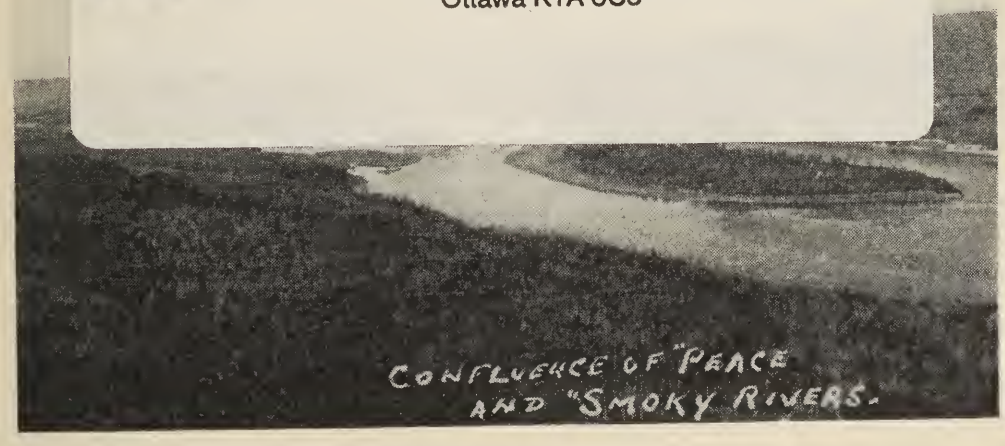
PUBLICATION NO. 792
TECHNICAL BULLETIN NO. 60

ISSUED OCTOBER, 1947
FIRST PRINTING

DOMINION OF CANADA — DEPARTMENT OF AGRICULTURE

A STUDY OF PIONEER FARMING IN THE FRINGE AREAS OF THE PEACE RIVER, ALBERTA 1942



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Published by Authority of the Rt. Hon. JAMES G. GARDINER, Minister of Agriculture, Ottawa, Canada.

13-10-47

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FOREWORD

This is the second in a series of reports on investigations dealing with land settlement problems in the woodland areas of Alberta. These investigations have been carried on by the Economics Division, Marketing Service, Dominion Department of Agriculture, in co-operation with the Department of Political Economy, University of Alberta. They are part of a broader enquiry into the economic and social problems arising out of the present use of the land in Western Canada, instituted under the Prairie Farm Rehabilitation Act.

In this particular study, which deals with land improvement, farm organization, and income in the more recently settled woodland areas of the Peace River in Alberta, the authors desire to acknowledge the generous co-operation of several hundred settlers in the area who provided much of the basic data. They are particularly indebted to the late W. D. Albright, an old time resident in the Peace River and since the establishment of the Experimental Station at Beaverlodge, its Superintendent. Elizabeth Low, J. H. Younie, W. D. Gainer, A. R. Brown, W. Bredo, and J. L. Anderson assisted in the field enumeration and the analysis of the material assembled. Professor Andrew Stewart of the University of Alberta assisted in the direction of the study and in the preparation of the report. Acknowledgements are also made of the valuable suggestions offered by other members of the University staff as well as by officers of the Alberta Departments of Agriculture and of Municipal Affairs.

Articles based on material obtained during the progress of the study have been previously published in the Economic Annalist.

SUMMARY OF THE MORE IMPORTANT FINDINGS AND CONCLUSIONS

1. For the purpose of this study the Peace River is considered as that area extending from Lesser Slave Lake to the British Columbia boundary and northward as far as Township 96. The particular districts chosen for study were representative of its various physical characteristics and also of different periods of settlement in this region.

The climate of the Peace River is typical of the parkland areas of Alberta. Topographically, the country is a level to undulating plain, but the Peace and Smoky Rivers with their tributaries have cut deep wide channels which are costly to bridge. There are two distinct soil types—the black and the grey wooded. A native characteristic of the latter is its denser tree growth which presents a bigger problem in its clearing.

The areas studied were Bear Lake near Grande Prairie, which was typical of an old established district on the black soils; and the Fringe Areas, including the Debolt, Wapiti-Lymburn, Hines Creek, and Battle River districts. The Fringe Areas, on the grey wooded soils, were still in the pioneer stage of development.

2. Improving the land has been a slow job in the Fringe Areas. With the exception of the Battle River district, little more than 4 acres of new land was brought into cultivation each year. In the Battle River district, because of a light cover at the time of settlement, it was possible for farmers to improve nearly 8 acres per year.

3. Over a thirteen-year period on black soils, wheat yields averaged 20 bushels and oats 37 bushels per acre; whereas on the grey wooded soils the yields were 17 bushels of wheat and 30 bushels of oats.

4. Data for this study based on farm business records for the year ended May 1, 1942 were obtained from 416 farmers in the various districts surveyed. For purposes of analysis the farms surveyed were divided according to type of farm, into two main classes: Subsistence and Commercial farms. The former was further divided into sub-classes, namely: Self-Sufficient, Pensioner, Part-Time; the latter into Grain, Mixed-Grain, Mixed-Livestock and Livestock.

5. The Subsistence farms were those where the operators derived a substantial part of their living from the farm in the form of perquisites, or where operators received substantial sums of money from sources off the farm, either by way of a pension or other non-farm receipts. The Part-Time farmers recorded the highest receipts—average $559—from farm enterprises, and average receipts from outside sources, both for this and the Pensioner group were approximately $320. Receipts from both the farm and sources off the farm were much less on the Self-Sufficient farms.

Expenses on the Part-Time group were also higher than on the other two groups of Subsistence farms, but not relatively so, and the results of the year's businesses indicated greater net earnings and increase in net worth for the Part-Time farmers. Lumbering, hauling, and trapping were the chief sources of income earned off the farm.

6. Of the Commercial farms in the Fringe Areas, those found in the Battle River district were mainly of the Grain and Mixed-Grain types; those in the other areas were mainly of the Mixed-Livestock and Livestock types. For all types the average size of farm was the half section, but on the Grain type there was more land under cultivation. The amount of capital invested in the Grain farms, averaging $5,519, was highest for all types.

7. The study suggests that in a Grain type of farming, the usual operator requires at least 150 acres of cultivated land in order to earn a surplus over and above current operating, capital maintenance and family cash living costs, sufficient to meet readily the cost of this land improvement in a reasonable period of time. Fifteen years at 5 per cent per annum was suggested. In a Livestock type of farming 100 acres improved would suffice.

The analysis on size of farm indicated that there was an association between the acres of cropland operated and the success of the farm business. The farm earnings, level of living, and change in net worth of the farmers increased with the size of farm business operated. This was true both for farmers emphasizing grain growing and for farmers emphasizing livestock production.

During the year of survey—1941–42—farmers emphasizing livestock production averaged higher returns than those principally engaged in grain growing. However, the average annual increase in net worth since time of settling was greater for the grain farmer, which indicates grain growing over a period of years had been more profitable. For the survey year, the grain-livestock ratio favoured the livestock producer. The type of farm was determined by the physical characteristics of a locality rather than changing price relationships between the chief commodities produced. Grain farmers were located in areas suitable for grain farming and those farmers emphasizing livestock production were located in districts less suited to a grain economy.

8. From the study, it would appear that a settler should have a minimum in cash or credit of $4,000 (exclusive of land) for land improvement, cash cost of buildings, livestock, and equipment, as well as some working capital for the first year of operation. It was found that on the average, settlers in the Fringe Areas did not have this minimum of required capital at time of starting to farm, and that after 12 years of establishment the amount as set out in the budget was just being reached.

9. Farmers in the Bear Lake District, an old established community, with well developed rural services and farms were able to improve their financial position on an average by $401 per year, and at the same time were able to maintain a reasonably high level of living. Because the type of farming practised emphasized Grain production, farm incomes for the year under review were adversely affected by a wet harvest in the fall of 1941.

10. A comparison of farming was made between the Fringe Areas and Bear Lake District. Compared with the Fringe Area settlements the Bear Lake District was more adequately served by transportation and more accessible to markets; the District and its farms were more highly improved; and the farmers operated larger farms. Capital investment was larger, and the level of living enjoyed by its farmers was higher than in the Fringe Areas.

11. The possibilities of settlement in the Peace River were appraised. It has been estimated that over three million acres of land, much like that in the Fringe Areas described, are available for settlement in the Peace River and adjoining territory.

A Study of Pioneer Farming in the Fringe Areas of the Peace River, Alberta

1942

B. K. ACTON[1] AND C. C. SPENCE[2]

Introduction

This study of farming in the Peace River is the second in a series dealing with the problems and progress of settlers on the fringe of present settlement in Alberta. The factual information contained herein is considered pertinent to the possible post-war settlement of soldiers, immigrants, and a normally expanding rural population. Although parts of the Peace River have been farmed for many years, the area is so vast that detailed agricultural data for the whole territory are limited. The fringe or new areas in the Peace River suitable for settlement vary from prairies of parkland soil to bush lands of wooded soil. Consequently, there is a variety of problems presented such as transportation, land improvement, and maintenance of soil fertility, all of which differ somewhat in each district settled. A study of farming in different sections of this country will, however, give a fair indication of agricultural possibilities, and of the problems and progress of farmers, and the data acquired will be of value in choosing suitable settlement areas, type, and size of farm.

This study was undertaken in 1942 by the Economics Division, Dominion Department of Agriculture in co-operation with the Department of Political Economy, University of Alberta. The purpose was to gather factual data on the problems and progress of settlers in the Peace River.

Specifically, the objectives of the study were to determine:

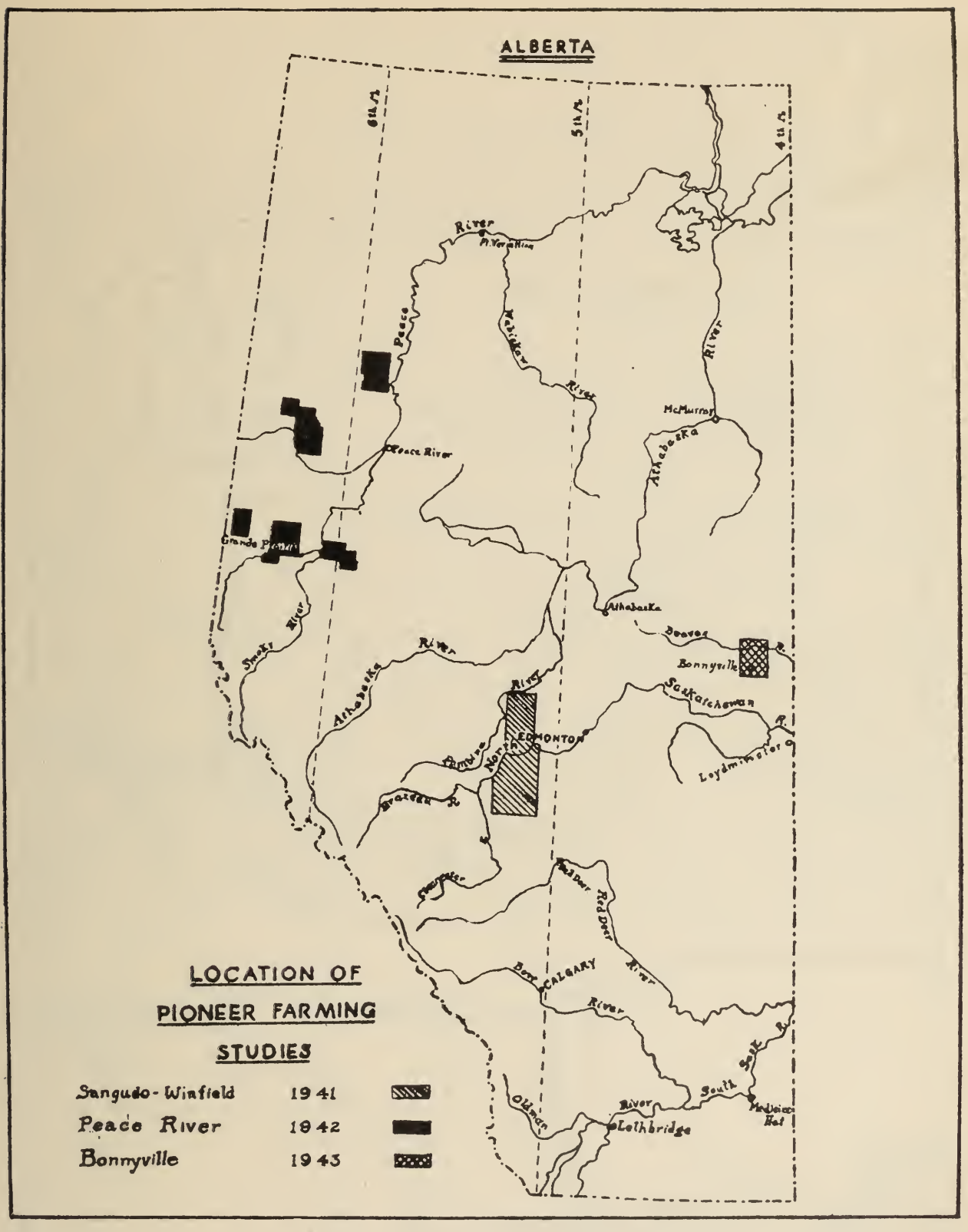
1. Cost and rate of land improvement.
2. Minimum capital necessary to establish a farm.
3. Type of farming most suitable to the fringe area studied.
4. The expected returns from a typical farm and the expenses necessary for operation.
5. The level of living the settler may be able to maintain.
6. The direct contribution made by the farm to the family living.
7. The length of time required for a settler to become established.

Description of Area

In general, the Peace River includes all of the area west and northwest of Lesser Slave Lake, extending into British Columbia as far west as Fort St. John and Hudson Hope, and northward in Alberta a distance of nearly 100 miles beyond Peace River town (Figures 1 and 2). Specifically, in Alberta, it is the area contained between townships 69 and 96, range 15, west of the fifth meridian, to the British Columbia boundary. Roughly this block is 165 miles by 150 miles wide, and contains an area of approximately 25,000 square miles or sixteen million acres.

