more employees. Some companies earn extra income by selling products, such as radio messages, printed

bulletins, automobiles, and bus tickets.

2.2.3 Fishing and Hunting: There are Minority Groups living in reserves in Regions B, C, and D. Some Minority Group Members and some Small Farm Owners (or Smallholders) earn a marginal income by fishing in Lake Charlotte or Lake Manitou. (See the Interlake Map, subsection 2.7, for exact locations) In addition to this, all Minority Members in regions B, C, and D can support themselves one year in every two by hunting and trapping.

2.2.4 Vendors: The necessities of life in the Interlake Simulation are represented by Subsistence Tickets, Subsistence Certificates, and Automatic Subsistence. Vendors obtain a small income by serving as retail outlets for Subsistence Tickets and Certificates. When Farmers and Minority Members support themselves from farm produce or hunting, they obtain Automatic Subsistence. This is further explained in section 4.

2.3 The Interlake Government: The remaining roles and functions of the Interlake Simulation are supported, either directly or indirectly, by taxation revenue.

2.3.1 The Legislature: The Interlake Government is controlled by five Legislative Members who are elected every second Stage, or year. Two Members are elected from Region A and one from each of the other regions.

2.3.2 The Civil Service: The decisions of the Legislature are carried out through the four departments of the Civil Service. The four departments, Environment, Commerce and Development, Welfare and Education, and Justice and Democracy, are managed by four Senior Civil Servants.

2.3.3 Programs and Services: The government departments are responsible for many services. Drainage Systems, Schools, and Utilities may only be built by the Government, which also hires the teachers to run the schools. Companies may not be created without government approval. The government also maintains a postal service, and can provide Welfare, Job Training, and pollution control programs. Law and order are maintained through a police force and a courts system. These services are funded through taxation and, to some extent, through Federal Grants, as described in section 2.4.4.

2.4 The Outside World: Although the Interlake Area is somewhat isolated, it has considerable contact with the rest of the world.

2.4.1 The Banker: Most functions of the "outside world" are represented in the role of the Banker.

2.4.2 Revenue: All revenue which enters the Interlake Region is distributed by the Banker, whether as money or as produce or as Subsistence Tickets and Certificates.

2.4.3 Maintenance and Expansion: It is expensive to maintain, construct, or expand physical facilities and structures. All fees required for these services must be paid to the Banker.

2.4.4 Federal Grants may be obtained by the Interlake Government to provide up to 50% of the funds for development programs administered by underemployed groups in the Interlake. Grant applications must originate with citizens' groups, not with the government itself, and the programs must be beneficial to the underprivileged groups. The Federal Government acts through the Banker.

2.4.5 Unions: Although Unionism is known in the Interlake, no formal unions have been established. Two Union Leaders, temporarily funded from outside the Interlake, may attempt to organize unions to improve working conditions in the Area.

2.4.6 Economic Contingencies: Worldwide fluctuations in economics, such as food shortages, oil crises, and inflation, affect the Interlake Simulation through Contingencies.

2.5 Constraints: The Interlake Simulation is not a smoothly operating system. There are limitations to the actions a player or company may perform, but there are also actions they must perform to avoid drastic consequences. These constraints include obtaining

subsistence and paying maintenance fees. Failure to complete these requirements may cause unemployment or economic failure.

2.6 Simulation Flowchart: The various components of the Interlake Simulation interact with one another to produce a system which constantly acts upon itself to create either stability or eventual breakdown and chaos. A diagram of the components and their interactions might appear as follows:

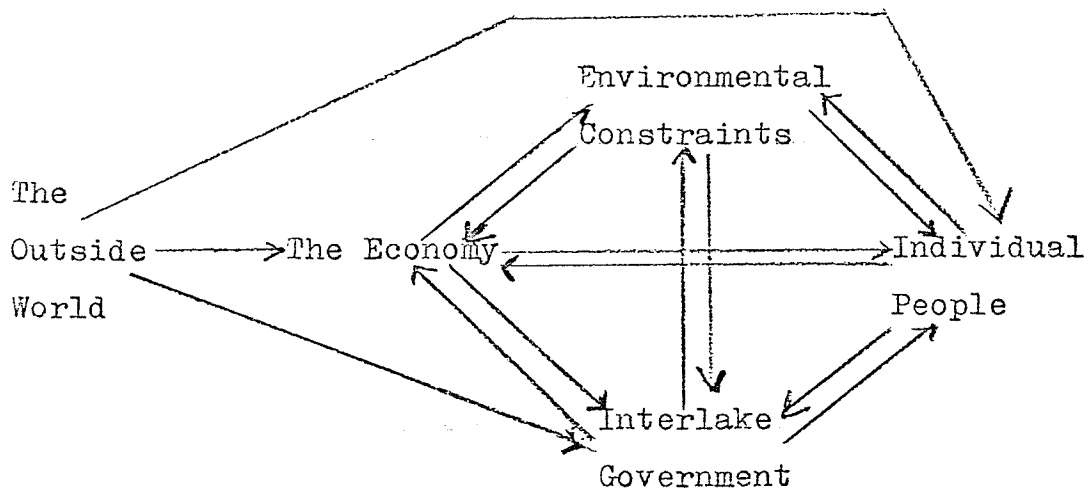
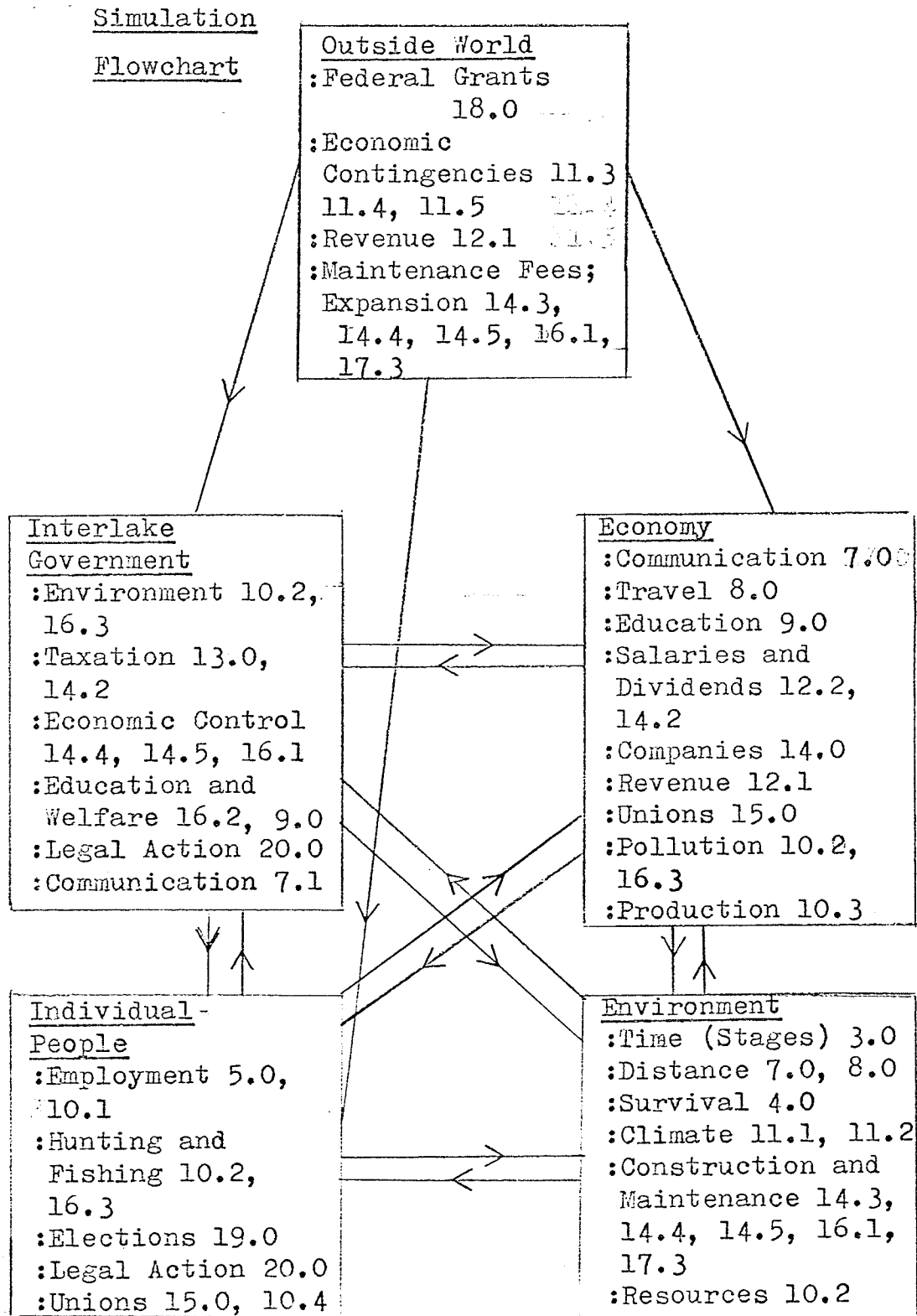


Figure 3. Links Between Simulation Components

2.6.1 In other words, all factors within the Interlake affect one another. In addition, the outside world has an important effect on the Interlake, but is too large to be affected in turn, at least within the scope of the simulation. A more complete breakdown of the components and their interactions is presented on the following page. Section numbers are provided in

Figure 4.











order to allow players to find the rules which apply to each component.

2.6.2 Because the simulation is an interdependent system, players should become aware of the basic concepts of each of the major subsections, even though they may not use the rules directly.

2.7 The Interlake Map: The map on the following page is intended as a visual aid, to help players identify the physical and spatial relationships between the regions in the Interlake. Within each region, the map only depicts major structures or areas; individual homes are not indicated. Their locations may be inferred through place of employment, ethnic origin (Minority Group Members live on Reserves), or occupation (Fishermen live near the lakes).

2.7.1 Key to Symbols:

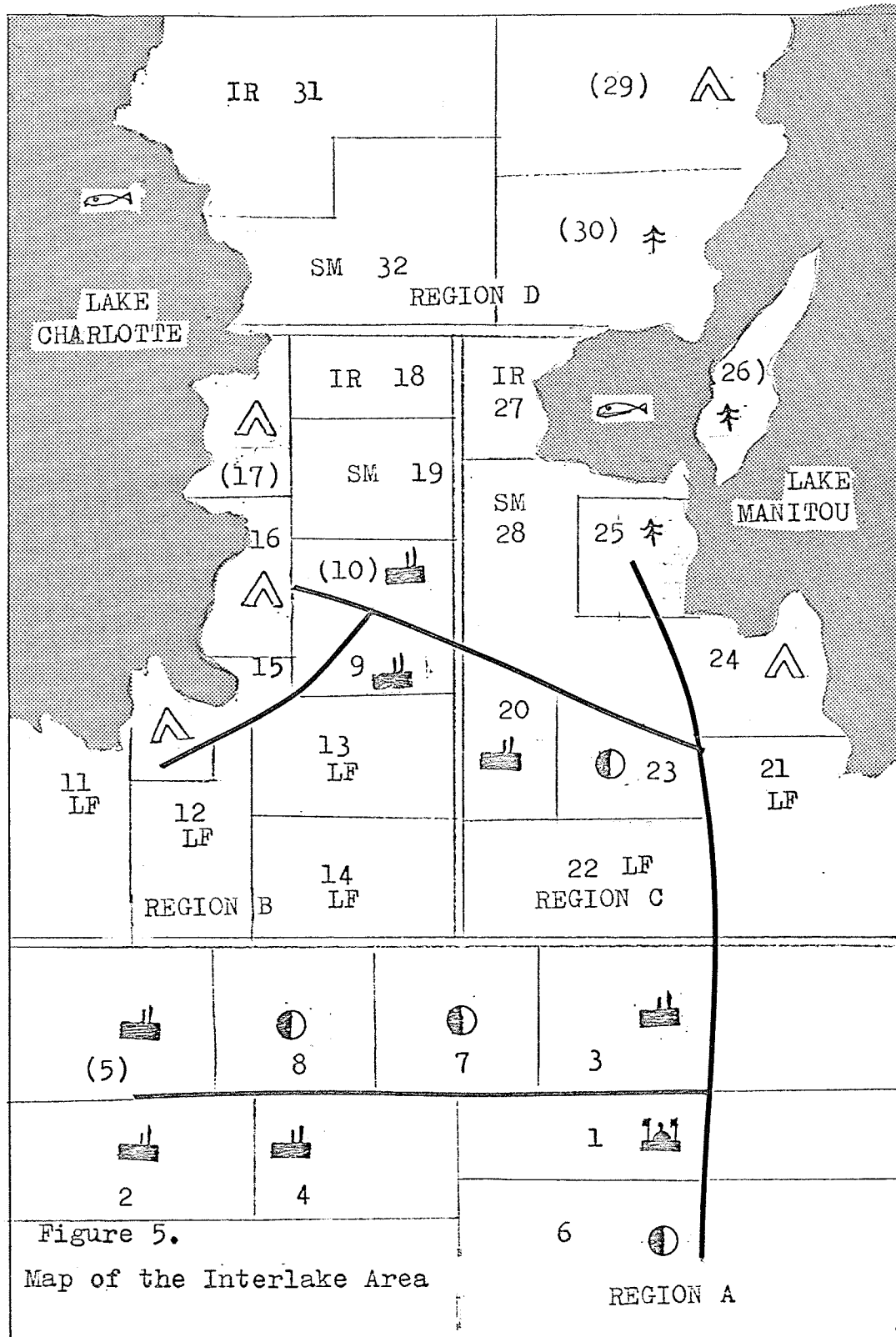
	-Lake		-Resort
	-School		-Fishing Area
	-Industry		-Wildlife Area
	-Government		-Road
	Offices		IR -Reserve
SM	-Smallholdings	LF	-Large Farm

2.7.2 Key to Numbered Locations:

() designates an Undeveloped Company.

1 Government Offices

2 Unitruck Transportation Co.



- | | |
|-----------------------------------|-------------------------|
| 3 Station WKZ | 18 Broken Hill Reserve |
| 4 Interlake Furnishing | 19 Smallholders |
| (5) Interlake Clothing | 20 Roadmasters Inc.. |
| 6 St. Mary's Academy | 21 Lot 5 |
| 7 McDonald High School | 22 Twin Rivers Farm |
| 8 Eastwood High School | 23 Twin Rivers School |
| 9 Caravan Construction Co. | 24 Shoaling Beach |
| (10) Food Processors Ltd. | 25 Wildfowl Unlimited |
| 11 Lakeview Farm | (26) Gameland Inc. |
| 12 Lot 2 | 27 Great Bear Reserve |
| 13 Lot 3 | 28 Smallholders |
| 14 Broadacres Farm | (29) Sandy River Park |
| 15 Sandy Bay | (30) Moose Creek Range |
| 16 Point Arthur | 31 Forked River Reserve |
| (17) Hidden Beach | 32 Smallholders |

PART II: SYSTEM RULES

This section explains the general rules which apply to all players continuously throughout the Interlake Simulation.

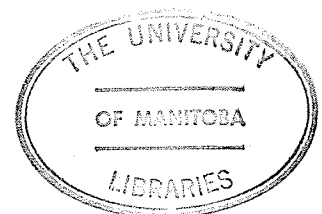
3.0 Sequence of Events:

3.1 Preparation: Before participating in the Interlake Management Simulation, each player should obtain a Rule Manual and read it thoroughly. Players who have not read the manual will find it all but impossible to make a meaningful contribution to the exercise.

3.1.1 At the start of the simulation, the Organizer will distribute Information Cards, sheets, and Assets to the appropriate players. Participants should spend about fifteen minutes reviewing the rules and finding the portions of the simulation room which represent their assigned regions.

3.1.2 Players assigned to more than one role should ensure that all their roles reside in the same region.

3.2 Stages: The Interlake Simulation is performed in stages, each lasting sixty to ninety minutes. The first stage will take longer than the rest, as players gain experience in using the rules of the simulation. Four stages are adequate for a first exercise, but the



Organizer may terminate the simulation at any time. A ten minute break should occur between stages, and an hour should be set for lunch if an exercise is to continue for more than two stages.

3.2.0 During each stage, certain events occur in a fixed order. Each such event occupies a Phase of the stage. Phases may overlap, but they should not occur in an irregular order. Detailed explanations of events within a Phase are explained in Part III.

3.2.1 Contingency Phase: At the start of each stage, the Organizer announces any unscheduled events, or Contingencies, and determines their effects. This phase is not mandatory; the Organizer may decide not to use any contingencies, or may use only a few. Section 11 gives more details about Contingencies.

3.2.2 Payment Phase: During this phase, the Banker distributes Revenues and Produce to Managers, Farmers, Fishermen, and Vendors. Managers and owners of large Farms distribute Salaries and Dividends to Workers and Shareholders.

3.2.3 Taxation Phase: Civil Servants collect taxes from Managers, Farm Owners, Vendors, and Fishermen. They then pay salaries to Government Employees.

3.2.4 Grant Application Phase: Role-players discuss their regional problems with their Legislative Members, and may submit applications for Federal Grants at this time.

3.2.5a Legislative Session: During the odd-numbered stages (first, third, etc.) the Legislature makes decisions concerning Federal Grants, finances, regional expansion, and expenditures.

3.2.5b Election Phase: During the even-numbered stages (second, fourth, etc.) an election is held to replace or re-elect Legislative Members.

3.2.6 Program Implementation Phase: The government acts on the decisions reached during the Legislative Session.

3.2.7 Maintenance Collection Phase: The Banker collects Maintenance and Construction fees from the government and the Companies. Payments for Subsistence Tickets and Certificates, and any unsold tickets, are also collected at this time.

3.2.8 Census Phase: The Civil Servants collect statistics on unemployment, disorder, pollution, and resource depletion and announce their findings to all Players.

3.2.9 End of Stage: Break for coffee or lunch.

3.3 De-briefing: At the end of the simulation, the Organizer will aid the players in evaluating the simulation and the knowledge they derived from it.

4.0 Subsistence:

4.0.1 In order to remain healthy and active, a

person must obtain a minimal amount of food, clothing, and shelter from the elements. A person who fails to meet these standards through normal occupations must spend too much time struggling to live, and may be forced to abandon his job. In the Interlake Simulation, these concepts are represented by Subsistence.

