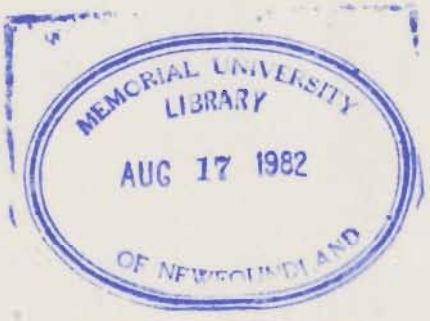
A REPORT ON THE DEVELOPMENT OF AN INSTRUCTIONAL UNIT ENTITLED "NEWFOUNDLAND RAILWAYS"

JAMES DONALD MACNEILL

SLIDES & TAPES INCLUDED



A REPORT ON THE DEVELOPMENT OF AN INSTRUCTIONAL UNIT ENTITLED "NEWFOUNDLAND RAILWAYS"

by


James Donald Macneill, B.A., B.Ed.

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ABSTRACT

The purpose of this project was to develop an instructional unit on the history of Newfoundland railways for use as supplementary material in the Grade Nine Canadian history course.

A slide-tape format was chosen as the medium of presentation of the material to the intended learners.

Various development stages were involved in the completion of the slide-tape presentation. At various stages of development content and media experts, teachers and students were consulted informally and formally for the purpose of evaluating the content and technical qualities of the slide-tape presentation. Based upon the recommendations of these evaluations, changes were made in the slide-tape presentation.

A nonequivalent control design was used in piloting the slide-tape presentation. Two Grade Nine history classes and one Grade Nine history teacher took part in the study. Statistical analyses of the pretest/posttest results of both classes showed that learning had taken place in the class which had viewed the slide-tape presentation. A resource materials form

was also used to evaluate the content and the technical qualities as well as the suitability of the instructional unit. Grade Nine history teachers who used this form highly recommended the slide-tape presentation, Newfoundland Railways, for use in the Grade Nine Canadian history course.

ACHNOWLEDGEMENTS

I wish to thank my advisors, Dr. Donald Boehnoker, Dr. David Carl and Dr. Garfield Fizzard, for their encouragement and assistance throughout all phases of this project.

I also thank the following persons who willingly and unselfishly aided me: Mr. Donald Morris, Provincial Archives of Newfoundland and Labrador; Mr. William Griffin, graphic artist, and Mr. Dan Michaud, photographer, with the Centre for Audio-Visual Education, Memorial University of Newfoundland; and Dr. Geoffery Jones, Department of Curriculum and Instruction, Memorial University of Newfoundland.

I want to thank especially Mr. Tolson Barrington for his help in the production of the narration and of the sound effects of the slide-tape presentation.

I wish also to thank my friends and those persons who have a keen interest interest in railways for their aid and encouragement.

To my family who never failed in their encouragement, I owe a very special thank you.

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CHAPTER I

INTRODUCTION

The Grade Nine course in Canadian history presently offered in Newfoundland schools relies a great deal on the availability of supplementary resource materials which can be used in the classroom or to which students can be directed when they carry out assignments in their text books or those set by their teachers. The instructional unit, Newfoundland Railways, which has been developed, deals with one area not adequately covered in this course -- the era of railway construction which took place in Newfoundland during the late nineteenth and the early twentieth centuries.

Railway construction in Canada during the latter half of the nineteenth century and the role which railways played in Canada's development are two of the major themes dealt with in the Grade Nine Canadian history course. In many ways Newfoundland's experience in the construction of railways reflected the Canadian experience: the engineering feats involved, the excesses and mismanagement of financing them, the monopolistic family control over many of them, the heated arguments for and against their construction, the political intrigues and scandles

often associated with the granting of railway contracts, the unrealized revenues of many lines after their construction, their roles as roads to resources, and finally, but not least of all, the positive influences railways played in the consolidation of territory and the fostering of feelings of nationalism.

Supplementary resource materials on the history of railways in Newfoundland were found to be rare or archival in nature and, therefore, inaccessible to a majority of history teachers and students. Hence, the purpose of this project was to produce an instructional unit in a slide-tape format, using an instructional design approach and providing a brief history of railways in Newfoundland, which teachers and students would find useful as a supplement to the Grade Nine Canadian history curriculum.

This development process entailed:

1. a survey of existing materials available on the Newfoundland railways and their suitability to the Grade Nine history course.
2. a description of the intended learners.
3. a task analysis, that is;
   (a) a brief summary of the learner's knowledge of Newfoundland railways and the use of non-print media.

(b) a break-down of the knowledge to be communicated to the learner.

(c) the specific learning objectives to be met.

4. a rationale for the choice of media being used.

5. the development procedures being used.

6. the formal evaluation of the completed instructional unit through an analysis of the data obtained from the formal testing of the slide-tape presentation.

7. the revisions, conclusions and recommendations drawn from the whole process.

Figure 1 represents this development process.

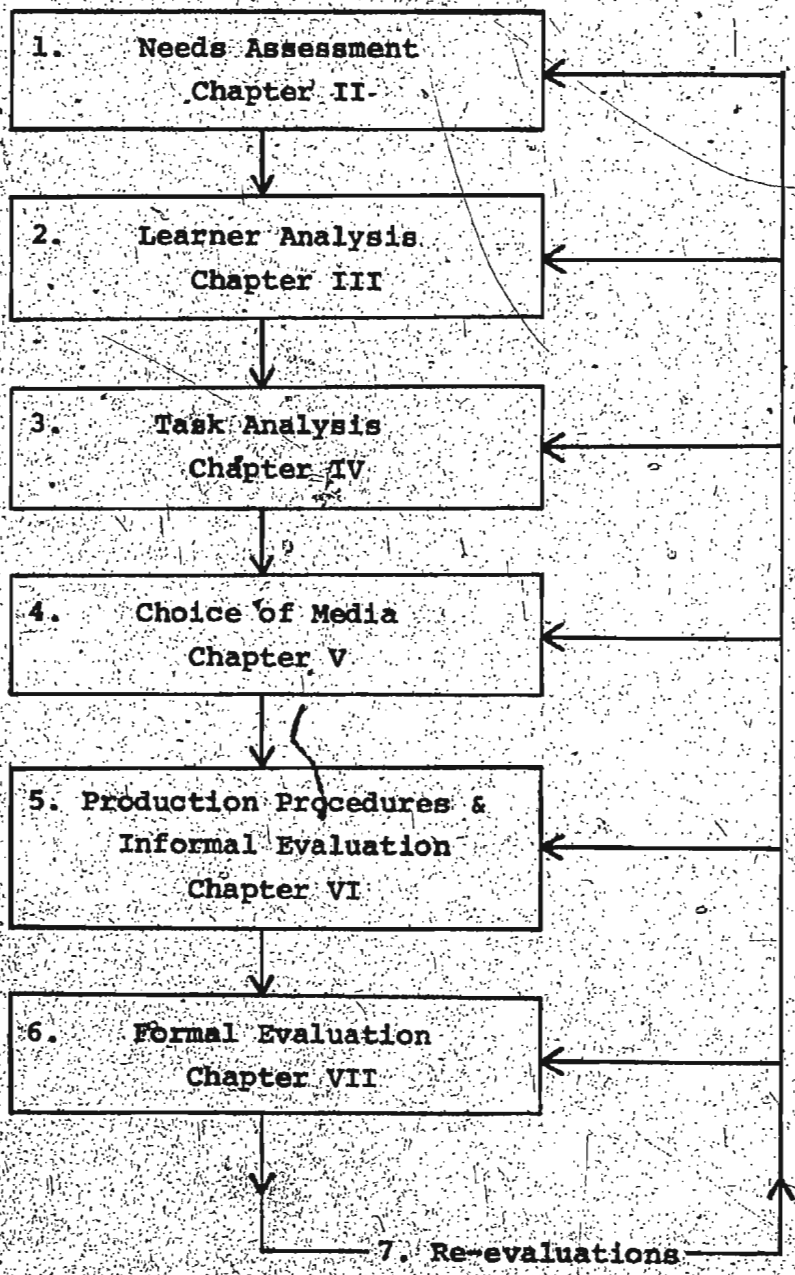

Figure 1. Instructional Design Model

CHAPTER II

NEEDS ASSESSMENT

Initially, the development of instructional materials is normally proposed because of the developer's perceived need for such materials. However, before the development is started, it is the responsibility of the developer to conduct a needs assessment, that is, a process which determines a need or desire expressed by teachers and students for a particular resource material under consideration for development.

If such a need is indicated, there are three ways to meet the need: (i) to use existing materials in their present condition, (ii) to modify existing materials, and (iii) to develop new materials.

To determine the extent to which there are materials that may be used as they are or in modified form, criteria or standards on which decisions for acceptance or rejection of existing resource materials are established. Using these criteria, a summary of existing resource materials on the topic in question is carried out. If materials are found to be satisfactory without modification, only the preparation and the circulation of an awareness list are required. If the research reveals materials that

would be satisfactory with modification, the developer is normally advised to proceed in that direction. However, if no materials are found to be satisfactory with or without modification, the rationale thereby exists for the development of new materials.

In the development of this project, the steps outlined above were followed. First, teachers and students were approached informally concerning the extent to which they wished to have materials on Newfoundland railways and concerning the availability and acceptability of existing materials on the subject. Later a more formal questionaire to the same effect was circulated among Grade Nine history teachers at Clarenville Integrated High School and was given to twenty-eight Grade Nine history teachers representing various regions of Newfoundland who were attending Summer Session at Memorial University (see Appendix A). All twenty-eight teachers at the Summer Session answered yes to the two questions: Have you experienced difficulty locating suitable resource materials on the history of Newfoundland railways? and In your opinion as a teacher of the above topic in the Grade Nine Canadian history course is there a need for the production of resource materials specifically for this topic? Next, a set of criteria

was developed in consultation with an instructional design expert at Memorial University and with the Grade Nine history teachers at Clarenville Integrated High School. Using this set of criteria a review of existing materials was undertaken. The final decision to produce or not to produce additional resource materials on the Newfoundland railways was to be based or justified upon the results of these various surveys. In this case the results of these surveys showed that the production of resource materials on this topic was justified as the expressed need of the teachers was not being met by existing materials on Newfouhdland railways.

Rationale for Additional Newfoundland Resource Materials

The teaching of history has been very much text book oriented in the past in Newfoundland schools. By the time students reach Grade Nine, they have been exposed in most instances to history courses using this approach. However, the new Grade Nine Canadian history course introduced in Newfoundland schools during the 1976-1977 school year relies a great deal on the availability of resource materials, print and non-print, which can be used in the classroom and by the students for individual and group assignments as set out in

their texts or by their teachers.

In recent years individual teachers and those belonging to the various subject and speciality interest councils of the Newfoundland Teachers' Association, school board personnel, professional educators at Memorial University and personnel from the Department of Education for Newfoundland and Labrador have worked on joint committees at various levels to formulate guidelines and to develop new programmes in various subjects in Newfoundland schools. Several school boards have recently set up learning resource centres at the school and the school board levels in their districts to accommodate the increasing demands of teachers for resource materials (Rowe, 1976).

Other organizations have expressed a desire to produce Newfoundland resource materials. CSF (The Canadian Studies Foundation) stated that there was a need for local studies in the various regions of Canada. Two of these projects in Newfoundland, funded by CSF, resulted in the production of a booklet, A Changing Fishery Technology in the Community of Grand Bank, which is a local history of the fishing methods used in the Grand Bank area (Jackman, 1977).

and a multi-media kit on the history of St. John's, Culture in Transition; Problems of a Changing Lifestyle (Dawe, 1977).

Newfoundland & Confederation, a jackdaw, was produced by a committee of the Newfoundland Library Association (1977) as a result of what the staff at the Newfoundland Public Library described as an increase in demand by students and teachers for Newfoundland materials -- a fifty percent increase in requests filled for Newfoundland materials in one seven year period (Newfoundland Public Libraries Board, Annual Reports, 1968-1976). Also, there has been a considerable increase in Newfoundland publications, books, recordings and the like, in recent years to satisfy a growing local market for Newfoundland materials.

Grade Nine history teachers of Clarenville Integrated High School, as well as history teachers from other schools in Newfoundland who were consulted informally during the preparation of this project, stated that in their opinion they required additional resource materials on Canadian and particularly on Newfoundland historical themes in order to teach the Grade Nine history course effectively and in

order to meet the objectives of the course.

Criteria for the Selection of Resource Materials

The criteria used for the selection of resource materials sets the standard on which a decision or judgment may be based to either accept or reject a particular item as being suitable material for use by Grade Nine history teachers and students. The following criteria for the acceptance of resource materials on Newfoundland railways were developed in consultation with Grade Nine history teachers and an instructional expert:

1. Materials must be readily accessible to both teachers and students.
2. All materials may be handled without undue restrictions.
3. Copies of materials considered to be rare or of a fragile nature must be readily available upon request.
4. Reading and comprehension levels of materials must be compatible with those of Grade Nine students.
5. The system of storage and retrieval of materials must lend itself to the research abilities of Grade Nine students.

6. Content of commercially produced materials (or otherwise) must be scholarly and accurate.

Review of Existing Resource Materials

Information pertaining to railway construction in Newfoundland available for use by teachers and by students is very limited. Most of this information is contained in rare books, in materials which are archival in nature and in articles protected by copyright, such as masters' theses; almost all of which are housed in St. John's collections, such as the Newfoundland Room of Memorial University Library and the Provincial Archives of Newfoundland and Labrador to which there is only limited access.

There is a number of books, booklets and jackdaws available commercially and/or through public libraries on the history of Canadian railways, but these materials contain little information on the history of Newfoundland railways in particular, with the exception of several books and articles which were written for an adult audience.

Commercially Produced Materials

Commercially produced books on the railways of Canada generally deal with mainland Canadian railways

such as The Great Railway by Berton (1972), The Last Spike by Berton (1971), The National Dream; the Great Railway 1871-1881 by Berton (1970) and Canadian Pacific, A Brief History by McDougall (1968). Other works include: a booklet, Stand Fast Craigellachie; the Building of the Transcontinental Railway (1867-1885) by Robertson (1970); and a jackdaw, Building the CPR; With a Recording of John A. Macdonald's Speeches by John G. Diefenbaker by Stuebing (1973).

Canada's Railways by Philips (1968) tends to be "folksy" and condescending in its treatment of the railways of Newfoundland although its information is relatively accurate. Railways of Canada, A Pictorial History by Nick and Helma Mika (1972) gives a brief outline of the history of railways in Newfoundland. Their account is brief, indeed, especially when compared to the rather extensive treatments given to other railway systems in Canada, although its information is more extensive than that given in the Grade Nine history texts. The accompanying map to this outline is of poor quality due to the lack of keys, scales, dates and symbols showing the locations of many branch railway lines.

History of the Canadian National Railways by

G. R. Stevens (1973) gives a fairly good and accurate account of railway construction and the role it played in the history of Newfoundland. This book should present few reading difficulties for Grade Nine history students. This last book, together with the photographs and the technical information contained in Narrow Gauge Railways of Canada by Lavallée (1972), is all the more informative since Lavallee is a railway "buff" of the first order and has travelled extensively on the railways in Newfoundland and has photographed much of the materials used on the section of his book dealing with the railways in Newfoundland. The works of Stevens and Lavallée are the two most valuable books available commercially.

Newfoundland; Island into Province by Chadwick (1967) is on the recommended reading list for the Grade Nine history course. Chadwick travelled extensively in Newfoundland and Labrador as an advisor to the National Convention on economic matters from 1946 to 1949. One section of Chadwick's book deals at length with the economic and political scandals associated with the building of the railways from 1880 to 1923 when the Newfoundland Government assumed

control of the Newfoundland Railway and its auxillary services from the Reids and especially with the terms and political implications of the various contracts made with private developers by the Government. Chadwick's book is a scholarly work and so might present some difficulty to Grade Nine history students who do not have a prior knowledge of Newfoundland history.

Materials Available at Public Libraries

A History of Newfoundland From the English, Colonial and Foreign Records by Prowse (1895), reprinted in 1971, gives a comprehensive account of the events leading up to railway construction in Newfoundland and the details of the actual construction of the various railway lines and the economic, social and political events associated with railway construction. This is a rather scholarly work written in the style of composition associated with historians of the nineteenth century and so would be rather difficult reading for the average Grade Nine history student. It also requires a certain amount of knowledge of the history of railways in Newfoundland on the part of its readers since it was written for an audience familiar with that period in Newfoundland's history. Copies of

the 1971 edition, which is now out of print, may be available at public libraries and at book stores.

The Book of Newfoundland; Volume III by Smallwood (1967) includes the following three articles: 1. The Newfoundland Railway: Newfoundland Epic by Alfred R. Penney; 2. The Great Robert Reid -- the Man Who Built the Railway; and 3. C.N.R.'s Explosion of Progress by Ernest J. Cooke. The first article deals with the history of the railways in Newfoundland, and the second article is a reprint of a flattering biography of Robert Reid, the famous railroad and bridge builder, written just prior to Reid's death in 1908. The second article is useful since it shows the extent of the personal wealth and influence of the Reid family. The third article describes briefly the condition of the railways in Newfoundland at the time of Confederation and Canadian National Railways' attempts to upgrade the roadbed, rolling stock and railway and other related services. All three articles contain many historical photographs of the railways in Newfoundland over a seventy year period.

The Provincial Archives of Newfoundland and Labrador

The materials in the Provincial Archives on the railways in Newfoundland consist of many file boxes

containing the "Reid Papers", old photographs in folders and albums, government correspondences and reports, letters of public persons of the time, rare and out-of-print books and back issues of local newspapers and journals. There are also maps and some items such as cancelled passenger train tickets. Much of this information has been catalogued under general subject headings and in bibliographies and lists prepared by the staff of the Archives. Persons wishing to collect data must hunt diligently in order to piece together what they wish to know. Most of these materials are rare and/or fragile, such as the old photographs and the well worn newspapers; hence, they would not stand up to any amount of handling.

The Provincial Archives is primarily a place of research, and so it caters more to the individual researcher rather than to large groups of teachers and students. However, it does provide some copying services free of charge to schools, but reserves the right to charge for these services if large demands are put upon them. Except for these copied materials, the collection of the Archives cannot be used effectively by individual high school students living outside St. John's. Materials are not available on loan.

Newfoundland Room, Memorial University

Materials in this collection on the Newfoundland railways are for the most part rare books, maps, student theses and papers of recognizable value, such as pamphlets, government reports, military and engineering reports, correspondences and xeroxed copies of similar materials listed above and in the Archives. Since in many instances these materials listed above are primary source materials, it would require much time and effort and the necessary research skills on the part of high school students in Grade Nine to extract information from these materials. Of interest, for example, are:

1. The Construction of the Newfoundland Railway 1875-1898 by F. Cramm (1961), which is a comprehensive account of the politics behind railway construction in Newfoundland.
2. The Proposed Railway Across Newfoundland; A Lecture Delivered in the New Temperance Hall by Father Morris (1875), an excerpt from the Public Leger, which was a newspaper of the time.
3. Events Leading Up To, And Surrounding the Building of the Railway to Harbour Grace, 1875-1884 by Gerald W. Wells (n.d.), which gives an account of

the political and financial troubles associated with the first phase of railway construction in Newfoundland. This paper is one of several of the Maritime History Group and cannot be copied or borrowed from the Newfoundland Room.

4. More Blood, Sweat and Money; the Development of the Branch Railways in Newfoundland by F. A. Martin (1974), which is an account of the political and financial troubles encountered in the building of the branch railways by R. G. Reid.
5. The Railway and Local Politics in Newfoundland, (1870-1901) by J. K. Hillier (1974), which is similar in content to Cramm's thesis.
6. Three histories of Newfoundland by Newfoundlanders: A History of Newfoundland From the English, Colonial and Foreign Records by Judge Prowse (1895); and Newfoundland As It Is In 1894 by Moses Harvey (1894) and Newfoundland In 1897 also by Moses Harvey (1897).

The staff at the Newfoundland Room do not deny access to the materials in their collection by the occasional high school student who may wish to use them. This library, however, is not intended for the use of high school students. Moreover, the materials themselves when written were often intended for mature

readers of history. Like the materials in the Provincial Archives, these materials are not available on loan, and so only individual Grade Nine history students living in the St. John's area could readily make use of the materials in this collection.

Centre for Audio-Visual Education, Memorial University

The staff at the Centre for Audio-Visual Education report that they have no materials on Newfoundland railways.

Newfoundland Public Library

The Newfoundland Public Library, Arts and Culture Centre, St. John's, has a fair collection of micro-films of early Newfoundland newspapers. Copies of these can be obtained by individual patrons from photocopying machines at a small charge per sheet. On request from schools, the staff of the Public Library will send photocopied materials in files compiled specifically because of a particular request. They do not charge for this service, but they require that such files be returned to the Public Library in St. John's since these materials can then be lent to other schools. This library also operates a loan service free of charge to anywhere in Newfoundland and Labrador for books and reference materials. With the exception

of the information contained in old newspapers and rare books, this library's collection deals mostly with railways of other provinces and countries. Despite the free loan service of the Public Library, out-of-town students who want to do adequate research work on the Newfoundland railways need to be in St. John's since they will have to depend heavily on the expertise of the librarian assigned to research, compile and photocopy the materials.

National Film Board, St. John's

The staff at the National Film Board in St. John's report that they have no materials on the railways in Newfoundland.

Instructional Materials Centre, Department of Education

The Instructional Materials Centre operates a free loan service for audio-visual materials for Newfoundland schools. The staff of the Instructional Materials Centre report that although there is a considerable demand by teachers for Newfoundland materials, they have no materials on the Newfoundland railways.

Decision to Develop Materials

The informal and formal surveys of history

teachers' needs as previously stated in this chapter indicated a desire by these Grade Nine history teachers for additional materials for the Grade Nine history course on Newfoundland railways. The criteria developed for the selection of suitable resource materials for this topic showed that existing materials were unacceptable because of their particular content, formats and/or inaccessibility. After examining the above results, it was determined that the expressed need of teachers for resource materials on Newfoundland railways could not be met through the use of existing materials. Therefore, it was decided that the production of an instructional unit on the Newfoundland railways for use in the Grade Nine history curriculum was a worthwhile project to be undertaken.