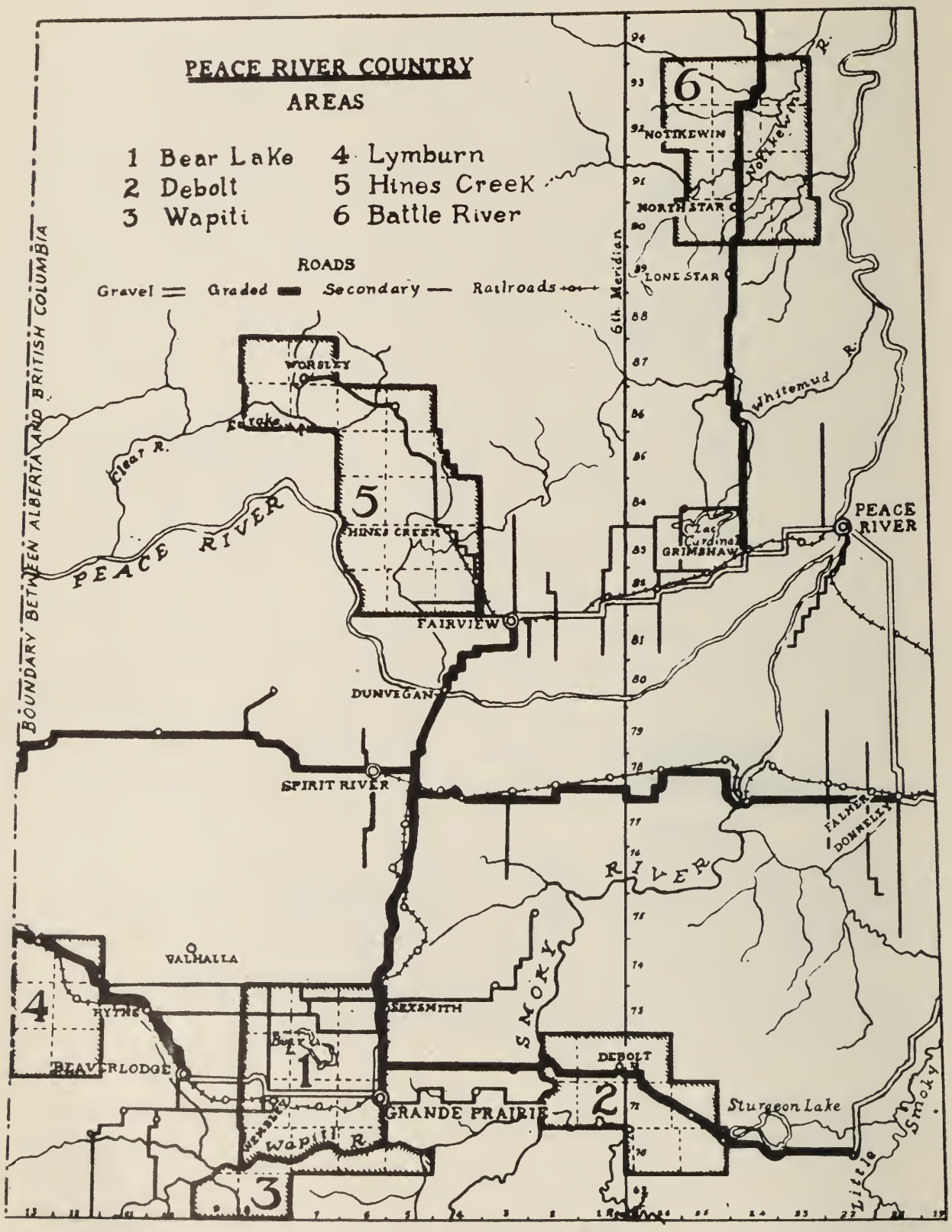
The Peace River is separated from Edmonton by over 150 miles of rough, muskeg country considered to be unsuited to agricultural settlement. Highway mileages from Edmonton to the principal Peace River points are: High Prairie, 265 miles; Peace River town, 345 miles; and Grande Prairie, 380 miles.

(1) Formerly Agricultural Assistant, Dominion Department of Agriculture.
(2) Agricultural Economist, Dominion Department of Agriculture.



Map 1.—Showing location of studies.

As might be expected within a territory so large as the Peace River, there are differences in topography, soil, vegetative cover, and other physical characteristics. These cause a considerable variability in the type of agriculture practised. There occur parkland areas of varying size, which are separated from each other by large and small blocks of wooded soils and muskegs. These parkland areas are ideally suited to agriculture and in many instances whole sections of land needed little clearing when broken. On the other hand grey wooded soils require heavy clearing before the land can be cultivated, and then



Map 2.—Showing transportation facilities.

the soil itself must not only be maintained but improved, in order to support profitable agricultural production.

Physical Characteristics

The Climate.[1]—The climate of the Peace River is similar to that of the parkland regions of Alberta. Spring, which usually comes during the latter half of April, is followed by a temperate summer with very long days. The fall is pleasant, but as a rule colder weather arrives during November. The coldness of the winter, however, is tempered by occasional balmy spells, created by warm winds from the Pacific Ocean.

Climate is an important factor in determining the adaptability of a region to agriculture. Climatic suitability of an area for farming results from a combination of factors such as precipitation, hours of sunshine, length of growing season, and temperature. The climate of this district can best be described by comparing its features with those of other known points. The points chosen for comparison are: (1) Beaverlodge (west of Grande Prairie), the climate of which is reasonably typical of the Peace River as a whole: (2) Fort Vermilion on the Peace River in the extreme north of the province; (3) Edmonton, an area, generally speaking, where climatic variation is low; and (4) Medicine Hat in the extreme southeast of the province, which is noted for its semi-arid conditions resulting mainly from low rainfall and high evaporation.

The average long-time precipitation at Fort Vermilion was 12.77 inches; Beaverlodge, 16.53 inches; Edmonton, 17.22 inches; and Medicine Hat, 12.70 inches (Table 1). Average precipitation at Fort Vermilion and Medicine Hat is similar, but its availability for plant growth is greatly different. At Fort Vermilion the rate of evaporation is low, while at Medicine Hat it is high. In the Peace River a rainfall of 10.89 inches, which is approximately two-thirds of the total annual moisture, comes during the growing season and fall, April 1 to October 31. Year to year variability of precipitation affects the stability of agriculture in any given area. This variation in annual moisture is least at Edmonton, and greatest at Medicine Hat. The proportion of years that precipitation was less than 8.00 inches during the growing season was, for Beaverlodge, 17 per cent; Edmonton, 10 per cent; and Medicine Hat, 29 per cent.

Table 1.—Meteorological Data for Selected Alberta Points[1]

(*Data compiled up to 1938*)

Station	Average Long-Time Records			
	Annual Precipitation	Hours of Sunshine per Year	Frost-free Period	Mean Average Temperature
	In.	Hrs.	Days	Deg. F.
Fort Vermilion	12.77	.....[2]	70	28.4
Beaverlodge	16.53	2,134	93	34.6
Edmonton	17.22	2,200	95	36.9
Medicine Hat	12.70	2,320	130	42.9

(1) McCalla, A.G., "Crop Production Factors in Alberta," Field Crops Department, University of Alberta, 1943. Meteorological data complete from origin of each station up to and including 1938.

(2) Data not available.

Hours of sunshine per year averaged at Beaverlodge, 2,134 hours; Edmonton, 2,200 hours; and Medicine Hat, 2,320 hours.

Both the suitability of a region for agricultural production generally, and

the kind of crops that may be grown, are determined to a considerable extent by the frost-free period. The effect of the frost-free period on farming is related to the length of day and rapidity of plant growth in any particular area. The average frost-free period at Fort Vermilion was 70 days; Beaverlodge, 93; Edmonton, 95; and Medicine Hat, 130 days. The shortest and longest reported frost-free periods at the selected points were: at Beaverlodge, 64 days and 124 days; at Edmonton, 52 days and 134 days; and at Medicine Hat, 96 days and 161 days.[1] Late spring and early fall frosts in most instances, however, are not killing frosts.

The mean average temperatures were: Fort Vermilion, 28.4° F.; Beaverlodge, 34.6°; Edmonton, 36.9°; and Medicine Hat, 42.9° F. The mean average temperatures at Beaverlodge by seasonal months were January, 0.6° F.; May, 47.7° F.; July, 59.4° F.; and September, 48.1° F.

Generally, the climate of the Peace River is somewhat more severe than at Edmonton, and is subject to slightly greater variability. However, neither the northern location of the Peace River nor its variability of weather prohibit the economic production of crops similar to those grown at Edmonton.

The Watersheds.—All drainage in the Peace River leads eventually to the Arctic Ocean, via the Mackenzie River system. The Peace and Smoky Rivers, which join near Peace River town, are the main drainage channels for the area surveyed. Both these rivers rise in the Rocky Mountains. Important tributaries of the Peace and Smoky Rivers are: Wapiti, Red Willow, Simonette, and Little Smoky Rivers, Hines Creek, Eureka River, and the First, Second, and Third Battle Rivers.

Lesser Slave Lake, situated just outside of the southeast corner of the Peace River area, is the largest single body of water in the settled parts of the province. It is approximately sixty miles long by ten miles wide. There are a few other small lakes in this country, such as Winagami, Kimiwan, Snipe, Sturgeon, Bear Lake, Saskatoon, Clairmont, and Lac Cardinal. In many parts of the Peace River farm water supply, however, is a problem. Dugouts are commonly used, because deep wells are costly.

Elevations in the Peace River vary with topographical changes, but generally decrease to the north and east. The agricultural lands are approximately 2,100 feet to 2,200 feet above sea level. Saskatoon Mountain, a notable landmark west of Grande Prairie, rises to a height of 3,000 feet above sea level and the Burnt Hills (Saddle Mountains) south of Spirit River, to a height of 3,100 feet. Elevations at various other points are: Grande Prairie and Hines Creek each 2,200 feet; Debolt, 2,000 feet; Fairview, 2,100 feet; and Notikewin (Battle River), 1,700 feet. The river channels have cut deep gorges across the country. The river banks, for example, at Peace River town rise approximately 800 feet above the water's edge.

The Topography.—Arability of land is affected by the topography. Agricultural lands in the Peace River are, for the most part, level to undulating. These blocks of farming country are isolated from each other by large and small areas of poor soil and topography. The land south and west of Grande Prairie rises rapidly into the Rocky Mountain foothills. The Burnt Hills, which run east and west, form a barrier between the Grande Prairie and Spirit River districts. The Hines Creek district is hemmed in by the Clear Hills to the north and the Peace River to the south.

The Soil.—Agricultural soils in the Peace River are, for the most part, heavily textured being silt or clay loams. There are, however, marked differences in the soil colour, some being quite dark (parkland soils) and others

(1) The shortest and longest frost-free periods were not reported for Fort Vermilion.

quite grey (grey wooded soils). The parkland soils occur in pockets of varying sizes, the largest extending from east of Grande Prairie, west to Hythe. A smaller block is found in the Spirit River district and extends north of the Peace River as a narrow area bordering the river as far east as Grimshaw. The country west from Hines Creek to the British Columbia boundary has a fairly dark soil, which is probably more of a transition between a parkland and a wooded soil. The remainder of the area, designated as the Peace River, consists of grey wooded soils, some of which are more degraded than others. Light soils and sand ridges occur in the hills.

The Native Vegetation.—In its virgin state, the Peace River had both parkland and bush areas. The vegetative cover of the parkland was grass with occasional clumps of poplar and willow. Poplar of varying density grew on the bush soils. In the wooded areas might be found also willows, birch, spruce, pine, and tamarack. In many districts there were and still are good stands of merchantable timber. The muskegs that occur in the bush regions are in some cases quite open, and in others are covered with a stunted coniferous growth.

Pea vine and vetches are native to both the parkland and bush areas. On the undisturbed parkland soil luxuriant native grasses grow, but their nutritive qualities are not comparable with those on the southern prairies of the province. In the woods, an undergrowth of sedges, ferns, woodland grasses, and mosses is common.

Services and Industries

All routes of transportation to outside markets are via Edmonton. The Northern Alberta Railway, which services the Peace River, runs from Edmonton to McLennan, from which point it proceeds westward and northward as two branch lines. One branch goes from McLennan west to Spirit River, south to Grande Prairie, and then northward to Dawson Creek, British Columbia. The other branch extends northwest to Peace River town and from there west through Fairview to Hines Creek.

Main roads link Grande Prairie and Peace River town to Edmonton. The fact that the road through Grande Prairie leads onto the "Alaska Highway" is of particular interest at this time. The principal centres of this northern community are connected by several secondary roads. Main and secondary roads are partially all-weather, and complete gravelling of these highways is being proceeded with at a rapid rate. Market roads vary from poor to excellent, according to the stage of development of the particular districts being serviced.

The deep gorges, cut by the river channels, make inter-communication within the Peace River difficult. For instance, Spirit River and Fairview are thirty-two miles apart, but the construction of a connecting railroad would involve an expensive river crossing at Dunvegan.

Grande Prairie, with a population of 1,645, and Peace River, with a population of 843 people, are the two principal towns that serve the Peace River. Other important marketing and supply centres are: High Prairie, McLennan, Donnelly, Falher, Grimshaw, Berwyn, Fairview, Hines Creek, Spirit River, Sexsmith, Wembley, Beaverlodge, and Hythe.

There are rural public schools, churches, and community centres throughout the region. High schools, hospitals, doctors, dentists, and the many other services needed by a rural population are located in the towns according to the immediate community needs and the ability of the farmers to support them.

Creamery facilities are limited, as dairying is not important. There are only three creameries in this large area, at Peace River town, Grande Prairie, and Valhalla. Near Debolt a cheese factory which operates seasonally has been established by a group of Mennonites. The marketing of legume and grass seed

is handled through a seed growers' organization at Grande Prairie. Several livestock marketing associations are supported by the farmers of the Peace River.

The Dominion Experimental Station, at Beaverlodge, forms a nucleus for the dissemination of knowledge on agricultural topics, and farmers take a keen interest in their own experimental station.

Fig. 1.—The main street of the Town of Grande Prairie.

Fig. 2.—The Town of Peace River located in the valley of the Peace River.

Full-time commercial fishing in Lesser Slave Lake is carried on by company and private interests. Lumbering, generally, is for supplying local needs. On the fringe of present settlement, trapping is a fulltime occupation for many and a part-time one for some of the new settlers. As yet, mineral production is of little importance, although in years past oil possibilities were investigated, and the search for oil pools has recently been renewed.

Location and Description of Districts Studied in The Peace River

During the survey of 1942, data were first obtained in the older and better established parts of the area. This was followed by a study in the various outlying districts, where settlement had been established for a shorter period of time and where development was still in its early stages. The following districts were those studied in detail during 1942.

Old Established District.—*Bear Lake, M.D. 740.*—This district extends north from the Wapiti River to within a few miles of the southern base of the Burnt Hills and westward from Grande Prairie to a few miles west of Wembley. It is an open parkland country with dark, heavy-textured soil and undulating topography. The district is typical of the parkland areas of the Peace River. Farmers are well established, and farm homes and buildings are equal to those in any good farming district in Western Canada. The farm organization tends towards grain production for market. The district has good rural services such as roads, schools, churches, and community organizations.

Fringe Areas.—*Debolt.*—This district borders the Grande Prairie and Edmonton highway, between the Smoky River and Sturgeon Lake. The distances to Clairmont, the nearest rail shipping point vary from 40 to 65 miles. The soil of the Debolt district is grey wooded of fairly heavy texture, and the topography is level to undulating. The unimproved land is heavily covered with trees, mainly poplar. Practically all settlement has taken place since 1927. While most farms have limited acreages under cultivation, the rate of land improvement has been accelerated in recent years. This has been the result of higher prices for livestock together with the profitable production of legume seed. At the hamlet of Debolt there are a couple of general stores, a feed grinding mill, a restaurant, a curling rink, and a community hall. There are a few other services provided, and generally these are in a pioneer stage of development. With the exception of the main highway (which as yet is not all-weather) roads are mostly trails through the bush.

Wapiti-Lymburn.—These two areas were studied at the time. The Wapiti is a narrow strip of country bordering the south side of the Wapiti River. The distances to Grande Prairie and Wembley, the nearest marketing centres, are approximately 25 to 35 miles. The Lymburn area is located between Hythe and the British Columbia boundary. In both areas soil and cover are similar to the Debolt district. Topography in the Lymburn area is gently rolling to rolling while in the Wapiti area it is level to undulating. The main marketable produce is livestock, with legume seed production increasing in importance.

Hines Creek.—This district is located between Hines Creek and the British Columbia boundary, and between the Peace River and the Clear Hills. Present settlement extends about thirty miles beyond the railhead at Hines Creek. The soil varies from a grey wooded to a second class parkland and is of fairly heavy texture. Forest cover resembles that of the Debolt district. Topography is undulating to gently rolling. The Hines Creek, Montagneuse and Eureka Rivers, which drain into the Peace River, have cut rather deep gorges across the district. A main dirt road, along which settlement is established, runs from Hines Creek northwest to Worsley. Other roads are no more than bush trails. The movement of settlers into this district commenced about 1927, and to date development of the area has not gone beyond the pioneer stage. Farmers gain their livelihood from the production of livestock.