4.0.2 General Rule: During the Census Phase of each stage, players must prove to their Civil Servants that they have achieved Subsistence in some form during that stage. Players who have not achieved Subsistence become Unemployed during the following stage; i. e. they do not receive a Salary; they may not look for employment; they may not receive Job Training or Agricultural Assistance. (See the appropriate sections for further details on these programs.)

4.1 Kinds of Subsistence:

4.1.1 Subsistence Certificates represent substantial purchases planned over several years. A Subsistence Certificate may be used as proof of Subsistence for four successive stages. Certificates may be obtained from Vendors, and may be transferred to other players. Note: it "costs" \$7 to produce a Subsistence Certificate. This should serve as a guideline to the price a Vendor charges for Certificates.

4.1.2 Subsistence Tickets represent short-term purchases of necessities. These Tickets may be used as

proof of Subsistence only during the stage of purchase. Subsistence Tickets cost Vendors \$2; the tickets are transferrable.

4.1.3 Automatic Subsistence represents the ability to live off the land. Owners of Large Farms receive Automatic Subsistence at all times. Smallholders and Minority Members receive Automatic Subsistence once every two stages. Civil Servants should keep careful records, distinguishing Automatic and normal Subsistence. Automatic Subsistence may not be transferred to another role or player under any circumstance.

4.1.4 Clarification: Note that Farm Operatives who work on Large Farms do not receive Automatic Subsistence; they must obtain a Subsistence Ticket or Certificate.

4.2 Lack of Subsistence implies that, through disaster or carelessness, a person has not been able to maintain an adequate standard of living.

4.2.1 Loss of Subsistence may be caused by failure to produce a Subsistence Certificate or Ticket during the Census Phase, or by removal of Automatic Subsistence due to a Contingency or Imprisonment.

4.2.2 A role which lacks Subsistence may not become or remain Employed during the following stage, nor may it receive Job Training or Agricultural Assistance.

4.2.3 Roles which are entitled to Automatic Subsistence may receive it. This rule takes precedence over section 4.2.2.

5.0 Employment:

5.0.1 Employment is an important factor in the Interlake Simulation, and is closely linked to Subsistence. Whereas Subsistence implies the ability to hold a job, Employment is the act of holding one. The number of Employed, Unemployed, or Semi-Employed roles in the Interlake Area at any time are a measure of the social and economic well-being of the Area.

5.1 Kinds of Employment:

5.1.1 Employed: A role is Employed if it receives a salary as a full-time employee. Most jobs fall in this category.

5.1.2 Semi-Employed: A player's role is Semi-Employed if it receives a salary as a Seasonal Employee or a Fisherman.

5.1.3 Unemployed: Any role which is neither Employed nor Semi-Employed is Unemployed, even if receiving Dividend Payments or other funds.

5.1.4 For Census purposes, the best employment type is recorded if a role receives salaries for more than one job.

5.1.5 Note: If a Large Farm owner becomes Unemployed, his Farm Operative automatically becomes unemployed as well.

5.2 Effects of Unemployment: A high ratio of Unemployment in a Region implies a serious deterior-

ation of the local economy. This may have a small effect on individuals, but Industry and Public Works suffer.

5.2.1 Unemployment effects are measured separately for each Region during the Census Phase. If more than 45% of the roles in a Region are Unemployed, Maintenance Costs for Companies and Public Works in that Region are doubled in the following Stage.

5.2.2 For this purpose, two Semi-Employed roles are equivalent to one Unemployed role.

6.0 Money:

6.0.1 For simplicity of operation, the Interlake Community is a cash society. Although players may freely transfer money and objects to other players on an implied-credit basis, there are certain circumstances where this is not allowed:

6.0.2 All taxes must be paid on time.

6.0.3 All transactions with the Banker must be on a cash-only basis; Players unable to pay the Banker the required amounts suffer appropriate penalties.

6.0.4 All unofficial transfers of money must be voluntary. As even \$1 represents a large amount of money, all funds are presumed to be kept in a safe place, such as a bank, and theft is impossible.

6.0.5 To prevent confusion, Players are advised to keep funds for each role and Company separate, especially where more than one role is involved.

7.0 Communication:

7.0.1 The Communication and Travel rules which follow are designed to produce the effects of distance and mass media.

7.0.2 General Rule: Communication within the Interlake Area is represented either by direct verbal communication or by written messages. Written messages to players in the same region are passed directly. In addition, the following communication modes exist:

7.1 Postal Service: The Interlake Government operates a mail service between regions. A Postal Worker will carry packages and written messages to players in other regions at no charge. Money may be sent through the mail.

7.2 Radio Messages: Station WKZ will make verbal announcements to the entire Interlake Area at a cost of \$5.

7.3 Printed Bulletins may be printed and posted throughout the Interlake Region. This service is provided by Station WKZ for \$5 per message.

8.0 Travel:

8.0.1 Travel is relatively unimportant in the Interlake Simulation, except as an aid to communication

with other Regions. The Travel rules also simulate the difficulties involved in servicing distant populations.

8.0.2 The Travel rules only apply to travel from one region to another. There are two general methods of travel and one special method:

8.1 Travel Vouchers represent round-trip bus tickets which may be purchased from Unitruck Transportation for \$1. Each Voucher may be used only once, and permits a player to travel to one other region.

8.1.1 Players must surrender their travel vouchers to a Unitruck employee on reaching their destinations. No Travel Voucher is needed for a player to return to his home region.

8.1.2 Only a limited number of Travel Vouchers are available in each stage.

8.2 Automobiles may be purchased from Caravan Car Sales Ltd. for \$30. Cars must be obtained directly from the sales outlet in Region B. A car allows a player to travel between regions without restriction.

8.2.1 All cars are single-passenger vehicles, except for Police vehicles, which may carry passengers.

8.2.2 Only a limited number of cars are produced in each stage for purchase.

8.2.3 The Interlake Government may introduce legislation to license or limit the use of Automobiles.

8.3 Holidays are available for those who can afford them. Special holiday facilities will be provided by the Organizers. A holiday costs \$80 per stage, plus \$20 return air fare (unless the vacationer owns a car). Taxes must be paid in advance for the duration of the holiday, and special responsibilities, such as managing a Company or a government department, must be delegated.

8.3.1 The Holiday rule is intended to produce the effects of absentee ownership and management, as only the wealthier roles can afford to take vacations. Players may also wish to use the rule to "drop out" of the simulation for a period of time to observe it from the outside.

8.3.2 Note: Holidays are the only instances in which Air Travel is used.

8.4 Special Cases: There are several exceptions and qualifications to the Travel Rules. Other factors, of importance to Unitruck and the Government may be found in section 14 on Companies:

8.4.1 One employee of Unitruck is assigned to "Traffic Control", as most travel is accomplished via Unitruck Travel Vouchers. Players travelling away from their home regions must show a Travel Voucher or an Automobile card to this employee, with the following exceptions:

8.4.2 Travel Vouchers and Cars are not needed by WKZ employees posting bulletins or making announcements, Postal Employees delivering mail, or any player on a Vacation.

8.4.3 The Banker and the Organizer are not subject to Travel restrictions.

9.0 Education:

9.0.1 Educational level is the major factor which limits the employability of roles in the Interlake Simulation. Jobs in business and government require a higher level of formal and technical learning than subsistence occupations such as hunting, farming, and fishing.

9.0.2 General Rule: Each role is assigned a specific level of education which affects the employability of that role. Government programs are available which allow players to improve their educations.

9.1 Employment Standards:

9.1.1 All Managers and Senior Civil Servants require education beyond Grade 12.

9.1.2 All employees of Companies and all minor Civil Servants require education beyond Grade 9.

9.1.3 All Teachers require University degrees in Education.

9.1.4 There are no restrictions on education

levels for Legislative Members, Farmers, Fishermen, or Minority Members.

9.2 Job Training programs are available through the Interlake Government to raise Education Levels. See section 16, Government Services and Programs, for further details.

10.0 The Census:

10.0.1 The Census is the last phase of any stage of the Interlake Simulation. The social indicators measured during the census are indicative of the social and economic well-being of the Interlake Area. As well, these measurements are used in the simulation to calculate the effects of various conditions on the Interlake Area in the stages which follow.

10.0.2 Census measurements are taken by the Senior Civil Servants, with the help of the Banker and the Organizer.

10.1 Unemployment is the most telling of the social indicators. It is measured by the Civil Servant in charge of Welfare and Education.

10.1.1 The Civil Servant obtains from the Banker, all Company Managers, and other players, the occupations, employers, and incomes of all roles. (After the first Census, this becomes easier, as only changes need be

recorded.) Presence or absence of Subsistence is also noted at this time.

10.1.2 An Employment Index is calculated for each Region as outlined in section 5.2. In addition, an aggregate Employment Index, consisting of the ratio of Unemployed to total population, is calculated for the Interlake Area as a whole.

10.1.3 Any Employment or Subsistence effects which affect revenue or employment in the following stage should be reported to the affected parties and the Banker.

10.2 Pollution and Resource Depletion are measured by the Civil Servant for the Environment. These factors indicate the government's concern for environmental problems.

10.2.1 Measurement of these indices and descriptions of programs to counteract them may be found in section 16.

10.3 Gross Regional Production is a measure of the economic productivity of the Interlake Area. It is measured by the Civil Servant in charge of Commerce and Development, with the help of the Banker.

10.3.1 The Banker is responsible for all funds which enter and leave the Interlake. He should keep records of all transactions.

10.3.2 The Gross Regional Product (GRP) is obtained

by adding together all revenues entering the Interlake during the Payment Phase of each stage. This equals all payments to Large Farms, Companies, Smallholders, and Fishermen during a stage, excluding internal transactions.

10.3.3 A Net Regional Product (NRP) may be obtained by subtracting all Maintenance Costs and Construction Fees from the GRP.

10.3.4 Note that neither GRP nor NRP measure funds injected into the Interlake by the Federal Government, except where these funds are used as expenditures.

10.4 Labour Unrest is measured by the Chief Justice.

10.4.1 The Labour Index is merely the number of workers who participated in Strike Actions in each stage. Details pertaining to Unions and Strikes may be found in section 15.

10.5 Evaluating the Simulation: As each social and economic indicator is calculated, it should be announced to the participants in the simulation.

10.5.1 Although the various indices only affect the simulation in certain cases, they are indicators of trends which might cause the Interlake Area to collapse into disorder and economic failure. Knowledge of these trends may help the players and the government in

particular to halt a movement before disaster occurs.

10.5.2 Several of the Indices refer to rules not yet mentioned. Despite their omission from the System Rules, these elements of the simulation are very important.

10.5.3 The Census measurements are also an important aid to information-gathering in other phases of the simulation, and in evaluating the simulation after its completion. For this reason, all records should be kept as accurately as possible.

11.0 Contingencies:

11.0.1 In the real world, certain unique events occur which are too rare to include in the Interlake Simulation as regular events. Floods, droughts, serious inflationary periods, food shortages, or energy crises may only be seen once in a lifetime. The Contingency rules enable the Organizer to insert such events into the simulation if he feels that such a contingency would prove useful or interesting.

11.0.2 The contingencies described here are only a sample of the possible events. Organizers may compose their own contingencies to fit special situations.

11.1 Flooding of lakes, rivers, and streams is a serious problem in many areas, especially during spring runoff. In economic terms, floods have the

greatest effect on agriculture, by ruining crops. As well, public utilities are sometimes disrupted, and recreation areas may require renovations after a flood.

11.1.1 When a Flood contingency is announced, a die is rolled for each of Regions B, C, and D. A roll of 3 or higher in a region indicates that flooding has occurred.

11.1.2 In flooded regions, Maintenance Costs for Public Works and Resorts are doubled during the flood stage.

11.1.3 Each farmer in a flooded region must roll a die. A result of 1 or 2 indicates flooding for that farmer. Smallholders who are flooded lose their Automatic Subsistence; if they have part-time jobs, they must quit work to rebuild their farms (i.e. they become Unemployed). Large Farm owners lose their Automatic Subsistence and half their farm revenue for the flood stage only.

11.1.4 Drainage programs may be implemented in each region to prevent flooding.

11.2 Drought, like flooding, has its greatest effect on rural regions. Unlike flooding, a drought is more general, and depends not on river channels, but on a lack of water. Rural industries may suffer from a water shortage, but those found in cities can usually appropriate enough for their own needs.

11.2.1 Drought causes revenue to drop by 20% to

all Large Farms and Companies in regions B, C, and D.

11.2.2 All farmers must roll a die. Those who roll a 1 lose their Automatic Subsistence unless they have completed an Agricultural Education program.

11.3 General Inflation affects everyone, but the poor are hardest hit, because they have no surplus cash, and few are able to sacrifice luxuries they do not possess.

11.3.1 Inflation adds \$2 to the wholesale price of Subsistence Tickets to Vendors; i.e. the Vendor must pay the Banker \$9 for 1 Subsistence Certificate or 5 Subsistence Tickets instead of \$7.

11.3.2 Ten percent is added to the cost of Maintenance or Construction of any facility.

11.3.3 The inflationary trends generally begin with increased prices and profits. Inflation adds 10% to the revenue of all Companies.

11.4 A World Food Shortage would generally be beneficial to Canadian agriculture, by raising prices of agricultural products. However, only the large Agri-Businesses show a tangible increase in revenue, due to price regulation at the intermediate levels of marketing.

11.4.1 A World Food Shortage adds 20% to the revenue of Large Farms.

11.5 An Energy Crisis, whether artificial or real, has a serious effect on industry, especially the Transportation sector of the economy. Although Canada is relatively safe from such a crisis today, this rule demonstrates how such a crisis might affect the Interlake.

11.5.1 An Energy Crisis adds 10% to the Maintenance Costs of all facilities. In addition, Unitruck must pay the Banker \$1 for every Travel Voucher sold, and Caravan Construction must pay the Banker \$15 for every car sold. These companies may pass on their added costs to their customers.

11.6 Note: All contingencies are temporary. Conditions return to normal at the start of each new stage unless the Organizer renews the contingency.

PART III: SUBSYSTEM RULES.

The Subsystem Rules apply to specific roles, institutions, and events found in the Interlake Management Simulation. A brief summary of each section will be presented at the start of each major section to help players find the rules which apply to them.

12.0 Revenue and Income:

12.0.1 This section deals with productive revenue as derived from the Banker, as well as the means of distribution of Salaries, Dividends, and other funds. In places, this section also overlaps with section 13.0, Taxation.

12.0.2 General Rule: In the Payment phase of each stage, the Banker delivers Cash Revenue and Products for Sale to Company Managers, Farmers, Fishermen, and Vendors. All Salaries and Dividends from non-Government revenues are paid to employees and shareholders, minus any Income Tax. Government Employees are paid during the Taxation Phase.

12.1 Revenue is the physical product of work, and, in the Interlake Simulation, is presumed to originate outside the Interlake community. In addition to money, Revenue also includes Travel Vouchers and Cars. Subsistence Tickets and Certificates are a special kind

of Revenue, produced outside the Interlake for use within the Area. In the limited sense presented here, Automatic Subsistence is also Revenue.

12.1.1 The kinds and amounts of Revenue vary according to the recipient's status, the presence or absence of certain Contingencies (section 11), and random factors.

12.1.2 Farm Revenue is marked on the Role Cards of Farm Owners at the start of the Simulation. Revenue to a Large Farm is fixed at \$25; Smallholders do not receive any Farm Revenue unless they participate in Drainage Programs or Agricultural Assistance programs. Details on these may be found in section 16.

12.1.3 Vendors receive only Subsistence Tickets and Subsistence Certificates as Revenue. Each Vendor is given 30 Subsistence Tickets and 6 Subsistence Certificates in the Payment Phase. The Vendor must pay for any Tickets or Certificates sold during a stage in the Maintenance Collection Phase, and return the unsold ones to the Banker. The Vendor pays \$7 for each Subsistence Certificate or 5 Subsistence Tickets sold, and \$2 for each Subsistence Ticket up to 5.

12.1.4 Company Revenue is calculated with the aid of a die and the Revenue table printed on each Company Card. As the calculation of Company Revenue is a special case, it is described more fully in section 14, Companies. Company Revenue includes Travel Vouchers and

Cars.

12.2 Salaries and Dividends: During the Payment Phase, Company Employees, including Managers, receive Salaries from their Managers. Farm Operatives are paid a Salary by the owners of the farms on which they work. Shareholders also receive Dividends from their Companies.

12.2.1 An Income Tax is removed from all Salaries and Dividends before payment as described in section 13.

12.2.2 Dividend payments are derived from Company Revenue as described in section 14.

12.2.3 Salaries are independent of Revenue, and may be negotiated in the case of individual workers or Union members as described in section 15, Unions.

12.2.4 Salaries of Government Employees are paid as described in section 13.

13.0 Taxation:

13.0.1 In order to maintain public utilities and services, Governments were invented. Taxation was later invented as a relatively painless method of paying for the Government and the services it provided. This section is of interest to all Interlake residents, but applies particularly to Managers, Farm Owners, Fishermen, and Civil Servants.

13.0.2 General Rule: Each Senior Civil Servant is assigned a Region from which he must collect Taxes during the Taxation Phase of each Stage. To save time,

Managers and Farm Owners remove taxes from their employees' Salaries and Shareholders' Dividends before payment.

13.1 Taxable Income: There are several classes of revenue from which taxes are extracted. Other classes of taxation may be devised by the Legislature.

13.1.1 Corporate Tax: Companies are taxed a rate based on the remainder of Company Revenue after payment of Salaries and Dividends. For this purpose, Revenue includes Sales Revenue from the previous stage.

13.1.2 Dividends to Shareholders are taxed.

13.1.3 Salaries to all employees are taxable.

13.1.4 Personal Income from self-employed roles is taxable. This includes Revenue earned by Farm Owners and Fishermen, and profits made by Vendors from the sale of Subsistence Tickets and Certificates during the previous stage.