CHAPTER III

LEARNER ANALYSIS

Overview of Relevant Characteristics

According to Cavert (1974), "Specific characteristics of an individual learner must be identified to narrow the total population to a specific target group" (p. 23). Also, the environment plays an important role. Therefore, "the characteristics of the learner's environment must be in harmony with the educational universe it seeks to serve" (Cavert, 1974, p. 47). In short, defining the individual characteristics of the intended learners helps to identify them more clearly.

For the purpose of this project, the intended learners were average Newfoundland Grade Nine students of Canadian history who were grouped by grade in a traditional academic system which was compartmentalized into subject areas at the high school level and was largely textbook and teacher oriented.

Age

The Grade Nine history students for whom the instructional unit was designed were between the ages

of thirteen and sixteen. Examination of school records of several schools considered by the author to be representative of high schools in Newfoundland showed that in some instances the age of an individual student as well as the academic achievement of the student had been determining factors in grade promotion.

Achievement

Achievement was normally measured by teacher-made tests, and student promotion was largely based on the results of these tests. Also, in-grade grouping was sometimes carried out on the basis of academic achievement and in some schools by sex as well. These students had previously taken Newfoundland history and geography in Grade Five and history in all grades since Grade Five.

Attitudes

Grade Nine history teachers who were contacted informally for this project stated that in their opinion Grade Nine students generally appeared to like social studies. These teachers also stated that generally their students appeared to prefer lessons in which audio-visual and other supplementary materials were used as an integral part of the lesson plans to those lessons based only on the lecture/textbook approach. These teachers said that Grade Nine history students were

familiar with the use of audio-visual materials in class and that they quite readily offered to operate audio-visual equipment if given the opportunity to do so by their teachers.

Additional Characteristics

The Grade Nine history teachers who were approached informally stated that a large proportion of Grade Nine students were bused from surrounding communities to attend high school in the larger centres of the Province. Often, these bus routes were over long distances and so lengthened considerably the school day of many students. In informal conversations these same teachers said that in their opinion Grade Nine students generally came from homes with all the modern conveniences, had access to community facilities such as stadia and play grounds, shopped at large shopping centres with their families, had access to medical facilities, had access to public or community libraries or to library buses operated by the Newfoundland Public Libraries Board and were greatly influenced by the electronic media such as television, radio and commercially produced records and audio-tapes.

CHAPTER IV

TASK ANALYSIS

A task analysis assesses the present level of achievement of the intended learners, breaks down the learning which is to take place and describes the goals which will move the present level of achievement towards the intended learning outcomes, that is, the learning objectives.

Entry Behaviour

As a result of the opinions expressed orally by Grade Nine history teachers of the Clarenville area in informal discussions, the entry behaviour of Grade Nine history students was assessed: that is, their present level of knowledge of railways and Newfoundland history and the use of various media including non-print was determined as accurately as possible. It was the general consensus of these teachers that Grade Nine history students:

1. have taken history since Grade Five.
2. had taken Newfoundland history in Grade Five.
3. had taken Newfoundland geography in Grade Five.
4. have been familiar only with the more apparent

details associated with railways in Newfoundland, such as trains and railway tracks.

5. have been familiar with film strips, slides and audio-tapes used in the classroom.

Task Analysis

The purpose of this instructional unit was to communicate to Grade Nine history students the story of railways in Newfoundland from their inception to recent times. Since these railways were built one after another to form a branch railway system, as opposed to the more prevalent North American network systems, it was decided to represent diagrammatically the various elements in the story to show the historical development of this branch system and the subsequent abandonment of many of its branches. Figure 2 represents the main task or goal of the whole project on the history of Newfoundland railways and divides the story to be communicated into its principal parts or elements, these elements in turn are divided further in Figures 8 and 8 into smaller elements and sub-units of information to be communicated to the intended learners.

This task analysis and the learner analysis discussed in the previous chapter were then used as a starting point in the preparation of a definitive list, after many revisions, of the learning objectives of the instructional unit.

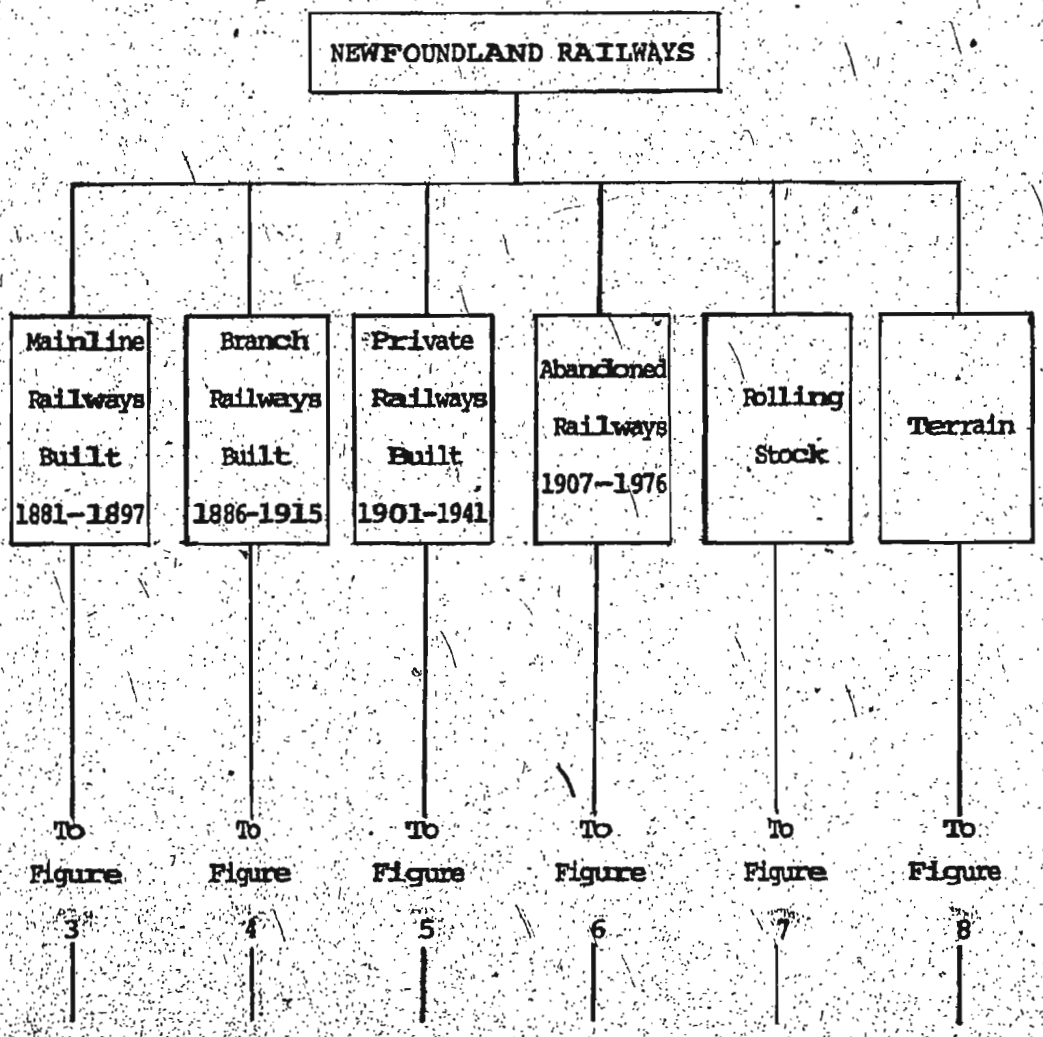

Figure 2. Newfoundland Railways

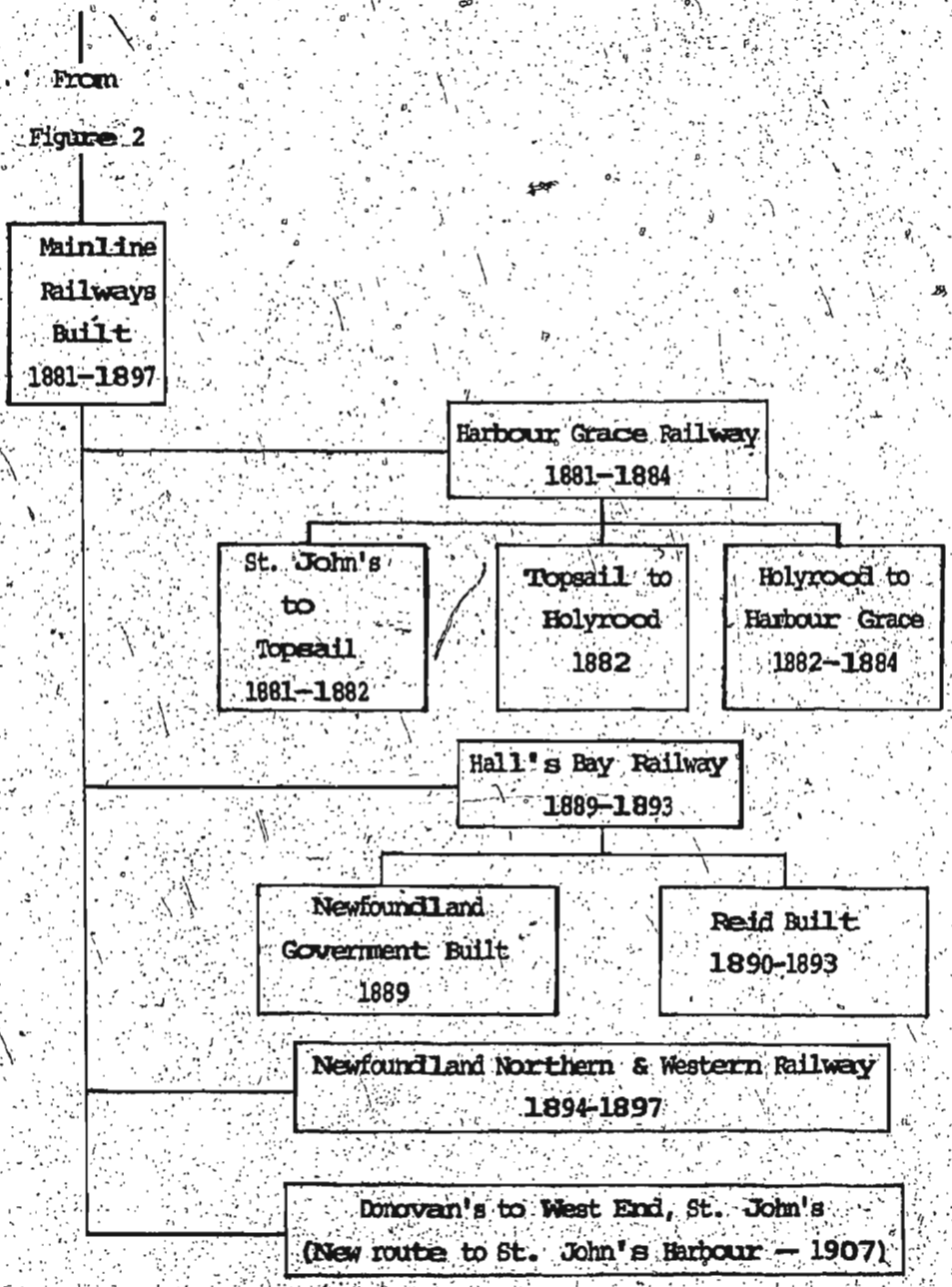

Figure 3. Mainline Railways -- 1881-1897

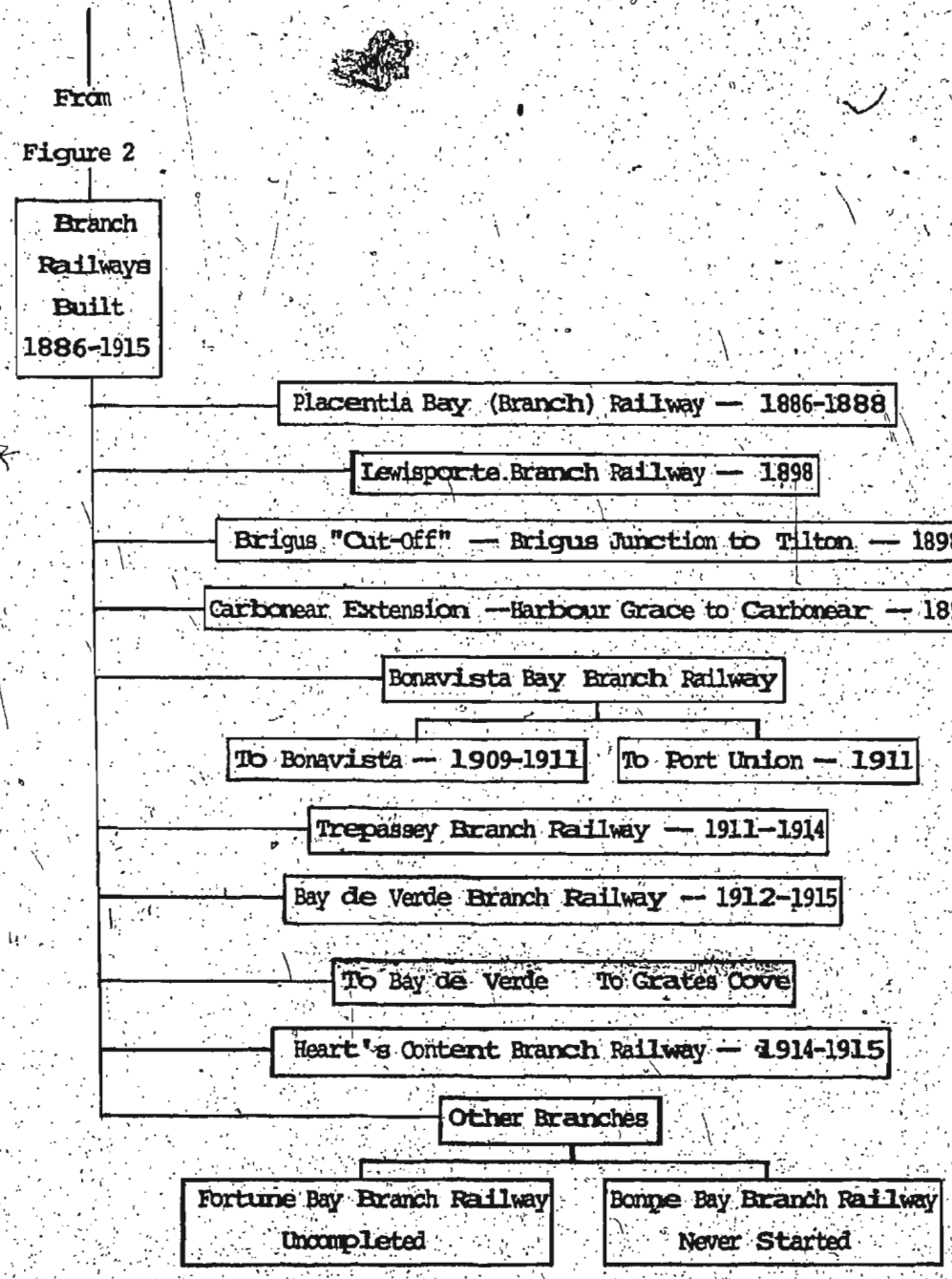

Figure 4. Branch Railways -- 1886-1915

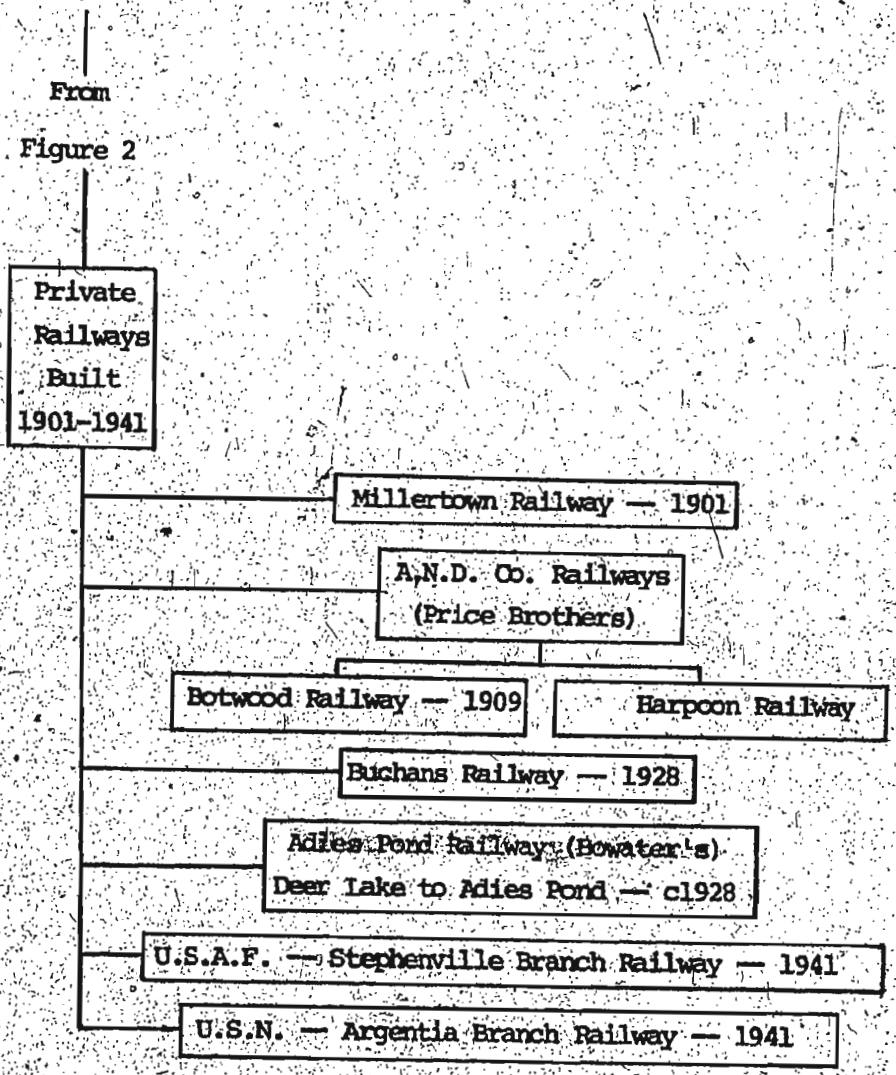

Figure 5. Private Railways -- 1901-1941

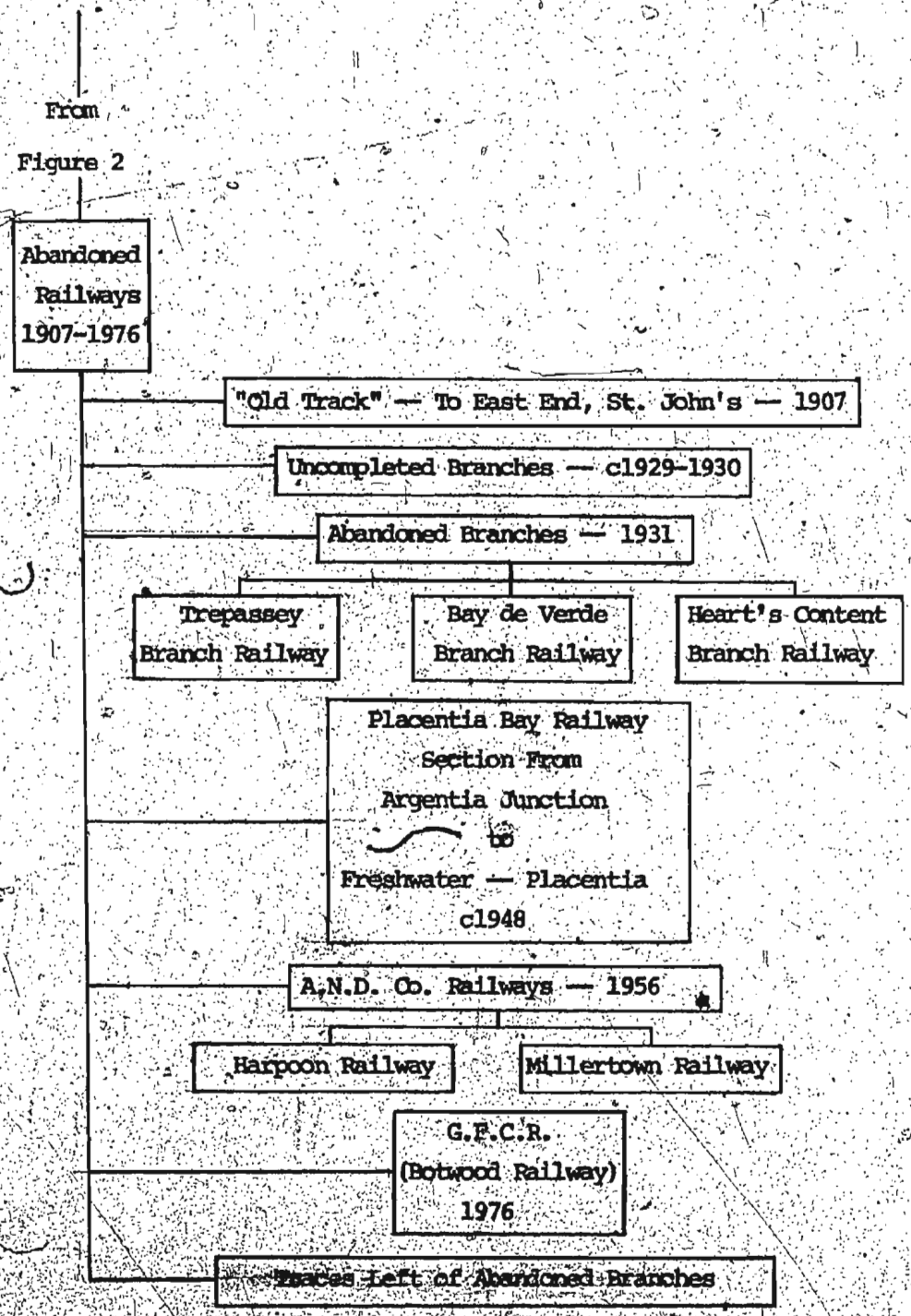

Figure 6. Abandoned Railways — 1907-1976

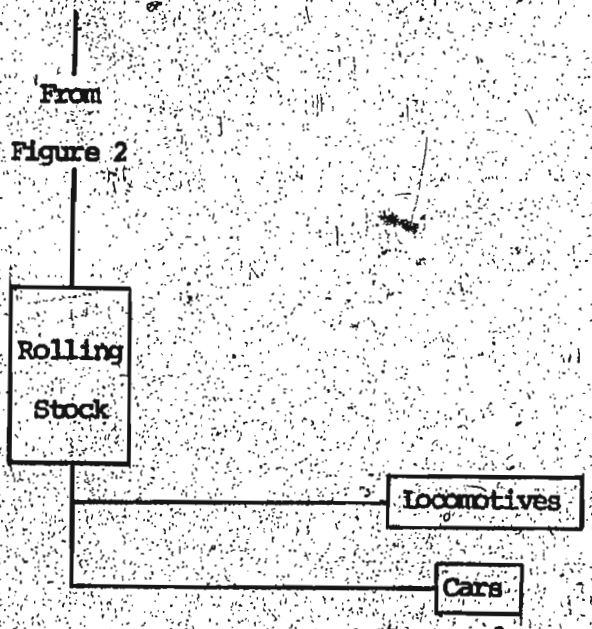

Figure 7. Rolling Stock

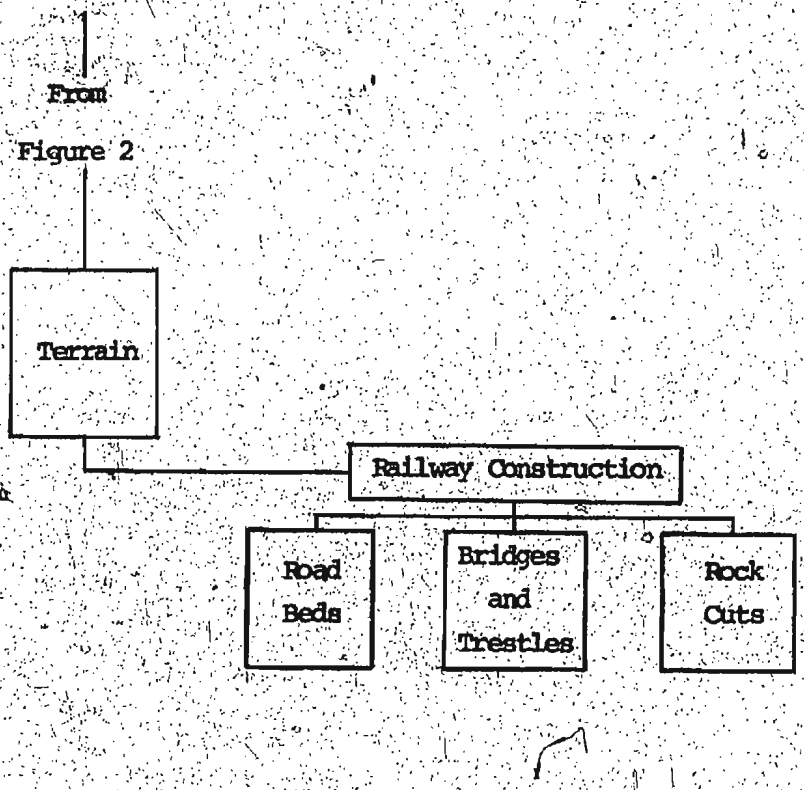

Figure 8. Terrain

Learning Objectives

The pupose of stating the learning objectives or intended learning outcomes of an instructional unit being developed is to describe clearly the performance expected of the intended learners at the close of instruction, that is, the project objectives. In addition, a criterion for success of the whole instructional unit should also be stated.