Battle River.—This is the most northerly commercial agricultural settlement in Canada. The size of this district is approximately eight townships, and the southern end is about fifty miles north of Grimshaw. The Battle River district is a pocket of heavy-textured grey bush and parkland soil of level topography. Originally this pocket was covered with heavy bush, that was burned

over prior to the commencement of settlement. At some time in the past, the Battle River district was a large lake basin. An excellent dirt road connects the settlement with Grimshaw, fifty to seventy miles distant. This road is part of the winter road leading north to Great Slave Lake, N.W.T. Wheat and flax are the most important marketable crops grown, with livestock taking second place in the farm economy. North Star and Notikewin are two small hamlets which service the district. At these points are post offices, stores, churches, schools, community halls, and so on. A United Church hospital is located at Notikewin. Although there are daily trucking services to Grimshaw, there are children fourteen years of age in the settlement who have yet to see their first train. The Battle River district shows the greatest developmental progress of all the Peace River fringe areas, despite its isolated position. This is probably due to the fact that clearing of the land is less difficult.

The History of Settlement and Development

Competition between the Northwest and Hudson's Bay fur trading companies resulted in the early discovery of the Peace River. The search for new sources of furs caused these companies gradually to extend westward along the northern water routes. The Peace River was first ascended in 1792–93 by Alexander Mackenzie from Fort Chipewyan on Lake Athabaska. Several trading forts were established throughout the country during the next few years.

The early traders added to the variety of their table menus from the wild life of the country and from produce grown on the land in the vicinity of their forts. In a crude way, the suitability of the country for agriculture was proved by these fur traders; they found that the frost-free period was of sufficient length to produce vegetables and permit grain to ripen. Following the fur traders into the Peace River were the church missionaries, who experimented still further with the possibilities of agricultural production. Settlement, however, was limited and scattered until the turn of the present century.

About 1910 the Peace River came into prominence as an area of good, free land. The first settlers, in the era prior to construction of a railroad, proceeded via Athabaska and Lesser Slave Lake to Peace River Crossing (now Peace River town). Later, the Edson trail was cut from Edson to somewhere in the vicinity of Sturgeon Lake and Debolt, and thence to Grande Prairie. Land seekers travelled these two trails on foot, by oxen and horse team, and in wagons or sleighs. These early settlers secured their land chiefly by homesteading, and in some cases by purchase of South African War veteran's script. Agricultural development, however, awaited the arrival of the railroad. All supplies had to be hauled in overland, and little agricultural produce was marketed because of the distance to market.

The Edmonton, Dunvegan, and British Columbia Railway reached Peace River town in December, 1915 and Grande Prairie via Spirit River in July, 1916. The coming of the railroad was met with enthusiasm and optimism by the settlers. The general opinion held was that there would be a rapid expansion in agriculture, industry and construction, resulting in a new empire being founded in the north.

The next several years of history for the E.D. and B.C. Railway were difficult, with ownership changing hands and branch line extensions spasmodic. In 1920, the Alberta Government assumed responsibility for the railroad and leased it for operation to the Canadian Pacific Railway until 1926. Between 1926 and 1929 the Alberta Government operated the railroad under their own management. In 1929 the C.P.R. and C.N.R. acquired joint ownership of the road, under the name of Northern Alberta Railways (N.A.R.). Periodic ex-

tensions were made to this northern railroad to meet public demands, until in 1930, Hines Creek, Alberta and in 1931 Dawson Creek, British Columbia were reached. Each successive railhead became a "boom" town as the terminal of the railway moved westward, only to be deflated after it had passed.

The railway lines existing in 1931 have been maintained but no further extensions have been made. It is not to be construed from this, that further railroad expansion has not been considered. Several projects have been surveyed, and settlers in the outlying areas are very expressive in their desires for a railroad.

Since 1912, when the construction of a railroad into the Peace River was first suggested, there has been a growing demand for a Pacific outlet. This demand is as evident today as during the early period of settlement. The proposal is that a connection be made with the C.N.R. at some point in British Columbia.

GENERAL TRENDS IN THE PEACE RIVER

Census Division 16 does not include within its boundaries the whole of the Peace River nor, for that matter, all of the districts surveyed. It is, however, of sufficient size and so located, that the long-time trends in this division are indicative of the general growth and progress of the Peace River.

The rural population (Table 2) in Census Division 16 increased from 5,540 in 1916 to 26,349 in 1941. With the exception of a slight recession in the period 1921 to 1926, each census has indicated a growing rural population. Periods of most rapidly expanding population occurred immediately following the last war and during the "boom" period after 1926. The cause of these two periods of rapid expansion was the northward movement of land seekers.

TABLE 2.—POPULATION, AND NUMBER AND TENURE OF FARMS, 1916 TO 1941 [1]

Census Division 16

Year	Rural Population	Number of Farms	Owners	Part-owners	Tenants	Managers
	No.	No.	No.	No.	No.	No.
1916 [2]	5,540	1,488	.....	.....	.....	....
1921	10,730	3,578	3,061	310	207	....
1926	10,193	2,796	1,967	590	239	....
1931	24,766	6,977	6,024	658	295	....
1936	25,932	6,522	4,984	975	553	10
1941	23,349	6,395	4,252	1,474	649	20

(1) Census of Canada.

(2) Data on farm tenure not given in 1916 Census.

The number of farms in Census Division 16 followed a trend similar to that of rural population, and increased from 1,488 farms in 1916 to 6,395 farms in 1941. Tenure of farms was predominantly owner operated, although fluctuations occurred in the extent of ownership according to the prosperity of a given period. Of the 416 farmers reporting during the survey, 273 were owners, 127 were part-owners, and 16 were tenants. There has been a tendency since the war for an increase in part-owner operated farms. This is due to many farmers having enlisted and their holdings being operated by neighbours.

There were 371,505 acres in 1916 (Table 3) in occupied farms in Census Division 16, and by 1941 the amount of land occupied had increased to 2,066,907 acres. Most of this acreage increase was the result of additional settlement. The average size of farm in this Division was 250 acres in 1916 and 323 acres in

1941. The acreage of improved land changed during the same period from 75,804 acres to 951,416 acres; an increase from 51 to 149 acres per farm. That is, in 1916 only 20 per cent of the land was improved per farm, whereas in 1941 there was 46 per cent improved per farm.

Table 3.—Total Acres, Acres Improved and Acres in Field Crops of Occupied Farms, 1916 to 1941[1]

Census Division 16

Year	Total Acres	Acres Improved	Field Crops	Wheat	Oats	Percentage of Land Improved
	Ac.	Ac.	Ac.	Ac.	Ac.	%
1916	371,505	75,804	54,463	20,639	27,581	20
1921	879,945	243,570	170,589	58,548	84,690	28
1926	857,154	308,232	222,840	128,735	73,001	36
1931	1,804,418	674,179	491,390	305,922	150,206	37
1936	1,864,056	778,972	539,542	285,150	189,782	42
1941	2,066,907	951,416	611,594	313,886	213,324	46

(1) Census of Canada.

Acres sown to field crops increased correspondingly as more land was improved. In 1916 there were about 20,000 acres in wheat, and by 1941 over 300,000 acres. Similarly, acreage seeded to oats for the same period increased from 27,500 to 213,000 acres. In the early years of settlement the acreage sown to oats exceeded that to wheat. However, during the period 1916 to 1941, the wheat acreage increased more rapidly than oats and in Census Division 16 it became a more important marketable crop.

The number of livestock (Table 4) increased as more farms were established. The livestock per farm, however, has remained relatively the same throughout the period 1916 to 1936; and did not increase proportionately to the rate of land improvement. During the period 1936 to 1941 the number of cattle in Census Division 16 declined markedly, while the hog population practically doubled.

Table 4.—Livestock Population, 1916 to 1941[1]

Census Division 16

Year	Horses	Cattle	Swine	Sheep
	No.	No.	No.	No.
1916	6,439	7,211	12,393	51
1921	18,461	39,675	14,457	3,821
1926	20,280	22,372	16,911	1,673
1931	30,111	28,731	37,793	6,339
1936	34,390	53,204	38,227	7,005
1941	38,792	37,631	71,744	7,299

(1) Census of Canada.

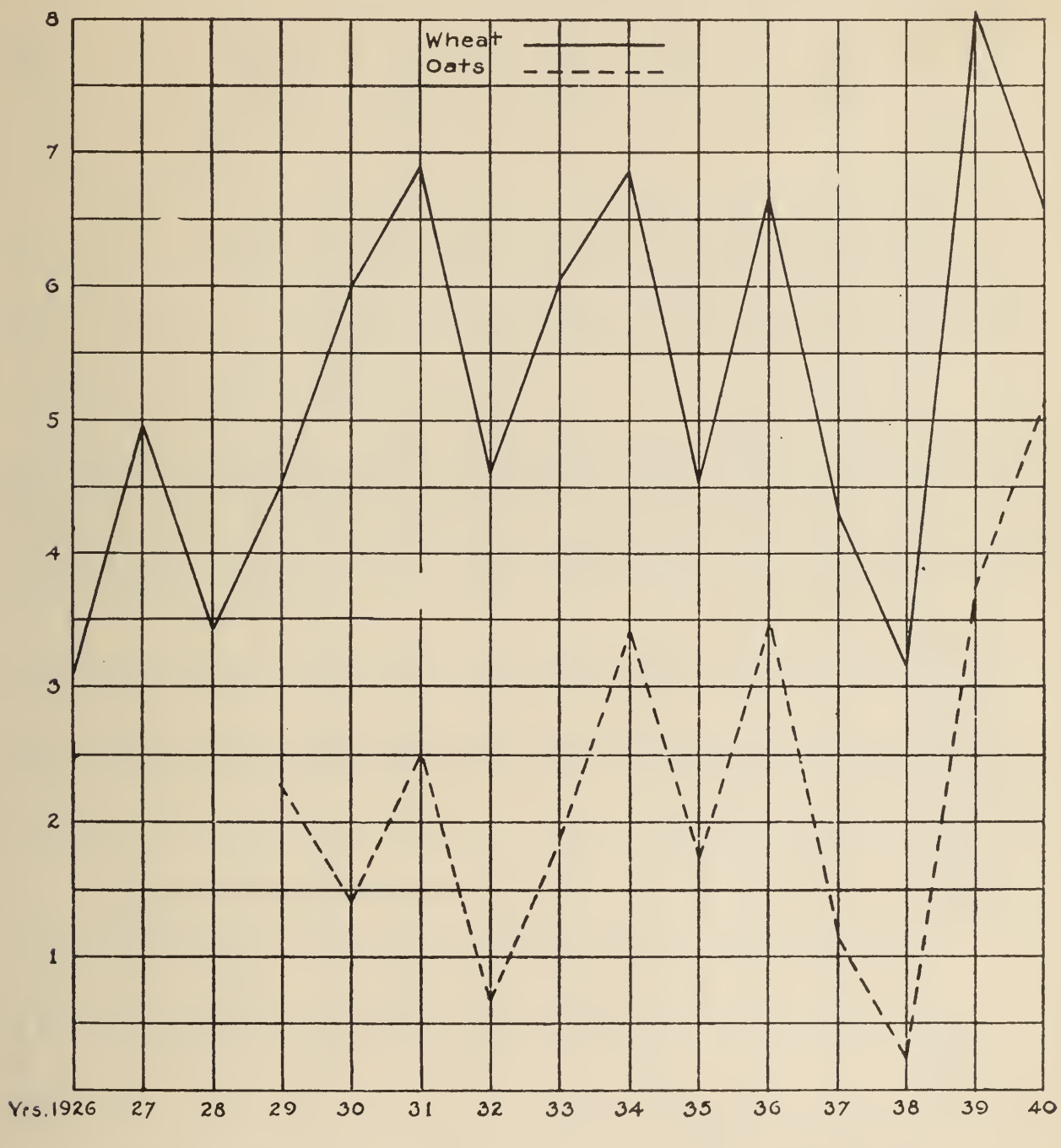
Table 5 gives the numbers of special kinds of machinery on farms in Census Division 16, for the years in which information was available. There was considerably less than an average of one per farm, of the items listed. The most common machine (as shown in the table) was the binder, and the figure in 1936 of 3,699 binders represented approximately one to every two farms.

CHART 1.

Wheat and Oat Shipments from the Peace River Country 1926-40

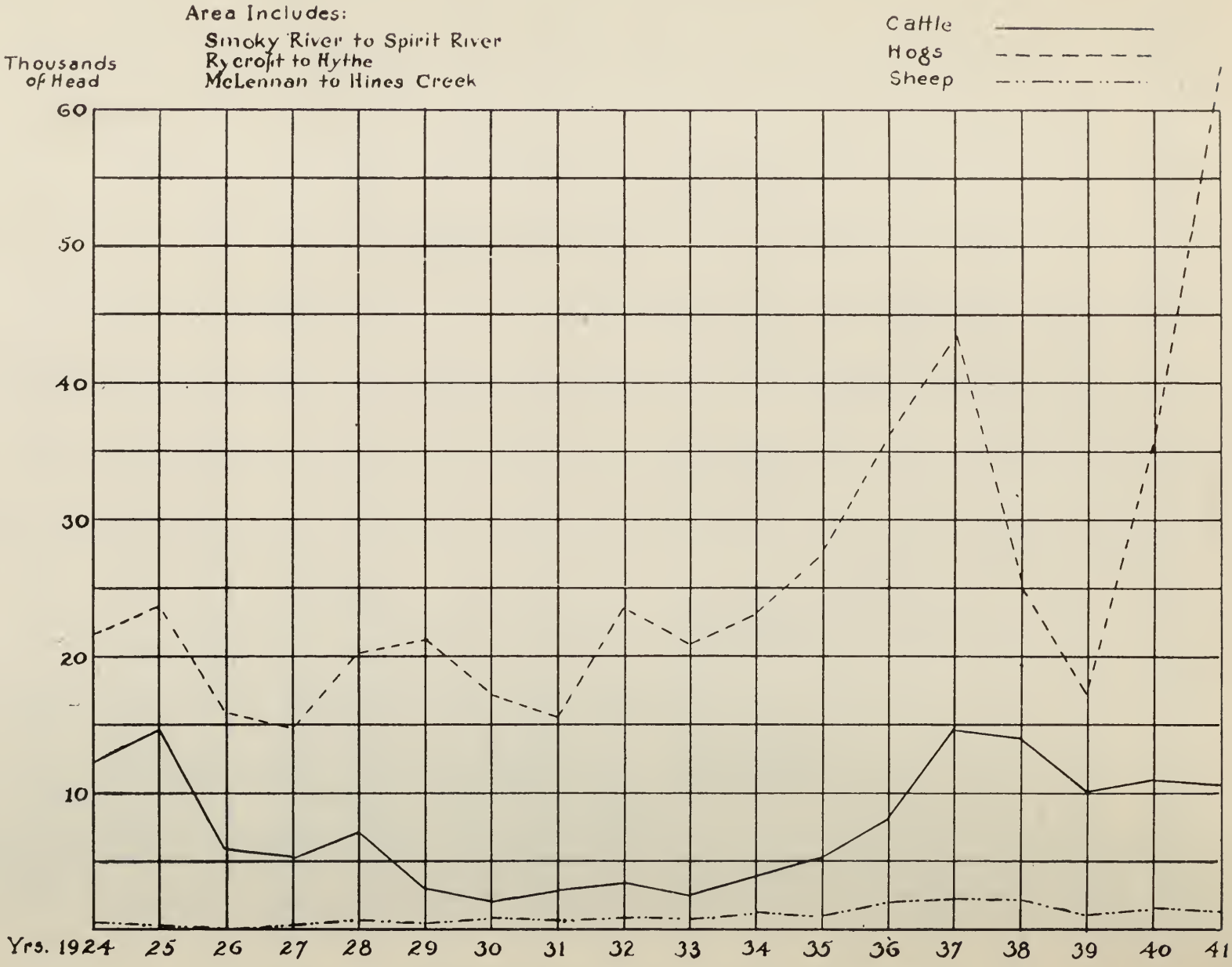
Millions of Bushels

Area Includes:—Smokey River to Spirit River
Rycroft to Hythe
McLennan to Hines Creek



Source of Data:—Dominion Experimental Station, Beaverlodge, Alberta.