13.1.5 The Taxation Rate for all classes of Income is 20% at the start of the simulation.

13.2 Levying of Taxes: Only the Interlake Legislature may levy a tax or change a rate of taxation.

13.2.1 Only the Civil Servant assigned to a region may collect taxes in that region. Additional Civil Servants may be hired to aid in Tax collection, but they must be given the specific powers to collect

taxes where help is needed.

13.2.2 A salary of \$2 or less may not be taxed. This rule is designed to protect players from taxes which might render them unable to purchase Subsistence Tickets.

13.2.3 Capital purchases or property improvements are not taxable. This is because purchases such as cars are already taxed as Sales Income, and funds used to purchase "improvements" such as new companies or Expanded companies leave the Interlake entirely. Property Improvements usually yield additional revenue which can be taxed in any case.

13.3 Salaries of Government Employees: All taxation revenue is turned over to the Civil Servant in charge of Welfare and Education, who then pays Salaries to all Government Employees, including Civil Servants, Legislative Members, Teachers, Police Officers, and any other Civil Servant hired during the simulation.

13.3.1 All Government Employees are subject to the same taxation requirements as any other salaried worker.

13.3.2 The Department of Welfare and Education manages all Government Funds.

14.0 Companies:

14.0.1 Governments and Companies are complex entities. Whereas Agriculture and Fishing are essential-

ly one or two-person enterprises, Companies are large businesses requiring incorporation, sales of shares, and employees. The Interlake Government is more complex still, and its importance to the simulation is such that it must be dealt with in several sections.

14.0.2 Summary: Companies are large business corporations. Companies may be created and expanded with Government permission, by selling Shares and hiring employees. Company Revenue is dependent on economic conditions, which are simulated using dice, and on the inherent profitability of each Company. Revenue must be expended to pay employees, to pay taxes, and to distribute Dividends to Shareholders. Shareholders are responsible for Company actions.

14.1 Company Revenue: Each Company is assigned a distribution of Revenue which is printed on the Company Cards, as depicted below and in section 1.4:

Revenue at:		
Die	2/3	Full
Roll	cap.	cap.
1	\$36	\$51
2	\$48	\$68
3	\$72	\$102
4	\$96	\$136
5	\$120	\$170
6	\$120	\$170

Managers calculate revenue by rolling a die and cross-indexing the die roll with the capitalization of their Companies. Companies which are in operation at

the start of the simulation have sold only 2 blocks of shares, and use the "2/3 cap." column. The Revenue Table is different for each Company.

14.1.1 The procedure described above is modified by the number of responsibilities a Manager takes upon himself. A responsibility includes managing a company, holding office in the Legislature, and managing a Farm.

14.1.2 Managers who have only one responsibility must roll the die twice, and use the highest (i.e. best) roll to determine their Company's revenue.

14.1.3 Managers who have more than one responsibility must roll the die once for each responsibility and use the lowest (i.e. worst) result to determine Revenue.

14.1.4 Managers who manage more than one Company must repeat the procedure for each Company they manage.

14.1.5 Farm Owners may remove their farms from their list of responsibilities by hiring a second Farm Operative.

14.2 Salaries, Dividends, and Taxes: After receiving Revenue from the Banker, Managers deduct Taxes from Salaries and Dividends and pay these to the appropriate players.

14.2.1 Salaries at the start of the simulation are marked on Company Cards and Role Cards. Individual and group negotiations may cause changes in Salaries. This is described in more detail in section 15.

14.2.2 Dividends are calculated as Company Revenue plus Sales Revenue from the previous stage minus present Salaries, divided by 4. These Dividends are divided equally between the blocks of Shares.

14.2.3 Corporate Tax is based on the remainder of Revenue plus Sales after payment of Dividends and Salaries. The Tax deducted from Dividends and Salaries should not be included when calculating Corporate Tax. Taxes on Dividends and Salaries are based on the amounts paid to individual roles. All fractional values are rounded downward.

14.2.4 The money remaining after taxation is Company Funds, which may be spent only with the approval of all Shareholders.

14.3 Maintenance of Companies: Companies of all types are considered to possess physical facilities which must be maintained to allow the Company to operate efficiently.

14.3.1 Maintenance Costs for each Company are marked on the Company Cards. These costs must be paid to the Banker in the Maintenance Collection Phase of each stage.

14.3.2 Failure to pay Maintenance Costs due to lack of funds results in the Company's Revenue being halved in the following stage. Double the normal payment is then necessary to return the Company to

normal operation.

14.4 Expansion of Companies: Companies in operation at the start of the simulation or created during the simulation may be expanded from their initial 2/3 capacity to Full capacity by performing the following actions:

14.4.1 An application to expand the Company must be submitted by the Manager to the Civil Servant for Commerce and Development. If approval is to be granted, a Certificate of Expansion will be issued.

14.4.2 A third block of shares must be sold, and the full price of the block must be paid to the Banker during the Maintenance Collection Phase.

14.4.3 Two additional Workers must be hired. If the Company is unionized, the Workers must become union members.

14.4.4 If the above actions have been completed, and the Government has provided the Utilities required to use the expanded capacity, the Company may begin to use the Full Cap. column of the Revenue Table at the start of the next stage.

14.5 New Companies may be created during the course of the simulation. Several potential sites for Companies are considered to exist in the Interlake; these are depicted on the Interlake Map, section 2.7.

New Companies are created in a similar fashion to the procedure for expanding a Company:

14.5.1 An application to create a specific Company must be submitted to the Civil Servant for Commerce and Development. This application may be submitted under the Federal Grants program described in section 18.

14.5.2 If the application is approved, two blocks of shares must be sold, and the price of the shares paid to the Banker during the Maintenance Collection Phase.

14.5.3 Four Employees must be hired, a Manager and three Workers. All education qualifications described in section 9 must be followed.

14.5.4 The Government must provide the necessary expansion of Utilities before the Company may commence operations. Note that the Government's approval of a proposed creation or expansion of a Company implies a contract to provide these services if needed.

14.5.5 New Companies begin operation at 2/3 capacity. A Company may not be created and expanded during the same stage. This rule is designed to simulate start-up times; a new business does not spring up fully developed in a single year.

14.6 Special Rules pertaining to Companies:
Certain Companies serve special functions during the Interlake Simulation, and have unique conditions

attached to their conditions of operation.

14.6.1 Station WKZ operates a news service which prints bulletins and announces messages as described in section 7. The following special rules apply only to WKZ:

a. Radio Announcements are made by a WKZ employee, who travels to each region and reads the announcement once in a loud voice. Bulletins will merely be posted in each region. The employees of WKZ do not require Travel Vouchers while they perform these services.

b. As a Public Service, WKZ must provide the Interlake Government with four free Radio Announcements each stage. Government announcements beyond 4 must be paid in full. WKZ must also provide one free Radio Announcement to each of the two Political Parties at the Election Phase, as described in section 19.

14.6.2 Unitruck Transportation operates a Bus Company which provides travel services as described in section 8. The following rules apply to Unitruck Transportation only:

a. One Unitruck employee is assigned to Traffic Control as described in section 8.4.

b. As a Public Service, Unitruck must provide three free Travel Vouchers to each Legislative Member and two free Vouchers to each Senior Civil Servant at the start of each stage. These free Vouchers are in addition to those provided for sale.

14.7 Employment Constraints: In addition to the economic constraints required to create or maintain a Company, relations between employer and employee have effects on production and Revenue:

14.7.1 Hiring and Firing: Company Managers may only be dismissed or hired by a majority vote of the Shareholders. All other employees are hired and fired at the discretion of the Manager. In any stage, an employee may never be hired or fired before the end of the Payment phase. This rule is intended to simulate difficulties in hiring personnel, and to allow an employee sufficient time to find a job before his money runs out.

14.7.2 Manpower Shortages: If a Manager has been unable to find a replacement for an employee by the end of a Stage, it is presumed that the Company has been short of staff for a significant period of time. This has a detrimental effect on production, which is depicted as follows:

During the following Payment phase, the Manager rolls a die to calculate Revenue. For every employee below optimum (i.e. 3 at $\frac{2}{3}$ cap. and 5 at full cap.) the Manager rolls the die one extra time. This increases the probability that the Company will lose Revenue. A Company may never receive revenue if the Manager or a qualified replacement is absent from the Company.

14.7.3 Labour Relations have a considerable effect

on the operation of Companies. This is described in detail in section 15, Unions.

15.0 Unions:

15.0.1 Labour movements are important factors in improving wages and working conditions. When used in different ways, the powers of Unions can help and hurt a local economy.

15.0.2 General Rule: Two Union Leader roles exist. These leaders may attempt to form local chapters of their two unions within the Interlake. When all the Workers in an employment sub-group belong to the same union, they may back their wage demands through strike actions.

15.1 Union Formation and Membership: The purpose of a Union is to strengthen the bargaining position of underpaid workers with respect to their employers. Therefore, only workers who receive salaries from specific employers may belong to Unions. The Banker is not considered to be an employer, and occupations which receive income directly from the Banker cannot be unionized. This includes Farm Owners, Fishermen, and Vendors. These occupations derive their income from the sale of goods, and not from labour.

15.1.1 A Company Union is considered to be in operation when all salaried workers in a Company belong to the same Union. Managers may not belong to Company Unions if they own shares in their Companies,

to prevent conflicts of interest. In this case, the Union can operate without the Manager's membership.

15.1.2 A Farm Union is considered to be operative when all Farm Operatives in a single Region belong to the same Union. As only Regions B and C contain Large Farms, only two Farm Unions are possible.

15.1.3 Government Unions become operative when all salaried employees in one of the four departments of government belong to the same Union. Because of probable conflicts of interest, Senior Civil Servants need not be included in these Unions, though they may join them. Legislative Members may never form a Union.

15.1.4 Membership in a particular Union is indicated by payment of \$1 in Union Dues in the Maintenance Collection phase of each stage. Payment of dues confers union privileges for the stage following payment.

15.1.5 As there are two Unions, roles may only belong to one Union for each salaried job. In most cases only one salary will exist.

15.1.6 If members of the different Unions work in the same Company or government sector, the Unions must trade members or otherwise come to an agreement before a union chapter becomes operative. Government sectors are defined for this purpose in section 16.

15.2 Union Organization: Two Union Leaders have

been sent to the Interlake by the Workman's Union of America and the Canadian Union of Workers (WUA and CUW). In Stage I of the simulation, their Salaries are paid by the Banker; thereafter they must obtain jobs or be paid by their Union Workers.

15.21 Union Leaders are elected by their unions every second stage, at the same time as Legislative elections are held. These elections also determine the Salary a Union Leader is to be paid. Union elections are described more fully in section 19.

15.22 Union Leaders pay taxes on their Salaries as defined in section 13; they are an addition to the list of players the Civil Servants must visit. Salaries are received in the Maintenance Collection phase are taxed in the following stage.

15.23 Union Dues are collected by the Union Leaders. Dues are utilized for the salaries of Union Leaders, strike relief funds, and for Union Expenses incurred in travelling or message-distribution via WKZ.

15.3 Union Actions: Operative union chapters may submit group demands for wage increases to their employers. Wage demands which are rejected may be negotiated. If negotiations fail, strike actions may be initiated. Strikes which continue for unreasonable periods of time may be terminated by government arbitration.

15.3.1 Wage demands to Companies are negotiated by Shareholders. Farm Owners negotiate for Farm Unions, and Legislative Members negotiate for Government Unions.

15.3.2 Strikes may be called at any time after the Payment Phase of a stage. A legitimate wage demand must first have been submitted and rejected. A majority of the workers in a union chapter must agree to strike or no strike occurs.

15.3.3 Striking sectors of the Interlake become inoperative. Players may not travel by bus if Unitruck employees strike; Job Training programs may not operate if Teachers strike, and so on. Company strikes cause Maintenance Costs to double; as well, Companies suffer from employee shortages as described in section 14.7.

15.3.4 Strikers may unilaterally decide to end a strike, if they are threatened with lack of Subsistence or feel that continued striking will harm everyone.

15.3.5 Arbitration procedures are possible if a strike shows signs of lasting for two or more stages. This is described in section 20, Legal Action.

15.4 Employer Constraints: Many tactics have been developed by management to counter Labour actions. These would be all too effective in this simulation, and the following rules have been devised to protect the workers.

15.4.1 Unions are legitimate organizations. No player may be dismissed from a company for holding

membership in a Union. Just cause must be shown for dismissal from any employment.

15.4.2 The Interlake Management Simulation contains no provisions for violence. Nevertheless, employers may not hire "Scab Labour" during a strike, on the grounds that violence would occur under these conditions in the real world.

16.0 Government Services and Programs:

16.0.1 The Interlake Government represents those Municipal and Provincial employees who are responsible to the people of the Interlake. For simplicity, they have been represented as an autonomous body. The government is responsible for the creation and maintenance of many services in the Interlake Area. All applications for Federal Grants as described in section 18 must be forwarded through the Interlake Government.

16.1 Utilities and Public Works: Sewers, water supplies, roads and railroads, buildings, and drainage systems are essential to the Interlake economy, and are maintained and created through the Department of Commerce and Development.

16.1.1 Maintenance Costs for Utilities must be paid to the Banker in the Maintenance Collection phase. At the start of the simulation, these utilities cost \$100 in Region A, \$50 in Region B, \$20 in Region C,

and \$10 in Region D.

16.1.2 Creation or expansion of a Company during the simulation requires Utilities to be expanded to maintain services. The expansion costs the government \$20. New Companies also increase Maintenance Costs by \$10; expansions cause an increase of \$5. Note that Region A does not need to expand its utilities for any reason, although the Maintenance Costs still increase.

16.1.3 All applications and cost estimates for the creation or expansion of private or public facilities, including Companies, Schools, Drainage Systems, and Pollution Control systems, must be submitted to the Senior Civil Servant for the Department of Commerce and Development for approval.

16.1.4 Departmental Organization: The Department of Commerce and Development consists solely of the Senior Civil Servant.

16.2 The Department of Welfare and Education is responsible for financial assistance and educational programs. Most financial assistance is given in conjunction with agricultural or educational programs, but pure Welfare payments also exist. The Civil Servant for Welfare and Education is also the government Treasurer and Paymaster.

16.2.1 Education Programs enable players to raise their educational levels and improve their

chances of obtaining employment. There are two facets to Educational Programs: Expansion of Schools and the Adult Education programs themselves.

16.2.2 Expansion of Schools: The four schools in the Interlake are presumed to be operating to capacity at the start of the simulation. They must be expanded before any Job Training programs may take place. School Buildings may be expanded at a cost of \$50 per Teacher. This enables each teacher (including the school principal) to process 4 Job Trainees per stage. A school may be partially expanded if it has more than one teacher; this allows only some of the teachers to participate in these programs. To build a school in Regions B or D would cost \$100 per teacher. New teachers must be hired to operate new schools; they may be trained by the existing teachers. If a Teacher does not live in the same region as the school he operates, a Transfer fee of \$20 must be paid to the Banker to change the player's region.

16.2.3 Educational programs may be implemented in the stage following expansion of schools. The Civil Servant for Welfare and Education selects Job Trainees in the Census Phase before training begins. In the Program Implementation Phase, the Job Trainee must go to a designated school, where a Teacher will provide a Certificate of Training bearing the Trainee's name and the degree of education achieved.

16.2.4 Educational Costs: To raise a player's

educational level by one step (from below Grade 9 to High School; from High School to University, etc.) costs the Government \$3 per student. As well, a fee of \$15 per teacher must be paid for all expanded schools, and \$10 per stage for unexpanded schools. These costs must be paid in order to operate an Adult Education program.

16.2.5 Financial Assistance to Job Trainees may be provided under the following circumstances:

Unemployed Job Trainees may be paid \$3 as a bursary to prevent lack of subsistence at the end of a training stage.

Players who must travel to a different region for Job Training must be provided with Travel Vouchers. This incurs a Bussing fee of \$3 per student which must be paid to the Banker during the Maintenance Collection Phase.

16.2.6 Welfare: Unemployed players who lack Subsistence may apply to the Civil Servant for Education and Welfare to receive a Welfare Subsidy of \$2. Welfare is provided at the discretion of the Government, and may be revoked at any time. Players may not receive Welfare in any stage in which their roles received a Salary, even if the role became unemployed before the Payment phase. Welfare payments are distributed during the Program Implementation phase of each stage.

16.2.7 Departmental Organization: The Department

of Welfare and Education consists of the Senior Civil Servant and the Teachers, including the Principals of the schools.

16.3 The Department of the Environment administers all government programs which deal with Agriculture, Wildlife, Fisheries, and Pollution Control.

16.3.1 Agricultural Assistance programs may be organized to improve the marginal lands owned by Smallholders, and to improve their farm management techniques. Smallholders who receive Agricultural Assistance are entitled to an income of \$4 per stage, ~~as well as~~ receiving Automatic Subsistence in every stage. Agricultural Assistance programs cost \$10 per Smallholder for Land Improvement, and the farmer must complete an Adult Education program as described in section 16.2. As this is a special program, the smallholder's Training Certificate must be signed by an Agricultural Representative hired by the Government, rather than a teacher.

16.3.2 Drainage Systems may be installed in each region at a basic cost of \$30 per region and a Maintenance Cost of \$2 per participant per stage. A Drainage System protects all Public Works from floods, as well as any Resorts and Farmers who participate in a program. Smallholders who benefit from Drainage Systems receive \$2 in revenue each stage, but may not hold jobs beyond the management of their farms. Once a Drainage System has

been provided to a Farmer or Resort, the \$2 maintenance fee must be paid or the entire Drainage System becomes inoperative in the following stage. The Civil Servant or an Agricultural Representative must inform the participants of a program that they are receiving assistance.

16.3.3 Wildlife Conservation: Hunting and trapping by Minority Group Members is causing a 7% reduction in Wildlife per stage for each Minority Member in a region. The Department of the Environment may counteract this depletion by creating Wildlife Areas, Companies which increase Wildlife by 10% per region, and by persuading Minority Group Members to stop hunting. When a Minority Member agrees to this, he forfeits his Automatic Subsistence and must find another source of income.