The criterion for success, that is, the programme objective, for this instructional unit was determined to have been met if 80% or more of the posttest questions, which were derived directly from the specific learning objectives, had been successfully completed by 80% or more of the Grade Nine history students.

The learning objectives for the slide-tape presentation on the history of the Newfoundland railways were written in consultation with Grade Nine history teachers, who stated that in their opinion these learning objectives were fair indicators of performance for the various elements of the instructional unit. These learning objectives stated that after viewing the slide-tape presentation, students would be able to state correctly:

1. the first town from which a railway was built.

2. the community in which armed resistance to the construction of the railway took place.
3. the main reason out of those presented in the slide-tape presentation for the initial construction of the first railway in Newfoundland.
4. the date of the year in which the first railway in Newfoundland was completed.
5. the date of the year in which the first railway in Newfoundland was started.
6. the contractor responsible for the construction of most railways in Newfoundland.
7. the name of the western terminus of the railway across Newfoundland.
8. the country whose fishing rights in Newfoundland were challenged by the completion of a railway across Newfoundland.
9. the main reasons why Reid was given large land grants by the Newfoundland Government along railways built by Reid.
10. the main reason why the Canadian Government was unwilling to accept Newfoundland's bid to join Confederation in 1895.
11. the terminus of the Placentia Bay Railway.
12 one out of two reasons which are stated in the

slide-tape presentation for the Newfoundland Government's decision to turn over all future railway construction to private companies.

13. one reason given by the Liberal Opposition in 1910 for not building branch railways.

14. one out of all the branch railways built still operating in Newfoundland.

15. one out of the first three branch railways built by the Reid Newfoundland Company for the Newfoundland Government.

16. at least one out of the six private branch railways constructed between 1900 and 1941 and mentioned in the slide-tape presentation.

17. the correct reason for the building of the Botwood Railway.

18. the correct reason for the building of the Buchans Railway.

19. one out of the reasons given in the slide-tape presentation why most of the branch railways were eventually abandoned.

20. the three main types of railway cars shown in the slide-tape presentation.

21. the name of the largest river to be bridged in building the railway across Newfoundland.

22. the highest point of land to be crossed in building the railway across Newfoundland.
23. the most formidable natural obstacle to railway construction in Newfoundland as shown in the slide-tape presentation.
24. a street which at one time was a railway bed.
25. the chief method given in the slide-tape presentation for clearing the way for building the road beds of early railways in Newfoundland.

CHAPTER V

RATIONALE FOR CHOICE OF MEDIA

Background

Once the population characteristics of the intended learners have been defined, the essential content of the instructional unit has been reshaped and broken down into manageable elements of instruction and the specific learning objectives have been chosen for the unit of instruction, then appropriate media have to be selected to bring about the desired learning at the end of instruction.

It is commonly accepted that the choice of media used to communicate the learning to the intended learners can affect the degree of success for the production. Therefore, for this project, given (a) the student population, the nature of the information to be communicated and the learning objectives of the instructional unit, and (b) the media preferences of Grade Nine history students and teachers and the technical limitations of production and the usefulness of various media, it was decided that the learning objectives for the instructional unit under production

could best be met by a slide-tape presentation.

Student Attitudes

Student preference for non-print media from primary to college levels has been noted in numerous studies (Ellis, 1969; Hardway, 1969; Lyon, 1972; McGuire, 1970; Nielsen, 1970; and Zikmund, 1971).

In informal evaluations of the production materials for this slide-tape presentation, Grade Nine history students stated that they preferred the non-print forms of media as opposed to printed forms such as their text books and reference books.

Teacher Attitudes

Many teachers surveyed on the use of non-print media reported that it saved them time in the preparation of lessons (Steihl, 1972) and that their students did their required work in less time (Flanigan, 1972; Thatcher, 1972; and Wilson, 1971). This was particularly true of the slide-tape presentation format versus the printed format (Longsdorf, 1971). In informal evaluations of the production of this instructional unit, the Grade Nine history teachers consulted stated that they preferred non-print forms of media for supplementary materials for use in their classrooms and with small groups and individual students.

Other Considerations

For this project, it was decided that old railway photographs could just as easily be turned into slides as into study prints or prints included in a jackdaw. Similarly, much of the required information taken from original sources could be represented visually in a slide format by the use of maps, graphs, diagrams and other drawings and even by the use of present-day photographs taken on location for the production.

It was also decided to complement these slides with a cassette audio-tape which would interpret the slides, allow for the addition of other pertinent information unsuitable for the visual representation and then tie the two formats into a meaningful story.

The adoption of the slide-tape presentation format, then, satisfied both Grade Nine history student and teacher preferences for the non-print format. The slide-tape presentation offered versatility, since: (a) it could be used by teachers with their students in class in order to augment their lessons; (b) it could be assigned to groups of students or individual students to aid them when they did research projects

as set by their teachers or text books or, for example, to serve as a remedial unit for those students who had missed classes in which this topic had been discussed; and (c) it could be used by individual students who wanted to learn more about the history of railways in Newfoundland in the same manner in which these students might search out and use other materials of interest housed in the learning resource centres of their schools. In the first instance, teachers would have an instructional unit which could be used in a single class period, or they might choose to use these slides without the tape for their own purposes. In the latter two instances, students would not be left entirely to themselves to interpret what they saw since the accompanying audio-tape would help to guide them in their viewing.

The availability of the necessary audio-visual equipment, that is, a slide projector or filmstrip projector capable of showning slides and a cassette recorder or player needed to show a slide-tape presentation, would also determine whether or not a slide-tape presentation ought to be used in the production of the instructional unit. It was assumed that most Grade Nine history teachers and students had

access to the above equipment in their schools or through the district offices of their school boards. History teachers consulted informally stated that they had the necessary audio-visual equipment in their schools. Rowe (1976) confirmed this finding.

Finally, the decision to produce slides in black and white, together with a narrative on cassette audio-tape, represented the best choice of media to meet the learning objectives of the instructional unit, given the nature of the materials and the technical resources and expertise available for their production at a reasonable cost of money and labour.

On the basis of the above considerations, the slide-tape presentation format was chosen for the production, Newfoundland Railways.

Booklet, "Newfoundland Railways"

The booklet, Newfoundland Railways, in its unrevised state, served primarily as an organizational aid during production. It was used in the same manner as the storyboard had been used, but it was a more convenient format in that it could easily be taken around to be viewed by the various consultants and knowledgeable persons, such as railway employees.

During the initial stages of production, a booklet format had been considered as a possible alternative to a slide-tape presentation, or, at least as a supplement to a slide-tape presentation, since it would not require the use of audio-visual equipment to be used. However, to be used effectively in a single class period, or even in a reasonably short period of time, it would have been necessary to produce class sets to be made available for individual student use. The cost of such a production in booklet form would have been prohibitive. For these reasons, it was not chosen as the medium of the instructional unit, nor was it included as part of the completed production or formally tested and/or evaluated.

However, the revised booklet, Newfoundland Railways, was completed upon the advice given by Grade Nine history teachers and other content specialists during the informal evaluation stage of the production (see Appendix G). The specific format chosen for the revised booklet meant that it could quite easily be reproduced by xerography at a modest cost to schools and individuals who wished to make use of it.

CHAPTER VI

PRODUCTION PROCEDURES AND INFORMAL EVALUATIONS

Informal evaluation is a continuous process used in the planning and implementation of the learning objectives of the instructional unit being developed in order that the instructional unit may be the most beneficial to the needs of the intended learners. This continuous process indicates where the necessary revisions are to be made in the content of the instructional unit, in its format and/or the media used in its presentation, in the methods used in evaluating and testing its effectiveness as an instructional unit and, indeed, in the original learning objectives of the instructional unit itself. Throughout this process, the production is evaluated and re-evaluated with the aid of content, learning and media specialists and also in consultation with the intended learners.

Initial Production

As described in the preceding chapters, once the need or desire of teachers and students for additional materials on the history of Newfoundland

railways had been established, a thorough search was carried out to determine the availability and suitability of existing materials and whether or not the production of additional materials was warranted. The intended learners were then defined. A task analysis assessing the existing level of achievement of the learners, the learning to be communicated and the expected learning outcomes or objectives of the instructional unit were then prepared. Taking into account the media preferences of teachers and students, the nature of the source materials and the technical resources and expertise available, the most appropriate medium was chosen to meet the learning objectives of the instructional unit. Finally, formal tests were devised to determine if the learning objectives of the instructional unit had been met.

At each stage of development, the instructional unit was subjected to informal evaluations by the appropriate experts in their professions: (a) the content specialist, who was an archivist and historian, checked the content for accuracy; (b) learning specialists, that is, Grade Nine history teachers, and a professional educator at Memorial University, aided in the interpretation of the learner and the

task analyses, the choice of media and the preparation of the formal tests used; (c) media specialists, that is, an instructional design specialist, graphic artists and a professional photographer at Memorial University, monitored the process at the appropriate stages and gave technical assistance in the production of materials used in the slide-tape presentation. In addition to these specialists, other persons familiar with railways in Newfoundland, for example, Canadian National employees and long time residents of areas served by the railways, helped in the identification and interpretation of the various photographs used in the production and in the clarification of some of the information which had been already researched. Also, the original resource materials from which unsuitable items were to be culled were shown informally to Grade Nine history students for their reaction, which was noted for reference later in the initial production.

Script

As stated earlier in chapter four, general learning objectives were first written for the proposed instructional unit on the history of Newfoundland railways and later revised and expanded with the aid

of the learning and the instructional design specialists to form the set of specific learning objectives for the instructional unit. This was done after a thorough search had been made to determine the availability and the suitability of existing materials on Newfoundland railways. The factual content and photographs required for the script were collected as the result of research carried out at the Newfoundland Room of Memorial University Library, the Newfoundland Public Library in the Arts and Culture Centre at St. John's and the Provincial Archives of Newfoundland and Labrador at St. John's. The accuracy of these materials was checked by the content specialist, and their suitability for use in the Grade Nine history curriculum was determined in consultation with the learning specialists. On the basis of these examinations of the materials selected for the production and taking into account the learner and task analyses, many revisions were made in the arrangement of these materials so that the instructional materials might be more effective in bringing about the stated learning objectives set out for the production.

Subsequently, a revised script (see Appendix F) was prepared in consultation with the content,

instructional design and learning specialists. At this point, this revised script was broken down into the various elements of the story which was to be communicated to the learners, and this information was placed on production cards and individually filed in the storyboard.

Storyboard

A storyboard was used during the final stages of preparing the revised script and as an organizational aid in the selection of the appropriate visuals called for by the script. Contact prints of old railway photographs and rough sketches of illustrations and photographs to be collected or produced were attached to production cards together with the appropriate portions of the script and filed in the storyboard.

At this point, many of the actual materials used for the completed production were produced and subjected to informal evaluations by the various specialists and by the Grade Nine students. As a result of their evaluations and criticisms, changes were often made in the choice of illustrations for particular elements of the story, in the actual quality of the particular illustrations, in the wording of the script and in the arrangement of the various

elements of the story as represented by the arrangement of the production cards on the storyboard. Subsequently, many revisions were made in the slide-tape presentation during production. As revisions were made in the production materials, revisions were also made in the task analysis since it served essentially as the blue-print of the slide-tape presentation (see Figures 2 to 8).

Slides

The photographs used in the production of the slides were copies from rare photographs found in the collection of the Provincial Archives. The negatives of these copied photographs were turned into black and white slides. Similarly, graphic works, such as the maps, graphs and other drawings, were photographed and reproduced as black and white slides from the original drawings produced in consultation with a graphic artist, a cartographer, a content specialist, learning specialists, media specialists and Grade Nine history students. On the advice of media specialists and learning specialists, the factual content as well as the actual drawings were kept as simple and as direct as possible in the presentation of information. After an initial production of the maps in colour, it was decided on the advice of the instructional design

specialist and other media specialists that these maps, graphs and other drawings would be produced in black and white to keep in character with the rest of the black and white photographs in the presentation.

Sound

Sounds commonly associated with railways were used as background accompaniments. These sounds, from early steam locomotives to present-day Newfoundland diesel-electric locomotives of Canadian National, were arranged in historical perspective to help create the feeling of the passage of time. No music was used. On the advice of learning and media specialists, the narration was kept to a minimum to interpret the information shown in each slide.

Audio-tape

The sound track of the slide-tape presentation was produced and mixed at the sound studio of the Centre for Audio-Visual Education, Memorial University. This sound track was then recorded onto a cassette tape together with an inaudible audio sound signal. Several copies of this cassette tape were then duplicated for testing and evaluation.

Evaluation by Content Specialist

The content specialist consulted for this production was a professional archivist at the Provincial Archives of Newfoundland and Labrador in St. John's who had contributed to various journals articles on Newfoundland historical themes. The content specialist aided in the search for and interpretation of materials such as the old railway photographs, newpapers, letters and papers used for the production. He also helped in the selection of appropriate materials, and because of his prior knowledge of railways, he was able to provide insights into many events in the history of railways which helped in drafting the script for the production. From time to time as materials were being produced for the production, his advice was sought on the accuracy of the content and visuals, such as the maps and other graphics, which were specifically produced for the production.

Evaluation by Learning Specialists

The learning specialists for this project were the Grade Nine history teachers from Clarenville Integrated High School, Clarenville. One of these

teachers had been previously employed with the Government of Newfoundland and Labrador as a cartographer and had served on the district history committee of the Bonavista-Trinity-Placentia Integrated School Board. This teacher had also served on a provincial history committee, which was responsible for the writing of a guide book for the Grade Nine history course. Consultation also took place with a professional educator with the Department of Curriculum and Instruction at Memorial University who also was the editor of the guide book for the Grade Nine history course.

These learning specialists were mainly concerned with the appropriateness of the materials produced for the Grade Nine history curriculum and their usefulness to the students in learning about the history of the Newfoundland railways. These teachers and educators were consulted throughout the production on the wording and style of presentation of materials, the kinds of specific information they wanted included in the presentation and the sequencing of the various elements of the story. Throughout the production, they previewed the production materials and offered suggestions to make the slide-tape presentation more

meaningful to the average Grade Nine student. Often, these suggestions concerned technical aspects of the production, such as the picture and sound quality, the use of captions and other lettering used in the slides, the proper cuing of words and visuals and the general need for simplicity in presentation. Finally, these Grade Nine history teachers evaluated the individual test items used for the pretest and the posttest and found that they were satisfactory test instruments of the slide-tape presentation and that their students were familiar with the format used in these tests.

Evaluation by Media Specialists

The media specialists consulted for the production were an instructional design specialist with Memorial University and a professional photographer and a graphic artist with the Centre for Audio-Visual Education at Memorial University.

The instructional design specialist helped in the preparation of the learner and the task analyses, in writing the learning objectives for the production, and in setting out the process for the instructional design which was followed in this project. This individual also aided in the selection of the media

to be used in the production and gave advice on the technical aspects of producting the materials to be used in the slide-tape presentation. The photographer was concerned mainly with the quality of the visuals and helped select the photographic equipment, films and chemicals required to reproduce the old photographs and other visuals into slides. The graphic artist aided in the selection of graphic supplies and instruments and styles and techniques of visual presentation required to produce the graphics which were to be made into slides.

Evaluation by Learners

The materials for the production were evaluated by groups of Grade Nine history students from Clarenville Integrated High School. Teachers of this school stated that these students were average Grade Nine history students. These students were shown the production materials at the various stages of development. The main purpose in showing the production materials to these students was to see if they perceived clearly the story the visuals and narrative proposed to portray. As in the initial selection of the resource materials for the production, this was done informally when

necessary with small groups of these students so as to access their reactions to the production materials. Any misunderstandings on the part of students, that is, their questions and comments about anything they saw or did not see or did not understand, were noted and kept for further reference in the discussions held with their teachers about the points their students had made and in the preparation of the final production.

As a result of the evaluations by the content, learning and media specialists and by the learners, revisions were made throughout the production of the slide-tape presentation. When all these corrections had been made, then the slide-tape presentation was ready for formal evaluation.

CHAPTER VII

FORMAL EVALUATION

Formal evaluation is the process of measurement or proof required to demonstrate that the stated learning objectives of an instructional unit have been transmitted or have not been transmitted successfully by that instructional unit to the intended learners. Furthermore, Mager (1962) states that this proof or "terminal behaviour is defined by identifying and naming the observable act that will be accepted as evidence that the learner has achieved the objective" (p. 43).

The formal evaluation took two forms: classroom testing and evaluation by teachers. Each is described in the following sections.

Classroom Testing

Overview

The classroom evaluation was conducted through the use of two classes: one was given a pretest, saw the slide-tape presentation, and was given a posttest; the other was given a pretest but did not see the slide-tape presentation.

Three types of analyses were used to examine the data: (a) the percentage of students with percentage of items correct on the posttest of the group which viewed the slide-tape presentation; (b) an item analysis of the scores between the pretest and the posttest of the group which viewed the slide-tape presentation; and (c) the comparision of the means of the pretests, posttests and pretest-posttest differences of the two classes.

Percentage of students with correct items. This analysis was conducted to determine the level of achievement obtained by the group which viewed the slide-tape presentation.

Item analysis. The item analysis was intended to show the growth of learning or improvement in performance which had taken place for each pretest-posttest item, that is, the extent to which each objective was met as measured by the performance on each item.

Comparision of means. This analysis was used to show whether or not the slide-tape presentation caused a significant difference in the growth of learning experienced by the group of students who viewed the slide-tape presentation; in other words, to show the extent of the success of the production as a whole.

To obtain the data required for this analysis, a

"non-equivalent group" design was used in which the control group and the experimental group did not have pre-experimental sampling equivalence; that is, the classes used in the experiment already existed. As Campbell and Stanley (1963) state, "The groups constitute naturally assembled collectives such as classrooms, as similar as availability permits but yet not so similar that one can dispense with the pretest. The assignment of X [treatment] to one group or the other is assumed to be random and under the experimenter's control" (p. 47). Futhermore, Kerlinger (1964) states that if available evidence such as sex, age, and social class of the groups used and their performance on the pretests do not indicate any dissimilarities of the groups, then at least there is no evidence against the equivalence assumption which in turn increases the possibilities of attaining internal validity.

Instrumentation

Objective examination questions were written in a pretest-posttest format derived from a set of specific learning objectives as shown in Table 1. The examination questions (see Appendices B and C), together with the specific learning objectives, were then shown to and examined by experts in instructional design, graphics and

media and in each case were judged to be suitably matched. It was also agreed by the Grade Nine history teachers of Clarenville Integrated High School that these test items were satisfactory indicators of the knowledge stipulated by the specific learning objectives of the instructional unit.

Table 1

Objectives Matched With Items on the Pretest and the Posttest

Objective No.	Pretest Item	Posttest Item	Objective No.	Pretest Item	Posttest Item
1	3	1	14	20	18
2	4	8	15	14	12
3	22	15	16	8	20
4	1	3	17	16	24
5	2	19	18	25	13
6	5	5	19	23	10
7	10	22	20	18	7
8	7	21	21	24	4
9	11	25	22	13	17
10	19	9	23	17	14
11	6	2	24	21	16
12	9	6	25	15	11
	12	23			

Selection of Subjects

The two classes were Grade Nine history classes at Clarenville Integrated High School. They were chosen by the school administration in consultation with these students' teachers and the school guidance councillor. Every effort was made by the school at the beginning of the school year to assure the similarity of the members of each Grade Nine class: age, sex, academic capabilities and achievement. Also taken into account in the composition of each class was the geographic location of the students' homes, since most students were bused to the school from outlying communities. However, excluded from these classes were students who were deemed by the guidance councillor and the school administration as "special education" students because of their poor academic records or because they had previously been in special education classes in their respective elementary schools before being advanced to high school.