CHART 2. Cattle, Hogs and Sheep Shipments from the Peace River Country 1924-41



Source of Data:—Dominion Experimental Station, Beaverlodge, Alberta.

Table 5.—Special Farm Machinery Numbers, 1926 to 1941 [1]

Census Division 16

Year	Cars	Trucks	Tractors	Separators	Combines	Binders
	No.	No.	No.	No.	No.	No.
1926	339	15	185	..... [2]	..... [2]	..... [2]
1931	1,694	194	980	490	23	3,089
1936	1,466	156	945	517	44	3,699
1941	1,838	382	1,562	..... [2]	29	..... [2]

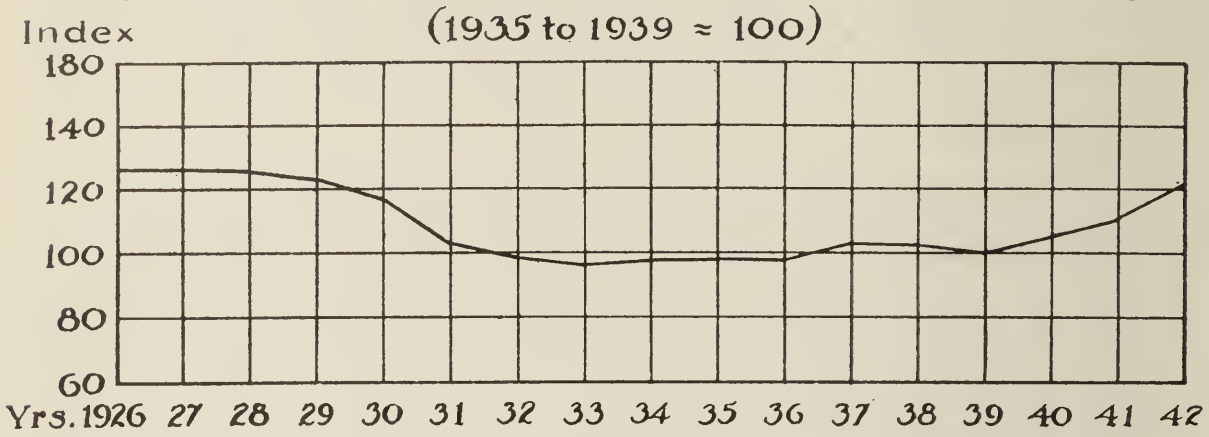
(1) Census of Canada.
(2) Data not available.

Shipments of grain (wheat and oats) and of livestock from the Peace River are shown in Charts 1 and 2 for a series of years. Marked year-to-year fluctuations in grain shipments are indicated. The fluctuations have resulted from two causes, namely: (1) variations in yields due to weather; and (2) the time of marketing the crop. In 1939 over eight million bushels of wheat were shipped, this being the highest on record. The high year for oats was 1940, with shipments exceeding five million bushels.

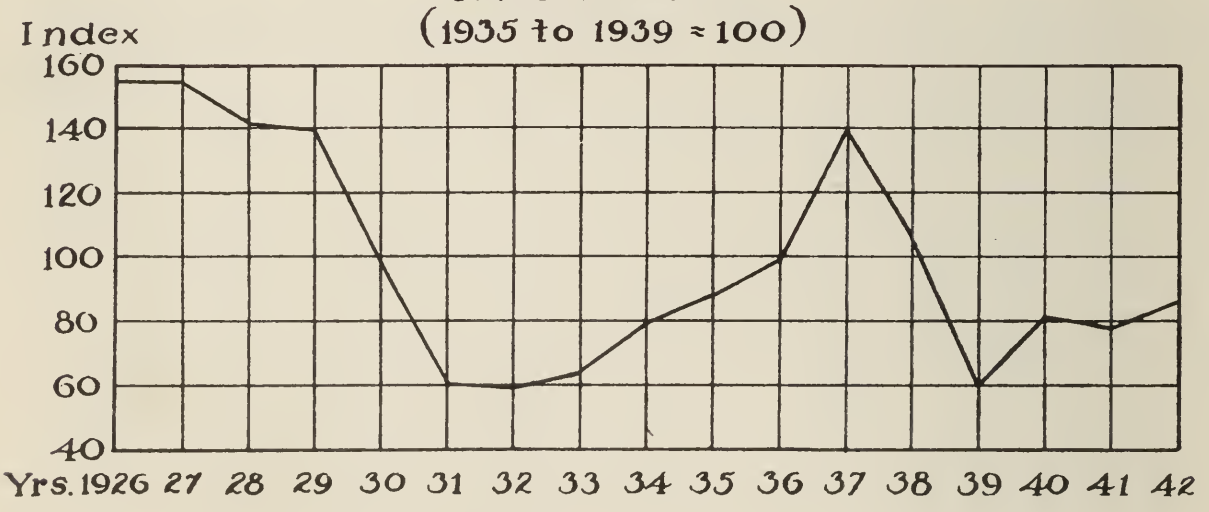
Livestock shipments have fluctuated from year to year, but not to the same extent as grain shipments. During the period 1924 to 1941 hog marketings have maintained an upward trend. This trend has been accelerated since the beginning of the war, and hog shipments in 1941 reached approximately 63,000 head. Cattle shipments declined until 1930, but since that time they have shown a gradual increase. The numbers of sheep marketed have been small during the period 1924 to 1941.

Chart 3.

PRICE INDEX NUMBERS of COMMODITIES and SERVICES USED by FARMERS COMBINED with FARM FAMILY COST-of-LIVING INDEX NUMBERS WESTERN CANADA 1926 to 1942



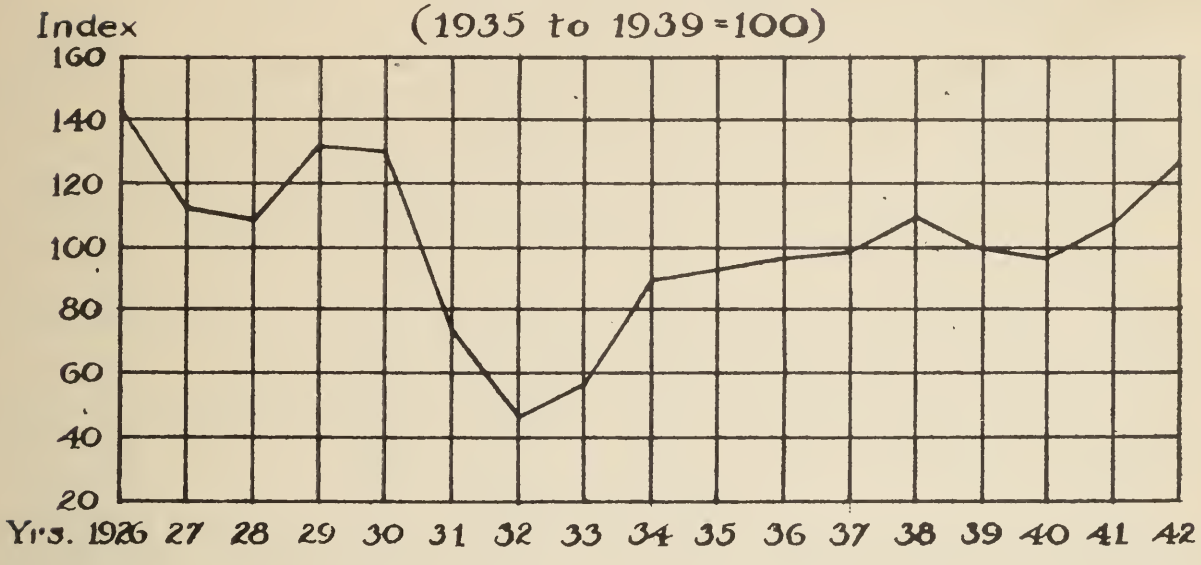
INDEX NUMBERS of WHEAT PRICES WHEAT No1 MANITOBA NORTHERN at FORT WILLIAM 1926 to 1942



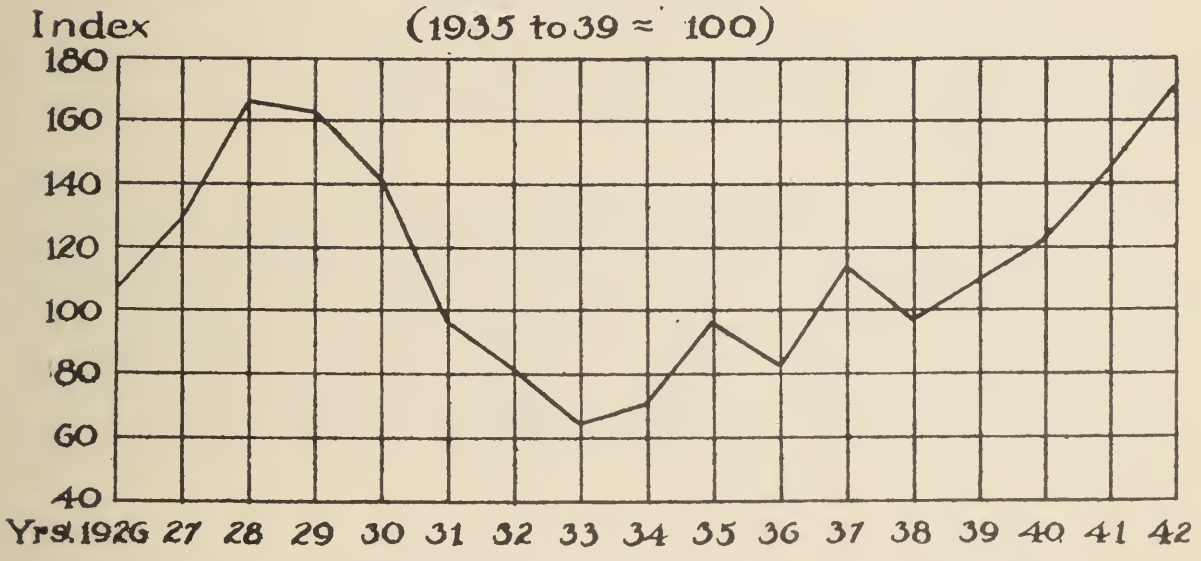
Source of Data- Dominion Bureau of Statistics

Chart 4.

INDEX NUMBER of HOG PRICES
HOGS at WINNIPEG
1926 to 1942



INDEX NUMBER of CATTLE PRICES
STEER ~ GOOD at WINNIPEG
1926 to 1942



Source of Data- Dominion Bureau of Statistics

Current Economic Factors Affecting Farming in the Peace River

The war has affected both the demand and price of agricultural commodities. Charts 3 and 4, portraying the long-time price indices of various commodities for a series of years, show that substantial changes in relative prices have occurred, with consequent effects on the relative profitability of different enterprises. By items, the significance of the price movements for the year 1941–42 was as follows:

1. Commodities and Services Used by Farmers, Combined with Farm Family Cost of Living.—There was some upward movement of the index during the year under review, the index in 1942 being 22 points above the 1935 to 1939 base of 100.

2. Wheat.—The government by means of the Wheat Board had stabilized the price of wheat. The price was still below the average of 1935 to 1939.

3. Hogs.—Because of a large overseas demand for bacon and pork products, the price of hogs showed a rapid upward trend. For 1942 the price index was 27 points above the 1935 to 1939 base index of 100.

4. Cattle.—The demand for beef was similar to that for pork, with a correspondingly rapid rise in price. The cattle price index for 1942 stood at 172 or 72 points above the 1935 to 1939 base period of 100.

Hand in hand with increased prices for pork and beef, there has been a governmental program to encourage increased production of these commodities. Some farmers, and particularly those on the fringe areas, have been able to emphasize hog and cattle production, and thus take advantage of these price increases. Farms organized for the production of wheat, necessitating the utilization of large acreages and large machinery, have not been able to the same extent to take advantage of the demand for pork and beef. Even where these farmers have attempted to increase their production of hogs and cattle, they still had to use a large proportion of their acreage in growing wheat.

The fall of 1941 in the Peace River was one adverse to the harvesting and threshing of grain. A prolonged wet spell caused many crops to remain uncut or in the stook over winter. Much grain was lost, with a resulting loss of income to the grain farmer.

The relatively advantageous position of the producer of livestock and livestock products compared with the grain producer, for the period under review, was to some extent offset by: (1) the payment of storage on grain held on the farm until such time as it could be marketed; (2) the Wheat Acreage Reduction bonus, whereby a bonus was paid to farmers for land taken out of wheat and summerfallowed or seeded to grass; and (3) the Prairie Farm Income bonus, whereby a bonus was paid to farmers on cultivated land up to a limit of 200 acres or $150. These policies, as a rule, were of more importance in increasing the income of the farmers emphasizing grain growing than of those emphasizing livestock production.

The foregoing facts should be taken into account, when an appraisal is being made later on in this study of the merits of the different types of farming ractised in the Peace River.

The fringe areas of the Peace River were settled just prior to and during the depression. Many of the settlers were on relief, and little progress was made in farm development. The farms were operated during this period with a very low overhead cost. Because of demand and prices since the war, for livestock products, these settlers have obtained higher incomes. With a surplus of cash, they have been able to pay for land improvement, purchase breeding stock, and become more firmly established in the business of farming.

As previously mentioned, the distance from the Peace River to Edmonton varies from 300 to 450 miles. This distance results in higher costs in the marketing of farm products, compared with most other farming areas of the west. The approximate freight charges between the Peace River and Edmonton are as follows:

Livestock	35c per 100 pounds
Incoming freight	60c to $1.40 per 100 pounds, depending upon the class of freight
Grain	The highest rate on grain for export from the Peace River is 6 to 7 cents higher than from Edmonton.

In addition to the higher freight costs, the fringe areas, which are 25 to 75 miles away from a rail shipping point, have high trucking expenses in connection with the marketing of produce. Typical trucking costs are:

Grain	7c to 10c per bushel
Hogs	$1.00 per head
Cattle	$3.00 per head

These extra marketing costs, as compared with those at Edmonton, are of lesser importance during a period of normal or above-normal prices. They are, however, very important at a time when prices are depressed as they were in 1932.

Sources of Data

During the summer of 1942 a field party studied farming in the Peace River, visiting about 416 settlers and securing from each a record of the farm business for the previous crop year. Information was obtained from each co-operator on the history of the land, its utilization, farmer's receipts, expenses, indebtedness, living costs, and family history. Other related data were also obtained. This information was later analysed in order to secure a picture of returns on farms in the Peace River.

Municipal and provincial government records provided useful material on tax delinquency, agricultural relief indebtedness, and so forth.

Land Acquisition and Tenure

Settlement commenced in the Bear Lake district about 1910, and by 1916 most of the best land had been occupied. Only 38 per cent of the settlers interviewed had started farming in the district during the early years of settlement, when land was available for homesteading (Table 6). During the thirty odd years of agricultural development in the Bear Lake District, a great deal of land has changed hands with the result that 51 per cent of the farmers interviewed purchased their farms when first starting to farm. Only 9 per cent of the farms were rented, some of which may have been purchased later.