16.3.4 Fishery Conservation: Fishery Depletion in Lake Charlotte and Lake Manitou occurs at a rate of 10% per Fisherman. A Fishery Conservation Program for each lake may be introduced at a cost of \$10 per stage. These programs improve the fisheries in each lake by 20% per stage. As well, the Department may attempt to persuade the Fishermen in each region to cease fishing. This causes a Fisherman to forfeit his \$3 income.

16.3.5 Pollution Control: Industries pollute their regions at a rate of 8% per stage. Resorts pollute their regions by 4% per stage. These may be countered by building Effluent Treatment Centers at a cost of \$30 per business or resort. These are Public Works which

cost \$4 per stage to maintain. Wildlife areas may also be built; these counter pollution by 4% per stage.

16.3.6 The values of Wildlife and Fishery Depletion and the Pollution Index are measured during the Census.

16.3.7 Departmental Organization: The Department of the Environment consists of the Senior Civil Servant and any Agricultural Representatives hired by him. Note: An Agricultural Representative must have a grade 12 education, or have completed an Adult Education program.

16.4 The Department of Justice and Democracy is responsible for the Postal Service and the operation of Elections, as well as the administration of justice through the Interlake Courts.

16.4.1 A Postal Worker is responsible for the delivery of messages and packages between regions in the Interlake as described in section 7.1.

16.4.2 The Election procedures for the Interlake Area are described in detail in section 19. All Civil Servants are required to assist the Chief Justice in charge of Justice and Democracy in these matters.

16.4.3 Justice is served through the Interlake Courts, which are aided by a small Police Force. The situations requiring these courts to be used, and the procedures for administering justice, are described in section 20.

16.4.4 Departmental Organization: A federally

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appointed Chief Justice administers this department. He may not be removed from office unless clear evidence of incompetence or corruption is available. Two Police Officers also operate in this department, as does the Postal Worker.

16.5 Taxation: Matters concerning the collection and distribution of public funds are administered through the Civil Service as a whole, as described in section 13. The Legislative Assembly makes all decisions related to government funds.

17.0 Legislative Session:

17.0.1 The real business of government is to serve the people it governs. Nevertheless, the word "government" brings to mind the operations of Parliaments and Congresses, the political side of public service. This part of a political system is at least as important as the Civil Service, as it decides how the government will administer its services and programs.

17.0.2 General Procedure: During the odd-numbered stages of the Interlake Simulation, the Legislative Members must hold assembly to determine the best way to allocate programs in the Interlake. They must base their decisions on information gathered by the Civil Servants, and on the needs of the people of the Interlake, as determined in the Grant Application phase preceding

the Legislative Session.

17.1 Information Gathering: Data concerning the Interlake Area is collected continuously throughout the simulation, but decisions should be based on the following criteria:

17.1.1 Grant Applications for funds or services are direct indications of people's desires. As well, applications from unemployed or underemployed players may allow the Federal Government to share costs on such projects as new Companies, Drainage Systems, and Schools. Federal Funding is described more fully in section 18.

17.1.2 Applications for the expansion or creation of Companies should be carefully considered, as industries incur costs to Public Utilities as well as providing tax revenue.

17.1.3 The various Social Indicators calculated during the Census phase will show where the government's attention should be focussed; towards unemployment, pollution and resource depletion, labour relations, or increasing productivity.

17.1.4 Taxation Revenue is the most important constraint on government spending. Because the Interlake is a cash society, as described in section 6, the Interlake Government may not engage in deficit spending. It must pay cash to the Banker for all services purchased, or the services are not provided. Thus,

if the Legislature has too little money to perform the programs it needs, additional revenue must be obtained.

17.2 Legislative Decisions: The Legislative Assembly is limited in the kinds of decisions it may make.

17.2.1 The Assembly may approve or reject Grant Applications. On approval, the Grant Application must be forwarded to the Banker for approval, as described in section 18.

17.2.2 The Legislature may implement or expand any of the Government Services or Programs described in section 16.

17.2.3 Legislation may be passed to regulate taxes, create or remove license fees, prices, wages, and unions. The Legislature may not regulate the Police Force, the Elections, or the Legal System, except in imposing fines, as described in section 20.

17.2.4 All Legislative decisions should be made with the assistance of the Civil Servants, who must administer the programs.

17.3 Budget Constraints:

17.3.1 Regional Maintenance fees for Public Works should be allocated before any other fees. Failure to maintain these Utilities results in economic deterioration: all revenue in a region is halved in the following stage.

17.3.2 All costs of a program should be assessed by the appropriate Civil Servant before implementation begins. Projects which exceed budget constraints may be partially constructed if they involve several separate expenditures, but they yield no benefits until they are completed.

18.0 Federal Grants:

18.0.1 In the 1960s, the Governments of Canada and Manitoba implemented a series of rural development programs in the Interlake Region. Costs for the projects were shared on a proportionate basis by the province and the federal government. This rule section simulates the operation of this cost-sharing agreement.

18.0.2 General Rule: The Federal Government, in the person of the Banker, will provide 50% of the funds for new government programs designed to aid unemployed or underemployed groups in the Interlake.

18.1 Program Types: The following projects are eligible for Federal funding:

18.1.1 Creation or Expansion of a Crown Corporation. Interlake Residents may apply to create a Company. 50% of all costs of setting up a Company, including construction, utility expansion, and training of employees and Managers, may be paid by the Federal Government. The Interlake Government is the only shareholder in a Crown Corporation, unless a private

citizen is willing to buy a block of shares.

18.1.2 Implementation and operating costs for all Education, Conservation, Agricultural Assistance, Drainage, and Pollution Control programs which will assist disadvantaged groups are eligible for Federal funding.

18.2 Application Procedure: During the Grant Application phase of each stage, Legislative Members must travel to the regions they represent and discuss the needs of the residents in each region.

18.2.1 Grant Application forms are available from the Organizer. The Legislative Member for a region helps fill out the applications, which must include the names, occupations, and states of employment of the people to whom the benefits of the project will go, as well as a complete description of the project.

18.2.2 During the Legislative Session, costs of the project are estimated, and the project is approved or rejected by the Legislature. More than 50% agreement is needed to pass an application.

18.2.3 Applications which are approved must be forwarded to the Banker for approval. Rejected applications may be retained by the Legislative Member who forwarded them, for later consideration.

18.2.4 If the Banker approves an application, he provides funds immediately.

18.2.5 Rejected applications may be funded entirely

through Interlake funds. They then become Interlake Fund programs, and are not subject to the Review procedures described below.

18.3 Grant Review: In the case of projects lasting several stages, the results of a program, in terms of costs incurred, income created, decreases in unemployed persons, etc., must be submitted to the Banker to obtain additional funds in each stage. If the Banker finds a project to be lacking in positive results, he may refuse to grant additional funds. These programs must then become Interlake Fund programs or cease operation at once.

18.4 Interlake Fund: The Interlake Government need not place its programs in the hands of the Federal Government. If funds are abundant, the Legislative Assembly may perform any of the projects described in section 18.1 with no assistance from the Banker. Programs whose Federal funds have been cut off or rejected are also eligible for Interlake Funding.

19.0 Elections:

19.0.1 On a large scale, the democratic process plays a part in the Interlake Simulation in only two cases: the Elections of Legislative Members and Union Leaders. All other decisions are made by individuals

or small groups.

19.1 Legislative Elections occur in the Election phase of even-numbered stages.

19.11 The Chief Justice is responsible for all elections. The other Senior Civil Servants assist him by collecting ballots from their own regions as assigned on their Role Cards.

19.12 Nominations: Each candidate for election in a region must be nominated by another role resident in that region. The nominee need not be a resident in the region he represents. Each region must have at least one nominee; Region A must have at least two, as two Legislative Members must be elected for Region A.

19.13 Campaign Funds: Each candidate who accepts a nomination must place a deposit of \$20 with the Civil Servant for his region. Candidates who receive three or more votes may reclaim their deposits. No one may run for more than one office at a time.

19.1.4 Voting is accomplished by the use of secret ballots. Players are entitled to one vote per role. The voting is scrutinized by Civil Servants and representatives of the two political parties. (See section 19.2.) The Chief Justices may not vote except in the case of a tie.

19.1.5 Ten minutes is allowed before elections for campaigning.

19.2 Political Parties: There are two political parties in the Interlake Area at the start of the simulation, parties L and R.

19.2.1 Members of the two parties may expand party membership by collecting membership dues of \$1. Party members must also pay dues each stage.

19.2.2 The two official parties are entitled to two minutes of free Radio Message each at election time for campaign speeches.

19.2.3 The purpose of the parties is to provide a unified government, and to enable players without funds to run for office by using money lent them by other party members, or derived from membership fees.

19.2.4 New parties may be organized, and fees set as desired. No player can be forced to join a political party.

19.3 Union Elections are held by ballots sent through the mail. Each union member votes for the player he feels would make the best Union Leader.

19.3.1 All votes must be for other players; no one may vote for himself. Each voter also votes for the salary he feels would be suitable for a Union Leader.

19.3.2 All votes must be for members of the same union. In the case of a tie, a by-election should be held using the tied names. The votes are counted by a player who is not the present leader of the union.

19.4 Newly Elected Union Leaders and Legislative Members take office at the start of the stage following their elections.

20.0 Legal Action:

20.0.1 Because the Interlake Management Simulation is very complex, there are too many special cases and limitations which could be applied to the simulation; to include all of them would double the size of the rules. The Legal Action rules are intended to allow players to decide for themselves concerning certain rules, and to deal with infractions within the framework of the simulation.

20.0.1 General Rule: Players who have a complaint against another player may seek redress in the Interlake Courts. The kind of judgement handed down in the case depends on whether the complaint is Criminal or Civil, and whether a Union Arbitration is involved.

20.1 Crimes: Police action is necessary in the event that a crime has been committed.

20.1.1 The following actions are considered to be crimes:

- a. Tampering with the Mail.
- b. Tampering with Elections.
- c. Bribing Public Servants.
- d. Extortion (charging unfair prices for Subsistence Tickets).

e. Tax Evasion (Includes failure to pay license fees and fines).

20.1.2 Players who suspect that a crime has been committed may submit a complaint to the Chief Justice bearing the name of the plaintiff as well as the player accused of the crime.

20.1.3 If the Chief Justice believes the complaint to be valid, he may issue a warrant for the arrest of the accused. A Police Officer must serve the warrant, and must immediately escort the accused to the Courts in Region A. The accused must remain in custody until he is brought to trial.

20.1.4 Prisoners must be brought to trial within one stage of their arrest. All prisoners must be supplied with Subsistence at Government expense.

20.2. Court Procedure:

20.2.1 Civil and Union Actions follow the same procedures as Criminal Actions, save that no one is arrested in the former.

20.2.2 Trials and Arbitration proceedings are held in the Program Implementation phase of any stage.

20.2.3 The Chief Justice runs all court proceedings. A Jury of six players must be selected for every Court Action. The Jury must be acceptable to both sides of a dispute.

20.2.4 Only one spokesman is permitted per

side in a dispute. In Criminal and Civil actions, these are the Plaintiff and the Accused. Union Arbitration procedures are debated by one Union Member and one representative of the Employer.

20.2.5 Each party in an action is given five minutes to plead his case, calling any witnesses as needed. These witnesses must be present at the start of the trial. The Jury then has five minutes to retire and present a verdict agreed to by over 50% of the jurors.

20.2.6 The Chief Justice then announces a settlement or pronounces a sentence.

20.3 Kinds of Judgements:

20.3.1 In Civil or Criminal Actions the jury must find the accused Guilty or Not Guilty. The Chief Justice may then impose a fine, a sentence, or a settlement in the case of a Guilty verdict.

20.3.2 Fines may be imposed against players for Crimes as defined in section 20.1 or for offences defined by the Interlake Government during the simulation. Fines must be paid, and failure to pay is regarded as Tax Evasion, a Crime.

20.3.3 Sentences are the equivalent of prison sentences, and may only be imposed in Criminal cases. Players who have been Sentenced may not receive an Income or Subsistence for the duration of the Sentence. They become unemployed, and may not seek employment.

A player who has been sentenced to prison may not travel. Imprisonment costs the Government \$10 per stage per prisoner. Prison sentences begin at the start of a stage and end at the end of a stage.

20.3.4 Settlements are required in Civil cases. They take the form of instructions by the Justice to the guilty party to make payments or otherwise make amends to the plaintiff. Failure to obey a Settlement instruction is grounds for fining.

20.3.5 In Strike Arbitrations, the jury must make a declaration for the Union or for the Employer.

20.3.6 If the judgement favours the Union, the Chief Justice must grant the Union a wage increase greater than that offered by the Employer.

20.3.7 If the judgement favours the Employer, the Union must accept the wage increase offered by the Employer. Wages may not be lowered in this case, and no further strike action may be taken until the end of the next stage.

20.4 Civil action and Arbitration:

20.4.1 A Civil Action is initiated by a complaint by a player which does not concern a crime. The Chief Justice must still decide whether or not the complaint is valid.

20.4.2 Strike Arbitration may be invoked by either Labour or Management once a strike has lasted for more than one stage.

B. THE INSTRUCTOR'S MANUAL

This manual is designed for use in conjunction with the Interlake Management Simulation. It contains most of the special components needed to use the simulation, and provides suggestions for the efficient use of the exercise.

1. Intent of the Simulation:

This simulation exercise is intended to teach players about the complexities of Regional Development by allowing them to plan and implement their own development programs within a simulated community. Although the resources available to players are limited, it is the uses to which these resources are applied which will determine the success or failure of the development programs. Teamwork is essential, as the Government will be unable to raise funds for programs unless players postpone the temptations which exist to maximize personal gain. Within the simulation framework, it is possible for all players to benefit from cooperation.

The Interlake Management Simulation is intentionally complex. Regional planning is a complex process, and not all of the people affected by such plans are interested or in agreement with the planners. Opportunities have been created for the

simulation to proceed in many directions. In one exercise, Union Action might predominate; Politics and Business might prevail in others. The economic constraints on the simulation focus attention on Government action and reaction, but the people chosen to play different roles will have a considerable effect on the course of play.

2. Preparations for Play:

a. Playing Area: The amount of space needed to stage the Interlake Management Simulation will vary, depending on the number of players. For the full complement of 92 players, at least 4 rooms of school classroom size will be required. The rooms should be linked by a common hallway. A single large room, such as a gymnasium, might also prove adequate, but the four Regions should be clearly separated. A cafeteria should be located nearby, for lunch and coffee, unless the Organizers are providing these. This problem will not arise if the stages are played in a classroom context on different days.

b. Role Distribution: When fewer than 92 people, plus the Organizer and the Banker, participate in this exercise, some players must be given several roles. This is because the numerical factors in the simulation have been calculated to fit the number of role cards, and any reductions will make it difficult for development programs to succeed. Major roles

such as Legislative Members, Managers, and Civil Servants, require considerable attention, and should not be combined with other roles. Workers, Minority Group Members, and Smallholders are less demanding role types, and can be combined without overloading players. Role combinations should belong to the same region, but not to the same Company or ethnic group. If a player controls several roles in the same Company, he may be able to form a Union at the start of the first Stage, and his control will be too great. A mixing of role types provides more possibilities for interaction.

c. Briefing the Players: The rules to the Interlake Management Simulation are complex, and must be understood by all players. The Organizer should distribute the Rule Manuals to players before the day of the exercise, and should ensure that each participant knows his or her part in the simulation. The Rule Manual states that many of the rules represent natural laws which may not be broken; this should be repeated before the exercise begins.

3. Conducting the Exercise:

The Organizer plays a minor role in actually operating the simulation. The Rule Manual covers most of the possible occurrences in the exercise, and the players themselves should enforce the rules. The Organizer's chief function should be as a timekeeper

and observer. As time will frequently be limited in this exercise, the Organizer should announce the amounts of time remaining in the stages, and should remind players of the events and actions they must complete before proceeding to the next stage. If the pace of one phase begins to slacken, the Organizer should intervene to restore interest in the simulation. One option open to him is the Contingency phase, which allows him to "sabotage" the success of a program when a particular simulation proceeds too smoothly.

The Banker is a more active participant in the simulation. Much of his time will be spent in record-keeping and in distributing and collecting funds. Tables and charts have been prepared to facilitate the Banker's duties, but he must still know the Rule Manual better than any of the other players. When acting as the Federal Government, the Banker must judge the merits of each Grant Application, and should consider the consequences of his decisions. In general, Grants should be approved, rather than rejected.

4. Ending the Exercise:

a. Selecting an endpoint: This simulation is intended as an educational experience rather than a complete exercise which must be "finished." A period of three or four stages should suffice to indicate whether the programs would have succeeded or failed. The end

of the simulation should not come at a logical break, such as the end of a stage, as the players should still be interested in the exercise for the de-briefing which will follow. The best point to end the simulation is when chaos is about to occur, rather than during a phase of tranquility.

b. De-briefing the players: In any simulation exercise which requires competition and role-playing, a thorough de-briefing is a vital necessity.¹⁰ Players must be given the opportunity to discuss their experience with other players under controlled conditions, to prevent misunderstandings and emotions expressed in the exercise from escaping to the real world. The de-briefing should take the form of a discussion controlled by the Instructor or Organizer. Questions should be asked, concerning what the players learned from the simulation, what they felt, and what they observed. Opinions should be gathered from each role group and region, limiting each speaker to three minutes. Only one person should be allowed to speak at a time, at the direction of the Organizer.

The de-briefing should not degenerate into a "re-play" of the simulation; players should be allowed to do this on their own time. At the end of the de-briefing, players should be requested to write a 2-page report on what they learned from the exercise, and how it might be improved or adapted.