Other than the arrangements made by the school in the selection of the members of each Grade Nine class, no attempt was made to choose particular subjects for the experiment or to use randomized samples of students out of the classrooms for fear of " . . . creating more awareness of experiment, I'm-a-guinea-pig attitude, and the like"

(Campbell and Stanley, 1963, p. 50). Also, for testing purposes, the choice of the two particular Grade Nine history classes used for this project was determined by the school time table: these were the only two groups which had been scheduled consecutively and which were taught by the same history teacher.

Procedure

Both Grade Nine history classes received the pretest during the two consecutive time periods previously selected. During the same periods in the next cycle ten days later, one class was given only the posttest while the second class in the next class period was shown the slide-tape presentation immediately followed by the posttest. The history teacher only changed classrooms between the two class periods.

The Grade Nine history teacher who piloted the project was provided with a written instruction sheet for the piloting of the slide-tape presentation (see Appendix E). The teacher reported that these instructions were followed in the administration of all examinations and the slide-tape presentation.

The results from the pretest and the posttest were then tabulated after the completion of the instructional unit and the administering of both tests.

Analysis of Results

In the interpretation of the project, the following delimitations should be considered: (a) due to availability of subjects, the piloting of the project was restricted to students in the Grade Nine classes previously described, and (b) the students used for this project were average and above average ability as judged by the school administration and their teachers. The assumption was also made that these Grade Nine history students were typical of Newfoundland Grade Nine history students.

Percentage of Students With Percentage of Items Correct

The first indicator of the extent to which learning had taken place in the group that received instruction was the percentage of students who had obtained various percentages of items correct. As shown in Table 2, 96% of the students achieved 80% or more of the items correct on the posttest while all students obtained 75% or more of the items correct on the posttest. These figures show a high level of achievement by the students of the group which viewed the slide-tape presentation on the posttest and demonstrates an acceptable level of performance for the instructional unit.

Table 2

Percentage of Students With Percentage of Items Correct in the Posttest

% of Students	% of Items Correct
12	100
36	95 or more
68	90 or more
84	85 or more
96	80 or more
100	75 or more

Item Analysis

An item analysis was used on the pretest and the posttest scores of the group which received instruction showing the difference in the number of successful students on each item on the pretest and the posttest. As shown in Table 3, there was a significant increase in learning by the students as demonstrated by the difference in the numbers of successful students on twenty-two of the twenty-five pretest-posttest items. Sixteen of the items were significant at the $p. < .05$ level, five items were significant at the $p. < .01$ level, and one item was

Table 3

An Item Analysis of the Scores Between the Pretest and the Posttest

Item	# of Successful Students Pretest / Posttest		% of Successful Students on Posttest	Difference Between Pretest and Posttest χ^2
1	8	22	88	6.53*
2	10	23	92	5.12*
3	10	22	88	4.50*
4	6	23	92	9.97**
5	12	24	96	4.00*
6	8	24	96	8.00**
7	9	22	88	5.45*
8	8	22	88	6.53*
9	10	22	88	4.50*
10	12	24	96	4.00*
11	10	21	84	3.90*
12	10	24	96	5.76*
13	10	22	88	4.50*
14	12	24	96	4.00*
15	18	25	100	1.14
16	14	23	92	2.19
17	9	23	92	6.13*
18	12	24	96	4.50*
19	15	22	88	1.32
20	7	25	100	8.00**
21	5	23	92	11.57***
22	11	23	92	4.50*
23	7	21	84	7.00**
24	9	21	84	4.80*
25	6	23	92	8.56**

*p. < .05
**p. < .01
***p. < .001

significant at the $p. < .001$ level. There was no significant growth in three items.

Comparison of the Means

The comparison of the means of the pretests, the posttests and the pretest-posttest differences of the two groups of students was undertaken. The pretests were necessary because, while every effort was made to select classes as similar as possible, experimental sampling equivalence could not be demonstrated. If the means of both groups had been significantly different, the two groups would have differed on the posttest scores independently of any effects of the treatment (Campbell and Stanley, 1963). However, the comparison of the pretest and the posttest means of both groups, as shown in Table 4,

Table 4

Comparison of Pretest Means

Experimental and Control Groups

Group	N	M	SD	t
Experimental	25	9.92	1.58	-0.095
Control	29	9.97	1.88	

$df = 52$; $p. > .001$

indicated no significant difference between the two groups. In other words, both classes were very similar in composition. Therefore, any difference between the groups in the posttests could not be attributed to pre-treatment differences.

As shown in Table 5, the comparison of the posttest means of both groups indicated that the experimental group preformed significantly better than the control group.

Table 5

Comparison of Posttest Means

Experimental and Control Groups

Group	N	M	SD	t
Experimental	25	22.88	1.51	25.61
Control	29	10.03	2.08	

df = 52; p. < .001

In addition to comparing the posttest scores of the two groups, they were compared with respect to their means of gain scores, or the difference between the pretest score

and the posttest score of each student. As shown in Table 6, with a mean score of 12.96 for the experimental group and a mean score of .07 for the control group, the differences between the pretest and posttest scores of the experimental group were significantly larger than the differences between the two sets of scores for the control group.

Table 6

Comparison of Pretest-Posttest Difference Experimental and Control Groups

Group	N	$\bar{X}_d$	SD	t
Experimental	25	12.96	1.37	26.85
Control	29	0.07	2.03	

df = 52; p. < .001

As the only experience between the pretest and the posttest which was provided the experimental group and which differentiated that group from the control group was the showing of the slide-tape presentation, it is reasonable to conclude that the difference in the performance on the

posttest scores can be attributed to their viewing the slide-tape presentation.

Teacher Evaluation

The Grade Nine history teacher who piloted the slide-tape presentation and administered the tests and fellow history teachers at Clarenville Integrated High School agreed that Grade Nine history students could readily comprehend the information presented in the instructional unit.

A teacher evaluation form (Owens, cited in Saunders, 1975) was also used to formally evaluate the quality and suitability of the slide-tape presentation for the Grade Nine history curriculum (see Appendix D). All fourteen Grade Nine history teachers who previewed the slide-tape presentation agreed that this instructional unit would be an asset to the Grade Nine history course (see Table 7).

Conclusion

The purpose of the formal evaluation was to determine whether or not the learners had successfully acquired the information specified by the learning objectives of the instructional unit as set forth earlier

Table 7

General Criteria for the Evaluation of Resorce Materials

Item	Question	Yes	No
1	Is the purpose of the materials easily perceived?	14	0
2	Is the information presented clearly and accurately?	14	0
3	Are the materials well organized and balanced in content	14	0
4	Are the materials appropriate to the instructional level of the students?	14	0
5	Will the materials catch and hold the interest of the students?	14	0
6	Do the materials promote the learning objectives of the course?	14	0
7	Are the visuals of good quality?	14	0
8	Are the lettering and the titles appropriate?	14	0
9	Do the visuals strengthen the materials?	14	0
10	Is the quality of the narration acceptable?	14	0
11	Do the background sounds strengthen the materials?	14	0
12	Is the sound clear and intelligible?	14	0
13	Are the sound, visual image and message effectively synchronized?	14	0
14	Would you recommend these materials?	14	0

in this report. Analyses of the pretest and the posttest results showed that the learners had acquired the information presented at an acceptable level on the test items which had been previously matched with the specific learning objectives as shown in Table 1.

Since the information of the slide-tape presentation, Newfoundland Railways, was successfully communicated to the learners who were defined earlier in this chapter as typical of Newfoundland Grade Nine history students, the instructional unit as a whole was a successful production and met the general project objective of producing needed and useful supplementary materials for use in the Grade Nine history curriculum.

CHAPTER VIII

CONCLUSION AND RECOMMENDATIONS

Conclusion

The slide-tape presentation, Newfoundland Railways, was well received by Grade Nine history teachers and students. These teachers stated that it was a very good production which provided much needed material on the importance of railways in the history of Newfoundland. These teachers also stated that this production indicated clearly a need for other materials, both print and non-print, to be produced on Newfoundland themes in social studies.

Recommendations

For the most part the production is a satifactory presentation in its present condition. However, the aethetics of the slide-tape presentation could be improved through revisions of a technical nature requiring professional equipment. These changes in turn would require additional changes in the script and further field testing of the revised slide-tape presentation on a more extensive scale.

If the materials are revised to improve their aesthetics, consideration should be given to features that were noted in the production and the piloting of the slide-tape presentation:

1. The original slides were produced from black and white photographs, sketches and drawings. However, these slides could be converted to colour, and so enhance their historical nature, by: (a) shooting colour slides of touched-sepia coloured prints from the black and white negatives taken of the original old photographs; (b) having a professional artist redraw the sketches making these more life-like through the use of colour or possibly replacing these with colour slides of the original old photographs if these become available; and (c) having a professional graphic artist redraw the maps and other drawings using colour and paying particular attention to the size and placement of lettering and railway symbols.

2. The audio portion of the slide-tape presentation could be improved by: (a) the use of a professional speaker using professional equipment; (b) the use of professional recording equipment for the collection and the dubbing of railway sounds on the sound track; and (c) the use of traditional

Newfoundland music where necessary to add to the Newfoundland setting of the production.

The slide-tape presentation, "Newfoundland Railways", could be the basis for the production of a series of slide-tape instructional units dealing with other forms of rail transportation such as the St. John's Street Railway or tramways or with roadways and sailing ships.

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APPENDICES

APPENDIX A

Questionaire: Availability of Suitable Resource Materials on the Topic of Newfoundland Railways in the Grade Nine Canadian History Course

Questionaire: Availability of Suitable Resource Materials on the Topic of Newfoundland Railways in the Grade Nine Canadian History Course

	Circle Response
1. Have you experienced difficulty locating suitable resource materials on the history of Newfoundland railways?	Yes No
2. In your opinion as a teacher of the above topic in the Grade Nine Canadian history course is there a need for the production of resource materials specifically for this topic?	Yes No

All twenty-eight Grade Nine history teachers surveyed answered "yes" to both questions.

APPENDIX B

Pretest

Newfoundland Railways

INSTRUCTIONS

Students are to answer all questions by underlining the correct answer to each question.

1. In what year was the railway completed across the Island of Newfoundland?
   (a) 1897
   (b) 1902
   (c) 1941

2. When did work begin on the first railway in Newfoundland?
   (a) 1897
   (b) 1881
   (c) 1898

3. The first railway tracks laid down in Newfoundland were located at:
   (a) Bonavista
   (b) Heart's Content
   (c) St. John's

4. Where was there the strongest opposition by Newfoundlanders to railway construction through their community?

(a) Carbonear

(b) Foxtrap

(c) Heart's Content

5. Whose company built most of the railways on the Island of Newfoundland?

(a) Reid's

(b) Blackman's

(c) Thorburn's

6. What was the western terminus of the Placentia Bay Railway?

(a) Freshwater

(b) Holyrood

(c) St. John's

7. Whose fishing rights did the Newfoundland Government challenge when it had a railway built all the way across the Island of Newfoundland?

(a) American

(b) British

(c) French

8. Which of the following branch railways was built by a company for its own use?

(a) Bonavista Bay Branch Railway

(b) Millertown Railway

(c) Trepassey Branch Railway

9. The Newfoundland Government always preferred to have private companies build railways in Newfoundland because it did not:

(a) have enough money to build railways.

(b) know how to build railways.

(c) have the necessary equipment and manpower to build railways.

10. What was the western terminus of the first railway across the Island of Newfoundland?

(a) St. John's

(b) Port-aux-Basques

(c) Harbour Grace

11. The Newfoundland Government granted land along the railways by Reid since:

(a) the Government did not need the land.

(b) this land was Reid's payment for building railways.

(c) this land was needed for railway construction.

12. Those opposed to the final stage of branch railway building in Newfoundland pointed out to the Government that further railway construction was:
(a) too expensive.
(b) not needed.
(c) not wanted by the people.

13. What was the highest point of land to be crossed in the building of the railway across Newfoundland?
(a) Gaff Topsails
(b) Grand Falls
(c) Isthmus of Avalon

14. Which of the branch railways listed below was one of the first branch railways built by the Reid Newfoundland Company for the Newfoundland Government?
(a) Adies Pond Railway
(b) Brigus "Cut-Off"
(c) Harpoon Railway

15. Early railways in Newfoundland were constructed chiefly by the use of:
(a) hand labour.
(b) heavy equipment.
(c) horse and cart.

16. The Buchans Railway was built chiefly to transport:
    (a) minerals.
    (b) pulpwood.
    (c) passengers.

17. In building railways in the Island of Newfoundland, the main natural obstacle was the:
    (a) hilly terrain.
    (b) rivers.
    (c) swamps and bogs.

18. The three main types of railway cars used on the first railways in Newfoundland were the box car, the flat car and the:
    (a) passenger coach.
    (b) ore hopper car.
    (c) oil tank car.

19. Newfoundland's bid to join Confederation in 1895 was turned down by the Canadian Government because:
    (a) Canada knew that the Newfoundland people did not want to join Confederation.
    (b) Canada only wanted provinces which had standard gauge railways.
    (c) Canada would have to assume Newfoundland's railway debts.

20. Which of the following branch railways is still operating in Newfoundland?

(a) Heart's Content Branch Railway

(b) Botwood Railway

(c) Lewisporte Branch Railway

21. Which of the following roadways was once a railway bed?

(a) Cabot Highway

(b) Empire Avenue, St. John's

(c) Conception Bay Highway

22. The Harbour Grace Railway was constructed mainly for:

(a) passenger travel.

(b) transportation of freight.

(c) political reasons.

23. Most branch railways in Newfoundland were eventually abandoned cheifly because:

(a) they were no longer needed.

(b) they became too expensive to maintain.

(c) roads by this time were more important than railways.

24. What was the largest river to be bridged in building the railway across the Island of Newfoundland?

(a) Exploits River

(b) Shoal Harbour River

(c) Gander River

25. The Botwood Railway was built mainly for:

(a) passenger travel,

(b) transportation of pulp and paper,

(c) political reasons.

APPENDIX C:

Posttest

Newfoundland Railways

INSTRUCTIONS

Students are to answer all questions by underlining the correct answer to each question.

---

1. The first railway in Newfoundland originated at:
   (a) St. John's.
   (b) Heart's Content.
   (c) Bonavista

2. The western terminus of the Placentia Bay Railway was at:
   (a) Holyrood.
   (b) St. John's.
   (c) Freshwater.

3. The railway across the Island of Newfoundland was completed in the year of:
   (a) 1897.
   (b) 1902.
   (c) 1941.

4. The largest river to be bridged in the building of the railway across the Island of Newfoundland was the:

(a) Exploits River.

(b) Shoal Harbour River.

(c) Gander River.

5. The contractor who built most of the railway on the Island of Newfoundland was:

(a) Thorburn.

(b) Reid.

(c) Blackman.

6. The Newfoundland Government liked to have private companies build railways in Newfoundland because it did not:

(a) have the necessary equipment and manpower to build railways.

(b) know how to build railways.

(c) have enough money to build railways.

7. The three main types of railway cars used on Newfoundland railways were the box car, the flat car and the:

(a) ore hopper car.

(b) passenger coach.

(c) oil tank car.

8. The strongest opposition by Newfoundlanders to railway construction through their community was at:

(a) Carbonear.

(b) Heart's Content.

(c) Foxtrap.

9. The Canadian Government turned down Newfoundland's bid to join Confederation in 1895 because:

(a) Canada knew that the Newfoundland people did not want to join Confederation.

(b) Canada only wanted provinces which had standard gauge railways.

(c) Canada would have to take over Newfoundland's railway debts.

10. Many branch railways in Newfoundland were eventually abandoned since:

(a) they were no longer needed.

(b) roads by this time were more important than railways.

(c) they became too expensive to maintain.

11. Early railways in Newfoundland were constructed using mainly:

(a) hand labour.

(b) heavy equipment.

(c) horse and cart.

12. One of the first branch railways built by the Reid Newfoundland Company for the Newfoundland Government was the:

(a) Brigus "Cut-Off".

(b) Adies Pond Railway.

(c) Harpoon Railway.

13. The Botwood Railway was built to carry:

(a) passengers.

(b) pulp and paper.

(c) iron ore.

14. In building railways on the Island of Newfoundland, the main natural obstacle was the:

(a) hilly terrain.

(b) rivers.

(c) swamps and bogs.

15. The railway to Harbour Grace was constructed mainly for:

(a) political reasons.

(b) passenger travel.

(c) transportation of freight.

16. Which one of the following roadways was built upon a former railway bed?

(a) Conception Bay Highway

(b) Cabot Highway

(c) Empire Avenue, St. John's

17. The highest point of land to be crossed in the building of the railway across Newfoundland was the:

(a) Gaff Topsails.

(b) Grand Falls.

(c) Isthmus of Avalon.

18. Which branch railway of the following railways listed below is still operating in Newfoundland?

(a) Heart's Content Branch Railway

(b) Botwood Railway

(c) Lewisporte Branch Railway

19. Work began on the first railway in Newfoundland in the year of:

(a) 1898.

(b) 1881.

(c) 1897.

20. A branch railway which was built by a company for its own use was the:

(a) Bonavista Bay Branch Railway.

(b) Millertown Railway.

(c) Trepassey Branch Railway.

21. When the Newfoundland Government had a railway built all the way across the Island of Newfoundland, it challenged the fishing rights of the:

(a) French.

(b) Americans.

(c) British.

22. The western terminus of the first railway across the Island of Newfoundland was located at:

(a) Port-aux-Basques.

(b) St. John's.

(c) Harbour Grace.

23. Those who opposed branch railway building in Newfoundland told the Government that further railway construction was:

(a) not needed.

(b) too expensive.

(c) not wanted by the people.

24. The Buchans Railway was built mainly to carry:

(a) pulp wood.

(b) passengers.

(c) minerals.

25. The Newfoundland Government gave land to Reid along the railways since:

(a) this land was Reid's payment for building railways.

(b) this land was needed for railway construction.

(c) the Government did not need the land.

APPENDIX D

General Criteria for the Evaluation of Resource Materials

General Criteria for the Evaluation of Resource Materials

Materials	Circle Response	
1. Is the purpose of the materials easily perceived?	Yes	No
2. Is the information presented clearly and accurately?	Yes	No
3. Are the materials well organized and balanced in content?	Yes	No
4. Are the materials appropriate to the instructional level of the students?	Yes	No
5. Will the materials catch and hold the interest of the students?	Yes	No
6. Do the materials promote the learning objectives of the course?	Yes	No
Technical Quality		
7. Are the visuals of good quality?	Yes	No
8. Are the lettering and the titles appropriate?	Yes	No

9. Do the visuals strengthen the materials? Yes No

10. Is the quality of the narration acceptable? Yes No

11. Do the background sounds strengthen the materials? Yes No

12. Is the sound clear and intelligible? Yes No

13. Are the sound, visual image and message effectively synchronized? Yes No

Recommendations

14. Would you recommend these materials? Yes No

15. Additional comments:

_____

_____

_____

_____

_____

APPENDIX E

Instructions for Pilot-project "Newfoundland Railways"

Instructions for Pilot-project "Newfoundland Railways"

1. Both classes are to be given the pretest and approximately two weeks later the posttest. Give each test in consecutive history class periods to help minimize interaction between classes.
2. When questioned by the students about the test being given, simply say:
   (a) This test is being given to you in order to find out how much you know of the history of the Newfoundland railways.
   (b) The test results will be given to you at a later date this year.
   (c) This test will not be counted towards your final history mark.
3. Two weeks later (next cycle):
   (a) give posttest to first class.
   (b) show the slide-tape presentation and then immediately give the posttest to the second class.
4. Score the tests using the answer keys provided.

APPENDIX F

Script: Slide-tape Presentation

"Newfoundland Railways"

Script: Slide-tape Presentation

"Newfoundland Railways"

Slide	Script
1. Focus/Start Tape	(Track and early steam locomotive sounds -- increasing)
2. Title	(Track and early steam locomotive sounds -- increasing)
3. Producer credit	(Track and early steam locomotive sounds)
4. Illustration of fish stage and boat	For hundreds of years the economy of Newfoundland had been tied to the success or failure of the cod fishery. (Track and early steam locomotive sounds -- decrease and hold as background sound.)
5. Shoreline	By the nineteenth century, settlement along the rugged coastline was an accepted fact.

Travel was mostly by sea and depended on the seasons of the year and weather conditions. (Track and early steam locomotive sounds -- hold as background sound.)

6. Interior Newfoundland/ mining

The mid-1800's was a period of railway building in North America. Many Newfoundlanders felt that a railway would open up the interior of the Island to mining, logging and farming and so lessen Newfoundland's dependence on the fishery. (Track and early steam locomotive sounds -- fade out. Use steam whistle to emphasize the emptiness of the interior of the Island.)

7. Map/Harbour Grace Railway

The first railway built was the Harbour Grace Railway connecting St. John's and Harbour Grace. It

		was a narrow gauge railway judged to be the most economical width considering that railways in those days had to be constructed chiefly by the use of hand labour.
8.	The "A. B. Blackman"/ steam locomotive	In August, 1881, work was started on this railway by the Newfoundland Railway Company controlled by the Blackman Syndicate.
9.	St. John's Harbour	Its eastern terminus was located at the East End of St. John's Harbour.
10.	Harbour Grace	This railway was built mainly to provide a passenger service between St. John's and Harbour Grace, the two largest towns on the Island.
11.	Foxtrap	From St. John's it went overland to Foxtrap on Conception Bay where there was much opposition

to the project by local residents because they feared they would be taxed unfairly if the railway ran through their communities.

12. Holyrood

The railway continued along the shore until it reached Holyrood. Three years after construction was started, a passenger service existed between St. John's and Holyrood.

13. Harbour Grace Junction (later renamed Whitbourne)

In 1883 the Newfoundland Railway Company went bankrupt, and the project had to be taken over and completed by the Government. The railway was finally completed to Harbour Grace by way of Harbour Grace Junction, Blaketown on Trinity Bay and Tilton on Conception Bay.