Table 6.—Relative Importance of Different Methods of Acquiring First Parcel of Land

Acquisition	Bear Lake		Fringe Areas	
	Number	Percentage	Number	Percentage
Homestead	34	38	275	84
Soldier's grant	.....	...	4	1
Purchased	46	51	31	10
Legacy	2	2	2	1
Rented	8	9	14	4
Total	90	100	326	100

The Fringe Areas surveyed, on the other hand, were for the most part settled in the late twenties and early thirties. As a probable consequence of this recent settling of the area, it was found that 84 per cent of the farmers interviewed commenced farming by homesteading, and only 10 per cent had purchased. First acquisition by renting was 4 per cent. Under the Provincial Lands Act, 1939, homestead privileges, which then existed, were abolished.[1]

(1) All Crown Lands are now acquired for farming purposes either by Agricultural or Cultivation Lease. In the first instance, up to one-half section of which at least 50 per cent must be arable land is leased for a twenty-year period. After ten years, the tenant is given the option of purchasing the land, at a price based upon a fair valuation. The Cultivation Lease is given for a ten-year period, providing the parcel of land is at least one-third arable. No option to purchase is given with the Cultivation Lease. Under either method improvements up to, or above a stipulated amount must be made each year.

In the Bear Lake District and the Fringe Areas the land tenure picture (Table 7) at the time of the study was quite similar. Approximately two-thirds of the farms were owner operated, and one-third were part-owner operated. A part-owner farm is one where the farmer owns part of his land and rents additional land. Renter-operated farms made up a small proportion of the total farms surveyed.

Table 7.—Distribution of Land Tenure

Tenure	Bear Lake		Fringe Areas	
	Number	Percentage	Number	Percentage
Owners	60	67	213	65
Part-owners	25	28	102	31
Renters	5	5	11	4
Total	90	100	326	100

PROGRESS OF SETTLERS IN IMPROVING LAND AND COSTS OF LAND IMPROVEMENT BY THE USE OF POWER MACHINERY

The rapidity with which a bush farm can be brought into cultivation is contingent upon three factors, namely: the type of bush cover; the initiative

Fig. 3.—Light cover being cleared.

of the settler; and the resources at the farmer's command, either in the form of money or equipment. In the past, the clearing of bush lands has, for the most part, been done by hand. This, at best, is a slow, laborious process. Table 8 gives the average annual rate of land improvement in the Fringe Areas over a fourteen-year period, and also the total acres of improved land per farm at the end of this time.

Fig. 4.—Medium to heavy cover being cleared.

Fig. 5.—Home-made brush cutter at work in light cover.
About 5 acres per day may be cleared.

Fig. 6.—Recently improved bush land.

Table 8.—Average Annual Progress of Fringe Area Settlers in Improving Land Over a Fourteen-year Period[1]

District	Average Acres Improved per Year	Cumulative Acres Improved
	Ac.	Ac.
Debolt	4.5	63.5
Wapiti–Lymburn	4.3	60.3
Hines Creek	4.3	60.6
Battle River	7.9	110.3

(1) See Appendix Tables I, II, III, and IV for additional data on rates of progress of land improvement.

As indicated in Table 8, the rate of land improvement in the Debolt, Wapiti-Lymburn, and Hines Creek districts was practically the same. The cover of these areas was very similar, being mostly poplar growth of medium or average density. The topography which was level to undulating was not an obstacle to the clearing of the land. The Battle River district, on the other hand, while also quite level was more open and parklike in nature at the time of settlement, and thus permitted land to be cleared and improved more rapidly.

Farmers during the past year or two have commenced using power machinery for the clearing and breaking of bush lands. There are three important reasons to explain this tendency to use power machinery for the improvement of land: (1) higher prices for agricultural produce have given settlers a surplus of funds over and above those needed for the normal farm and living expenses; (2) shortage of labour; and (3) the use of mechanized machinery in wartime for both combat and construction purposes has caused settlers to become more power-equipment conscious. At the present time considerable interest is being shown in the type of power equipment used, the rate at which land improvement is accomplished, and the costs involved in the use of power equipment for land improvement.[1]

(1) Acton, B.K., "The Use of Power Equipment in the Improvement of Alberta Bush Lands," Publication No. 7[illegible]5, Department of Agriculture, Ottawa, 1944.

The Fertility of the Soil

Data presented in Table 9 indicate a difference in the productivity of parkland and grey wooded soils. On parkland soils the average yield of wheat was 20 bushels per acre and of oats 37 bushels. In the same period on the grey wooded soils the average yield per acre for wheat was 17 bushels and for oats 30 bushels. These yield data were compiled from records at the Soldier Settlement of Canada office in Edmonton. In order to secure a sufficient sample by soil type, it was necessary to use yield histories from the whole of the Peace River. This is not entirely satisfactory, as the country is so large that in any one year many factors are apt to influence the average yield on the same soil type, as between one part of the area and another. A further difficulty arises from the fact that soil maps of the Peace River, being based on a broad reconnaissance survey, do not show small changes in soil type.

Table 9.—Wheat and Oat Yields per Acre by Soils Type[1]

Year	Parkland (Transition) Soils		Grey Wooded Soils	
	Wheat	Oats	Wheat	Oats
	Bu.	Bu.	Bu.	Bu.
1931	21	32	24	41
1932	19	37	18	31
1933	24	44	19	33
1934	21	53	21	39
1935	18	36	14	18
1936	24	37	16	30
1937	12	16	11	20
1938	7	20	12	21
1939	21	35	15	34
1940	25	46	17	30
1941	26	39	22	38
1942	24	37	16	37
1943	13	27	11	30
Thirteen-year Average	20	37	17	30

(1) Data taken from the files of the Soldier Settlement of Canada district office, Edmonton, Alberta.

Despite these limitations, the available data indicate that in the long run higher yields may be expected from the parkland than from the grey wooded soils.

There is also evidence that the quality of grain produced on these two types of soil differs. Wheat grown on parkland soil generally has a somewhat higher protein content and is of better quality than wheat grown on grey wooded soil. This affects its marketability as a cash crop.

Origins and Other Characteristics of the Settlers

The settlers interviewed in the Peace River represented three main groups, namely: Anglo-Saxon, Western Europeans (Scandinavian, German, and French), and Central Europeans including Russians (Table 10).

Table 10.—Distribution of Origin of Farm Operators

Origin	Bear Lake		Fringe Areas	
	Number	Percentage	Number	Percentage
Anglo-Saxon	59	67	144	45
Western Europeans (Scandinavian, German, and French)	21	24	94	30
Central Europeans and Russians	8	9	78	25
Other	....	....	1	....
Total	88	100	317	100

In the Bear Lake District 67 per cent of the farmers interviewed were of Anglo-Saxon origin, and 24 per cent were Western Europeans.

In the Fringe Areas, or those districts most recently settled, 45 per cent of the farmers interviewed were Anglo-Saxon, and 55 per cent were of foreign origin—30 per cent Western European and 25 per cent Central European.

Seventy-five per cent of the farmers interviewed in the Bear Lake District and 62 per cent in the Fringe Areas were born in English speaking countries (Table 11). The place of birth of the remainder was either Western or Central Europe including Russia. Only 4 per cent of the farm operators in both groups were born in Alberta. In the Bear Lake District 44 per cent of the farmers were born in Canada. Many settlers in this district were raised in Ontario.

Table 11.—Distribution of Birthplace of Farm Operators

Birthplace	Bear Lake		Fringe Areas	
	Number	Percentage	Number	Percentage
Alberta	4	4	14	4
Canada (*excluding Alberta*)	36	40	96	29
United States	10	11	58	18
British Isles	18	20	35	11
Other	22	25	123	38
Total	90	100	326	100

Most settlers in the two areas were married (Table 12). The average age of the farm operators was 51 years in the Bear Lake District and 46 years in the Fringe Areas. There was a difference in the number of children (at home) per farm family. In the Bear Lake there were 2.5 children per farm family, while in the Fringe Areas the number was 3.5 children.

Table 12.—Distribution of Conjugal State, Age of Farm Operators, and Number of Children per Farm Family

	Bear Lake		Fringe Areas	
	Number	Percentage	Number	Percentage
Conjugal state:				
Married	73	81	253	78
Single	9	10	64	19
Widower and widow	8	9	9	3
Total	90	100	326	100
Average age of operator	51	....	46	....
Average number of children per farm family	2.5	....	3.5	....

Type of Farming

The Peace River may be broadly described as a mixed or diversified farming area, with the exception of some of the older and better districts that specialize in grain production. In this study, the farms were placed into various classes and sub-classes, on account of differences in the farm organization. There were many factors which contributed to these differences in farm organization:

1. The physical characteristics of the land.—Grain production was associated with good cultivable land; while livestock production was usually associated with poorer land, better suited to pasture. The quality of the soil also affected the quality of the wheat marketed.

2. The preferences of the operator.—Some farmers preferred producing livestock to raising crops for sale. It was a matter largely of their individual choice.

3. The stage of development of the farm—On some farms there was not sufficient acreage improved to produce a surplus above that required for farm home consumption.

4. Markets.—Distance from market influenced the type of farming practised. But type of farming was also affected by the relative prices of different products.

Two broad classes of farms were first defined and then each divided into sub-classes. Generally, the farms were classified as being either (1) Subsistence or (2) Commercial.

A Subsistence farm may be defined as a farm from which the bulk of the farm produce raised is used for farm living. This type of farm may be the result of one or more causes: (a) poor land, (b) an early stage of development, (c) the settler pursuing other activities (such as lumbering or trapping) or in possession of unearned income, who uses his holding as a home and to supplement his income.

The Commercial farms, on the other hand, were those where the settler confined his endeavours largely to producing marketable commodities, and derived his living from the sale of these commodities.

For purposes of this study, these Subsistence and Commercial farms were further classified.

Of Subsistence farms, three sub-classes were made:

1. Self-Sufficient (9 farms) where the value of the perquisites contributed by the farm was more than 75 per cent of the total returns (that is, farm and non-farm returns).

2. Pensioners (9 farms) were those farms where their operators received a pension amounting to more than 50 per cent of the farm returns.

3. Part-Time (78 farms) were those farms where receipts from outside work amounted to more than 50 per cent of the farm returns.

(All of the Subsistence farms were in the Fringe Areas.)

Of the Commercial farms, there were four sub-classes made:

1. Grain (65 farms) were those farms where the crop returns were greater than 75 per cent of the total farm returns.

2. Mixed-Grain (72 farms) were mixed farms emphasizing grain production, and where the crop returns were greater than 50 per cent of the total farm returns but not in excess of 75 per cent of the total farm returns.

3. Mixed-Livestock (67 farms) were mixed farms emphasizing livestock production, and where the livestock returns were greater than 50 per cent of the total farm returns but not in excess of 75 per cent of the total farm returns.

4. Livestock (116 farms) were those farms where livestock returns were greater than 75 per cent of the total farm returns.

Subsistence Farms

Subsistence farmers, generally, received insufficient income from the farm to meet their farm operating and living costs. These Subsistence farmers were located in the Fringe Areas. There was none in the Bear Lake District. Only 18 farmers, of all those interviewed in the summer of 1942, were classified as being Self-Sufficient or Pensioner—the number in each class being 9. There was, however, a large number of Part-Time farm operators, who earned substantial sums of money off the farm. These three sub-groups of Subsistence farms are described with respect to farm organization, income, and so forth, in the next few pages.

Land Use.—The most common size of the Self-Sufficient and Pensioner farms was the quarter-section unit for land owned by the operator. The Part-Time farms were approximately one-and one-half quarters in size for land owned by the farmer (Table 13). In many cases, however, additional land was rented by the settler, which increased both the average size of farm and the acres of cropland. On these groups of farms, in 1941 the acreages of cropland were: Self-Sufficient, 51 acres; Pensioner, 62 acres; and Part-Time, 79 acres.

FIG. 7.—A newly constructed Hudson's Bay Post at Sturgeon Lake.

TABLE 13.—PRESENT AND POTENTIAL USE OF LAND IN SUBSISTENCE FARMS

	Self-sufficient	Pensioner	Part-time
Number of farms.....No.	9	9	78
(a) Present Use—Average per Farm			
TOTAL ACRES:			
Cropland, 1941.....Ac.	51	62	79
Total operated.....Ac.	195	248	315
LAND OWNED BY OPERATOR:			
Cropland, 1941.....Ac.	48	47	63
Farmstead.....Ac.	2	1	3
Improved.....Ac.	50	48	66
Unimproved.....Ac.	127	129	175
TOTAL OWNED.....Ac.	177	177	241
(b) Potential Use—Average per Farm			
LAND OWNED BY OPERATOR:			
Improved.....Ac.	50	48	66
Unimproved arable.....Ac.	98	95	142
TOTAL ARABLE.....Ac.	148	143	208
Proportion of total acres improved.....%	29	27	27
Proportion of total acres unimproved arable.....%	55	54	59
TOTAL ARABLE.....%	84	81	86

Fig. 8.—A general store in the frontier Town of Hines Creek.

The principal crops grown on these Subsistence farms were wheat and oats. The land was apportioned generally, as follows: 20 per cent to wheat; 20 per cent to oats; 20 per cent to summerfallow; and 20 per cent to hay and other crops. Usually one or two acres of new land were brought into cultivation each year.

The amount of arable land per farm suggests the extent to which development of the farm may be possible in the future. Approximately 85 per cent of the land of Subsistence farms was considered arable by those settlers interviewed. The generally favourable topography of the Peace River was an important factor determining this high degree of land arability per farm.

Numbers of Livestock.—As stated earlier in this report, the Peace River is a diversified farming area. It would be expected, therefore, that even on the Subsistence farms there would be some livestock kept.

Table 14 indicates that there were sufficient horses on the average, on these Subsistence farms, to furnish the power necessary for the farm work. The numbers of horses per farm for each group averaged four or more.

Table 14.—Average Numbers of Livestock at the Beginning of Year and Sold on Subsistence Farms—1941

	Self-sufficient	Pensioner	Part-time
	No.	No.	No.
Number of farms	9	9	78
Horses: beginning of year	4	4	5
sold	....	....	....
Cattle: beginning of year	5	2	3
sold	1	1	1
Hogs: beginning of year	6	1	5
sold	19	5	13
Average number of animal units per farm (excluding horses) [1]	7.9	3.6	6.7

(1) See Appendix for table defining animal units.

Livestock was of more importance on the Self-Sufficient farms than on either of the other groups. The average number of animal units per farm as shown in Table 14 indicates the relative importance of livestock for each group of farms.

Farm Capital Statement.—The total amount of capital invested in the Self-Sufficient and Pensioner farms was considerably less than that invested in Part-Time farms (Table 15). Value of real estate was greater on the Part-Time farms, because of the larger unit involved. This group of farmers also had greater amounts invested in both livestock and equipment than did the other two groups. It would be expected, therefore, that Part-Time farmers would have more saleable farm products and greater farm receipts than either Self-Sufficient or Pensioner farmers.

TABLE 15.—DISTRIBUTION OF FARM CAPITAL, SUBSISTENCE FARMS, AS OF MAY 1, 1942[1]

	Self-sufficient	Pensioner	Part-time
Number of farms.....No.	9	9	78
Farm real estate.....$	972	1,172	1,914
Livestock.....$	530	431	712
Equipment.....$	259	308	614
Value of feed, seed, and supplies.....$	101	77	133
TOTAL FARM CAPITAL.....$	1,862	1,988	3,373

(1) Farm capital is calculated on a farm unit basis.

Operating Statement.—The measures of farm earnings are compared in Table 16 for the Subsistence farms.

Revenue from livestock sales, particularly hogs, formed a large portion of the cash farm receipts. On the Self-Sufficient farms, livestock receipts comprised 80 per cent of the cash farm receipts. Crop and other farm produce sales (butter, eggs, and so forth) were of lesser importance as a source of farm income on these farm groups.