5. Physical Components:

a. Facilities: Although the Interlake Management Simulation may be played in an unfurnished room, some amenities should be used, for comfort if nothing else. All players who need to write information should be provided with a table or a desk. Separate conference tables for the Legislature, the Courts, and some of the Companies will strengthen the impression that groups of people do exist in the simulation. If the Holiday option (Rule Manual, section 8.3) is used, a separate area should be set up, containing comfortable chairs, magazines to read, and perhaps a coffee machine. This will make "Holidays" a desirable option within the framework of the simulation. Chairs may be provided for the other players, but they are not necessities. The Banker and the Organizer should have a table separate from the other players, to store materials.

b. Playing Material: Dice, pencils, and writing paper will be needed by some players during the simulation. The Banker and Organizer should control the dice. The special sheets and cards used in the simulation are printed in this Instructor's Manual. The sheets should be detached from the Manual and copied on a xerox machine. The original sheets should be retained in a "master file", as the sheets will be written on, lost, or torn.

i. Banker's Information Sheet: These pages should only be given to the Banker for reference

purposes, and only one copy of each is needed. These sheets summarize data found on sheets and cards and scattered throughout the Rule Manual.

ii. Summary of Costs; Summary of Populations and Occupations: 10 copies of each of these are needed; they should be distributed to the Banker, the Senior Civil Servants, and the Legislative Members.

iii. Census Lists: The Banker will require one copy of these; the Senior Civil Servants may require two copies. The lists should be used to monitor taxation, subsistence, and employment.

iv. Information Cards: The Role Cards, Company Cards, and Assets listed on the cards should be distributed to the players at the start of the exercise. Cards for Undeveloped Companies should be retained by the Banker until a player wishes to start a Company.

v. Money, Certificates, and Vouchers: As large amounts of play money are required in the Interlake Management Simulation, the cost of copying the samples provided will be high (at least 200 \$1 bills will be needed). Rather than spend \$10 on xerox copies, potential users should invest in several packs of Monopoly money, available from Parker Brothers at a reasonable cost. Similar restrictions apply to the Subsistence Tickets and Travel Vouchers. Coloured Bingo Chips are a useful substitute for these cards, and different colours can be used to separate the stages of the simulation. In addition, they will relieve the monotony of handling

hundreds of pieces of paper. Other possibilities will occur to individual users of the simulation.

The Grant Application Forms and the Certificates of Expansion should be held by the Senior Civil Servants; all other sheets, cards, and forms should be kept by the Banker until needed.

Banker's Information Sheet

A. Companies: Revenue to Companies is calculated using the Revenue Tables on each Company Card. Other important data are summarized below:

<u>Company Name</u>	<u>Region</u>	<u>Cost of</u> <u>Shares</u>	<u>Maintenance</u> <u>Costs</u>
Station WKZ	A	\$200	\$5
Unitruck Transportation	A	\$300	\$15
Interlake Furnishing	A*	\$200	\$10
Caravan Construction	B	\$200	\$10
Point Arthur	B	\$200	\$15
Sandy Bay	B	\$300	\$20
Roadmasters	C	\$200	\$15
Shoaling Beach	C	\$200	\$15
Wildfowl Unlimited	C	\$200	\$5
<u>Undeveloped Companies</u>			
Interlake Clothing	A	\$300	\$10
Food Processors	B	\$300	\$10
Gameland	C	\$300	\$5
Moose Creek Range	D	\$400	\$5
Sandy River Park	D	\$250	\$5
Hidden Beach	B	\$400	\$10

*The Manager of Interlake Furnishing lives in Region B.

Banker's Information Sheet (cont'd)

B. Other Revenue: The Banker delivers revenue to individuals according to the following schedule, using the Census Lists to determine the recipients:

<u>Code</u>	<u>Job Classification</u>	<u>Amount of Revenue</u>
FO	Large Farm Owner	\$25 per stage
FM	Fisherman	\$3
UL	Union Leaders	\$5 (Stage 1 only)

C. Products for Sale:

Unitruck Transportation receives 25 Travel Vouchers per stage at 2/3 capitalization, and 50 Vouchers when fully capitalized. In addition, the company receives 23 special Travel Vouchers for distribution to Senior Civil Servants and Legislative Members.

Caravan Construction receives 4 Cars per stage at 2/3 capitalization and 8 per stage at full capitalization.

Vendors receive 30 Subsistence Tickets and 6 Subsistence Certificates per stage in each region. For each Certificate or 5 Tickets not returned to the Banker at the end of a stage, the Vendor must pay \$7. Individual Subsistence Tickets (up to 5) cost Vendors \$2 each.

D. Special Revenue:

Smallholders who have received Agricultural Assistance receive \$4 in Revenue from the Banker each stage.

Banker's Information Sheet (cont'd)

Smallholders who are participating in Drainage Programs receive \$2 from the Banker each stage.

E. Maintenance Collection: In the Maintenance Collection Phase, the Banker collects fees for the maintenance, expansion, and creation of Companies and Government Services as outlined on the Summary of Costs sheet and the Banker's Information Sheet.

Summary of Costs for Maintenance, Expansion, Implementation,
and Operation of Government Programs.

The following fees must be paid to the Banker in order to maintain and implement government services:

Program Type	Implementation Cost	Maintenance Cost
<u>Public Works:</u>		
Region A	NA*	\$100
Region B	-	\$50
Region C	-	\$20
Region D	-	\$10
Company Expansion *	\$20 ea.	\$5
New Company *	\$20 ea.	\$10
Unexpanded School	-	\$10/teacher
Expanded School	\$50/teacher	\$15 "
New School	\$100 "	\$15 "
Effluent Treatment	\$30/center	\$4
Drainage Systems	\$30/Region	\$2/participant
Postal Service	-	\$10/region
Education Programs	-	\$3/trainee
Bussing fee	-	\$3/trainee
Farm Improvement	\$10/farm	-
Agricultural Assistance	\$4/trainee	-
Transfer of Teachers	\$20	-
Fishery Conservation (20% improvement, 1 stage)		\$10/lake
Wildlife Conservation(10% improvement)		\$10/region

*Note: Region A need not expand its Public Works for Company improvements; the increased Maintenance still applies.

Summary of Populations and Occupations:

<u>Code</u>	<u>Job Classification</u>	<u>Region</u>				<u>Total</u>
		<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>Jobs</u>
<u>I. Government Employees</u>						
CS	Senior Civil Servant	3	(1)	-	-	4
LM	Legislative Member	3	(1)	(1)	-	5
PO	Police Officer	1	-	1	-	2
PW	Postal Worker	1	-	-	-	1
SP	School Principal	3	-	1	-	4
ST	Teacher	3	-	-	-	3
<u>II. Others</u>						
FM	Fisherman	-	-	(3)	(6)	9
FO	Large Farm Owner	-	4	2	-	6
MM	Minority Group Member	2**	2	8	10	22
MN	Manager	(1)	(3)	(2)	-	9*
SF	Smallholder	-	6	5(1)	11(1)	24
UE	Unemployed	2**	-	-	-	2
UL	Union Leader	2	-	-	-	2
VN	Vendor	1	1	1	1	4
WK	Full-time Employee	9	7	2	-	18
WS	Seasonal Employee	<u>-</u>	<u>(6)</u>	<u>(9)</u>	<u>-</u>	<u>15</u>
Population Totals		30	20	20	22	92 roles

Note: Bracketed numbers represent secondary occupations.

*There are more managerial jobs than managers because some roles manage more than one Company.

** The MM and UE roles in Region A receive Welfare payments.

Census List: Region A. (key on following page)

<u>Name:</u>	<u>Occupation:</u>
S. Brenowitz	LM
F. Browning	WK
M. Burke	UE
D. Campbell	VN
E. Charlesworth	CS
I. Cohen	UL
M. Girard	CS
P. Great Bear	MM
A. Harnyuk	WK
E. Hazan	ST
I. Kolakowski	ST
G. Kotarbinski	LM, MN
J. Leduc	SP
J. Leger	WK
G. Lewicki	WK
J. McEvoy	WK
P. Mitchell	WK
C. Molesworth	WK
H. Morris	PW
K. Murphy	ST

Census List: Region A(cont'd)

<u>Name:</u>	<u>Occupation:</u>
A. Nadinski	LM
C. Nagatwe	MM
P. O'Brien	UL
T. O'Flaherty	WK
K. Oleschuk	CS
D. O'Rourke	PO
H. Pfiefer	WK
J. Schmidt	SP
J. Smith	SP
C. Zabriski	UE

Key to Occupation Codes:

CS- Senior Civil Servant	SP- School Principal
FO- Large Farm Owner	ST- Teacher
LM- Legislative Member	UE- Unemployed
MM- Minority Group Member	UL- Union Leader
MN- Manager	VN- Vendor
PO- Police Officer	WK- Full-time Employee
PW- Postal Worker	WS- Seasonal Employee
SF- Smallholder	FM- Fisherman

Census List: Region B.

<u>Name:</u>	<u>Occupation:</u>
K. Brechinski	WK
D. Cameron	SF, WS
E. Entwistle	VN
E. Ferreiro	WK
J. Jacques	SF, WS
G. Laval	FO, MN, LM
G. Leblanc	SF, WS
J. Leveneu	WK
D. Mackintosh	WK
M. McDiarmand	SF, WS
I. McDonald	FO, MN
M. Novotny	WK
J. Pelletier	FO, CS
R. Schultz	WK
R. Spence	MM
F. Steinbeck	FO, MN
T. Tongwe	MM
J. Turner	SF, WS
M. Venier	WK
G. Weber	SF, WS

Census List: Region C.

<u>Name:</u>	<u>Occupation:</u>
J. Chipewann	MM
S. Clancy	PO
J. Cree	MM, WS
F. Georges	MM, WS
O. Grabasz	SF, WS
O. Horvath	FO, MN, LM
M. Huron	MM, FM
H. Jablonski	VN, SF, WS
D. Jones	SF, WS
D. McKenzie	SP
P. Nemrecky	WK
J. Ojibway	MM, FM
G. OPOCHYNSKI	SF, WS
G. Peguis	MM, FM
N. Pierco	MM, WS
Q. Romanuk	FO, MN
F. Seminole	MM
N. Tresniuk	WK
C. Yang	SF, WS
M. Zigelinski	SF, WS

Census List: Region D.

<u>Name:</u>	<u>Occupation:</u>
N. Assinaboine	MM
J. Charles	MM, FM
H. Daycock	SF, FM
P. Ferrieres	SF, FM
H. Giesbrecht	SF
J. Hiawatha	MM
J. Huron	MM
P. Kolakowski	SF
C. Lejeune	SF
J. Manatou	MM
J. McClusky	SF
G. Metis	MM
M. Mohawk	MM, FM
C. Nation	MM, FM
A. Nidjinski	SF
W. Nordmann	VN, SF, FM
D. O'Riley	SF
J. Petit	SF
P. Potowatame	MM
J. Real	MM
W. White	SF
W. Zamkowitch	SF

Ms. Georgina Lewicki
Region A Grade 12
Broadcasting Operative
for Station WKZ \$4

Ms. Florence Browning
Region A B.A.
Broadcasting Operative
for Station WKZ \$4

Peter Mitchell
Region A M.A.

Announcer for Station
WKZ \$6

Assets: \$5

Hans Pfiefer
Region A Grade 10

Carpenter for Interlake
Furnishing \$4

Adrian Harnyuk
Region A Grade 10

Carpenter for Interlake
Furnishing \$4

Jules Leger
Region A Grade 10

Mechanic for Interlake
Furnishing \$4

Terrence O'Flaherty
Region A Grade 10

Driver for Unitruck \$4

John McEvoy
Region A Grade 11

Mechanic for Unitruck \$5

Charles Molesworth
Region A Grade 12;
Dip. Mech. Eng.

Driver and Mechanic for
Unitruck \$6

Assets: \$3

George Kotarbinski
Region A B.Sc.(Econ.)
Manager of Unitruck \$20
Manager of WKZ \$20
Legislative Member for
Region D (independent) \$20
Assets: \$50; 1 share in
Unitruck; 1 share in WKZ

Samuel Brenowitz
Region A B.A.
Legislative Member for
Region A (Party L) \$20

Arne Nadinski
Region A B.A., Dip. Ed.
Legislative Member for
Region A (Party L) \$20

Ms. Marie Girard
Region A Ph.D (Stats.)
Senior Civil Servant, Dept.
of Education and Welfare;
Responsible for
Region D \$15

Edward Charlesworth
Region A M.Sc. (Econ.)
Senior Civil Servant, Dept.
of the Environment; \$15
Responsible for Region A.
Assets: \$40; 1 share in
WKZ; 1 share in Unitruck.

Klaus Oleschuk
Region A B.Sc. (Agric.)
Dip. Eng.
Senior Civil Servant, Dept.
of Commerce and Development;
Responsible for
Region C \$15

Harry Morris
Region A Grade 11
Postal Employee \$4

Christian Zabriski
Region A Grade 10
Welfare income \$3

Michael Burke
Region A Grade 12
Welfare income \$3

Charles Nagatwe
Region A Grade 6
Welfare income \$3
Minority Group Member

Peter Great Bear
Region A Grade 6
Welfare income \$3
Minority Group Member

John Smith
Region A B.A., Dip. Ed.
Principal, McDonald High
School \$6
Assets: \$15

Elijah Hazan
Region A B.Sc., Dip. Ed.
Teacher, McDonald High
School \$5
Assets: \$10

Jean-Marie Leduc
Region A M.A., Dip. Ed.
Principal, St. Mary's
Academy \$6
Assets: \$5

Kathleen Murphy
Region A Ph.D(Econ.)
Dip. Ed.
Teacher, St. Mary's
Academy \$4

Johann Schmidt
Region A M.Ed.
Principal, Eastwood School
\$5

Ivan Kolakowski
Region A B.Ed.
Teacher, Eastwood School
\$4

Israel Cohen
Region A B.Sc. (Econ.)
Union Leader for the
Workman's Union of America
Salary(stage 1 only) \$5

Patrick O'Brien
Region A Grade 12,
Union School
Union Leader for the
Canadian Union of Workers
Salary (stage 1 only) \$5

Donovan O'Rourke
Region A Grade 11
Police Constable \$8

Donald Campbell
Region A Grade 12
Vendor for Region A

Giles Laval
 Region B B. Econ.
 Manager of Sandy Bay \$20
 Legislative Member for
 Region B (Party R) \$20
 Owner of Lakeview Farm (\$25)
 Assets: \$80; 1 share in
 Sandy Bay; 1 share in
 Caravan Construction.

Michael Venier
 Region B Grade 12
 Farm Operative for
 Lakeview Farm \$5

Jules Pelletier
 Region B M.A., L.L.B.
 Chief Justice, Dept. of
 Justice and Democracy; \$15
 Responsible for Region B.
 Owner of Broadacres Farm
 (\$25)
 Assets: \$50; 1 share in
 Interlake Furnishing; 1 in
 Sandy Bay.

Jean Levene
 Region B Grade 12
 Farm Operative for
 Broadacres Farm \$5

Frederick Steinbeck
 Region B M.Sc.(Mech.Eng.)
 Manager of Caravan
 Construction \$20
 Manager of Shoaling Beach \$20
 Owner of Lot 3 (\$25)
 Assets: \$100; 1 share in
 Caravan; 1 share in
 Shoaling Beach

David Mackintosh
 Region B Grade 12
 Farm Operative for
 Lot 3 \$5

Ian McDonald
 Region B M.A.
 Manager of Point Arthur \$20
 and Interlake Furnishing
 \$20
 Owner of Lot 2 (\$25)
 Assets: \$150; 1 share in
 Interlake Furnishing;
 1 share in Point Arthur.

Kurt Brechinski
 Region B Grade 12
 Farm Operative for
 Lot 2 \$5

Chief Thomas Tongwe
 Region B Grade 10
 Chief of Broken Hill Reserve
 Reserve;
 Minority Group Member

Rudolph Spence
 Region B Grade 8
 Minority Group Member on
 Broken Hill Reserve.

Enzo Ferreiro
Region B Grade 11
Operative for Caravan
Construction Co. \$4

Rudi Schultz
Region B Grade 11
Mechanic for Caravan
Construction Co. \$5

Michael Novotny
Region B Grade 10
Operative for Caravan
Construction Co. \$4

Edward Entwistle
Region B Grade 12
Vendor for Region B

George Weber
Region B Grade 10
Seasonal job at
Sandy Bay Resort \$3
Smallholder

Georges Leblanc
Region B Grade 11
Seasonal job at
Sandy Bay Resort \$3
Smallholder

Jean Jacques
Region B Grade 10
Seasonal job at
Sandy Bay Resort \$3
Smallholder

James Turner
Region B Grade 10
Seasonal job at
Point Arthur Resort \$3
Smallholder

Douglas Cameron
Region B Grade 10
Seasonal job at
Point Arthur Resort \$3
Smallholder

Malcolm McDiarmand
Region B Grade 11
Seasonal job at
Point Arthur Resort \$3
Smallholder

Donald McKenzie
Region C B.A.; M.Ed.
Principal of Twin Rivers
School \$5

Assets: \$10

Sean Clancy
Region C Grade 11
Police Constable \$8

Chief Francoise Georges
Region C Grade 12
Seasonal job with
Wildfowl Unlimited \$4
Chief of Great Bear Reserve
Minority Group Member

Jacque Cree
Region C Grade 11
Seasonal job with
Wildfowl Unlimited \$3
Minority Group Member on
Great Bear Reserve

Nez Pierco
Region C Grade 11
Seasonal job with
Wildfowl Unlimited \$3
Minority Group Member on
Great Bear Reserve

Marcus Huron
Region C Grade 10
Fisherman on Lake Manitou
\$3
Minority Group Member on
Great Bear Reserve

John Chipewann
Region C Grade 9
Minority Group Member on
Great Bear Reserve

Grange Peguis
Region C Grade 7
Fisherman on Lake Manitou
\$3
Minority Group Member on
Great Bear Reserve

Finder Seminole
Region C Grade 6
Minority Group Member on
Great Bear Reserve

Jaques Ojibway
Region C Grade 9
Fisherman on Lake Manitou
\$3
Minority Group Member on
Great Bear Reserve

Quentin Romanuk
Region C Grade 12
Manager of Wildfowl
Unlimited \$20
Owner of Twin River Farm
Assets: \$50; 2 shares in
Wildfowl; 1 share in
Roadmasters; 1 share in
Shoaling Beach

Charles Yang
Region C Grade 10
Seasonal job as Gang Leader
for Roadmasters Inc. \$3
Smallholder

Olaf Grabasz
Region C Grade 10
Seasonal job with
Roadmasters Inc. \$3
Smallholder

Mauro Zigelinski
Region C Grade 11
Seasonal job with Shoaling
Beach Resort \$3
Smallholder

Nicholas Tresniuk
Region C Grade 10
Farm Operative for
Lot 5 \$4

Ole Horvath
Region C B.Sc.(Eng.)
Manager of Roadmasters
Inc. \$20
Legislative Member for
Region C (Party R) \$20
Owner of Lot 5
Assets: \$80; 1 share in
Roadmasters and Pt. Arthur.