14. Placentia Bay Railway/Map

Two years after the completion of the Harbour Grace Railway, the

		Government built the Placentia Bay Railway from Whitbourne to Freshwater which was located just one half mile from the waterfront and the Town of Placentia.
15.	Hall's Bay Rail Road steam locomotive	Late in the summer of 1889 the Government started work on the Hall's Bay Railway from Placentia Junction to Hall's Bay.
16.	Hall's Bay Railway -- Government built/Map	After only sixteen miles of work over difficult terrain, the Government found it could no longer afford to continue to build this railway.
17.	Public debt/ Graph	The Government now owed over $676,000 for railway construction.
18.	Rantem	The next year work resumed on the Hall's Bay Railway under an agreement between the Government and a partnership of R. G. Reid

and G. H. Middleton. The Government preferred to have private railway companies take most of the financial responsibility in return for large land grants.

19. 1890 Contract — This contract stated that Reid and Middleton were to take over and to operate all Government railways and rolling stock for five years in return for $15,600 and four thousand acres of land in payment for each mile of railway constructed.

20. Hall's Bay Railway -- Reid and Middleton built — By 1893 the railway was completed as far as Norris Arm on Notre Dame Bay. The Government then decided to push the western terminus two hundred miles farther west to Port-aux-Basques by way of Central Newfoundland, Bay of Islands and Bay St. George.

21.	Newfoundland Northern and Western Railway coaches	Now the Newfoundland Northern Western Railway Company was formed by Reid to undertake the western extension to Port-aux-Basques.
22.	1893 Contract	Under the terms of this latest contract, Reid agreed to operate the railway under terms similar to those of the 1890 contract.
23.	Exploits River Trestle	In 1894 the railway had crossed the Exploits, the largest river on the Island. During the spring ice break-up the bridge was severly damaged and a new one had to be constructed.
24.	Gaff Topsails	A year later the railway had crossed over the Gaff Topsails near Howley, the highest point of land on the route.

25.	Humber River Gap	Early the next year the railway was put through the Humber River Gap
26.	Humber Mouth Station	By 1896 it had reached Humber Mouth in the Bay of Islands on the French Treaty Shore.
27.	Curling/ Church	For the next two years the railway was pushed steadly onwards along the French Treaty Shore despite the protests of the French over the probable violation of its fishing rights and despite the protests of Britain who wanted to keep on good terms with the French.
28.	Codroy Valley	By the Fall of 1897 the railway had been completed as far as Port-aux-Basques by way of Bay St. George and the Codroy Valley.

29. St. John's -- East End Station

The formal opening of the trans-island railway took place when on June 29th., 1898, at 7 p.m. a train left St. John's

30. Port-aux-Basques

and arrived at Port-aux-Basques twenty-seven hours and forty-five minutes later at 10:45 p.m. on the following day.

31. Newfoundland Northern and Western Railway

Upon the completion of the Newfoundland Northern and Western Railway, the Reid Newfoundland Company, under a new contract, agreed to operate all railway property and other means of communication for fifty years.

32. Reid lots

In return the Government gave Reid an additional one point six million acres of prime timber and mineral bearing lands. The Government understood that Reid would develop these lands and so provide needed employment.

33. St. John's Dry Dock

Reid now consolidated the coastal boat service, the St. John's Dry Dock and all other railway properties into one company, the Reid Newfoundland Company. Here the Dry Dock is under construction.

34. Public debt/ Graph

By this time railway construction had cost Newfoundland $9,500,000 and even a chance to join Confederation, since Canada did not want to take over Newfoundland's railway debts. On the other hand, in return for a payment of $1,000,000 Reid's company controlled all means of communication and a large part of the Island.

35. Three branch railways/Map

The Reid Newfoundland Company now began to build three branch railways under a previous agreement made with the Government.

36. Lewisporte — The Lewisporte Branch Railway ran from Notre Dame Junction to Lewisporte which was to be a chief port of call for the new coastal boat service.

37. Work train — The Brigus "Cut-Off" built between Brigus Junction and Tilton on the Harbour Grace line shortened the distance to St. John's from Harbour Grace by twenty-two miles. The Harbour Grace Railway was then extended because of popular demand and political pressure.

38. Public debt/ Graph — As opposition grew to the terms of earlier contracts with Reid, the Government took advantage of the desire of Reid to incorporate his company by revising existing contracts contracts. The Reid Newfoundland Company Ltd. lost control over communications and

much of its lands. In return Reid received $3,500,000. Newfoundland's railway debt had now risen to $17,000,000.

39. Millertown Railway/Map

While the Government and Reid were negotiating a new agreement, Lewis Miller, the owner of a large sawmill operation, built a private railway from Millertown Junction to Millertown.

40. Millertown

This railway was bought by the A.N.D. Co. after a fire destroyed the mill at Millertown.

41. St. John's Harbour, West End

From 1907 to 1915 there was another flurry of branch railway building. A new site for the eastern terminus of the railway, its machine shops and dry dock was selected at the western end of St. John's Harbour, and a new spur was built to Donovans to

connect it to the main railway line.

42. Paper mill

Meanwhile, pulp and paper mills had been established at Bishop's Falls and Grand Falls near the source of hydro-electric power since in the early 1900's electricity could only be transmitted short distances.

43. Botwood Railway/Map

Therefore, a railway was built from Grand Falls to Botwood which became a transshipment port for pulp and paper exports.

44. Bonavista Bay Branch Railway/ Map

At the same time Reid started construction of a branch railway from Shoal Harbour to Bonavista with a spur line to Port Union. The spur line was eventually abandoned. The Bonavista Bay Branch Railway was officially opened in 1911.

45.	Trepassey Branch Railway/ sod turning	Now work was started on the branch railway to Trepassey along the Southern Shore.
46.	Trepassey Branch Railway/ Map	It ran from Kilbride in the Waterford Valley to Trepassey.
47.	Bay de Verde Branch Railway/ Map	The Bay de Verde Branch Railway built between Carbonear and Bay de Verde was an extension of the Harbour Grace Railway. A spur was built at the same time from Grates Cove Junction to Grates Cove.
48.	Heart's Content Branch Railway/ Map.	Work was also started on a branch railway to Heart's Content from Broad Cove, a point on the old abandoned section of the Harbour Grace Railway. This railway served as an alternate port for pulp and paper exports of the A.N.D. Co. when Botwood was blockaded with ice.

49. Work train — These branch railways were the last to be built by Reid for the Government.

50. Adies Pond Railway; Buchans Railway/ Map — In the 1920's two private branch railways were built; the Adies Pond Railway connecting the logging operations of the Newfoundland Power and Paper Co. at Adies Pond to Deer Lake -- the final section of this railway was abandoned in the 1940's;

51. Buchans Mining Company -- steam locomotive — and the Buchans Railway which provided a means of transporting lead and zinc ore to the coast.

52. Abandoned branch railways/ Map — The branch railways planned for Bonne Bay and Fortune Bay were never completed. By the early 1930's Newfoundland was facing bankruptcy. Therefore, it was forced to abandon the branch railways to Trepassey, Heart's Content and Bay de Verde.

53. Public debt/ Graph

The country just could not afford these branch railways just as critics had previously warned the Government before they were built. Newfoundland's railway debt had risen to $34,500,000 -- over thirty-six percent of the national debt. This public debt was in 1933 one of the chief causes for Newfoundland's loss of independence as a country.

54. Base Railway to Harnum Field; and Argentia Branch Railway/ Map

During World War II as part of the Allied war effort, the United States established military bases at Harnum Field and at Argentia to which branch railways were constructed.

55. Millertown Railway

In the mid-1950's the A.N.D. Co. abandoned the Millertown and Harpoon Railways, and a new company, the Grand Falls Central Railway, took over the operation

of the Botwood Railway until 1975, when it, too, was abandoned and its rolling stock sold.

56. Diesel-electric locomotive

After Confederation the Newfoundland Railway became the property of Canadian National Railways. Within five years it phased out its steam engines and Newfoundland cars and replaced these with more powerful engines and mainland cars fitted with narrow gauge trucks.

57. Canadian National passenger buses

Canadian National abandoned the trans-island rail passenger service and replaced it with a bus service four years after the Trans-Canada Highway was completed across Newfoundland.

58. Existing railways/Map

Newfoundland's railway building spree was supposed to open up the country to development. In

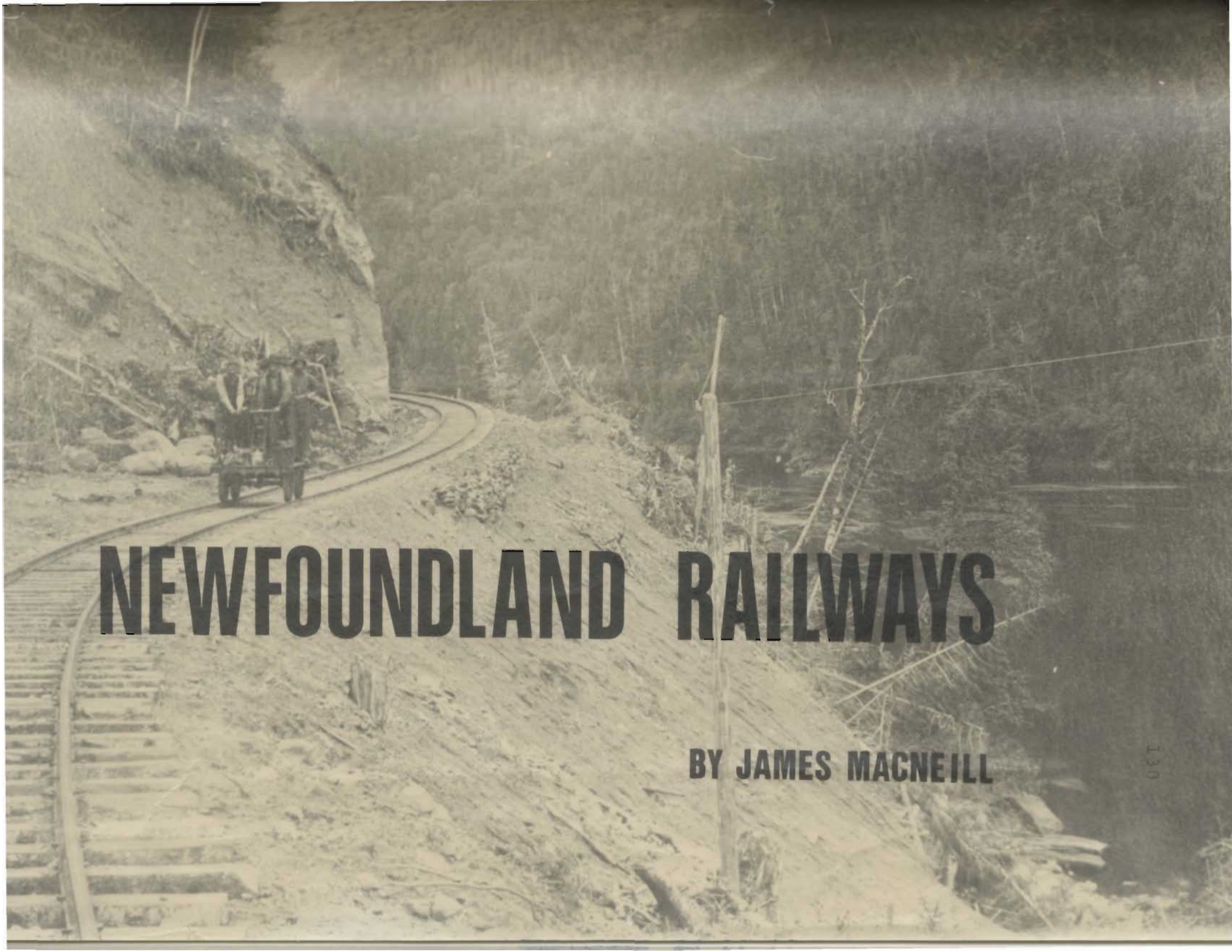
part it was successful, and these railways did change Newfoundland's traditional dependence on the fishery. There are now over seven hundred miles of track and most of it is operated by Canadian National.

(Track and modern Newfoundland diesel-electric locomotive sounds -- fade in and hold.)

59. End of train (Track and modern Newfoundland diesel-electric locomotive sounds -- hold and then fade. Modern diesel-electric horn on background track sounds. End tape sounds.)

APPENDIX G

Booklet: "Newfoundland Railways"

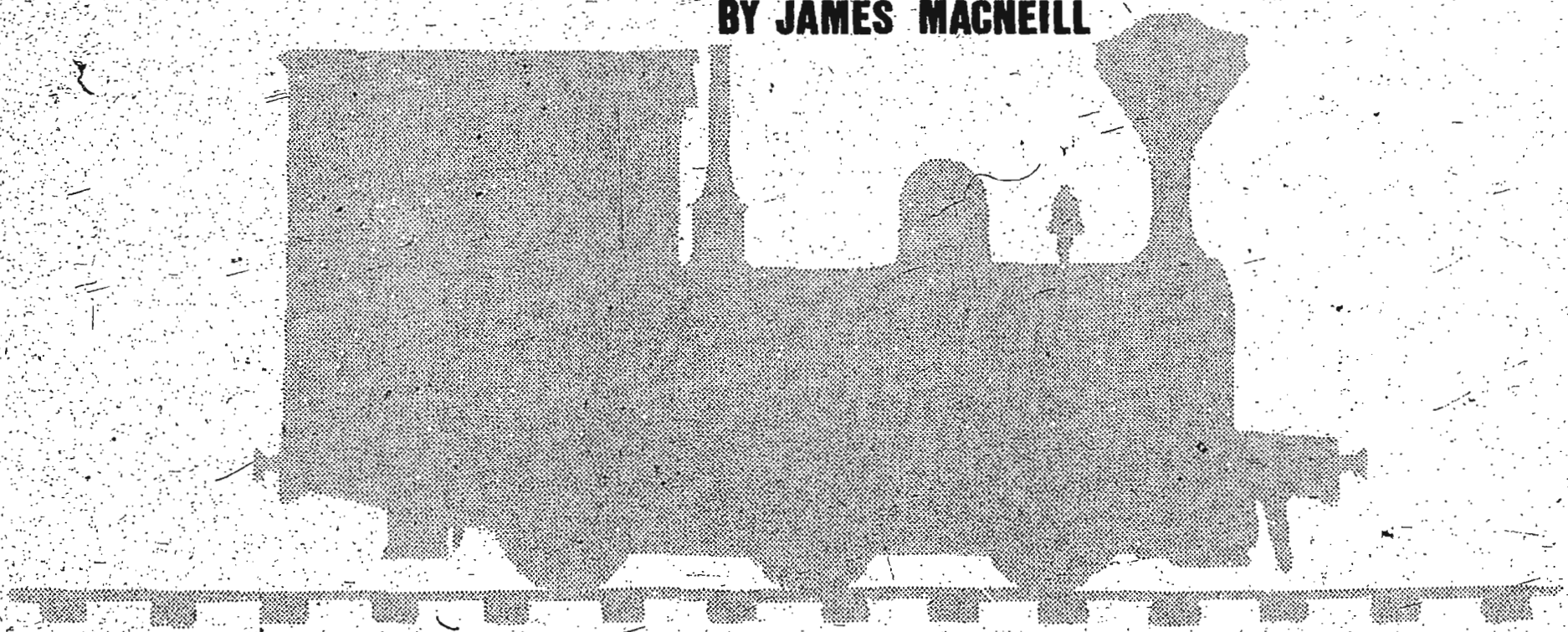


NEWFOUNDLAND RAILWAYS

BY JAMES MACNEILL

NEWFOUNDLAND RAILWAYS

BY JAMES MACNEILL



FOREWARD

Much of the information and many of the drawings used in the preparation of this booklet had been produced originally for the slide-tape presentation, Newfoundland Railways. The initial script and illustrations for the slide-tape presentation had been first placed in a storyboard, but this procedure made it difficult to take these collected materials and illustrations about for examination and evaluation by content and media experts, by teachers and students and by former railway employees and employees of Canadian National who often were the only persons who could identify photographs or clarify information needed for the script and interpreting information contained in the photographs.

Most of these persons expressed an interest in the "booklet": my portable storyboard. I chose the slide-tape presentation since it did what I wanted best and at a reasonable cost, but

I continued to develop this booklet to its present state.

I would like to thank all those persons who aided me in the production of this booklet: content and media experts, Grade Nine teachers and students, railway and history buffs and especially former railway workers and employees of Canadian National.

I want to thank especially the staff of the Provincial Archives of Newfoundland and Labrador for their assistance in researching materials in the Archives on Newfoundland railways and the Reid Family and for allowing me to photograph the railway pictures in their rare photograph collection.

J.M., 1980

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Front cover -- Humber River near Humber Mouth, c1898

Back cover -- Humber River near Humber Mouth, 1977

INTRODUCTION

Figure 1. Fishing stage.

For hundreds of years the economy of Newfoundland had been tied directly to the success or failure of the annual fishery. By the early 1800's much of the Avalon Peninsula, the Northeast Coast and the South Coast had been settled. During the Napoleonic Wars European control lessened, and by the 1850's Newfoundland had its own legislative assembly. Travel

Figure 2. An early mining operation in Newfoundland. Note the track for hauling the ore from the mine and the hand tools being used. Similar tools were used in building the railway beds of Newfoundland railways.

was mostly by sea and depended on the prevailing weather conditions.

The mid-1800's was a period of railway building in North America. Railway construction provided employment and indirectly opened up new lands for settlement and economic growth. Railways not only provided a much more efficient means of transportation, but also helped foster a feeling of nationalism by linking together more closely the various regions of a country

socially, economically and politically. Many prominent Newfoundlanders had said that railways would open up the interior of the Island to logging, mining and even farming and so lessen Newfoundland's traditional dependence on a single industry, the cod fishery, which in the past had been the main source of employment and, indeed, supplied Newfoundland's main commodity for international trade and was the Government's main source of taxable revenue.

By the late 1800's after considerable public and political debate for years, the Newfoundland Government cautiously embarked on the construction of what was generally considered at the time to be a very practical railway to be built at a reasonable cost, which in time would be recovered quite easily from the revenues generated by the venture.

HARBOUR GRACE RAILWAY

Figure 3. The East End, St. John's Harbour. Note switchbacks shown here (and the steep grades) required so that the railway could descend to the waterfront and a railway finger pier jutting out into the Harbour.

In August of 1881 a railway was started by the Newfoundland Railway Company -- controlled by a group of British investors -- from a terminus at the eastern end of St. John's Harbour to Harbour Grace; a distance of seventy-eight miles (125 kilometres) by rail. Most often, the route chosen for the railway was over very difficult, hilly and boggy terrain in order that it might serve the greatest number of settlements between St. John's and Harbour Grace.

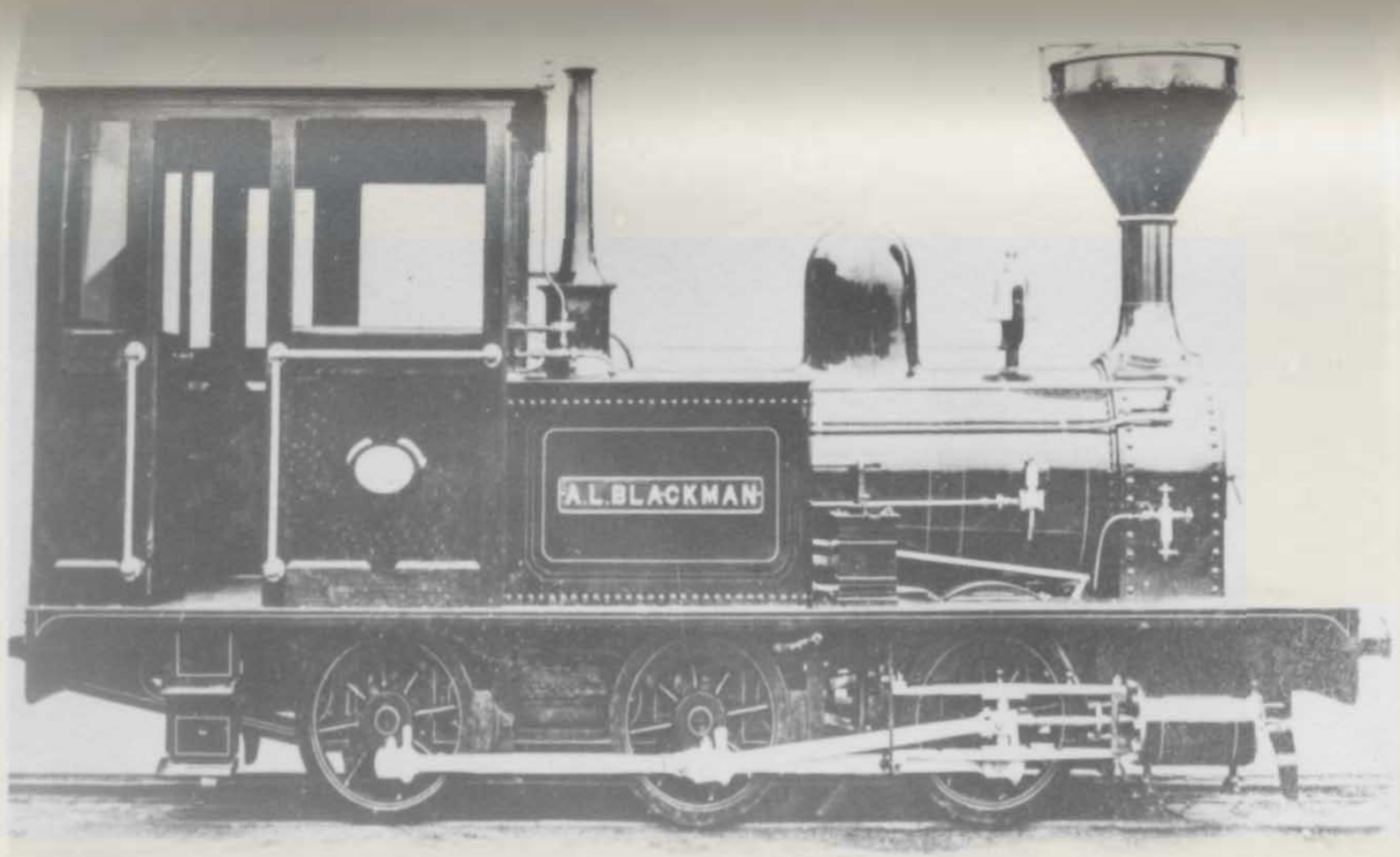
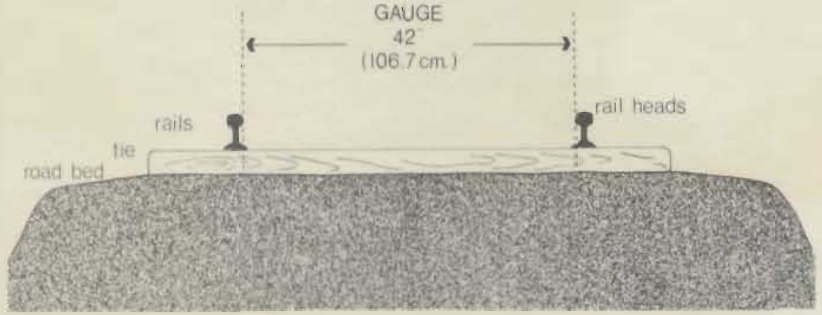


Figure 4. An early steam locomotive; one of the first to be used on the Harbour Grace Railway. This locomotive was named for the accountant of the Newfoundland Railway Co., A. B. Blackman. It eventually became the property of the A.N.D. Co. and was used on the Botwood Railway. Long a derelict, work was started in 1977 at Grand Falls on the restoration of this locomotive.