Although the size of farm operated by the Self-Sufficient and Pensioner farmers was very similar, the total cash expenses (cash farm expenses plus capital expenditures) were somewhat greater on the latter group. The total cash expenses of $519 (approximately $250 greater than expenses on Self-Sufficient and Pensioner farms) on the Part-Time farms may be accounted for in the somewhat larger farm unit.[1]

(1) See Appendix for itemized tables of cash receipts and total farm expenses.

TABLE 16.—OPERATING STATEMENT, SUBSISTENCE FARMS, FOR YEAR ENDING MAY 1, 1942

	Self-sufficient	Pensioner	Part-time
Number of farms	9	9	78
	$	$	$
Cash farm receipts	376	213	559
Increase in inventory	97	73	220
Total receipts	473	286	779

TABLE 16.—OPERATING STATEMENT, SUBSISTENCE FARMS, FOR YEAR ENDING MAY 1, 1942 (*Cont'd*)

	Self-sufficient	Pensioner	Part-time
Cash farm expenses	145	190	278
Capital expenditures	82	79	241
Total cash expenses	227	269	519
FAMILY INCOME FROM FARM	246	17	260
Cash living expenses	286	291	413
Less cash board of paid labour	1	2	6
Cash family living expenses	285	289	407
Family net income from farm	*—39*	*—272*	*—147*
Cash receipts non-farm	31	325	321
FAMILY NET INCOME FROM ALL SOURCES	*—8*	53	174
Family income from farm	246	17	260
Value of unpaid labour and board	66	61	140
Interest on capital	89	98	159
Total unpaid labour and interest	155	159	299
OPERATOR'S LABOUR INCOME	91	*—142*	*—39*
Value of perquisites	379	208	282
Less value of perquisites to paid and unpaid labour	12	11	30
Perquisites to operator	367	197	252
OPERATOR'S LABOUR EARNINGS	458	55	213

The family net incomes from farms in the three sub groups were negative amounts, consequently the farm business failed to cover the operating and cash living expenses, and there was no surplus for payment of debts or for savings.

The average operator's labour income on self-sufficient farms was $91. The other two types of farms failed to earn a labour income for the operators. If, however, the value of farm perquisites is added to labour income, the labour earnings were $458, $55 and $213 respectively on the Self-Sufficient, Pensioner and Part-Time farms.

From the standpoint of the farm business for the year 1941–42, Self-Sufficient farmers came the closest to balancing their farm receipts with their necessary expenditures. The Pensioner group had the greatest financial loss on the farm business over the year. In the case of the Pensioner and Part-Time farmers the non-farm income more than offset the deficit 'net income' from the farm enterprises alone.

Family Living Expenses.—The gross cash living expenses of the farm family are provided out of the farm and non-farm receipts. The gross value of perquisites indicates to what extent the farm contributes directly to the family living. These gross figures, however, are not altogether satisfactory as an indication of the level of living the farm family is able to maintain. The size

of family affects the gross total living costs, and in order to have a usable comparative figure it is necessary to find a common unit of expression.

This is accomplished by calculating children under fourteen years of age as equivalent to half an adult and expressing monthly living costs and values of perquisites on a per-adult basis (Table 17).

Fig. 9.—A rural school in the Bear Lake District.

Fig. 10.—A rural school in the Wapiti district.

TABLE 17.—CASH AND NON-CASH LIVING COSTS ON SUBSISTENCE FARMS

	Self-sufficient	Pensioner	Part-time
	No.	No.	No.
Number of farms	9	9	78
AVERAGE PER FARM:	$	$	$
Cash board	159	154	210
Other family expenses	127	137	203
Total cash expenses	286	291	413
Use of house	32	27	34
Farm produce used	347	180	248
Total perquisites	379	207	282
TOTAL LIVING	665	498	695
MONTHLY AVERAGES PER ADULT UNIT:			
Cash board	3	5	5
Other family expenses	2	4	5
Total cash expenses	5	9	10
Use of house	1	1	1
Farm produce used	6	6	6
Total perquisites	7	7	7
TOTAL LIVING	12	16	17

Monthly living expenses on the Self-Sufficient farms on a per-adult basis were $3 for cash board and $2 for such items as clothes, health, entertainment, and insurance (Table 17). Cash expenditures for living on the Pensioner and Part-Time farms were practically double that of the Self-Sufficient group; non-farm income, no doubt, helped to provide these two groups of Subsistence farmers with a higher level of living than they otherwise would have enjoyed.

The monthly value of perquisites on all groups of Subsistence farms was the same, namely $7 per adult. The lower cash living expenses of the Self-Sufficient farmers were not offset by a proportionate increase in perquisites.

Net Worth.—Table 18 shows the assets, liabilities, and net worth of the farmers on the three sub-classes of Subsistence farms. It also shows the change in net worth of the farmers as between the beginning and end of the business year. This change in net worth is an indication of the success of the year's business.

TABLE 18.—NET WORTH STATEMENT, SUBSISTENCE FARMS, AS OF MAY 1, 1942[1]

	Self-sufficient	Pensioner	Part-time
Number of farms.....No.	9	9	78
Total assets.....$	1,922	1,903	3,305
Liabilities.....$	417	79	398
Net worth.....$	1,505	1,824	2,907
Change in net worth, 1941–42.....$	—*11*	75	159

(1) Net worth is calculated on an operator basis.

On an average Self-Sufficient farmers showed a decrease in net worth amounting to $11, whereas the Pensioner and Part-Time farmers had increases in net worth of $75 and $159 respectively. The explanation for this was the revenue from non-farm sources obtained by the latter two groups as indicated in Table 16.

Progress of Settler Since Starting on Farm.[1]—The change in net worth for one year may not reflect the general progress being made by a farmer, because of variations that may occur in any one year from the long-time average with respect to prices, crops, and so forth. The change in net worth since the settler started on the farm is a more significant measure of progress or lack of progress. To express this, for comparative purposes, the total gain in net worth was divided by the number of years since the settler started on the farm, and is shown in Table 19. Subsistence farmers had on the average operated their farms for a period of twelve years.

(1) Due to incomplete data on some of the records, a smaller sample was used in this analysis.

Table 19.—Progress of Settler Since Starting on Farm, Subsistence Farms

	Self-sufficient	Pensioner	Part-time
Number of farms.....No.	5	5	52
Average number of years settler on farm.....Yrs.	10	12	12
Net worth beginning.....$	390	2,130	727
Net worth May 1, 1942.....$	1,368	1,294	3,064
Change in net worth per year.....$	98	—70	196
Average outside income per year.....$	99	125	197

The increase in net worth per year of Self-Sufficient farmers was $98, which was practically the average of income per year received from outside sources. Gain in net worth per year of Part-Time farmers amounted to $196. While these farm businesses as indicated in Table 13 were larger than those of the other two groups, the outside income was greater and also averaged the same as the gain in net worth. The Pensioner group not only had the use of a pension during the years of residence, but over the same period reduced their initial capital (net worth beginning) by $70 per year.

The Effect of Non-Farm Income on the Farm Businesses of Part-Time Farmers.—Part-Time farms were those farms on which non-farm income received by the operator amounted to more than 50 per cent of the farm returns. Sources of non-farm income were many and varied, as the following list indicates.

Sources of Non-Farm Income on Part-Time Farms

Custom work: threshing
grinding feed
Operation of a tractor
Road work
Hauling ice
Cutting ties
Trapping
Sale of lumber, logs, cordwood, posts
Owner of a sawmill
Outfitter for hunting parties
Installing river ferry
Postmaster (post-office)
Census enumerator
Clerk in store
School teaching (wife)
School secretary
Boarding teacher and others
Forestry look out
Investigator of dependents' allowances

Work on other farms
Logging and lumbering
Working on railroad section gang
Mining
Blacksmith
Mechanic
Carpenter
Weed inspector
Prairie Farm Income Bonus
Legacies, gifts
Pensions (war)
Army (allowances from sons or husband)
Wheat Pool dividends
Government relief

Employment, other than in agriculture, is limited in extent and to a limited number of settlers. With a further development and expansion of this country, it may be possible for more settlers to find part-time work in a number of seasonal occupations or part-time community activities.

The 78 Part-Time farms were analysed and studied according to the total amount of outside income received by the operator during the business year 1941–42. They were first divided into three main groups by non-farm income ranges, for analysis, namely: (1) those farmers receiving non-farm income up to $300; (2) those farmers receiving non-farm income between $301 and $600; and (3) those farmers receiving non-farm income in excess of $600, for the business year 1941–42.

The Part-Time settlers earning the most outside income operated the largest farms (Table 20). No doubt the extra funds obtained as non-farm income permitted these farmers to purchase additional equipment for the farming of greater acreages; on the other hand, the possession of machinery aided in the securing of non-farm employment such as in road construction.

Table 20.—Land Use by Amount of Outside Income on Part-time Farms

	Average Non-farm Income per Year per Farm		
	$300 and Below	$301 to $600	$601 and Over
Number of farms....No.	23	34	21
Total acres operated....Ac.	236	306	416
Total acres owned....Ac.	215	258	244
Acres cropland, 1941....Ac.	50	76	117
Acres cropland owned, 1941....Ac.	47	66	78

The operating statement of the Part-Time farmers, for the business year 1941–42, by amounts of non-farm income received indicated that farm earnings increased as non-farm income increased (Table 21).[1] The family income from farm averaged $71, $261, and $466 respectively for the $300, and below, $301 to $600, and over $600 groups. The family net incomes from farm were $–202, $–169, and $–62 for the same farm groups. Similarly, the other measures of farm earnings indicated that as the non-farm income increased, the farm business, in itself, had a greater earning capacity.

(1) See Appendix for definitions of measures of earnings.

The gross value of living on the Part-Time farms increased as the operator received greater amounts of non-farm income (Table 22). The total value of living by groups was $443, $762, and $859. For the same groups, the monthly value of living per adult unit was $18, $16, and $20. The size of family of the $301 to $600 group was double that of the $300 and below group, which probably accounts for their lower cash expenditures per person.

TABLE 21.—OPERATING STATEMENT, PART-TIME FARMS, FOR YEAR ENDING MAY 1, 1942

	Average Non-farm Income per Year per Farm		
	$300 and Below	$301 to $600	$601 and Over
Number of farms	23	34	21
	$	$	$
Cash farm receipts	308	505	923
Increase in inventory	—25	219	489
Total receipts	283	724	1,412
Cash farm expenses	150	228	498
Capital expenditures	62	235	448
Total cash expenses	212	463	946
FAMILY INCOME FROM FARM	71	261	466
Cash living expenses	274	432	534
Less cash board of paid labour	1	2	6
Cash family living expenses	273	430	528
Family net income from farm	—202	—169	—62
Cash receipts non-farm	193	447	902
FAMILY NET INCOME FROM ALL SOURCES	—9	278	840
Family income from farm	71	261	466
Value of unpaid labour and board	83	141	201
Interest on capital	117	171	200
Total unpaid labour and interest	200	312	401
OPERATOR'S LABOUR INCOME	—129	—51	65
Value of perquisites	169	330	327
Less value of perquisites to paid and unpaid labour	18	27	46
Perquisites to operator	151	303	281
OPERATOR'S LABOUR EARNINGS	22	252	346

The net worth of the Part-Time farmers as of May 1, 1942 (Table 23) was $2,141, $3,277, and $3,147 respectively on the '$300, and below,' '$301 to $600,' and 'over $600' non-farm income groups. The change in net worth for the respective farm groups was $–70, $141, and $433.

The gain in net worth per year, over a period of years, was greater for those Part-Time settlers who earned large incomes from sources off the farm. All groups had been established on their farms approximately 12 years (Table 24), and the progress each had made as shown by change in net worth per year was $124, $219, and $246 respectively.

TABLE 22.—CASH AND NON-CASH LIVING COSTS, PART-TIME FARMS

	Average Non-farm Income per Year per Farm		
	$300 and Below	$301 to $600	$601 and Over
	No.	No.	No.
Number of farms	23	34	31
AVERAGE PER FARM:	$	$	$
Total cash expenses	274	432	534
Total perquisites	169	330	325
TOTAL LIVING	443	762	859
MONTHLY AVERAGES PER ADULT UNIT:			
Total cash expenses	11	9	12
Total perquisites	7	7	8
TOTAL LIVING	18	16	20

TABLE 23.—NET WORTH STATEMENT, PART-TIME FARMS, AS OF MAY 1, 1942

	Average Non-farm Income per Year per Farm		
	$300 and Below	$301 to $600	$601 and Over
Number of farms.....No.	23	34	21
Net worth.....$	2,141	3,277	3,147
Change in net worth, 1941–42.....$	*—70*	141	433

TABLE 24.—FINANCIAL PROGRESS OF PART-TIME SETTLER SINCE STARTING ON FARM, BY NON-FARM INCOME CLASSIFICATION[1]

	Average Non-farm Income per Year per Farm		
	$300 and Below	$301 to $600	$601 and Over
Number of farms.....No.	15	24	13
Average number of years settler on farm.....Yrs.	12	12	11
Net worth beginning.....$	670	539	1,014
Net worth May 1, 1942.....$	2,182	3,249	3,797
Change in net worth per year.....$	124	219	246
Average outside income per year.....$	125	233	211

(1) Owing to incomplete data on some of the records, a smaller sample was used in this analysis.

Summary of Subsistence Farms.—The Subsistence farmers were those farmers who derived a substantial part of their living from the farm in the form of perquisites, and those who received substantial revenue from sources off the farm either through pensions or outside employment. Three classes of Subsistence farmers were recognized, namely: Self-Sufficient, Pensioner, and Part-Time.

The Self-Sufficient farmers operated for the most part a quarter-section farm, with a limited amount of capital investment. Their business turnover was small and their level of living low. Their rate of progress since settling on the farm was very slow. For the business year under review, their net worth was less at the end than at the beginning.

The Pensioner farmers, who received a substantial annual pension, operated approximately 240 acres with a limited amount of capital investment. Their whole business turnover was small. Their level of living was about average. Their original capital had declined at an average rate of $70 per year over the twelve-year period of settlement. However, for the year studied, they were worth more at the end than at the beginning by $75.

The Part-Time farmers, or those who received considerable money from non-farm sources, farmed approximately a half section of land, with a capital investment of roughly $3,400. The size of business operated was larger than either of the other two groups. Measured by the annual gain in net worth these farmers made a fair rate of progress during the twelve-year period of settlement. Part-Time settlers who earned larger incomes from non-farm sources, earned larger incomes from the farm as well.

Commercial Farms

Commercial farms were described earlier in this report as those farms on which the settler was mainly occupied in the production of commodities for market, and who depended on the sale of these for his living, to a greater extent than did those operating Subsistence farms. Only Commercial farms in the Fringe Area will be discussed in this section. The Commercial farms of an older established area (Bear Lake) will be discussed in a later section. The term "Fringe Areas" designates the districts surveyed that are still in the pioneer stage of development. The districts have been settled for a period of from ten to twelve years on the average, and improvements as clearing and breaking of land, and construction of better buildings and community services are by no means at an end. The districts within Fringe Areas studied in 1941, are: Debolt, Wapiti-Lymburn, Hines Creek, and Battle River.

Fig. 11.—United Church hospital at Notikewin, Battle River district.

Type Of Farming.—For the purpose of studying the effect of farm organization on the profitableness of the farm business, the Commercial farms in the Fringe Areas were divided into four main types. The four types were previously defined, being namely: Grain, Mixed-Grain Crop, Mixed-Livestock, and Livestock farms. The distribution of farm types by districts is shown in Table 25.

Fig. 12.—A newly constructed Greek Orthodox church, Hines Creek district.