Gustaf OPOCHYNSKI
Region C Grade 10
Seasonal job with
Roadmasters Inc. \$3
Smallholder

Hans-Dieter Jablonski
Region C Grade 12
Seasonal job with Shoaling
Beach Resort \$3
Vendor for Region C
Smallholder

David Jones
Region C Grade 11
Seasonal job with Shoaling
Beach Resort \$3
Smallholder

Paul Nemrecky
Region C Grade 10
Farm Operative for
Twin River Farm \$4

Chief John Charles
Region D Grade 12

Fisherman on Lake
Charlotte \$3

Chief of Forked River
Reserve
Minority Group Member

Manhat Mohawk
Region D Grade 11

Fisherman on Lake
Charlotte \$3

Minority Group Member on
Forked River Reserve

Cherokee Nation
Region D Grade 10

Fisherman on Lake
Charlotte \$3

Minority Group Member on
Forked River Reserve

Paul Potowatame
Region D Grade 5

Minority Group Member on
Forked River Reserve

George Metis
Region D Grade 6

Minority Group Member on
Forked River Reserve

John Manatou
Region D Grade 5

Minority Group Member on
Forked River Reserve

John Huron
Region D Grade 9

Minority Group Member on
Forked River Reserve

James Real
Region D Grade 6

Minority Group Member on
Forked River Reserve

Nicolas Assinaboine
Region D Grade 4

Minority Group Member on
Forked River Reserve

Jim Hiawatha
Region D Grade 4

Minority Group Member on
Forked River Reserve

Wolfgang Nordmann
Region D Grade 10

Fisherman on Lake
Charlotte \$3

Vendor for Region D
Smallholder

Henry Daycock
Region D Grade 9

Fisherman on Lake
Charlotte \$3

Smallholder

Pierre Ferrieres
Region D Grade 9

Fisherman on Lake
Charlotte \$3

Smallholder

Hermann Giesbrecht
Region D Grade 5

Smallholder

Jaques Petit
Region D Grade 6

Smallholder

Arne Nidjinski
Region D Grade 6

Smallholder

Pietr Kolakowski
Region D Grade 6

Smallholder

James McClusky
Region D Grade 5

Smallholder

Wilhelm Zamkowitch
Region D Grade 4

Smallholder

William White
Region D Grade 5

Smallholder

Dennis O'Riley
Region D Grade 4
Smallholder

Charles Lejeune
Region D Grade 4
Smallholder

Station WKZ

Region A. News Service.

Cost of Shares: \$200

Owners: G. Kotarbinsky

E. Charlesworth

Maintenance Costs: \$5

Assets: \$50

Manager: G. Kotarbinsky \$20

Operatives: G. Lewicki \$4

F. Browning \$4

Announcer: P. Mitchell \$6

Sales: Announcements and bulletins @ \$5 ea.

		Revenue at:	
Die	Roll	2/3	Full
		cap.	cap.
	1	\$36	\$51
	2	\$48	\$68
	3	\$72	\$102
	4	\$96	\$136
	5	\$120	\$170
	6	\$120	\$170

Unitruck Transportation Co.

Region A. Bus Service

Cost of Shares: \$300

Owners: G. Kotarbinsky \$10

E. Charlesworth

Maintenance Costs: \$15

Assets: \$50

Manager: G. Kotarbinsky \$20

Operative: C. Molesworth \$6

Driver: T. O'Flaherty \$4

Mechanic: J. McEvoy \$5

Sales: 25 Travel Vouchers @ \$1 ea. (50 at Full Cap.)

		Revenue at:	
Die	Roll	2/3	Full
		cap.	cap.
	1	\$52	\$72
	2	\$78	\$108
	3	\$78	\$108
	4	\$104	\$144
	5	\$130	\$180
	6	\$130	\$180

Interlake Furnishing Co.

Region A. Furniture Store.

Cost of Shares: \$200

Owners: J. Pelletier

I. McDonald

Maintenance Costs: \$10

Assets: \$50

Manager: I. McDonald \$20

Carpenters: H. Pfieffer \$4

A. Harnyuk \$4

Mechanic: J. Leger \$4

		Revenue at:	
Die	Roll	2/3	Full
		cap.	cap.
	1	\$36	\$51
	2	\$48	\$68
	3	\$72	\$102
	4	\$96	\$136
	5	\$120	\$170
	6	\$120	\$170

Caravan Construction Co.

Region B. Car Manufacturer.

Cost of Shares: \$200

Owners: G. Laval

F. Steinbeck

Maintenance Costs: \$10

Assets: \$100

Manager: F. Steinbeck \$20

Mechanic: E. Ferreiro \$5

Operatives: R. Schultz \$4

M. Novotny \$4

Sales: 4 cars per stage @ \$30 ea. (8 at Full Cap.)

		Revenue at:	
Die	Roll	2/3	Full
		cap.	cap.
	1	\$36	\$51
	2	\$48	\$68
	3	\$72	\$102
	4	\$96	\$136
	5	\$120	\$170
	6	\$120	\$170

Point Arthur

Region B. Resort.

Cost of Shares: \$200

Owners: I. McDonald

O. Horvath

Maintenance Costs \$15

Assets: \$150

Manager: I. McDonald \$20

Workers: J. Turner \$3

D. Cameron \$3

M. McDiarmid \$3

Revenue at:

Die 2/3 Full

Roll cap. cap.

1 \$50 \$68

2 \$75 \$102

3 \$75 \$102

4 \$100 \$136

5 \$125 \$170

6 \$125 \$170

Sandy Bay

Region B. Resort.

Cost of Shares: \$300

Owners: J. Pelletier

G. Laval

Maintenance Costs: \$20

Assets: \$200

Manager: G. Laval \$20

Workers: G. Weber \$3

G. Leblanc \$3

J. Jacques \$3

Revenue at:

Die 2/3 Full

Roll cap. cap.

1 \$51 \$71

2 \$68 \$94

3 \$102 \$141

4 \$136 \$188

5 \$170 \$235

6 \$170 \$235

Roadmasters Inc.

Region C. Road Construction.

Cost of Shares: \$200

Owners: Q. Romanuk

O. Horvath

Maintenance Costs: \$15

Assets: \$50

Manager: O. Horvath \$20

Gang Leader: C. Yang \$3

Workers: G. OPOCHYNSKI \$3

O. Grabasz \$3

Revenue at:

Die 2/3 Full

Roll cap. cap.

1 \$50 \$68

2 \$75 \$102

3 \$75 \$102

4 \$100 \$136

5 \$125 \$170

6 \$125 \$170

Shoaling Beach

Region C. Resort.

Cost of Shares: \$200

Owners: F. Steinbeck

Q. Romanuk

Maintenance Costs: \$15

Assets: \$80

Manager: Q. Romanuk \$20

Workers: H. Jablonski \$3

M. Zigelinski \$3

D. Jones \$3

Revenue at:

Die 2/3 Full

Roll cap. cap.

1 \$75 \$102

2 \$100 \$136

3 \$100 \$136

4 \$125 \$170

5 \$125 \$170

6 \$125 \$170

Wildfowl Unlimited

Region C. Wildlife Area.

Cost of Shares: \$200

Owner: Q. Romanuk (2)

Maintenance Costs: \$5

Assets: \$50

Manager: Q. Romanuk \$20

Workers: F. Georges \$4

J. Cree \$3

N. Pierco \$3

Die	2/3	Full
Roll	cap.	cap.
1	\$30	\$42
2	\$45	\$63
3	\$45	\$63
4	\$60	\$84
5	\$75	\$105
6	\$75	\$105

Interlake Clothing Co.

Region A. Clothing Manufacturer.

Cost of Shares: \$300

Owners:

Maintenance Costs: \$10

UNDEVELOPED COMPANY

Die	2/3	Full
Roll	cap.	cap.
1	\$120	\$150
2	\$160	\$200
3	\$160	\$200
4	\$200	\$250
5	\$200	\$250
6	\$200	\$250

Food Processors Ltd.

Region B. Canning & Packing Co.

Cost of Shares: \$300

Owners:

Maintenance Costs: \$10

UNDEVELOPED COMPANY

Die	2/3	Full
Roll	cap.	cap.
1	\$132	\$198
2	\$176	\$264
3	\$176	\$264
4	\$220	\$330
5	\$220	\$330
6	\$220	\$330

Gameland Inc.

Region C. Wildlife Area.

Cost of Shares: \$300

Owners:

Maintenance Costs: \$5

UNDEVELOPED COMPANY

Die	2/3	Full
Roll	cap.	cap.
1	\$72	\$99
2	\$96	\$132
3	\$96	\$132
4	\$120	\$165
5	\$120	\$165
6	\$120	\$165

Moose Creek Range			
Region D. Wildlife Area.			
Cost of Shares: \$400	Die	2/3	Revenue at: Full
Owners:	Roll	cap.	cap.
	1	\$93	\$132
Maintenance Costs: \$5	2	\$124	\$176
	3	\$124	\$176
UNDEVELOPED COMPANY	4	\$155	\$220
	5	\$155	\$220
	6	\$155	\$220

Sandy River Park			
Region D. Resort.			
Cost of Shares: \$250	Die	2/3	Revenue at: Full
Owners:	Roll	cap.	cap.
	1	\$72	\$99
Maintenance Costs: \$5	2	\$96	\$132
	3	\$96	\$132
UNDEVELOPED COMPANY	4	\$120	\$165
	5	\$120	\$165
	6	\$120	\$165

Hidden Beach			
Region B. Resort.			
Cost of Shares: \$400	Die	2/3	Revenue at: Full
Owners:	Roll	cap.	cap.
	1	\$120	\$171
Maintenance Costs: \$10	2	\$160	\$228
	3	\$160	\$228
UNDEVELOPED COMPANY	4	\$200	\$285
	5	\$200	\$285
	6	\$200	\$285

Region			
Cost of Shares:	Die	2/3	Revenue at: Full
Owners:	Roll	cap.	cap.
	1		
Maintenance Costs:	2		
	3		
	4		
	5		
	6		

ONE SIMULATED DOLLAR \$1

\$\$\$
\$\$\$
\$\$\$
\$\$\$

1

\$\$\$
\$\$\$
\$\$\$
\$\$\$

\$1 INTERLAKE PLAY MONEY

TEN SIMULATED DOLLARS \$10

\$\$\$
\$\$\$
\$\$\$
\$\$\$

10

\$\$\$
\$\$\$
\$\$\$
\$\$\$

\$10 INTERLAKE PLAY MONEY

FIVE SIMULATED DOLLARS \$5

\$\$\$
\$\$\$
\$\$\$
\$\$\$

5

\$\$\$
\$\$\$
\$\$\$
\$\$\$

\$5 INTERLAKE PLAY MONEY

FIFTY SIMULATED DOLLARS \$50

\$\$\$
\$\$\$
\$\$\$
\$\$\$

50

\$\$\$
\$\$\$
\$\$\$
\$\$\$

\$50 INTERLAKE PLAY MONEY

SUBSISTENCE TICKET

This card must be presented
to a Civil Servant as proof
of Subsistence during the
Census phase of Stage # _____

SUBSISTENCE CERTIFICATE

This card may be presented
to a Civil Servant as proof
of Subsistence during any
and every Stage of the
Interlake Simulation.

AUTOMOBILE

This card represents a
car manufactured by the
Caravan Construction Co.

Standard Car _____
Police Car _____

TRAVEL VOUCHER

This card permits the
bearer to travel to one
other region during

Stage # _____.
For Sale _____ Free _____

CERTIFICATE OF TRAINING

This certifies that
_____ has taken
an Adult Education course
equivalent to _____.
(Grade or Degree)

AGRICULTURAL ASSISTANCE
CERTIFICATE

This certifies that
_____ has
completed an Agricultural
Education Program.

Grant Application Form

Names of Applicants Status of Applicants (Occupation, etc.)

:	_____	_____
:	_____	_____
:	_____	_____
:	_____	_____
:	_____	_____

Type of Project: _____

Location: _____

Aims: _____

Planned starting date:
(Stage #) _____

Completion date:
(If different from starting.) _____

Endorsed by: _____
(Legislative Member)

Date submitted: _____

FOR OFFICIAL USE ONLY

Estimated

Costs: _____

Certificate of Expansion/ Creation

This signifies that the _____
(Name of Applicant or Government Dept.)

has been given permission to create/expand(delete one) the

_____ in Region ____.
(Name of Facility)

Approved by: _____
(Civil Servant)

Date approved: _____

CHAPTER V

THE REGIONAL DEVELOPMENT SIMULATION

The Regional Development Simulation examines regional planning from a more academic standpoint than that of the Interlake Management Simulation. The participants are placed in the roles of planners and groups of concerned citizens who are trying to implement government programs to improve the standard of living in an underdeveloped region. Because the mechanical components of the simulation are generalized, a large variety of starting environments can be created to simulate conditions in different countries at different times.

This simulation owes much of its physical structure to commercially produced War Games, but the conceptual factors of regional planning are derived from Manitoba's Interlake programs. Hopefully, these concepts can be applied to any situation with equal validity.

THE REGIONAL DEVELOPMENT SIMULATION

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THE REGIONAL DEVELOPMENT SIMULATION

1.0 Introduction

1.0.1 The Regional Development Simulation is an exercise in planning, implementing, and evaluating programs of regional development. It may be used by one to four people or groups of people.

1.1 General Course of Action: Participants in this exercise are presented with a map of an underdeveloped area. By placing counters (which represent groups of people, industries, and social services) on the map as directed by the Scenario they are using, the participants construct an abstract model of the social and economic conditions in the region. The users of the simulation take the parts of planners and citizens who must decide among themselves the best methods of solving problems within the region. Each planning group is assigned a specific area of responsibility in the region; either a government department, one of the portions of the Regional Map, or a special interest group inside the communities represented in the map. Participants, or Players, in the simulation, must use their wits to avoid conflicts of interest, and to solve the problems assigned to them without exceeding their budgets or causing unnecessary disruption to the region.

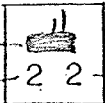
1.2 Simulation Concepts: Many of the techniques used in the Regional Development Simulation are derived from commercial War Games. They may appear strange to players who have not encountered them before. This section explains the main components to the simulation in some detail:

1.2.1 The Simulation Map is a stylized physical and economic map of a rural area. The markings on the map represent agricultural potential, towns, roads, rivers, and lakes. The map is overlaid with a hexagonal grid to regularize placement of the information counters. Each terrain feature on the map is an important factor in the simulation.

1.2.2 The Information Counters are squares of paper printed with numbers and symbols. The counters represent groups of people, physical structures or areas such as Wildlife Areas or Drainage Systems, and abstract programs such as Agricultural Assistance. Randomizer Chits and a Time counter are also included as aids to using the simulation. The counters are used to indicate the social and economic conditions in the region, and the actions of players are depicted on the map by the use of counters. The counter sheet should be glued to a sheet of stiff cardboard before cutting out the pieces.

1.2.3 A Summary of Unit Types, printed on the following pages, identifies the kinds of counters used

1.2.3 Summary of Unit Types: Cardboard squares are used as playing pieces in the Regional Development Simulation. Each counter bears a symbol or letters indicating the function of the unit. Some units also bear numbers indicating special properties affecting the counter. The general arrangement of numbers and symbols on the counters is as follows:

Unit Symbol		
"Size" of Unit		Education Level

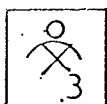
Unit Size applies only to Industry Counters. The number indicates the maximum number of Population Units which can be employed in the Industry. No minimum number of employees is required to maintain the industry, as it is presumed that outside employees will fill the positions until local help can be found. See section 4.3.3 for additional details.

Education Level indicates the average level of schooling obtained by a particular Population Unit. For Industries, the number denotes the minimum education level needed for employment in the Industry. On a School, the number indicates the level to which the School can raise a Population through Education Programs.

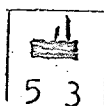
Three basic types of playing piece exist. Some units may be moved once they are placed on the map; they suffer from Subsistence and Failure. Agricultural Assistance counters merely remove some units from Subsistence, and are then taken from the map. A second

group of unit types are not affected by the course of the exercise, nor may they be moved after they are placed on the map. The third unit type is never placed on the map; these are the Time counter and the Randomizer Chits. The various unit types are as follows:

a. Moveable Units:



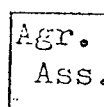
Population
Counters



Industries



Recreation
Areas

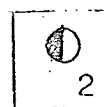


Agricultural
Assistance

b. Permanent Structures:



Drainage
Systems



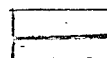
Schools



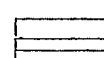
Farm
Improvements



Wildlife
Areas



Primary Roads

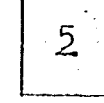


Secondary Roads

c. Playing Aids:



Time
Counter



Randomizer
Chit

The Time counter is placed on the Time Record track of the Progress Report forms during the Implementation Phase of the exercise to remind players of the "date". This is described in section 4.3

The Randomizer Chits are used to generate random numbers. The ten chits, numbered 0 to 9, should be placed in a bowl and drawn one at a time each time a random number is needed. Replace each chit before drawing another.

in the simulation.

2.0 Geography

2.0.1 This section explains the Terrain Features on the Simulation Map, and their uses in the simulation.

2.0.2 Mobility is one of the most important factors which affect rural populations. The usefulness of a school, or the profitability of a business, depends on how far a person must travel to make use of a service, or to transport his produce to a market. If the distance is too great, or the roads too poor, a service will remain underused, and a farm will not profit. Although other factors are important, distance and mobility overshadow the Regional Development Simulation to the greatest extent.

2.1 The Hexagonal Grid on the simulation map is used to measure distance and mobility. The areas created by the grid are called Hexes; the grid lines themselves are known as Hexsides.