Figure 5. Harbour Grace

Figure 6. Newfoundland narrow gauge (British metric)



It had been the original intention of the Government to provide a very basic railway service at a reasonable cost which the country could afford. The Government also believed that the construction of a narrow gauge railway -- with its narrow road bed and light rails and rolling stock -- would present fewer engineering difficulties than a Standard Gauge railway and so would be cheaper to build and maintain. Therefore, the Government decided to adopt a narrow gauge width of fort-two

inches (106.7 centimetres) between the rail heads (see Figure 6) as opposed to the Standard Gauge of fifty-six and a half inches (143.5 centimetres) more commonly used by other North American railways.

From St. John's the railway went overland to Topsail on Conception Bay and thence to nearby Foxtrap where a riot known as the Battle of Foxtrap took place because local residents feared that they would be taxed unfairly if the railway

Figure 7. Holyrood

Figure 8. Foxtrap, Conception Bay

was built through their community. From Foxtrap the railway continued along the shore of Conception Bay until it reached Holyrood in July, 1882. In 1884 a passenger service existed between St. John's and Holyrood.

In 1883 the Newfoundland Railway Company which had begun the first phase of construction of the Harbour Grace Railway went bankrupt and the operation of the railway had to be taken over by the Newfoundland Government. In 1884 the Government

Figure 9. Harbour Grace Junction (Whitbourne) became a railway centre with yards and machine shop facilities to service the Newfoundland Northern & Western Railway as well as the Harbour Grace and the Placentia Bay Railways. These activities were later shifted to the West End Station at St. John's.

Figure 10. Railway passes (tickets) issued by the Newfoundland Railway Co. One railway pass (centre) has been cancelled. The round stamp on the reverse of the passes indicated the date on which they were to be honoured.

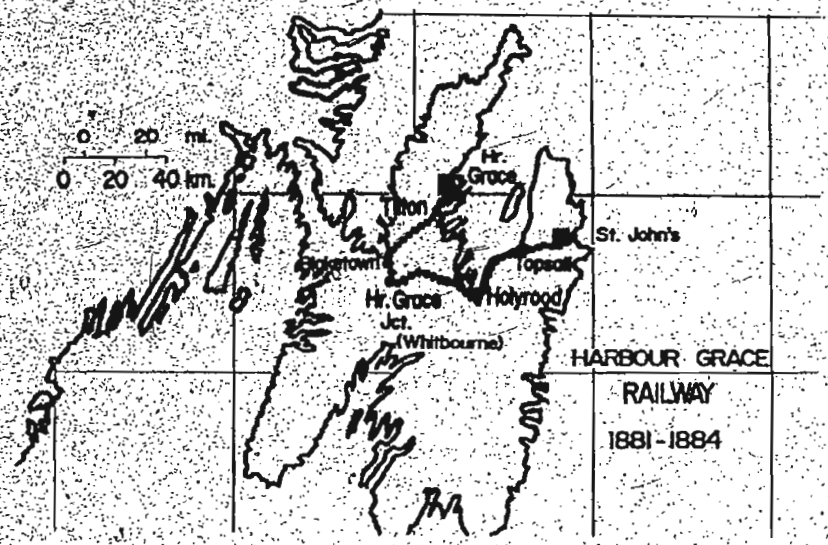


Figure 11. Harbour Grace Railway

completed the railway to Harbour Grace by way of Harbour Grace Junction (later renamed Whitbourne), Blaketown and Broad Cove on Trinity Bay and Tilton on Conception Bay. This route took advantage of the river valleys and barrens which ran generally in a northeasterly-southwesterly direction rather than a more difficult and costly route around Conception Bay.

Figure 12. North Arm, Holyrood. From North Arm the railway turned inland towards Harbour Grace Junction (Whitbourne). Shown here is a dry trestle (later replaced by a retaining wall and earth fill) which enabled the railway to negotiate the steep walls of the hills overlooking a small road and the sea below.

RAILWAYS BUILT BY THE NEWFOUNDLAND GOVERNMENT

During the late 1880's after the takeover of the Newfoundland Railway Company and the completion of the Harbour Grace Railway, the Newfoundland Government decided to continue its railway construction programme on its own.

By this time there was much opposition to the construction of additional railways. The Harbour Grace Railway had been costly to build and to maintain, and the expected revenues from its initial operation had not realized. Additional railway construction, it was argued, would be very expensive: perhaps, more than the country could really afford. Nevertheless, the Government decided to continue railway construction despite the high costs since, in its opinion, railways would

open up the interior of the Island and encourage the development of its forest, mineral and agricultural resources. The Government, therefore, was optimistic that, in the long run, these railways would pay for themselves. Lumber and minerals would be transported to the coast for shipment to world markets. Many Newfoundlanders would move inland and become properous farmers instead of being at the mercy of the annual fishery and world fish prices. The railways as an industry itself would also employ many Newfoundlanders. In the short run, the construction of railways would create immediate employment for jobless Newfoundlanders and beneficially stimulate the economy of the country.

PLACENTIA BAY RAILWAY -- 1886-1888

From 1886 to 1888 the Government built the Placentia Bay Railway from Whitbourne on the Harbour Grace Railway to Freshwater with a waterfront terminus at Jerseyside, Placentia Bay. From Jerseyside railway cars were

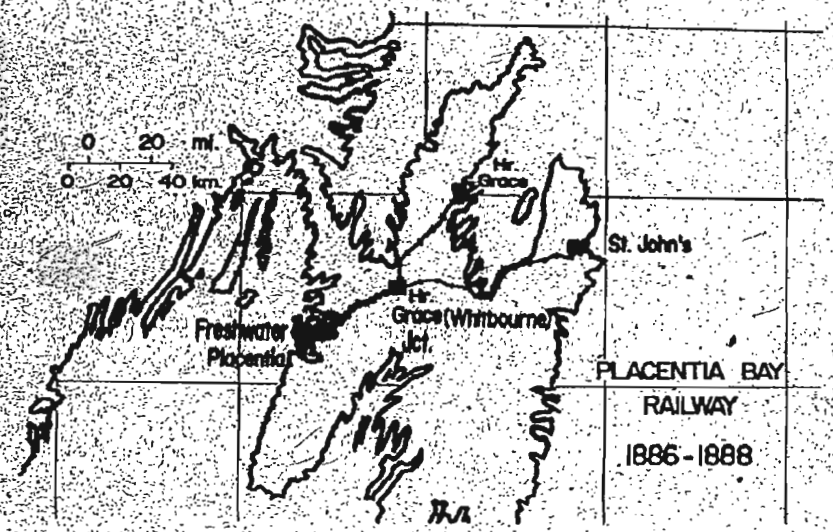


Figure 13. Placentia Bay Railway

lowered by cable down a steep stretch of track to the waterfront where goods destined for and coming from Placentia (just across the Placentia Gut) and other Placentia Bay and South Coast ports were loaded and unloaded.

The Placentia Bay Railway had cost over $500,000 to build (twenty-five miles in length -- 40 kilometres) and led some opponents of further railway construction to observe that this railway had cost $250,000 a head to build since the Government, they believed, had been politically motivated to

build this railway, not only for the immediate employment its construction created, but, also, to gain the support of two Government members from that region. Indeed, the Government had been so determined, it seemed, to have a railway built to Placentia Bay that it had undertaken in 1885 to build part of the railway bed for this new railway in the guise of a road construction project. However, since it had been the Government's belief that railways would help diversify the Newfoundland economy, it would be quite unfair to infer that the Government was only politically motivated to build railways in order to merely gain the support of the electorate at the polls.

HALL'S BAY RAILWAY -- 1889

Despite the costs already incurred, the Newfoundland Government decided to build yet another railway. Late in the summer of 1889, the Government started work on the Hall's Bay Railway from Placentia Junction on the Placentia Bay Railway towards Hall's Bay in Notre Dame

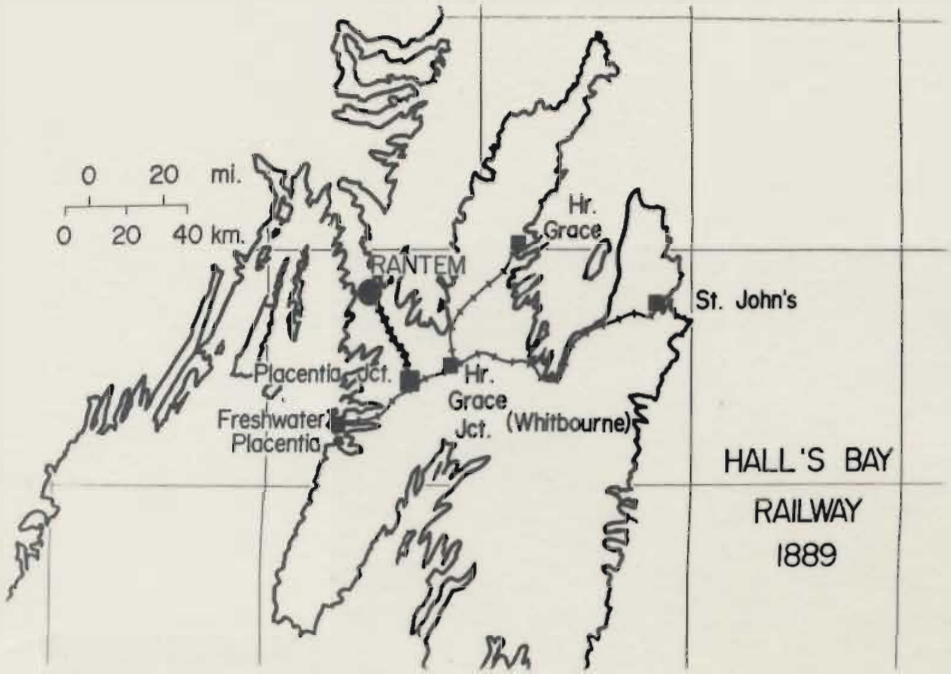


Figure 14. Hall's Bay Railway -- Section built by the Newfoundland Government.

Bay -- the site of newly discovered mineral deposits -- on the northeast coast of the Island. After only sixteen miles (25.6 kilometres) of work over very difficult terrain, the Government found that it could no longer afford to build this railway. The total cost of its railways was over $676,000.

As a result of their recent experiences of building railways entirely by themselves, the Government turned again to private companies to construct railways in Newfoundland. These

companies were to be paid a flat rate for each mile of railway line constructed, and the companies would have to pay the difference from their own financial resources. In addition to the cash payments, these companies would be given specified parcels of Crown Lands together with all the natural resources found on them for each mile of railway built. These companies would then be expected to develop their lands in order to recover their original investments in railway construction. This had been a common practice on Mainland North America. It encouraged railway companies to develop their lands as quickly as possible and, in so doing, help to create needed employment and settlement of uninhabited areas along new railway lines. Therefore, in 1889, the Government advertised for a private company to undertake and complete the Hall's Bay Railway started by the Government.

Figure 15. Isthmus of Avalon near Rantem. This was very difficult terrain over which to build a railway solely with the use of hand tools and manual labour. Grades were very steep and many turns, rock cuts, and earth works were required in order to build the railway over the Isthmus of Avalon. Grades were so steep that early steam locomotives could not pull a particularly long or heavily laden train over this stretch of track without first breaking up the train into two sections and making a return trip for the remaining cars.

RAILWAYS BUILT BY REID

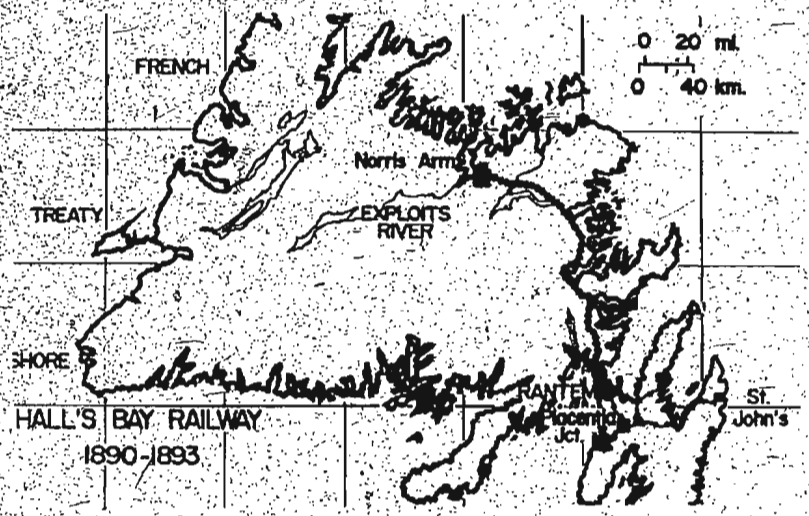


Figure 16. Hall's Bay Railway — Section built by Reid and Middleton.

HALL'S BAY RAILWAY -- 1890-1894

In 1890 work resumed on the Hall's Bay Railway under an agreement between the Government and the Partnership of R. G. Reid and G. H. Middleton. This new company was to: 1. complete the railway to Hall's Bay in five years; 2. operate the Placentia Bay Railway at no charge to the Government; and 3. maintain all rolling stock including that of the Harbour

Figure 17. Dark Hole Bridge, near Clarenville (lower Shoal Harbour). This bridge -- built by Reid -- was typical of the many railway bridges required to span the numerous small streams and their valleys which the railway followed and crossed on its route across the Island. Dark Hole River was diverted from its original river bed a short distance east to Lower Shoal Harbour River so that its waters would not undermine the railroad bed.

Grace Railway operated by the Government. In return for each mile constructed, Reid and Middleton received $15,600 and over four thousand acres (1620.3 hectares) of land as payment.

Reid had the reputation of being a very successful railway bridge engineer and builder in North America. Middleton supervised much of the early construction of the Hall's Bay Railway. Four years later, Reid and Middleton dissolved their partnership and Reid continued with the project.

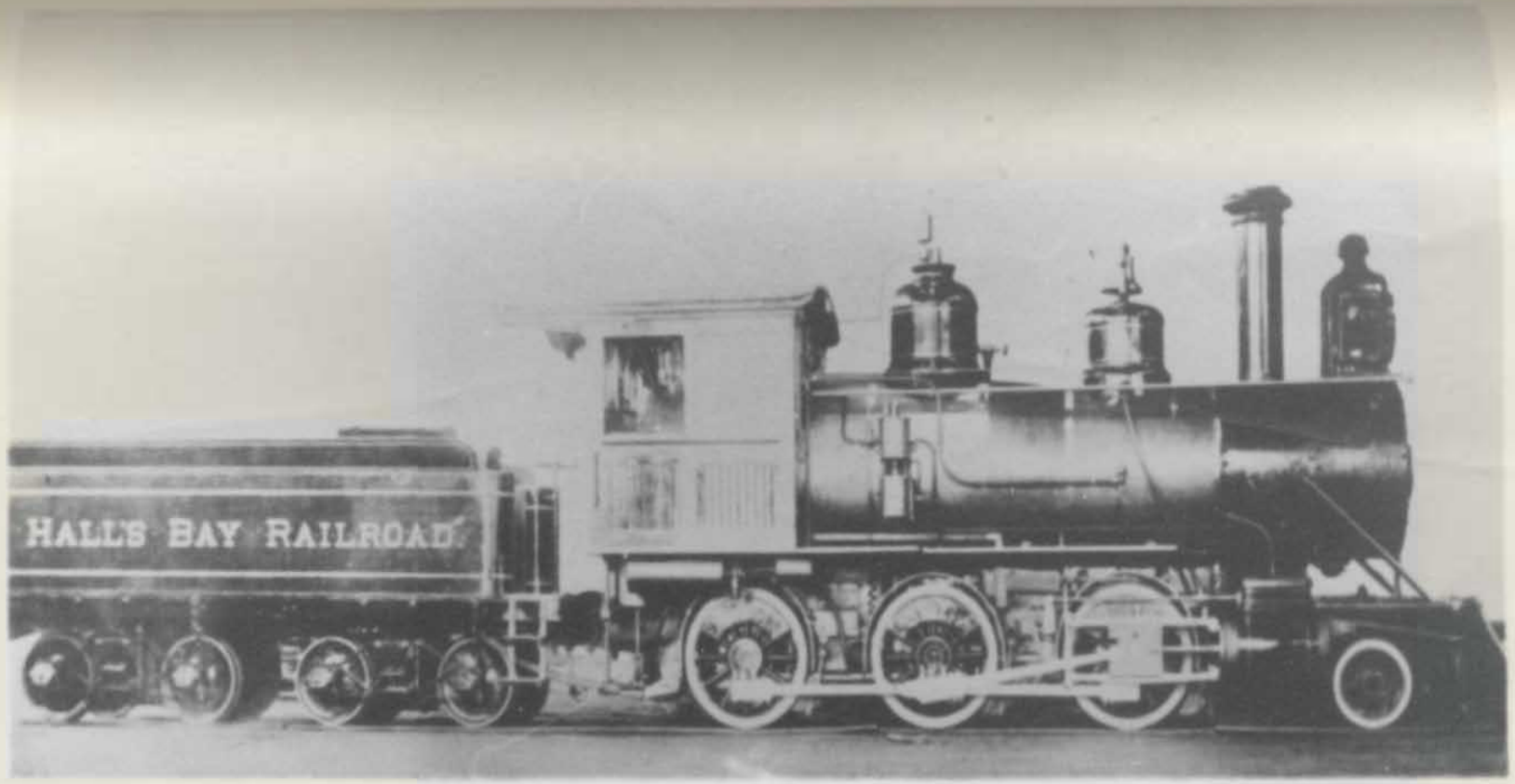


Figure 18. 2-6-0 steam locomotive (No. 4) first used on the Hall's Bay Railway and later on in the construction of the Newfoundland Northern & Western Railway. It was one of several locomotives used on the inaugural run of the first passenger train across Newfoundland in 1898.

NEWFOUNDLAND NORTHERN & WESTERN RAILWAY -- 1894-1897

In 1894 the Government decided to extend the Hall's Bay Railway two hundred miles (320 kilometres) farther west from Norris Arm to a new terminus at Port-aux-Basques on the South West Coast by way of Central Newfoundland, Bay of Islands, Bay St. George and the Codroy Valley. The Government's decision was influenced by reports of newly discovered mineral deposits in Western Newfoundland and by the large areas of good farm lands and forests located there. Travel time from the more densely populated centres of Eastern Newfoundland would be considerably shortened by a land route across the Island and by a short sea voyage to Cape Breton Island and the Mainland instead of the more arduous journey by sea around Southern Newfoundland to the Mainland. It was even argued that there was even the possibility that trans-Atlantic travellers would also prefer a land route for part of their journey between Europe and North America since it was shorter and far less dangerous than a stormy and ice infested route around Newfoundland. Therefore, the

Figure 19. Passenger coaches of the Newfoundland Northern & Western Railway Company. These were the first passenger coaches used in a regular passenger service across Newfoundland. Two cars of this vintage are presently being used as summer homes at Thorburn Lake Siding, three miles east of Port Blandford.

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Figure 20. The first trestle built across the Exploits River was destroyed in 1895 by the annual spring break-up of river ice. A permanent structure was built as quickly as possible next to it during the early Spring and Summer of 1895.

Newfoundland Northern & Western Railway Company was then formed by Reid to undertake the construction of the trans-Island railway under much the same terms as those laid down in the 1890 contract for the completion of the Hall's Bay Railway.

Under Reid management, work on the Newfoundland Northern & Western Railway progressed rapidly. By 1894 the railway had crossed the Exploits, the largest river on the Island. By 1895 the railway had crossed over the Gaff Topsails, the highest stretch of land along the route, and westwards towards

Grand Lake.[1] By the Fall of 1895 the tracks had been laid as far as Deer Lake; just thirty miles (48 kilometres) from the Bay of Islands. In 1896 the railway was put through the Humber River Gap to Humber Mouth on the French Treaty Shore.

During 1896 and 1897 Newfoundland disregarded the protests of France over what the French saw as a violation of

Figure 21. The Gaff Topsails

Figure 22. Humber Mouth Station, Bay of Islands

[1] For a short time a two-mile spur (from Howley) led to a small coal mining operation which supplied coal for firing the steam locomotives. However, the coal was found to be unsuitable since too many "clinkers" were left in the ashes.

Figure 23. Section men working on the railway near Humber Mouth shortly after the completion of the railway. This short section of track was eventually moved back several hundred yards from the Humber River to make way for a highway which had to share the same route with the railway through a narrow gorge of the Humber River.

Figure 24. River Side Drive, Humber Mouth, Corner Brook. (Same location as seem in the late 1970's.)