Table 25.—Distribution of Commercial Farm Types by Districts

	Grain	Mixed–Grain	Mixed–Livestock	Livestock
	No.	No.	No.	No.
Debolt	1	.....	8	53
Wapiti–Lymburn	3	7	4	17
Hines Creek	4	1	13	33
Battle River	32	33	17	4
Total	40	41	42	107

It will be noted from Table 25 that the Battle River district predominantly emphasizes grain production, whereas the other districts emphasize livestock production. Consequently, in the presentation which follows the discussion is largely one of type of farming in the various districts.

Land Use.—Commercial farms operated in the Fringe Areas, on the average, were half section in size (Table 26). Roughly 240 acres of this total were owned by the operator, and the balance acquired by rental. There were more cultivated acres per farm in the grain farms. Acreage of cropland 1941 per farm by type of farm was: Grain farms, 183 acres; Mixed-Grain, 155 acres; Mixed-Livestock, 123 acres; and Livestock, 73 acres.

TABLE 26.—PRESENT AND POTENTIAL USE OF LAND IN COMMERCIAL FARMS

	Grain	Mixed–Grain	Mixed–Livestock	Livestock
Number of farms.....No.	40	41	42	107
(a) Present Use—Average per Farm				
TOTAL ACRES:				
Cropland, 1941.....Ac.	183	155	123	73
Total operated.....Ac.	345	300	349	317
LAND OWNED BY OPERATOR:				
Cropland, 1941.....Ac.	146	129	95	61
Farmstead.....Ac.	3	3	2	3
Improved.....Ac.	149	132	97	64
Unimproved.....Ac.	99	110	157	179
TOTAL OWNED.....Ac.	248	242	254	243
(b) Potential Use—Average per Farm				
LAND OWNED BY OPERATOR:				
Improved.....Ac.	149	132	97	64
Unimproved estimated arable.....Ac.	82	72	117	138
TOTAL ESTIMATED ARABLE.....Ac.	231	204	214	202
Proportion of total acres improved.....%	60	55	38	26
Proportion of total acres unimproved estimated arable..%	33	29	46	57
TOTAL ESTIMATED ARABLE.....%	93	84	84	83

Approximately 85 per cent of the land on each farm was arable. Good topography was the important factor permitting this high degree of arability.

On farms emphasizing grain production, the proportion of land in wheat and summerfallow was greater than on those farms emphasizing livestock production (Table 27). The acreage seeded to oats and the proportion of land in hay and other crops tended to increase with livestock specialization.

TABLE 27.—DISTRIBUTION OF CROPS, COMMERCIAL FARMS, FOR THE YEAR 1941

	Grain	Mixed–Grain	Mixed–Livestock	Livestock
Number of farms.....No.	40	41	42	107
Wheat.....%	38	37	34	23
Oats.....%	19	22	28	40
Hay.....%	3	3	4	8
Other crops.....%	3	7	6	8
Summerfallow.....%	35	30	24	17
Breaking.....%	2	1	4	4
TOTAL.....%	100	100	100	100

Numbers of Livestock.—The Commercial farms had on an average 5 to 6 horses per farm (Table 28). As most units of farm machinery require for draught, four horses, the number per farm was sufficient to provide power.

TABLE 28.—AVERAGE NUMBERS OF LIVESTOCK AT THE BEGINNING OF YEAR AND SOLD, COMMERCIAL FARMS

	Grain	Mixed–Grain	Mixed–Livestock	Livestock
	No.	No.	No.	No.
Number of farms	40	41	42	107
HORSES: beginning of year	6	5	6	5
sold	.....	.....	.....	.....
CATTLE: beginning of year	2	3	5	7
sold	0.5	1	1	2
HOGS: beginning of year	3.5	6	7	12
sold	5	13	20	27
Average number of animal units per farm (excluding horses) [1]	4.2	7.2	10.7	13.9

(1) See Appendix for table defining animal units.

The number of cattle and hogs per farm, and sold throughout the year, increased as the type of farming inclined towards livestock production. The number of animal units (excluding horses) per farm by type of farm was: Grain farms, 4.2; Mixed-Grain, 7.2; Mixed-Livestock, 10.7; and Livestock farms, 13.9. The rate of increase is of interest in appraising the efficiency of livestock production on farms. The rate of increase on the Commercial farms for the important kinds of livestock per year was: cows, 1 calf; sows, 12 pigs.

Farm Capital Statement.—Some types of farming require a greater capital investment than do others. Some farmers may, because of limited capital, be practising one type of farming with the intention of eventually changing to another as more resources become available.

TABLE 29.—DISTRIBUTION OF FARM CAPITAL, COMMERCIAL FARMS, AS OF MAY 1, 1942 [1]

	Grain	Mixed–Grain	Mixed–Livestock	Livestock
Number of farms.....No.	40	41	42	107
Farm real estate.....$	3,813	3,348	2,611	1,771
Livestock.....$	563	678	928	981
Equipment.....$	1,084	1,160	741	573
Value of feed, seed, and supplies.....$	59	301	310	143
TOTAL.....$	5,519	5,487	4,590	3,468

(1) Farm capital is calculated on a farm unit basis.

On the farms emphasizing grain production, the value of real estate was greater than the value of real estate on those farms emphasizing livestock production (Table 29). This is readily understandable, as the Grain groups had greater acreages of land improved. Similarly, those farms (Grain groups)

having more acreage under cultivation were equipped with more farm machinery. On the other hand, farm groups producing livestock as a major source of income had more capital invested in livestock than those farms producing grain for sale. The total capital investment by type for Commercial farms was: Grain, $5,519; Mixed-Grain, $5,487; Mixed-Livestock, $4,590; and Livestock, $3,468.

Operating Statement.—The operating statement of a farm sets forth the various items that must be taken into account in determining the profitableness of the farm business during the business year. In addition to receipts and expenses, some consideration must be given to depreciation, interest on capital, change in the farm inventory position, and the contributions of the farm to the farm family living.

The total farm receipts are the cash farm receipts plus the change in farm inventory for the business year 1941–42. The cash farm receipts (Table 30) were greater on those farms having the greater acreage under cultivation; that is, those farms emphasizing grain production. Incidentally, hog receipts formed 65 per cent or more of the revenue from livestock on all groups of farms. The change in inventory position was negligible on Grain and Mixed-Grain farms. The fact that stocks of grain on hand, were diminished without any appreciable increase in livestock, accounted for these small inventory changes. There were increases in the inventories on the Mixed-Livestock farms and on the Livestock group averaging $412 and $244, respectively. These were due to considerable increase in livestock. Total farm receipts by farm type were: Grain, $1,416; Mixed-Grain, $1,200; Mixed-Livestock, $1,355; and Livestock, $1,105.

(1) See Appendix for itemized tables of cash receipts and total farm expenses.

Fig. 13.—A good stand of wheat in the Battle River district during the month of August, 1942.

The cash farm expenses were greater on those farms having larger acreages under cultivation, (farms producing more saleable field crops). Capital expenditures were not related to type of farming, as these may be large or small in any given year, depending upon the farmer's immediate needs and the cash or credit available. Total cash expenses for the year under survey on these farms were: Grain, $916; Mixed-Grain, $740; Mixed-Livestock, $661; and Livestock, $515.[1]

(1) See Appendix for itemized tables of cash receipts and total farm expenses.

For the survey year 1941–42, those farmers emphasizing live stock production had a larger family income from farm than did those farmers producing grain for sale. The Field Crop farmers spent somewhat more on cash living expenses than did the other groups, thus reducing the family net income.

TABLE 30.—OPERATING STATEMENT, COMMERCIAL FARMS, FOR YEAR ENDING MAY 1, 1942

	Grain	Mixed–Grain	Mixed–Livestock	Livestock
Number of farms	40	41	42	107
	$	$	$	$
Cash farm receipts	1,438	1,145	943	861
Increase in inventory	—22	55	412	244
Total receipts	1,416	1,200	1,355	1,105
Cash farm expenses	666	535	408	340
Capital expenditures	250	205	253	175
Total cash expenses	916	740	661	515
FAMILY INCOME FROM FARM	500	460	694	590
Cash living expenses	443	398	385	392
Less cash board of paid labour	15	8	5	4
Cash family living expenses	428	390	380	388
Family net income from farm	72	70	314	202
Cash receipts non-farm	89	83	88	73
FAMILY NET INCOME FROM ALL SOURCES	161	153	402	275
Family income from farm	500	460	694	590
Value of unpaid labour and board	8	92	72	91
Interest on capital	289	273	219	165
Total unpaid labour and interest	297	365	291	256
OPERATOR'S LABOUR INCOME	203	95	403	334
Value of perquisites	219	332	325	329
Less perquisites to paid and unpaid labour	8	34	23	22
Perquisites to operator	211	298	302	307
OPERATOR'S LABOUR EARNINGS	414	393	705	641

Fig. 14.—Wheat in stook in the Bear Lake District, 1943.

Table 31.—Cash and Non-cash Living Costs on Commercial Farms

	Grain	Mixed–Grain	Mixed–Livestock	Livestock
	No.	No.	No. M	No.
Number of farms	40	41	42	107
Average per farm:	$	$	$	$
Cash board	214	203	204	196
Other family expenses	229	195	181	196
Total cash expenses	443	398	385	392
Use of house	47	51	37	44
Farm produce used	172	281	288	285
Total perquisites	219	332	325	329
Total Living	662	730	710	721
Monthly averages per adult unit:				
Cash board	7	5	5	4
Other family expenses	8	5	5	5
Total cash expenses	15	10	10	9
Use of house	1	1	1	1
Farm produce used	6	7	7	7
Total perquisites	7	8	8	8
Total Living	22	18	18	17

The operator's labour incomes by farm-type groups were, respectively: $203, $95; $403; and $334. Interest charges were higher for the farms emphasizing grain production, because of the greater amount of capital invested in the farms. Family labour was not so important on the Grain farms as on the

other groups. The operator's labour earnings were $414, on the Grain farms; $393 on the Mixed-Grain; $705 on the Mixed-Livestock; and $641 on the Livestock.

The different measures of farm earnings indicated that the farms emphasizing livestock production had greater earnings during the business year 1941–42 than those farms producing grain for sale. During the survey year livestock prices were high relative to grain.

As noted earlier, certain districts were engaged predominantly in one type of farming. The Battle River district (Table 25) is more suited to field crop production than are the others. It is probable that in this district, grain as a cash crop will continue to be important.

Family Living Expenses.—Family living expenses of the settlers averaged according to type of Commercial farms: Grain, $662; Mixed-Grain, $730; Mixed-Livestock, $710; and Livestock, $721 (Table 31). Grain farms had the highest level of living with monthly cash expenses of $15 and perquisites of $7 per adult unit. The living costs of the other farm groups were approximately the same.

Table 32.—Net Worth Statement, Commercial Farms, as of May 1, 1942[1]

	Grain	Mixed–Grain	Mixed–Livestock	Livestock
Number of farms.....No.	40	41	42	107
Total assets.....$	5,660	5,390	4,487	3,521
Liabilities.....$	421	587	500	244
Net worth.....$	5,239	4,803	3,987	3,277
Change in net worth, 1941–42..$	118	118	370	269

(1) Net worth is calculated on an operator basis.

Net Worth.—For the business year 1941–42 (one year) the greater gains in net worth were made on those farms emphasizing livestock production (Table 32). The change in net worth by farm type was: Grain, $118; Mixed-Grain, $118; Mixed-Livestock, $370; and Livestock, $269.

Table 33.—Financial Progress of Settler Since Starting on Farm, Commercial Farms[1]

	Grain	Mixed–Grain	Mixed–Livestock	Livestock
Number of farms.....No.	15	17	25	63
Average number of years settler on farm.....Yrs.	15	14	11	11
Net worth beginning.....$	833	610	738	795
Net worth May 1, 1942.....$	6,631	4,313	3,320	3,066
Change in net worth per year..$	399	267	236	212
Average outside income per year.....$	119	57	90	94

(1) Because of incomplete data on some of the records, a smaller sample was used in this analysis.

Progress of Settler Since Starting on Farm.—Those farmers emphasizing the production of grain had been established on their farms for a longer period than those in the livestock types, by approximately three or four years (Table 33). Evidently, this additional time enabled these settlers to have more land under cultivation. With this larger acreage of improved land was associated the grain type of farming.

Fig. 15.—A settler's farmstead in the Battle River district.

Fig. 16.—A well-improved farmstead in the Battle River district.
(*Note the modern hexagonal hog barn.*)

The change in net worth per year since settler started on the farm, as shown in Table 33, was by type of farm: Grain, $399; Mixed-Grain, $267; Mixed-Livestock, $236; and Livestock, $212. Those farmers emphasizing grain production made the greater financial progress since the time of settle-

ment. Two factors contributed to the better progress of the Grain groups for the long-time period. Grain and Mixed-Grain farms had been established a longer period than the Livestock groups, and thus had more acreage under cultivation. Grain prices when compared with livestock prices were more favourable over the period of settlement as a whole than for the one year 1941–42.

Average outside income per farmer since the time the settler started on farm amounted to: Grain farms, $119; Mixed-Grain, $57; Mixed-Livestock, $90; and Livestock, $94. For the year 1941–42 non-farm income averaged $85 for each farm group.

Summary of Fringe Area Commercial Farms by Type of Farming.—There was an association between farm type and districts surveyed. The Grain and Mixed-Grain farms were located mainly in the Battle River district. In comparison farmers in the other districts were engaged in a Livestock type of farming.

The most common size of farm in all type groups was the half-section unit. Acres of cropland, however, increased as the types of farming moved towards grain production. By farm types, cropland in 1941 averaged, for Grain farms, 183 acres; for Mixed-Grain, 155 acres; for Mixed-Livestock, 123 acres; and for Livestock farms, 73 acres. The proportion of land used for wheat production and summerfallow was greater on the farms emphasizing grain.

The livestock enterprise, as measured by average numbers of animal units per farm, was greater on the farms classified as Mixed-Livestock and Livestock. Average number of animal units per farm was Grain, 4.2; Mixed-Grain, 7.2; Mixed-Livestock, 10.7; and Livestock, 13.9.

Capital investment was greater on those farms having the larger acreages under cultivation than those farms emphasizing livestock production. Amount of improved land, together with the machinery necessary to operate this acreage of cropland accounted for the greater capital investment. Capital invested by type of farm was Grain, $5,519; Mixed-Grain, $5,487; Mixed-Livestock, $4,590; and Livestock, $3,468.

The operating statements of these farmers for the year 1941–42 indicated that in this particular year farmers emphasizing the production of livestock as a source of revenue made greater earnings than those growing grain for cash sale. The average family net income from farm on these farms by type was Grain, $72; Mixed-Grain, $70; Mixed-Livestock, $314; and Livestock, $202. The family net income from farm represents the amount of cash the settler receives from the year's business (after all current capital maintenance and farm family cash living expenses have been met) available for payment of debts or for saving. The level of living the settlers were able to maintain (cash living costs plus value of perquisites) averaged $22 monthly per adult unit on the Grain group and $18 per adult unit for the other groups.

The increase in net worth for the business year 1941–42 was greater for the Mixed-Livestock and Livestock farmers than it was for those emphasizing grain production. However, the increase in net worth, since the time the settler started on his farm was greater for those engaged in the Grain type than in the Livestock type of farming. This was due to the Grain and Mixed-Grain farmers having been established on their farms for a longer period of time, with the result that they had more land under cultivation; and also because the grain-livestock price ratio had been relatively more favourable to grain production over the longer period than during the year 1941–42.