2.1.1 The distance between any two hexes on the map is measured in Mobility Points, abbreviated as M.P. A mobility point represents the expense, in travel time, gasoline, wear and tear, and inconvenience, of travelling regularly from one hex to another over a year of time. The Mobility Point cost of travelling from hex to hex varies according to the kind of roads which connect the

hexes.

2.1.2 The Effective Range of travel varies for the kinds of events involved. E.g. A person is willing to travel further to go to work than to use a recreation area, so a Recreation Area has a smaller Effective Range than an Industry does.

2.2 Roads have an effect on the number of Mobility Points required to traverse a hexside.

2.2.1 Primary Roads represent paved highways. A hexside traversed by a Primary Road incurs a Mobility Point Cost of 1 (one) M.P. Primary Roads may be created during the simulation, or may be upgraded from Secondary Roads.

2.2.2 Secondary Roads represent gravel highways. Secondary Roads require 2 M.P. to cross, and may be built or upgraded during the simulation.

2.2.3 The map is presumed to be crossed by a network of Tertiary Roads, which are not shown. A hexside which is not crossed by a Primary or Secondary Road costs 3 M.P. to cross.

2.2.4 The Mobility Cost of travelling from one hex to another is measured by adding up the number of mobility points required to cross the "shortest" number of hexsides from starting point to destination. In the cases involving an Effective Range, if the Mobility Cost is greater than the Effective Range of a service, the

service may not be extended into the hexes at that distance.

2.3 Agricultural Land is represented by two different map symbols:

2.3.1 Good Farmland is represented by clear hexagons, containing only Rivers, Lakeshore, or Roads. Good Farmland will yield a profitable income most of the time.

2.3.2 Marginal Farmland is represented by hexes containing "gravel" terrain symbols. (see the Terrain Chart, 2.6) Marginal Farmland will yield a profit only under exceptional circumstances which are difficult to achieve.

2.3.3 Only one kind of farmland is found in each hex.

2.3.4 For simplicity, hexes containing Towns may not be used for Farmland.

2.4 Towns represent the centers of population or industry.

2.4.1 All Schools, Industries, and Recreation Areas must be placed in Towns.

2.4.1 In some Scenarios, a Town may be designated as a Reservation. In these scenarios, the Population Counters placed in the Reservations are presumed to be Native People.

2.5 Lakes and Rivers represent watersheds which affect the hexes through which they run.

2.5.1 Rivers and Lakes may affect Industries or Agriculture by flooding, as explained in section 6.2.1.

2.5.2 Counters may never be placed in hexes which contain no land.

2.5.3 In some scenarios, Population Counters placed in Lakeshore Hexes may be defined as Fishermen.

2.6 A Terrain Chart is provided on the following page as a key to the terrain on the map.

3.0 Populations:

3.0.1 This section explains the use of Population Counters in the Regional Development Simulation.

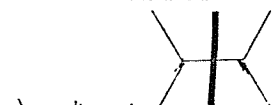
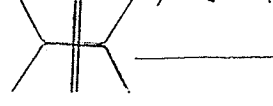
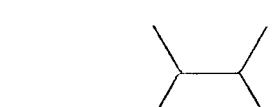
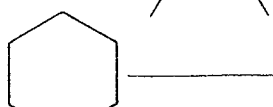

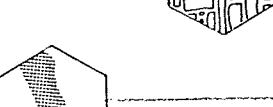



3.0.2 A Population Counter represents a group of approximately 200 households or jobholders. Each counter bears a symbol of a human figure and a number representing the average level of education attained by the heads of households in the population. The Education Level also represents the ability of the population to obtain employment in industry.

3.0.3 The Education Level of a population may be raised through Adult Education Programs.

3.1 Agriculture: Population Counters placed in Good Farmland or Marginal Farmland are presumed to be

2.6 Terrain Chart: This table explains the terrain symbols on the map. For a detailed explanation of terrain, see the rest of section 2.

Map Symbol Meaning and Effect

	<u>Primary Road Hexside</u> : Imposes a Mobility Point cost of 1 M.P.
	<u>Secondary Road Hexside</u> : Imposes a Mobility Point cost of 2 M.P.
	<u>Tertiary Road Hexside</u> : Imposes a Mobility Point cost of 3 M.P.
	<u>Good Farmland</u> : See text of rules.
	<u>Marginal Farmland</u> : See text of rules.
	<u>River</u> : Flooding may occur in River hexes
	<u>Lakeshore</u> : Flooding may occur on Lakeshores. In some scenarios, Fishermen are placed here.
	<u>All-Lake Hexes and Hexsides</u> : All units and effects are barred from these terrain types.
	<u>Towns</u> : Farming may not take place in Town hexes. See text of rules.

2.6.1 Placement of Units: When placing counters on the map, most counters are placed on the center of each hex. Roads are placed perpendicularly across the hexsides, because of their function in changing Mobility Costs.

farmers unless otherwise indicated.

3.1.1 Only one Population Counter may be placed in any hex other than a Town hex.

3.1.2 Farmers who cannot make a profit are said to be Subsistence Farmers. Subsistence (and Unemployment) is indicated by turning a Population Counter face down. Several factors may cause Subsistence to occur. These will be explained elsewhere in the rules.

3.1.3 Because Marginal Farmland is poorer than Good Farmland, Marginal Farms require more land to produce the same output as a farmer on Good Farmland. To simulate this, a Marginal Farm population is placed on Subsistence if there is another farm population on any adjacent hex.

3.1.4 Farm Populations may cease farming if their land is expropriated by the Government, or if the farmer is on Subsistence and is offered a job in a nearby Industry.

3.2 Town Populations are of two types:

3.2.1 Workers are populations employed in an Industry. All Workers (and Farmers employed in Industry) must have Education Levels equal to or greater than the Education Level printed on the Industry Counter representing their place of work.

3.2.2 Unemployed Populations are populations

in Towns which do not have jobs in Industry.

3.2.3 Unemployed Populations may be moved to locations where they may obtain jobs, but their homes must be expropriated, and the government must pay their transportation costs.

3.3 Importance of Populations: The populations in the simulation represent the people who must be aided by the players in order to achieve the objectives of the exercise. The criteria to observe include:

3.3.1 Unemployment and Subsistence should be lower at the end of the simulation than at the start.

3.3.2 Education levels should be raised.

3.4.3 These objectives should be accomplished with the smallest possible disruption to the social structure of the region.

4.0 Regional Development

4.0.1 This section describes how the Regional Development Simulation is played.

4.0.2 General Procedure: The Regional Development Simulation is divided into three major segments, or phases. A Scenario (see section 6) is selected and the pieces are deployed on the map. Each player selects an area of responsibility.

4.0.3 In the Planning Phase, players examine the map and their budget and decide how to allocate their

funds. A Benefit-Cost analysis is performed, and the expected outcomes of the programs are estimated. Players must ensure that their initial cost estimates do not exceed the budget allocation.

4.0.4 In the Implementation Phase, players attempt to implement the projects they planned. This phase represents five years of time, and rules place limitations on the order in which certain programs can occur.

4.0.5 An Evaluation Phase enables players to determine whether or not their projects have been successful. Criteria for judgement include improvements in unemployment and education and minimization of disruption, as well as the mere achievement of original program objectives.

4.1 Development Programs: Players may choose any combination of the following programs for implementation. The costs and benefits of these programs are presented on the Benefit-Cost Analysis Sheet, section 4.1.9.

4.1.1 Education programs may be used to raise the Education Level of a population unit to the level of any School within 5 M.P. of the population. Schools may be built in Towns for this purpose, but only one School may be placed in each Town. A Level 2 School may be upgraded to Level 3, if need be. A School may "educate one population unit to its own level in each Year of the

Implementation Phase.

4.1.2 Roads may be built or improved to increase the effective ranges of other services and programs.

4.1.3 Industries may be attracted to Towns to provide employment. Government Industries may also be created for the same purpose.

4.1.4 Wildlife Areas and Recreation Areas can be built to add to the incomes of Subsistence Farms. ~~Recre~~ Recreation Areas must be built in Towns; Wildlife Areas may be built anywhere except in a Town or All-Lake hex.

4.1.5 Drainage Systems may be built to prevent flooding in specified hexes.

4.1.6 Farm Improvements may be made, to convert Marginal Farms to Good Farms. Improvements may only be performed on occupied hexes.

4.1.7 Populations may be moved to new locations by expropriating their land and relocating the Population Counter. Town Populations may not be relocated as Farmers unless Agricultural Assistance is provided.(see next section.)

4.1.8 Financial Assistance is available to revitalize failing Industries or Recreation Areas. Agricultural Assistance may be provided to remove Farm Populations from Subsistence or to aid new farmers in their first years of operation.

4.2 Planning Phase: After deploying the counters for the Scenario, the Players must decide how to allocate their funds. The following constraints should

4.1.9 Benefit-Cost Tables: These tables present the benefits and costs of each program type for purposes of estimating the usefulness of each project.

<u>Program type</u>	<u>Benefit/Unit</u>	<u>Cost/Unit</u>
Construction Programs:		
Primary Road	4	2
Secondary Road	2	1
Conversion of 2ary to lary	2	1
School: Level 2	4	3
School: Level 3	3	3
Recreation Area	3	2
Wildlife Area	3	1
Farm Improvement	1	2
Drainage System	1	1
Government Industry*	2	2
Industrial Incentives*	3	2
Adult Education Program	1	1
Financial Assistance	2	1
Agricultural Assistance	1	1
Expropriation of land	1	2
Relocation of population	2	3

*Note: Costs and Benefits for Industries are per unit size. Thus a level 2 Industry, employing 2 Population Units, would cost 4 points to construct, and would provide 6 Benefit points as a private Industry, and 4 points as a Government Industry. Level 3 Industries employ 5 Population Units and provide higher costs in proportion.

be noted, as they are important:

4.2.1 Distance: Wildlife Areas, Recreation Areas, and Schools have effective ranges of 5 M.P. The effective range (for employment) of an Industry is 7 M.P. New farms may only be opened within 7 M.P. of a Town. If plans are made for such programs, funds should be allocated for road-building to extend the radius of influence of these programs.

4.2.2 Scenario variations: Players should note which contingencies or special rules are provided in the Scenario. If the Flood contingency is not used, Drainage Systems should not be built, for example.

4.2.3 Order of Implementation: Players should note the order in which their programs can occur. They may discover that they do not have time to implement some programs.

4.2.4 Budget Constraints: Limitations are placed on budget to prevent players from solving all problems at once. In the real world, funds and time are a constant check to developers and planners.

4.2.5 Role Conflicts: The roles assigned to players should not keep them from seeking reasonable compromises for the betterment of all players and the community.

4.3 Implementation Phase: The Implementation Phase consists of five identical "years" which are composed of the following subsections:

4.3.1 Contingencies: Unique events, such as floods,

droughts, recessions, or energy crises, are introduced at the start of each "year" of the Implementation Phase. Contingencies are outlined in the Scenarios and are detailed in section 6.

4.3.2 Education Programs are performed after any contingencies. To upgrade an Education Level, remove the existing Population Counter from the map and replace it with a counter of the same Education Level as the School used to "Educate" it.

4.3.3 Employment effects are applied after Education Programs. Unemployed Populations which are in Town Hexes with Industries must be employed first, followed by Subsistence Farmers within 7 M.P. of the Industry. Town Populations are considered employed by being placed face up beneath the Industry counter. Farm Populations employed in Industries must be designated on a separate sheet of paper by the location of their hexes and the Industries where they are employed. (See section 6 for location procedure) Wildlife Areas and Recreation Areas may be used to remove one Subsistence Farmer within 5 M.P. from Subsistence.

4.3.4 Expropriation and Relocation occur after Employment effects. Thus, a Population may not be employed in the same Year as it is moved.

4.3.5 Financial and Agricultural Assistance programs are implemented. These remove Industries, Recreation Areas, and Subsistence Farms from Subsistence or Failure caused by Contingencies. Note that Town Populations relocated

on farms must be given Assistance.(section 4.1.8)

4.3.6 Construction Programs are the last to be implemented. These include Industrial Incentives. A player draws one of the Randomizer Chits as indicated in the Summary of Unit Types. If the number on the chit is less than 3, the Incentive has failed to attract an industry. Any number between 4 and 9 inclusive causes the Industry to appear. Roads, Schools, Government Industries, Wildlife and Recreation Areas, Drainage Systems and Farm Improvements are all constructed at this time.

4.3.7 Farmers on Subsistence may undergo Spontaneous Recovery. A Randomizer Chit is drawn for each Farmer on Subsistence. A 0, 1, or 2 removes the Subsistence.

4.3.8 Census is taken as outlined in section 5.

4.3.9 New Subsistence is imposed on all Marginal Farm Populations which are adjacent to other Farm Populations. This does not affect Farmers working for Industry or Farmers on Improved land.

Explanation: A farmer on poor land may occasionally have a good year even if his farm is too small. The Spontaneous Recovery rule simulates this. Additional income may be obtained through hunting or selling farm produce to passers-by; the Wildlife and Recreation Areas simulate this. Nevertheless, the small farmer will usually return to a Subsistence level in the following years, unless he receives aid, a non-farming job, or moves to another, larger farm.

5.0 Evaluating the Simulation Exercise:

5.0.1 This section deals with the functions of record-keeping and evaluation.

5.1 Progress Reports: At the start of the exercise, one player is assigned to keep track of projects completed, funds expended, and the Census. Most of the paperwork should be done on the Progress Report Form, 5.1.1, on the following page. Extra sheets should be xeroxed.

5.1.2 In the Planning Phase, the record-keeper should note only the total budget allocations for each type of project.(i.e. if 4 Schools of Education Level 3 are built, the Progress Report should only contain a note such as "4#3 Schools" followed by costs and benefits) The actual locations where programs are to be established should be noted by the players who wish to implement the programs. An automatic Administration Cost of 5% must be added to all projects when estimating total budget.

5.1.3 During each Year of the Implementation Phase, only a Census need be taken. This is merely the total number of Unemployed Town Populations, Subsistence Farmers, and Failing Industries and Recreation Areas on the map. A Census should be taken at the start of the Implementation Phase as well.

5.1.1 Progress Report Sheet

Program Name	Estimated Benefits	Estimated Costs	Date(Time) Completed
Total	_____	_____	

5% Administration: _____

Total Costs _____

Benefit/Cost Ratio _____

Time	Start	Year	Year	Year	Year	Year
Record:		1	2	3	4	5
Census						
Record:						

Total Census Values(Years 1-5) _____

Divided by 5: _____

Net Benefits(Start census minus Average value): _____

5.2 Numerical Evaluation: Depending on the players' reasons for performing the Regional Development Simulation, two basic criteria for evaluation exist: qualitative and quantitative. When the exercise is being used by small groups, the actual success or failure of the programs should be examined.

5.2.1 In the Planning Phase, programs were budgeted, and a Benefit-Cost Ratio was calculated. The "benefits" listed on the Benefit-Cost Table, section 4.1.9, represent the average numbers of populations which could be aided by each program over the 5-year implementation period. The "costs" represent the actual economic costs of each program, as well as the social costs in terms of physical displacement (as in Relocation) or readjustment (as with Education Programs for re-employment). The Benefit-Cost Ratio should be greater than 1 at the start of the Implementation Phase to ensure any kind of real success in a development program.

5.2.2 Real Outcomes: A positive Benefit-Cost Ratio looks well on paper, but has little relation to the standard of living in an area. The people who elect a regional government will base their votes on what the government did for them during their term of office. Take the total Census count for the 5 years of the implementation phase and divide it by five. Subtract this from the Census value calculated before the Implementation began. The difference will equal the

number of population units and industries aided by government programs on a long-term basis. If the number calculated is small in comparison with the intended benefits, it would be wise to reconsider what was done during the simulation.

5.3 Qualitative Evaluation: When larger groups use this simulation, they should concentrate on what actually happened during the planning and implementation processes.

5.3.1 Programs: Were the programs designed to help a large portion of the populations in the region? Did they benefit the towns, or the rural farms? Was education considered important? Were disadvantaged groups, such as minorities or fishermen, given special help? Where did most of the programs go? To the South? Into the more distant parts of the map?

5.3.2 Interactions: How did the various groups interact? Were they competitive or cooperative? If there were citizens' groups, did they try to funnel programs to their own areas, or did they encourage an even distribution of funds? Did anyone actively oppose spending? The simulation organizer should lead the participants in a debriefing session to help them understand what they did and why they did it.

6.0 Scenarios:

6.0.1 The Regional Development Simulation is intended as a versatile exercise in regional planning. Enough counters are provided to simulate many different initial situations, and a blank hex grid is provided for the construction of a new map and different terrain. Each initial set of conditions is known as a Scenario.

6.1 Format: Although only one scenario is presented in this simulation, players may construct their own. For conciseness, a standard notation will be employed to describe the scenario.

6.1.1 Deployment: The initial location of the counters is indicated by cross-indexing the numbers at the top and right side of the hex grid. Thus, hex (5,8) is the 5th hex column from the left, and the 8th hex down. Vertical rows are always counted from the top, despite the staggered hexes.

6.1.2 Unit type is indicated by name (population, industry, school, etc.) and by level. Thus, a #2 population is a population counter of education level number two. In cases where only a level number (#1;#3) is given, a population counter is indicated.

6.1.3 A Maximum Budget will be indicated for each scenario. This is the maximum size of the Costs portion of the Benefit-Cost Ratio which may be used to fund programs. Programs which exceed this budget must be cut.

6.1.4 Special Rules, Contingencies, and Roles may also be specified in a scenario.

6.2 Contingencies: Certain kinds of events, such as disasters or economic disturbances, occur infrequently, but have widespread effects. The following contingencies are examples of such events. When a Contingency is specified in a scenario definition, the procedures outlined apply throughout the Implementation Phase, at the start of each year in the phase.

6.2.1 Flooding: A randomizer chit is selected at the start of each Year. A 1 or a 2 indicates that flooding may occur. Chits are drawn separately for each population unit, Industry, or Recreation Area on a Lakeshore or River hex. A result of 1, 2, 3, or 4 indicates that a Farm or Fishing population is flooded onto Subsistence, an Industry Fails, or a Recreation Area becomes unprofitable. Failing Industries force their employees into Unemployment or Subsistence, while Recreation Areas no longer remove farmers from Subsistence. Invert all counters affected by flooding. Drainage Systems prevent flooding in protected hexes.