Figure 25. Church and waterfront, Curling, Bay of Islands

Figure 26. Wooden trestle across Little River, west of St. Andrew's in the Codroy Valley

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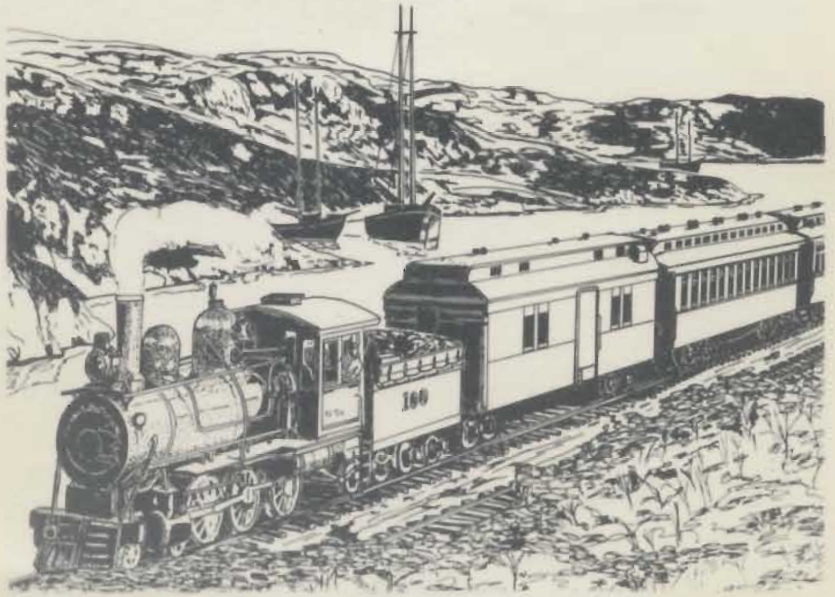
French fishing rights on the French Treaty Shore and continued to push the railway southwesterly towards Bay St. George and thence along the West Coast through the Codroy Valley to Port-aux-Basques by 1897. This had been a bold move which might have easily upset Great Britain's recent friendly relations with France.

The formal opening of the trans-Island railway took place when on June 29, 1898, at 7 p.m., a train left St. John's and arrived at Port-aux-Basques twenty-seven hours and forty-five

Figure 27. St. John's Station at Fort William (East End, St. John's)

Figure 28. Port-aux-Basques



minutes later at 10:45 on the following day.

Upon the completion of the railway across Newfoundland, the Reid Newfoundland Company was permitted under a new contract with the Government to operate all railway property and services for fifty years and received an additional one million six hundred thousand acres (647,500 hectares) of prime land with all timber and mineral rights. In return the Reid Newfoundland Company paid the Governemnt $1,000,000.

This land which ran in

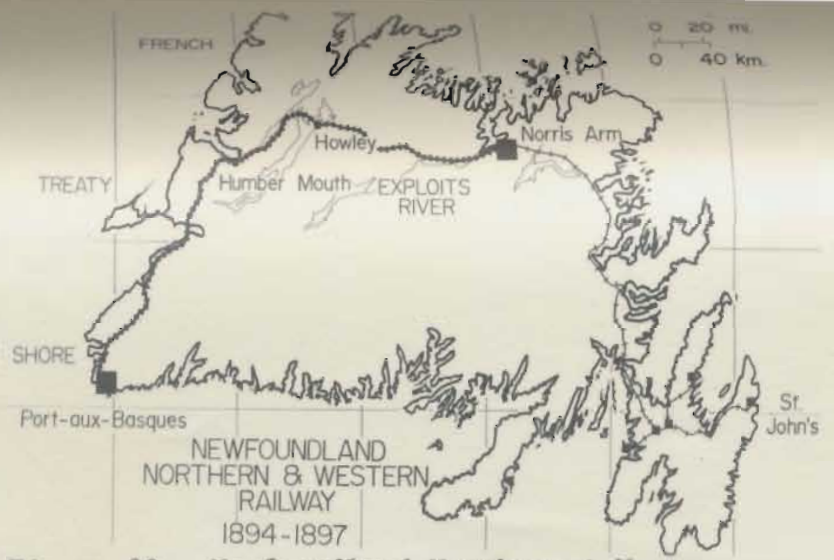
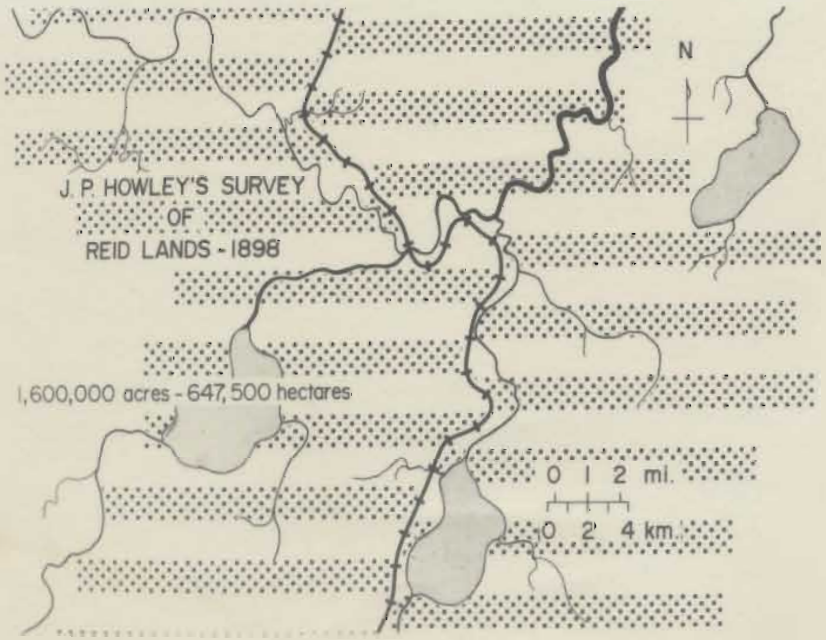


Figure 29. Newfoundland Northern & Western Railway

Figure 30. Reid Lots -- Taken in alternate blocks along the railway from Port-aux-Basques to Come-by-Chance Valley



alternate five thousand acre blocks (2,201 hectares) from the Isthmus of Avalon to Port-aux-Basques contained some of the best timber and mineral resources of the Island. It was the understanding of the Government that the Reids would try to develop these resources and so provide needed employment for jobless Newfoundlanders.

Reid and his sons now consolidated the coastal boat service, the telegraphs, the St. John's Dry Dock and all railway properties which included the Harbour Grace Railway, the Newfoundland Northern & Western Railway and Government built lines into one company -- the Newfoundland Company.

The railway by 1898 had cost Newfoundland $9,500,000 and in 1895 a chance to join Confederation since Canada had been unwilling to assume such a high public debt of which a large portion had been due to railway construction even though at the time the Newfoundland Government had argued that the railways were one of the country's assets.

Figure 31. The St. John's Dry Dock shown here under reconstruction by the Reid Newfoundland Company which acquired the Dry Dock from the Government in the 1898 agreement. Immediately west of the Dry Dock a new station house and marshalling yards as well as machine shops to service the railway, the coastal boat fleet and the Dry Dock were built on land reclaimed from the West End of St. John's Harbour.

BRANCH RAILWAYS BUILT BY REID

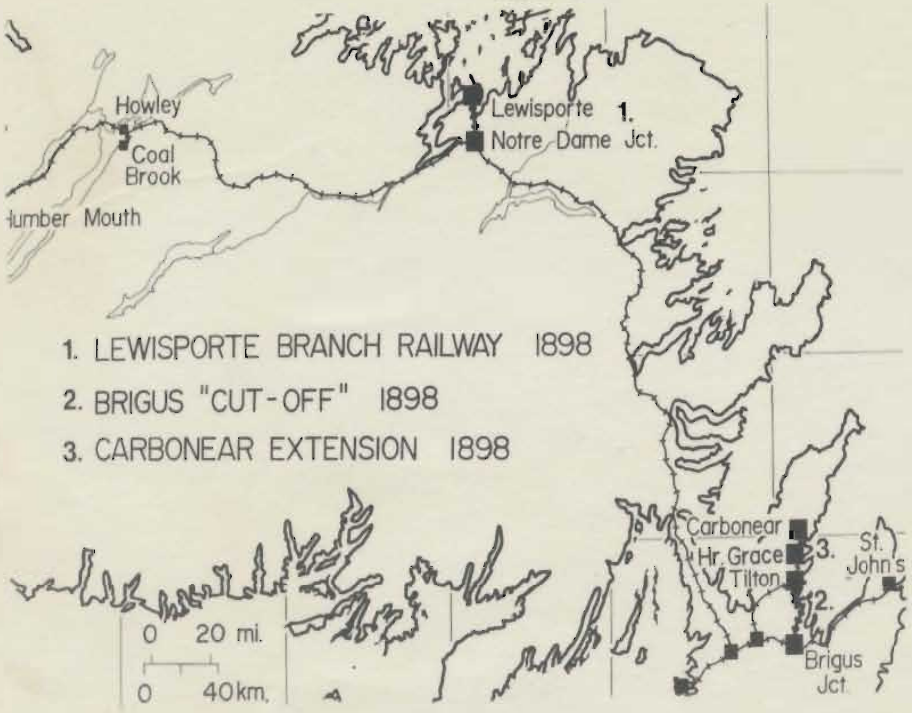


Figure 32. Branch Railways built by the Reid Newfoundland Company -- 1898

BRANCH RAILWAYS -- 1898

After the completion of the railway across Newfoundland, Reid and his sons, who were by this time actively involved in the Company, began to build three branch railways for the Government under a previous agreement.

The Lewisporte Branch Railway ran for nine and a half miles (15 kilometres) from Notre Dame Junction to Lewisporte which was to be a chief port of call for the

coastal boat service. The Brigus "Cut-Off" -- built between Brigus Junction and Tilton on the Harbour Grace Railway -- shortened the distance to the main line by ten miles (16 kilometres) and from St. John's to Harbour Grace by over twenty-two miles (36.2 kilometres). In the same year the original Harbour Grace Railway was extended six miles (9.6 kilometres) farther to Carbonear due to political pressure from the Carbonear townspeople who wanted to

Figure 33. Work train unloading rails, Conception Bay

Figure 34. Station House, Notre Dame Junction

Figure 35. Lewisporte

have a railway just like the people of Harbour Grace.

By the turn of the century, opposition grew to the terms of earlier contracts with the Reid Newfoundland Company. The newly elected Government in 1901 took advantage of Reid's desire to incorporate his company. These contracts, especially the 1898 contract, were revised with much of the land, railways and other forms of communication to revert back to the Newfoundland Government. In return the Reid Newfoundland Company Ltd. received $3,500,000 and the right to

Figure 36. 4-6-2 steam locomotive (No. 193) was manufactured by the Baldwin Locomotive Works of Philadelphia for the Reid Newfoundland Company Ltd.

operate the railways. The total public debt due to railway construction had risen to over $17,000,000.

BRANCH RAILWAYS -- 1907-1915

From 1907 to 1915 there was another flurry of branch railway building. Some politicians hinted that the contracts for these branch railways may have been rewards in return for Reid financial support of Government members in the elections of 1901, 1908 and 1909 and that the cost of these new branch

Figure 37. West End, St. John's Harbour. This part of the Harbour was eventually all filled in as more track was laid in the marshalling yard. The original machine shop building can be seen in the foreground . Part of it is presently used to house and service Canadian National's Road Cruiser passenger buses. The old St. Mary's Church (foreground) was torn down in the early 1960's to make way for harbour expansion on the South Side.

In 1907 a new site for the eastern terminus of the railway was selected at the West End of St. John's Harbour. The old station house and the railway finger pier had been destroyed in the 1898 fire which burnt the East End of St. John's, and, also, access to the waterfront presented less difficulties than did the steep inclines to the waterfront in the East End. Therefore, the Reids built a seven-mile spur (11.2 kilometres) from Western Junction (at Donovan's) through the Waterford Valley to the West End, the site of

Figure 38. Bonavista Bay Branch Railway

Figure 39. Trepassey Branch Railway

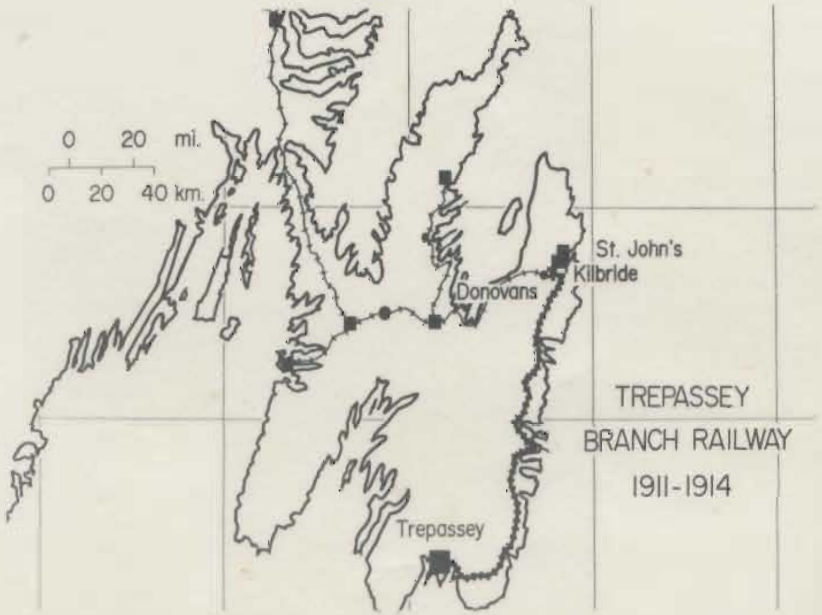


Figure 40. The "Loop" near Goose Cove, Trinity Bay. In order to negotiate the steep incline down to sea level, the railway first passed over an overpass, completely circled a small round pond and then passed under itself and continued down grade through a small river gorge shown in Figure 41 below.

Figure 41. Bonavista Bay Branch Railway

the Dry Dock and where they now located the new station house, yards, docks for the coastal boats and machine shops to service these.[2]

In 1909 a branch railway was built by the Reid Newfoundland Company Ltd. from Shoal Harbour eighty-eight miles (141 kilometres) north along the Bonavista Peninsula to the Town of Bonavista. A spur line was built to Port Union; a distance of two miles (3.2 kilometres).

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[2]The Reids also operated a street railway in St. John's. It was of the same gauge as the main railway and was linked to it so that the street cars could be taken to the machine shops for repairs. The street car service was abandoned in 1949. The building housing the street cars -- located just east of the station on Water Street -- was taken over by the Newfoundland Light and Power Company and was finally demolished in 1979 to make way for the new Arterial Highway Overpass to Water and New Gower Streets.

This spur was eventually abandoned. The Bonavista Branch Railway was officially opened in 1911 by the Governor of Newfoundland.

In the same year work was started on the Trepassey Branch Railway along the Southern Shore of the Avalon Peninsula. It ran one hundred four miles (167 kilometres) from Kilbride in the Waterford Valley of St. John's to Trepassey in Trepassey Bay.

In 1912 the Government decided not to go to Grates Cove and Bay de Verde by way of the proposed Heart's Content Railway Route from Whitbourne

Figure 42. The sod-turning ceremony at Kilbride, St. John's, of the Trepassey Branch Railway

Figure 43. Station House, Western Bay. After the Bay de Verde Railway was abandoned, this building had various uses, one of which was as a post office.

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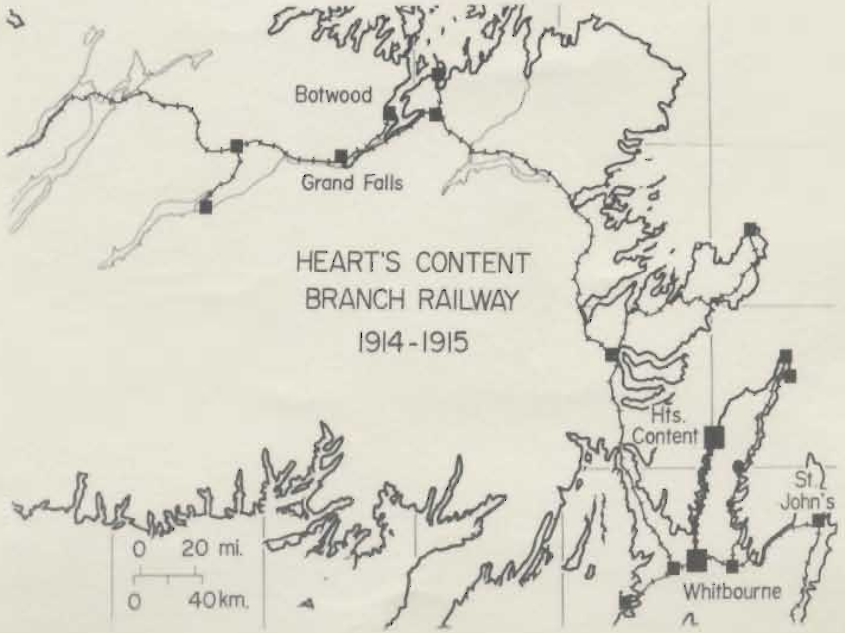
and Broad Cove on the old Harbour Grace Railway line, but to extend the railway forty-eight miles (76.8 kilometres) from Carbonear to Bay de Verde with a four-mile (6.4 kilometres) spur from Grates Cove Junction to Grates Cove.[3]

In 1914 work started on the Heart's Content Branch Railway from Broad Cove to Heart's Content; a distance of thirty-nine miles (62.4 kilometres) from Whitbourne on the main line. During the winter months, Heart's Content served as

Figure 44. Bay de Verde Branch Railway

Figure 45. Heart's Content Branch Railway



[3]Part of this route took advantage of an abandoned railway roadbed left by a mining company which had operated in the Grates Cove -- Bay de Verde area at the turn of the century.

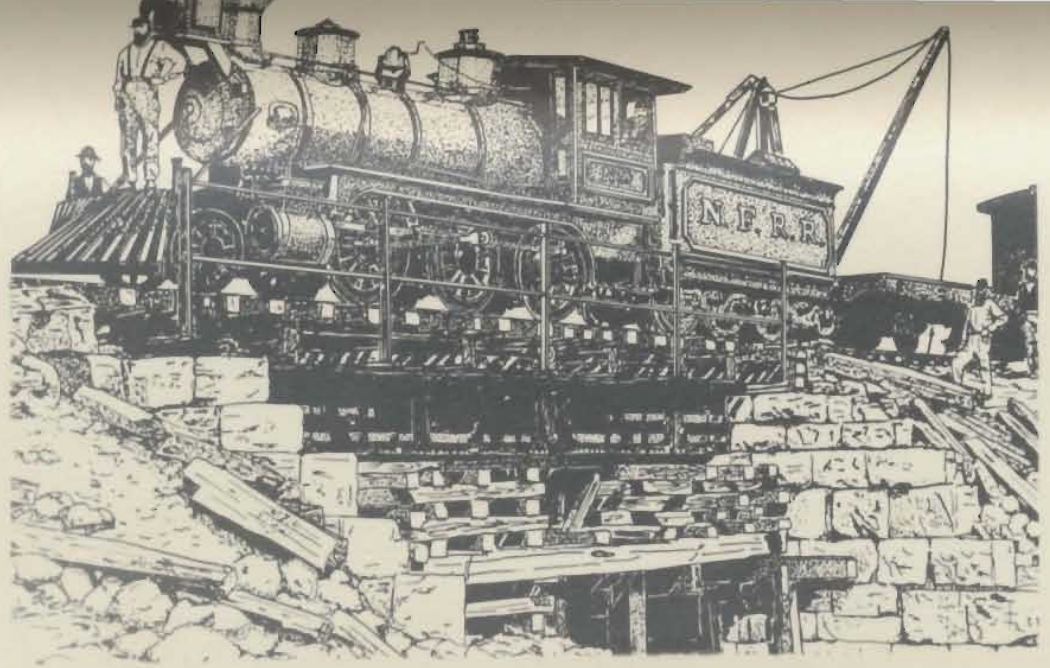


Figure 46. Work train and crew constructing a bridge (small trestle). Note the stone work typical of bridges and trestles built by Reid.

an alternate port of the A.N.D. Co. for their pulp and paper products when Botwood was blockaded by ice.

The Bay de Verde and Heart's Content Branches were opened in 1915. They were the last railways built by the Reid Newfoundland Company Ltd. for the Newfoundland Government. By the early 1920's the Reid Newfoundland Company Ltd. was facing bankruptcy because of the high costs which had been incurred in branch railway building. The Reids appealed to the Government for

financial support to operate their railway holdings, but after a dispute arose lasting two years between the Reid Newfoundland Company Ltd. and the Newfoundland Government, the Government in 1922 took over the operation of the railways operated by the Reids. In 1926 all public railways became known as the "Newfoundland Railway". By the 1930's the Newfoundland Government also faced with rapidly mounting railway debts and a world wide economic depression, The Great Depression, decided to abandon many of its branch railways -- a move which opponents of branch railways said only went to prove what had been originally said about the building of so many branch railways and which at the same time served to anger the residents of the areas served by these abandoned branches.

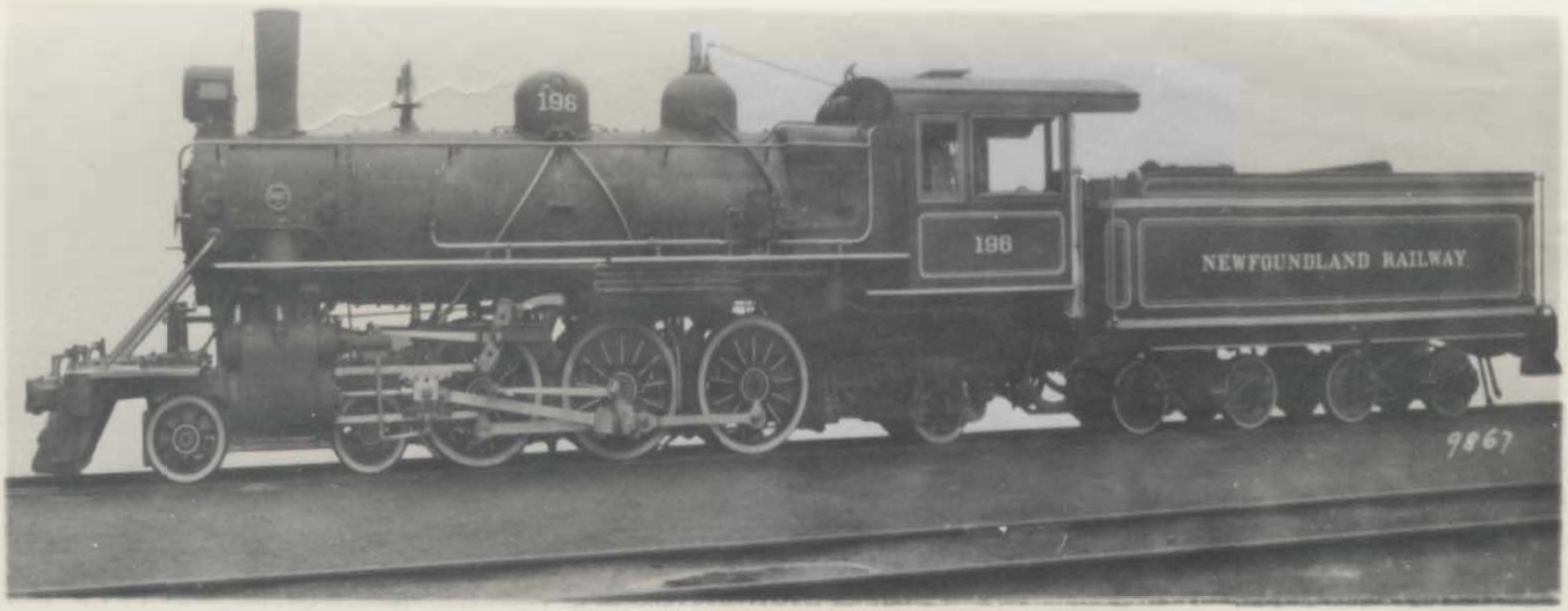


Figure 47. 4-6-2 steam locomotive (No. 196) bearing "Newfoundland Railway" lettering of the Newfoundland Government

PRIVATE BRANCH RAILWAYS

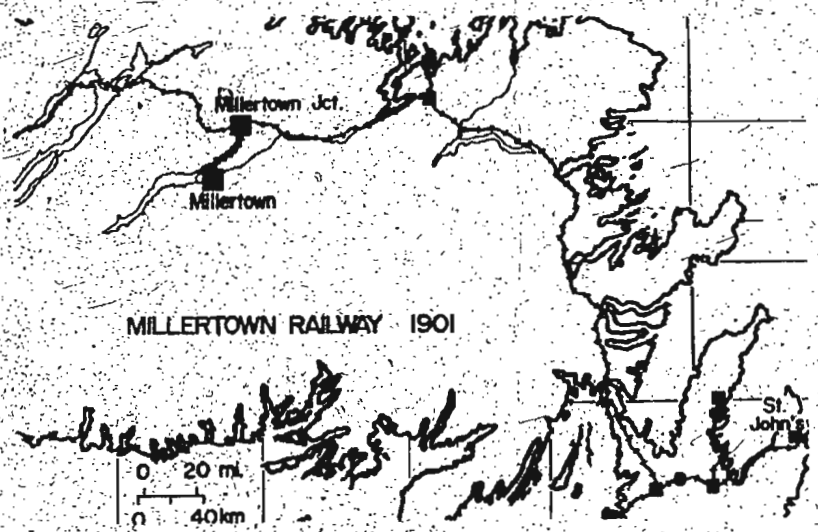


Figure 48. Millertown Railway

MILLERTOWN RAILWAY -- 1901

While Reid and his sons had been negotiating a new contract with the Newfoundland Government in 1901, Lewis Miller, the owner of a large sawmill operation at Millertown in Central Newfoundland, built a private railway from Millertown Junction on the main line to Millertown -- a distance of nineteen and a half miles (31.1 kilometres). The Millertown Railway was eventually bought in 1910 by the

Anglo Newfoundland Development Company after a disastrous fire destroyed the sawmill operation at Millertown.

BOTWOOD RAILWAY -- 1901

Meanwhile, a British company (later taken over by the A.N.D. Co.) had established pulp and paper mills at Bishop's Falls and Grand Falls. Due to electric power transmission technology of the early 1900's before the wide-spread use of alternating current to send electric power over long distances, this company was forced to locate its mill operations

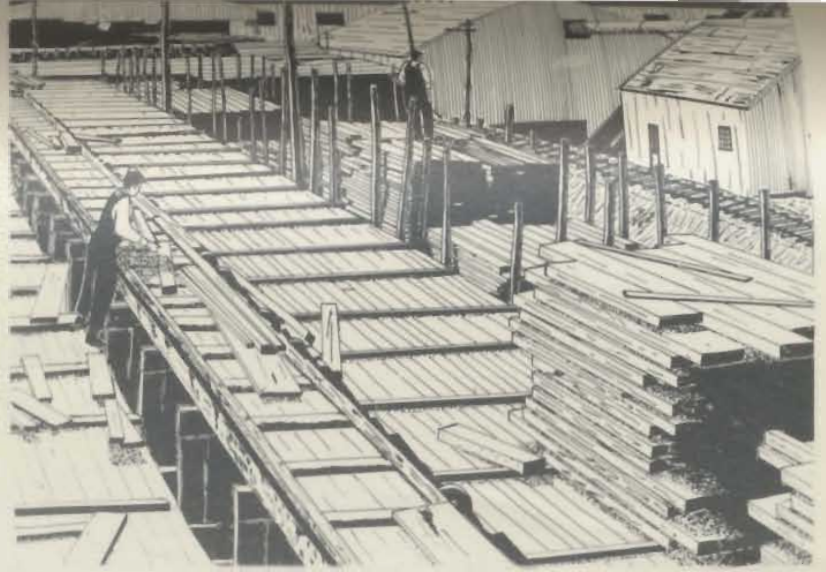


Figure 49. Sawmill operation at Millertown -- c1900

Figure 50. Botwood Railway

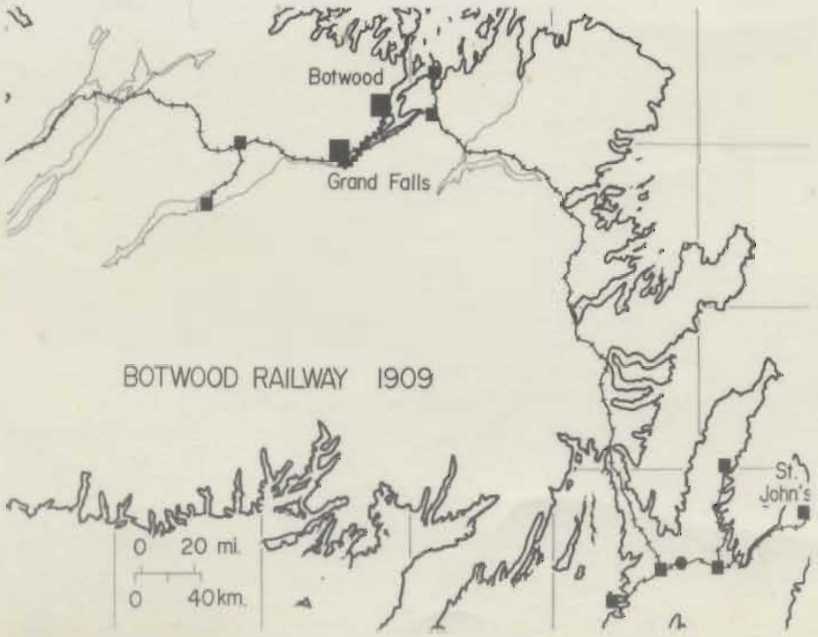


Figure 51. Pulp mill at Bishop's Falls; part of the pulp and paper operations of the A.N.D. Co. at Bishop's Falls -- Grand Falls. The pulp manufactured here was sent to Grand Falls by a flume to be processed further and made into paper.

near its source of hydro-electric power. In 1909 a branch railway was built from Grand Falls to Botwood which became a trans-shipment port for pulp and paper products. On its route to Botwood this railway passed through Bishop's Falls and crossed over the main railway line.

ADIES POND RAILWAY

Later in 1923 another pulp and paper mill was finally opened at Corner Brook (birchy Cove) by the Newfoundland Power and Paper Company, the forerunner of Bowater's. In the late 1920's, this company built a private twenty-mile (23 kilometres) railawy from Deer Lake to its logging operations at Adies Pond. Eventually, the section of track from Deer Lake to the Upper Humber River was abandoned, and, then, in

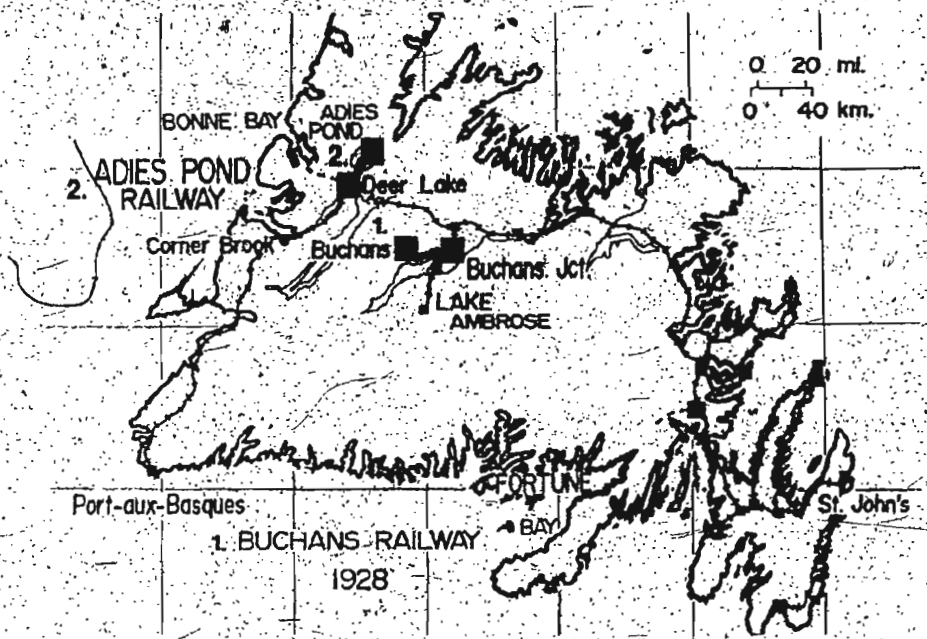


Figure 52. Adies Pond and Buchans Railways. Another railway — called the Harpoon Railway or Tramway — was built from Millertown (as an extension of the Millertown Railway) by the A.N.D. Co. to its logging operations in the Lake Ambrose area in southern Central Newfoundland. It was used mainly to carry supplies and loggers to the logging operations and logging camps at Lake Ambrose.

the late 1930's, the remaining section to Adies Pond (near the present Sir Richard Squires Provincial Park) was torn up as well, having by this time been replaced by a network of woods roads. However, Bowater's still maintained the track and two small steam locomotives from its logging railway for a time within the mill yards at Corner Brook.

BUCHANS RAILWAY -- 1928

In 1928 a twenty-two mile (35.2 kilometres) private branch railway was built from Buchans Junction on the Millertown Railway to the site of new mining operations at Buchans. The Buchans Railway enabled zinc and lead ore concentrates to be taken out to the coast for export. Like the Millertown Railway, it also provided the only means of transportation to and from the community it served. During World War II it was also used by the Americans who maintained a radio base at Buchans.

U.S. BASE RAILWAYS -- 1941

During World War II as part

Figure 53. 2-4-2 Buchans Mining Company, Ltd. steam locomotive, No. 1. This locomotive hauled trains of short ore hopper cars to Millertown Junction on the main line from which the ore was taken to the coast for export by ship. The Buchans Mining Company also owned another steam locomotive, No. 2, which was used on the Buchans Railway until 1953 when it was taken to Grand Falls and retirement. In 1949 and in 1952 the Buchans Mining Company bought two diesel-electric locomotives at about the same time the C.N.R. was converting to diesel-electric locomotives. These two diesels were still in operation in the late 1970's.

of the Allied war effort, the United States established military bases at Harmon Field, near Stephenville on the West Coast, and at Argentia in Placentia Bay to which small branch railways were constructed in 1941. The Argentia Branch Railway or Spur from Argentia Junction on the Placentia Bay Branch Railway eventually replaced the Freshwater-Jerseyside terminus since this new spur gave direct access to docking facilities at Argentia. This spur was taken over by Canadian National

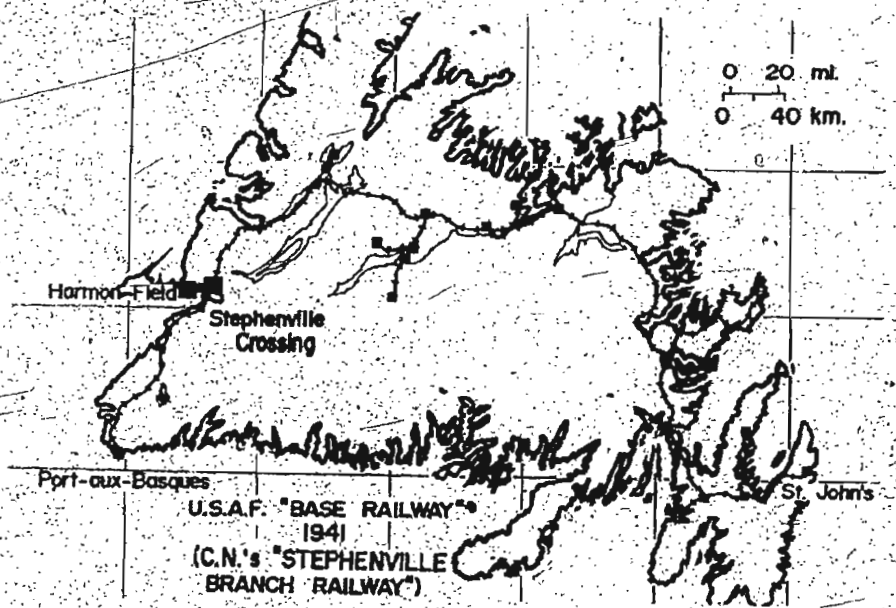


Figure 54. U.S.A.F. "Base Railway"; later to be known as the Stephenville Branch Railway

Railways in the 1960's. The "Base Railway", or Stephenville Branch Railway, ran for seven miles (11.2 kilometres) to Harmon Field Air Base at Stephenville. This railway was abandoned briefly in the mid 1960's as the Americans phased out their opefations at Harmon Field, but was later reactivated in the late 1960's as new industries were located in buildings formally belonging to the old air base.

ABANDONED RAILWAYS

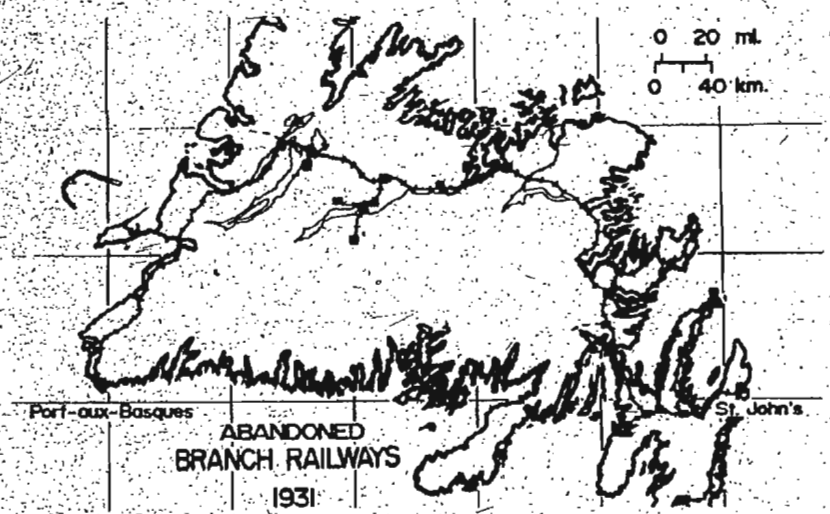


Figure 55. Abandoned branch railways

The railways had to a degree opened up the country to development especially in the forest industries and mining, but at a tremendous cost. By the early 1930's, Newfoundland was facing bankruptcy. The Government in 1931 was forced to abandon the branch railways to Trepassey on the Southern Shore, and to Heart's Content and to Grates Cove and Bay de Verde which served Trinity and Conception Bays. The Country just could not afford them

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since by now the public debt due to railway construction and operation had risen to nearly $34,500,000 -- over thirty-six percent of the public debt of Newfoundland. Newfoundland was still heavily dependent on the fishery and on the other resource based industries whose products during the Great Depression of the 1930's commanded very low prices. The Government's revenues could not even pay for essential public services let alone pay its railway debts or evn the the interest on those debts.

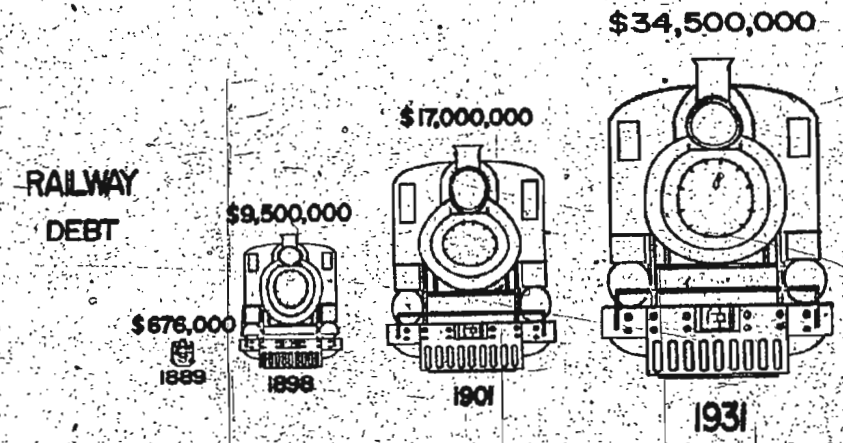

Figure 56. Newfoundland's railway debts just grew and grew. The railways never showed a profit except during World War II when they transported troops and military materiel and because they generally benefited from the buoyant economy created by the construction of military bases and the influx of military personnel.

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Therefore, Newfoundland's inability to pay this and other debts, for example, the debt incurred by Newfoundland's military operations during World War I, was in 1933 one of the chief causes for Newfoundland's loss of independence as a country.

In 1957 the Millertown and Harpoon Railways were finally abandoned, and a new company, the Grand Falls Central Railway, took over the operation of the Botwood Railway until 1975 when it, too, was abandoned and its rolling stock sold.

During the mid-1970's, ASARCO, the operators of the mines at Buchans, phased out its ore-carrying trains and replaced them with trucks which used the Buchans Highway built in the mid-1950's. This railway has been seldom used in recent years except by the occasional freight train to Millertown Junction[4] which became a ghost

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[4] Millertown Junction once had a hotel, two general stores, a school, sectionmen's houses, speeder and tool sheds, a station house and freight sheds. It was a regular stop on the main line since all freight and passengers going and coming from Millertown and its logging operations, Buchans Junction and Buchans and its logging operations passed through it. In 1967 only one or two houses and a freight shed remained. In 1978 the freight shed burned down and was not discovered until much later.

town as a result of being by-passed by the main highway to Buchans and Millertown.

After Confederation in 1949, the Newfoundland Railway became the property of the Canadian National Railways as did the St. John's Dry Dock, the coastal boat fleet, the telegraphs and other railway properties. Canadian National Railways phased out its steam locomotives and replaced them in the early 1950's with diesel-electric locomotives fitted with Newfoundland trucks (narrow gauge wheels). Later, in the 1960's they gradually replaced

Figure 57. Diesel-electric locomotive

Figure 58. CN passenger buses at Moorland's, Whitbourne

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Newfoundland railway cars of various types with much larger mainland cars fitted with Newfoundland trucks. In the late 1960's, CN built at Port-aux-Basques a facility which allowed incoming mainland freight cars to be quickly fitted with Newfoundland trucks as they rolled off the rail-car ferry.

In 1969 Canadian National abandoned the trans-Island passenger service and replaced it with a bus service. This decision was made after a trial year in which the public had a choice of travelling by bus or train. The majority of travellers chose to travel by bus. Some critics said that this was the result of CN's down grading of the rail passenger service.

CONCLUSION

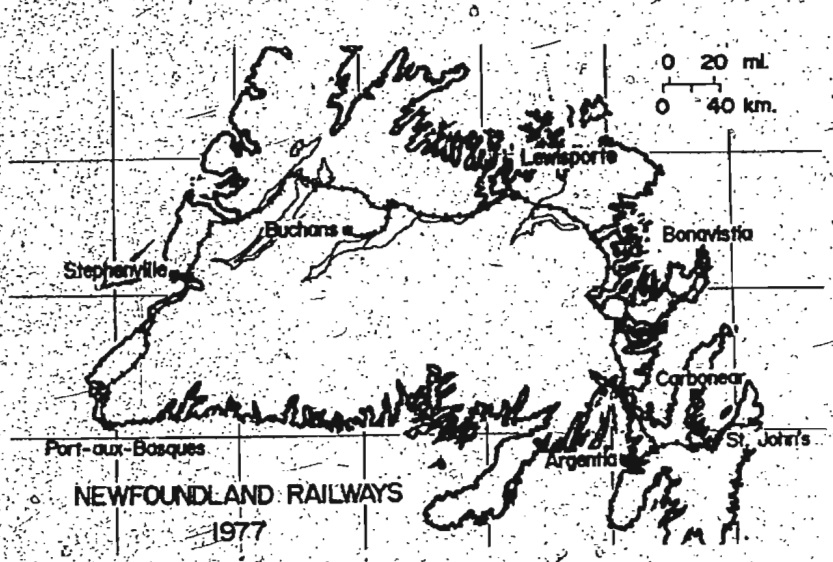

Figure 59. Newfoundland railways system

Newfoundland's railway building spree of the late 1800's and the early 1900's was supposed to open up the country to development. In part it was successful since it gradually lessened Newfoundland's total dependence on the fishery. It provided employment directly and indirectly as an industry itself for a growing population. Logging and mining operations owed their existence largely due to railway construction. Large numbers of

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Newfoundlanders who had lived in isolated communities moved to communities on the railway lines to work and live. Railways offered Newfoundlanders greater mobility. Traditionally, Newfoundland had been dependent on ocean travel. Geographically, it had been half way by sailing ship between those countries it traded with in North America and those in Europe. The opening of a trans-Island railway service was largely responsible for bringing Newfoundland closer to North America economically and culturally. Some people took pride in their railway as a symbol of progress and nationhood while other Newfoundlanders who were seeking employment and a higher standard of living found railways to offer a faster and safer means of emmigrating from Newfoundland to the United States and Canada where they hoped to find jobs.

The intention of the Newfoundland Government in 1881 had been to provide a low-cost, no-frills railway. From the very beginning, railways, especially some of the branch lines, proved to be very expensive to build and

Figure 60. Port Blandford Trestle

to maintain. This high cost eventually became an economic burden to the country; that is, the building of railways seemed to have almost the opposite effect. However, no one can really say what Newfoundland would have amounted to without these railways.

In the late 1970's there were over seven hundred miles (1120 kilometres) of railways in operation on the Island of Newfoundland, and most of this mileage was operated by Canadian National.

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APPENDIX H

Slide-tape Presentation:

"Newfoundland Railways"

under separate cover