6.2.2 Drought: Follow the same procedure as for Flooding. Droughts only affect Farm Populations which are found away from Lakeshore and River hexes.

6.2.3 Recessions affect units in all hexes, causing Subsistence and Failure. A randomizer chit is drawn each

Year of the Implementation Phase. The first time a 1 occurs, a Recession begins, and lasts until the end of the exercise. Thereafter, a randomizer chit is drawn each year for every occupied hex on the map. A result of 1 or 2 causes Failure or Subsistence.

6.3 Roles: Players are assigned roles according to the scenario in use. These roles are merely to create an appropriate frame of mind concerning the exercise. Some role divisions are presented here; others may be devised at will.

6.3.1 Department Heads: Each player controls a small portion of the programs listed on the Benefit-Cost Table. If groups are involved in the simulation, entire departments can be represented. Although the different branches should cooperate, the final decision to implement a particular program should be made by the appropriate department head.

6.3.2 Area Planning: Each group of players represents the municipal council responsible for development in a portion of the playing map.

6.3.3 Interest Groups: Players represent different ethnic and economic sectors of the region depicted on the map. One group should represent Regional Planners, while others represent such groups as Businesses, Farmers, and Native People.

6.4 Scenario 1:

6.4.1 Deployment:

In (4,11): 1x#3 Industry, 1x#3 School, 5x#3 Population.

In (5,12): 2x#2 Industry, 1x#2 School, 6x#2 Population.

In (3,8): 1x#2 Industry, 2x#2 Population.

In (1,4): Recreation Area.

In (9,3): 2x#2 Industry, Recreation Area, 1x#2 School,
4x#2 Population.

In (5,1): 7x#1 Population. Native Reservation.

Farm Populations: #1: (4,5)(5,6)(7,1)(7,3)(6,5)(4,7)

#2: (2,3)(4,1)(5,3)(9,1)(8,6)(7,9)

#3: (1,5)(1,6)(9,8)(3,9)

Fishermen: #1: (2,1)(1,2)(1,3)(9,2)

6.4.2 Maximum Budget: 60 cost points.

6.4.3 Special Rules:

a. Native Populations: Hex (5,1) is a reservation. Population units in this hex may only be Relocated at twice the normal cost. They may not be transferred to a Farmland hex.

b. Fishermen: are treated as normal units for most purposes, but they are affected by the Pollution and Depletion contingency. Fishermen may not become Farmers.

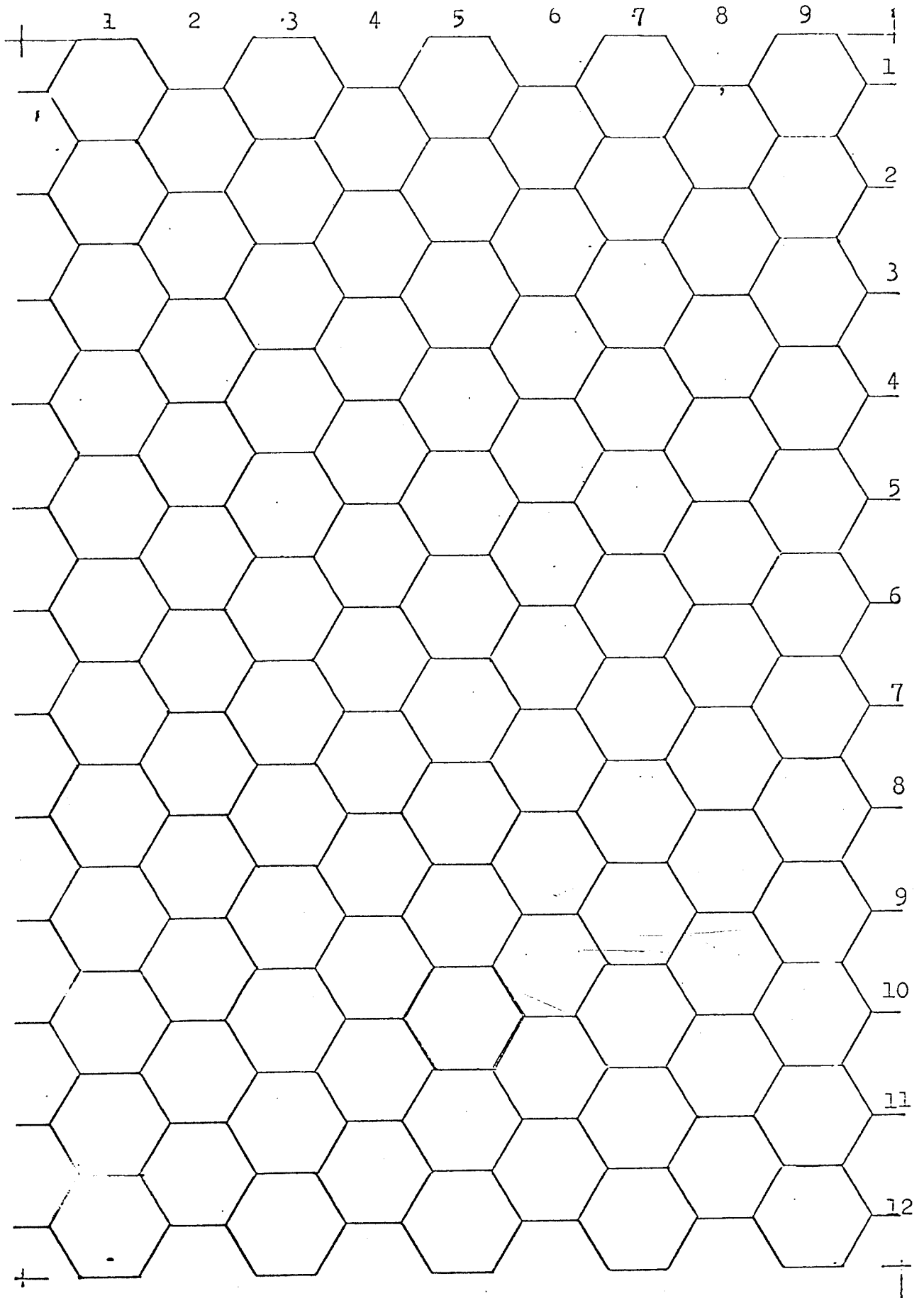
6.4.4 Contingencies:

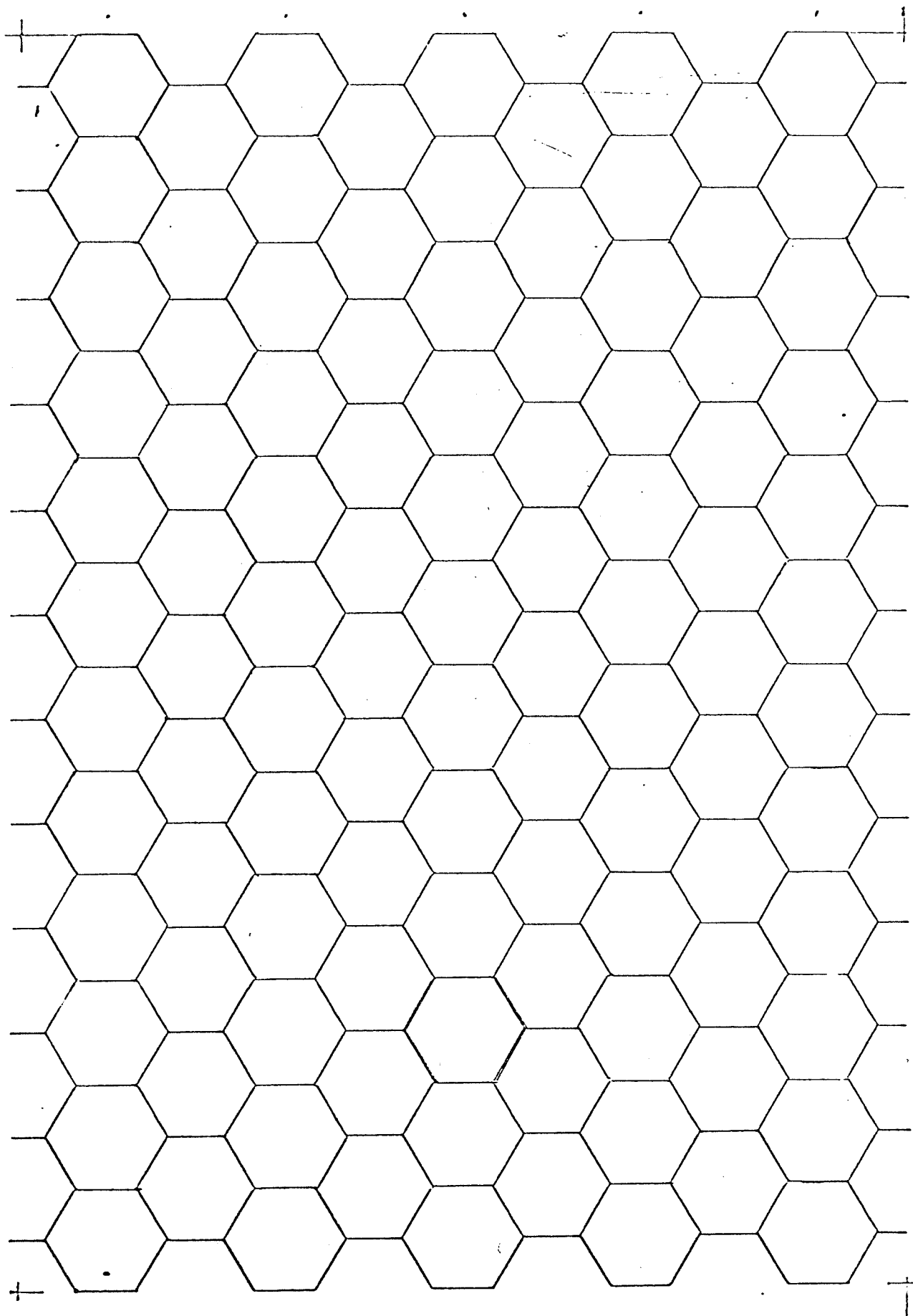
a. The Flooding Contingency is used in this scenario.











b. Pollution and Depletion affect Fishermen. A Randomizer chit is drawn in each Year of the Implementation phase. If a 1 occurs, Pollution calls a halt to











fishing in one of the two lakes. A second chit is drawn to determine which lake is "Polluted"; an even number indicates the lake on the left; an odd number indicates the lake on the right. Fishermen located on lakeshore hexes affected by pollution must go on subsistence. Fisheries are also affected by overfishing. If a lake remains unpolluted, draw a Randomizer Chit for each fisherman on the lake. If the total number exceeds 8, half the fishermen on the lake go on subsistence, rounding to the next highest number.











6.4.5 Roles: Players should use each of the role modules in turn to study the variety of outcomes.



































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







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







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

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CHAPTER VI

SUMMARY AND CONCLUSIONS

A. REVISING THE INTERLAKE MANAGEMENT SIMULATION.

The main objective of this Practicum was to design a simulation of regional development. The result has been two different simulations, each useful in its own way. In writing and rewriting the rules to these exercises, much has been learned about the Interlake Area and simulation techniques. Hopefully, some of this knowledge will be transmitted to the users of the exercises. Although neither device has been tested in its present form, the SIMILAK exercise designed by Dr. T. F. Carney at the Natural Resource Institute has been tested, and is the predecessor of both simulations.

SIMILAK was first played at St. Laurent, Manitoba, on August 8, 1974, with the aid of a group of high school students. The format of the rules was similar to the present rules, but the structure was less detailed. The players were uncertain of the rules, which affected the exercise to some degree. As play began, it was apparent that the Legislative Members could not decide what their duties were. The Civil

Servants assumed control of the government, and actually tried to delay an election until they could establish order in the regions. The Minority Group in Region D (which had no Companies and very little income) built a barricade to keep out the tax collectors, and later staged a mock revolution, using baseball bats as guns. The Civil Servants calmed them, promising reforms, but later brought in a Police Force, previously inactive, to prevent a recurrence. The situation almost degenerated to violence, and some people withdrew from the exercise to play pick-up-sticks in protest against the violent actions. Finally, the Organizers ended the exercise to prevent further incidents.

It was found that players acted as they did through feelings of helplessness. They were bewildered by the complex rules, and only a few of them learned to cope with their roles. The Minority Group's actions were a remarkable parallel to the Anicinabe Park occupation which was occurring at the same time. Misunderstandings of the rules led to a much more violent society than had been planned, which was unfortunate.

The second exercise was played with the students and staff of the Natural Resource Institute on September 13, 1974. The students had access to the rule manuals for several days previously, and were more organized than the

students at St. Laurent. The Legislative Members took their duties seriously, and revised the tax structure to place the financial burden of the regions on the Companies, which could afford to pay higher rates. The workers unionized themselves quickly, and the business owners decided that the Government needed all the help it could get. Most of the Minority Members and Smallholders collectivized their assets, and built such a stable economic base that even the Contingencies were overcome. The only players to remain confused throughout the exercise were the Civil Servants, who had read all the rules and were overcome by the amount of work assigned to them. Very little of this work was actually performed.

In the debriefing session which followed the exercise, it was found that the minor role-players felt helpless and isolated. This was not seen in the first exercise because players were given a mixture of important and minor roles. They ignored the minor roles, as their important roles had sufficient funds to support them. In the second exercise, minor roles were grouped together, so that the players holding minor role cards actually felt the desperation of private citizens faced with difficulties and an unheeding government. Nevertheless, players were able to organize themselves into groups which could protect individuals from disaster and

exert pressure for reform.

The differences between the two exercises may have originated with the players. The first test group consisted of students in high schools, with no special training in regional development other than living in the Interlake Region. Their interpretation of the simulation was coloured by a viewpoint of individuals who had no voice in the decisions of government. The students of the Natural Resource Institute were oriented towards planning and participating in government programs, and many had already studied the Interlake programs in detail. As a result, they deduced the community's needs in the simulation, and solved them with great ease.

Written reports were submitted by the players in the second exercise. A common theme in their comments was the realization of the complexity and responsibility faced by government planners and civil servants. As the simulation was terminated early in the third stage, due to a lack of time, this was the only major idea which emerged in the exercise.

Most of the changes in the Interlake Management Simulation are of a technical nature. Rules were clarified, and restructured. The roles of Managers,

Workers, and Unions were closely interrelated, and Agricultural programs were introduced to aid Smallholders and Farm Owners. Although these changes have lengthened the rules and complicated them, they are intended to make the exercise easier to understand.

B. REGIONAL DEVELOPMENT ON A MAP.

The Regional Development Simulation was intended as a companion exercise to the Interlake Management Simulation for small groups, but it presented entirely different problems to the larger device. A format was needed which was both simple and realistic. The solution chosen, development on a mapboard, has been used on a small scale for urban planning exercises such as the Community Land Use Game.¹¹ The hexagonal grid and the use of counters are derived from Historical Simulations, also known as War Games.

The initial version of the Regional Development Simulation concentrated heavily on the actual planning elements, while interactions between governments were handled through the use of random numbers and probability tables. It became apparent that a rather sterile and uninteresting device would emerge from this technique, and the present exercise uses the map and the planning elements to focus discussion. The generalized components

allow a large variety of situations to be simulated, but players must use their imaginations to identify the problems in each scenario.

C. SUMMARY AND CONCLUSIONS.

Neither the Regional Development Simulation nor the Interlake Management Simulation were intended as numerically accurate representations of Manitoba's Interlake Region and the associated development projects. Such a simulation has been constructed,¹² but it is an abstract, computerized simulation whose elements cannot be modified into an exercise which groups of students can use. Neither are the simulations too simple to reproduce the elements of development. The devices were designed to demonstrate the processes of development planning and the effects of individuals on such plans. As teaching exercises, their value lies in their ability to communicate these generalized processes to players. It is these concepts which are the most difficult to transmit by conventional means.

NOTES

1. Carney, T. F., Constructing Instructional Simulation Games, Natural Resource Institute, Winnipeg, Manitoba, 1974, p. 3.
2. Matviw, D., and P. Nickel, A Study Guide to the Interlake Planning Process, Natural Resource Institute, Winnipeg, Manitoba, 1975, p. 11.
3. Carney, T. F., Similak II, Natural Resource Institute, Winnipeg, Manitoba, 1974. Only a limited number of Participant's Manuals and Instructor's Manuals were printed, as the simulation had not been tested.
4. Framingham, C. F., J. A. MacMillan, and D. J. Sandell, The Interlake Fact, Highnell Printing, Winnipeg, Manitoba, 1970, p. 3.
5. Most of the data presented in Chapter II are derived from Matviw and Nickel's Study Guide, cited in note 2. The Study Guide is itself a digest of information about Manitoba's Interlake and the programs which were implemented therein. Some of the primary sources concerning the Interlake are listed in the Bibliography.
6. More publications have been issued concerning the Interlake than can properly be listed here. The Interlake Fact, by Framingham et al., is an imposing collection of pure data from the region, and is one of the best references for those seeking detailed numerical information on the Interlake. J. A. MacMillan and C. F. Framingham of the Department

of Agricultural Economics, University of Manitoba, have contributed to more than 28 papers and reports concerning the projects performed in the Interlake.

7. Twelker, P. A., and K. Layden, "A Basic Reference Shelf on Simulation and Gaming," pp. 445-459 in Zuckerman, D. W., and R. E. Horn, The Guide to Simulations/Games for Education and Training, Informational Resources, Inc., Lexington, Mass., 1973.
8. Carney, Constructing Instructional Simulation Games, p. 84.
9. ibid., p. 80.
10. ibid., p. 65.
11. Feldt, A. G., Community Land Use Game, The Free Press, New York, N. Y., 1972.
12. Tung, Fu-Lai, A Dynamic Model for Simulating Resource Development Program Impacts in the Interlake Area of Manitoba, Ph. D. Thesis, Department of Agricultural Economics, University of Manitoba, Winnipeg, Man., 1975.

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