Effect of Size of Farm, as Related to Type, on the Business Returns

In the foregoing, the four main types of Commercial farms in the Fringe Areas of the Peace River were discussed. It was noted that the type of farming varied by districts, because of differences in the physical characteristics of the land. The important physical differences were the soil, the topography, and the cover. While the cover can be changed, the other physical characteristics cannot. Therefore, although changing price ratios may cause some adjustments in farm organization in these districts, it seems reasonable to anticipate that, in the main, farm types as they are now established will likely remain much the same for some time to come.

In this section which deals with size of the farm unit, the Grain and Mixed-Grain farms have been grouped together, as also have been the Mixed-Livestock and Livestock types.

Farms Emphasizing Grain Production.[1]—The farms emphasizing grain production were studied by size groups according to the acres of cropland 1941. They were divided into three groups, namely: those farms having 100 acres and below; 101 to 200 acres; and over 200 acres of cropland. The total acres operated (includes both owned and rented land) by the respective size groups averaged 186 acres, 275 acres, and 484 acres (Table 34). The average acreages of cropland 1941 by corresponding size groups were 74 acres, 147 acres, and 285 acres.

(1) Farm capital is calculated on a farm unit basis.

Table 34.—Use of Land and Distribution of Farm Capital, as of May 1, 1942, on Farms Emphasizing Grain Production, by Size of Farm[1]

	Acres Cropland, 1941		
	100 and Below	101 to 200	201 and Over
Number of farms.....No.	18	37	26
Acres cropland, 1941.....Ac.	74	147	285
Total acres operated.....Ac.	186	275	484
Real estate.....$	1,163	3,383	5,528
Livestock.....$	406	627	766
Equipment.....$	422	911	1,909
Value of feed, seed and supplies.....$	18	27	46
Total.....$	2,009	4,948	8,249

(1) See Appendix for itemized tables of cash receipts, total farm expenditures, cash and non-cash living costs,

The amount of capital invested in these groups of farms increased with more acres of cropland operated (Table 34). Each item listed under farm capital, contributed to this general increase in investment with larger farms. The average capital investment by size groups was: '100 acres and below' of cropland, $2,009; '101 to 200 acres,' $4,948; and 'over 200 acres,' $8,249.

Cash farm receipts, by respective size groups defined, were $492, $1,077, and $2,144 (Table 35). On the smaller farms revenue from livestock sales made up 20 per cent of the farm receipts and field crop sales 41 per cent. As the size of farm operated became larger, these proportions changed, until on the farms having over 200 acres of cropland the revenue from livestock formed only 14 per cent of the farm receipts and sale of field crops 56 per cent. There was a substantial increase in the inventory on the group of farms of the smallest

TABLE 35.—OPERATING STATEMENT ON FARMS EMPHASIZING GRAIN PRODUCTION AS OF MAY 1, 1942, BY SIZE OF FARM

	Acres Cropland, 1941		
	100 and Below	101 to 200	201 and Over
Number of farms	18	37	26
	$	$	$
Cash farm receipts	492	1,077	2,144
Increase in inventory	118	6	—38
Total receipts	610	1,083	2,106
Cash farm expenses	206	525	979
Capital expenditures	161	150	383
Total cash expenses	367	675	1,362
FAMILY INCOME FROM FARM	243	408	744
Cash living expenses	243	405	562
Less cash board of paid labour	.....	11	19
Cash family living expenses	243	394	543
Family net income from farm	.....	14	201
Cash receipts non-farm	58	79	115
FAMILY NET INCOME FROM ALL SOURCES	58	93	316
Family income from farm	243	408	744
Value of unpaid labour and board	33	45	71
Interest on capital	105	258	434
Total unpaid labour and interest	138	303	505
OPERATOR'S LABOUR INCOME	105	105	239
Value of perquisites	150	266	380
Less perquisites to paid and unpaid labour	8	10	36
Perquisites to operator	142	256	344
OPERATOR'S LABOUR EARNINGS	247	361	573

size only. This was due chiefly to an increase in livestock. Those farmers on larger acreages did not increase livestock inventories appreciably; and at the same time reduced the feed, seed, and other supplies on hand at the beginning of the year. Receipts from sales of inventory are included under "cash farm receipts."

Total cash expenses (cash farm expenses plus capital expenditures) were by size groups, $367 on farms having 100 acres and below of cropland; $675 on farms having 101 to 200 acres; and $1,362 on farms over 200 acres. The cash farm expenses increased with larger sized farms. Capital expenditures, however, are contingent upon the farmer's specific needs and capital or credit available at any particular time, and need not be related to size of farm for a one-year period. Capital expenditures for the year under survey, by the respective size groups, were $161, $150, and $383.

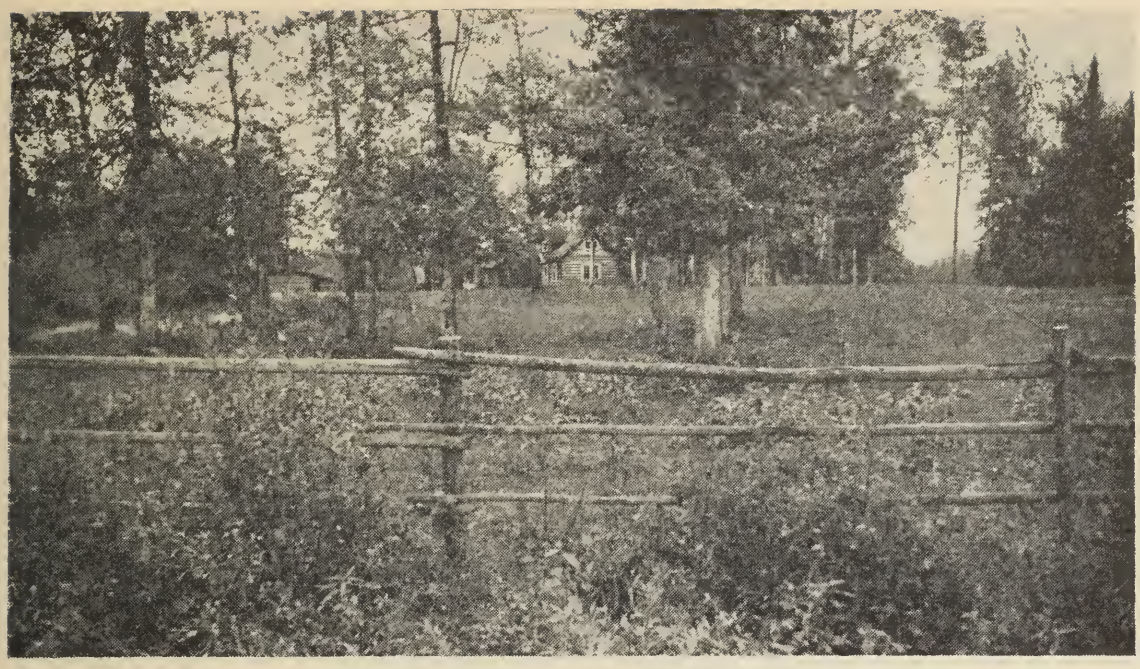


FIG. 17.—A picturesque farmstead in the Debolt district.

FIG. 18.—Settlers attending a Dominion Illustration Station field day in the Debolt district.

The family income from farm, or that remaining from the year's farming operations, after all farm expenses had been paid (exclusive of family living) was $243 for the group having less than 100 acres of cropland, $488 for the '101 to 200 acre' group, and $744 for the group having over 200 acres. After the family cash living expenses were deducted from the family income from farm the family net income from farm was by the respective size groups, 'nil', $14, and $201. As farm size increased, greater sums were spent on cash living expenses. The monthly costs of farm family living on a per adult unit basis was by size groups: '100 acres and below' $16; '101 to 200 acres,' $20; and 'over 200 acres,' $22. Included in these costs of farm family living on an adult unit basis were cash living expenses and perquisites.

The operator's labour income, or that sum remaining after the board and value of unpaid (family) labour, and a charge for use of capital were deducted from the farm family income was $105, $105, and $239 for the respective size groups. Charges for unpaid labour and for interest increased as the size of farm increased. The operator's labour earnings by size of farm were: '100 acres and below', $247; '101 to 200 acres,' $361; and 'over 200 acres,' $573.

Non-farm income increased with size of farm being respectively by size groups $58, $79, and $115. Operators farming larger acreages had tractors and other special equipment, which were used in earning non-farm income, in such jobs as road work. The average income from outside sources, since the settler started to farm, was $60 per year on the two smaller acreage groups and $134 per year for farmers having over 200 acres of cropland.

The change in net worth of the settlers since starting to farm on their present holdings was directly related to size of farm and also to the number of years on the farm. Average increase in net worth per year of the settlers since starting on their present farms was, by size of farm, $168 on farms having up to 100 acres cropland, $209 on farms of 101 to 200 acres, and $449 on farms having over 200 acres of cropland. The average term of occupancy of the first group was 12 years, of the second 14, and of the third 17 years.

Farms Emphasizing Livestock Production.[1]—The farms emphasizing livestock production were divided into four groups, according to acreage of cropland, in 1941, namely: 50 acres and under, 51 to 100 acres, 101 to 150 acres, and over 150 acres. The average size of farm operated (this included both owned and rented land) in these respective groupings was, 212 acres, 312 acres, 370 acres, and 531 acres (Table 36). The corresponding average acreage of cropland 1941 on these farms was 32 acres, 72 acres, 122 acres, and 205 acres.

(1) See Appendix for itemized tables of cash receipts, total farm expenditures, cash and non-cash living costs, net worth statement as of May, 1 1942, and progress of settler since starting on farm.

TABLE 36.—USE OF LAND AND DISTRIBUTION OF FARM CAPITAL, AS OF MAY 1, 1942, ON FARMS EMPHASIZING LIVESTOCK PRODUCTION, BY SIZE OF FARM[1]

	Acres Cropland, 1941			
	50 and Under	51 to 100	101 to 150	151 and Over
Number of farms.....No.	31	70	33	15
Acres cropland, 1941.....Ac.	32	72	122	205
Total acres operated.....Ac.	212	312	370	531
Real estate.....$	1,187	1,788	2,464	3,662
Livestock.....$	790	956	1,022	1,245
Equipment.....$	271	577	751	1,258
Value of feed, seed, and supplies.....$	5	15	27	45
TOTAL.....$	2,253	3,336	4,264	6,210

(1) Farm capital is calculated on a farm unit basis.

Capital invested in livestock on these farms formed approximately one-quarter to one-third of the total investment. The average capital investment per farm, increasing by size of farm was $2,253, $3,336, $4,264, and $6,210.

Cash farm receipts by respective size groups were $587, $812, $1,085, and $1,403, increasing as more acres of cropland were operated (Table 37). On the farms having less than 50 acres cultivated, approximately 70 per cent

of the cash farm receipts was from livestock sales and only 4 per cent from crop sales. On the largest size group of farms (over 150 acres of cropland) 51 per cent of the cash farm receipts was derived from livestock and 23 per cent from field crops. Thus, as the size of farm operated increased, the proportion of receipts from livestock decreased and that from field crops increased. Increases were noted in farm inventories on all farm groups, the increase being greatest on the largest size of farm operated.

TABLE 37.—OPERATING STATEMENT ON FARMS EMPHASIZING LIVESTOCK PRODUCTION, AS OF MAY 1, 1942, BY SIZE OF FARM

	Acres Cropland, 1941			
	50 and Under	51 to 100	101 to 150	151 and Over
Number of farms	31	70	33	15
	$	$	$	$
Cash farm receipts	587	812	1,085	1,403
Increase in inventory	169	277	361	461
Total receipts	756	1,089	1,446	1,864
Cash farm expenses	241	305	437	688
Capital expenditures	114	181	213	406
Total cash expenses	355	486	650	1,094
FAMILY INCOME FROM FARM	401	603	796	770
Cash living expenses	323	363	444	534
Less cash board of paid labour	1	2	2	11
Cash family living expenses	322	361	442	523
Family net income from farm	79	242	354	247
Cash receipts non-farm	59	71	63	179
FAMILY NET INCOME FROM ALL SOURCES	138	313	417	426
Family income from farm	401	603	796	770
Value of unpaid labour and board	68	69	124	114
Interest on capital	111	167	217	319
Total unpaid labour and interest	179	236	341	433
OPERATOR'S LABOUR INCOME	222	367	455	337
Value of perquisites	262	327	371	371
Less perquisites to paid and unpaid labour	13	15	37	70
Perquisites to operator	249	312	334	301
OPERATOR'S LABOUR EARNINGS	471	679	789	638

Total cash expenses by respective size groups averaged $355, $486, $650, and $1,094. Cash farm expenses varied in direct proportion to the size of farm. Relatively large capital expenditures were made during the year on the larger farms. Depreciation of new equipment purchases, particularly tractors, trucks and cars, is heavy during the first year of operation. This heavy depreciation

probably accounts for the 'family income from farm,' of the farms in the largest size group being less than the average of the farms in the next smaller size group.

The family net income from farm which is the part of the income available for payment of debts or for savings for the respective size groups averaged $79, $242, $354, and $247.

Living costs increased with size of farm and although part of this was due to the larger farms having larger families, there was also a higher level of living on the larger farms; the farm family living costs expressed as monthly values of living per adult unit being, by increasing size groups; $15, $16, $18 and $20.

On the farms emphasizing livestock production, the operator's labour income for the respective groups of farms averaged $222, $367, $455, and $337. Perquisites form a definite part of a farmer's income. Operator's labour earnings (which includes value of perquisites) on these farms by size groups averaged $471, $679, $789, and $638.

The non-farm income received by the operators for the year under review was approximately $65 on the three smaller sized farm groups, and $179 on farms having over 150 acres of cropland. Average non-farm income per year since the time the settler started on farm amounted to roughly $100 per year per farm.

The financial progress is affected by both size of farm and number of years of settlement. Generally, farmers operating larger farms had higher average gains in net worth per year over the whole period than those farmers on smaller acreages. Those farmers emphasizing livestock production had been on their farms 7 years, 12 years, 10 years, and 12 years, and had an average annual gain in net worth of $202, $185, $278, and $369 respectively.

Summary of Effect of Size of Farm, as Related to Type, on the Business Returns.—The foregoing analysis on size of farm (acres cropland 1941) indicated that there was an association between the acres of cropland operated and the success of the farm business. The farm earnings, level of living expressed in dollars, and change in net worth of the farmer increased with the size of the farm business operated. This was true both for farmers emphasizing grain production and for farmers emphasizing livestock production.

FIG. 19.—A farmstead of a settler in the Debolt district.

Fig. 20.—Dirt roads become difficult to travel after heavy rains.

For the survey year, on approximately the same acreage farmers emphasizing livestock production had greater returns on the average than those settlers emphasizing grain. For this particular year, the grain-livestock price ratio favoured the livestock producer. The change in net worth per year, since time of settlement, suggested that, over a period of time, grain farming had been profitable. In this regard it must be remembered that those farmers emphasizing grain production were located in areas suitable to this type of farming. On the other hand, farmers emphasizing livestock production were located in districts less suited to a grain economy.

A Budgetary Approach to the Relation of Cultivated Acreage to Farm Earnings by Type of Farming

A budget approach is used here to estimate the size of farm which would immediately give the average settler a reasonable living from it and would thus avoid many of the hardships involved during the early stages of developing a farm from raw bush land.

The analysis of the experience of farmers in the Peace River indicated that there were two definite types of farms, namely those farms emphasizing grain and those farms emphasizing livestock production. Typical examples of areas in the Peace River predominantly of the grain type is the Battle River, and of the livestock type, the Debolt district.

The farm budgets have been arrived at from the analysis of the data in the Fringe Areas of the Peace River as presented in the earlier sections of this report, with certain adjustments made to conform to long-time prices. In the suggested farm organizations[1] provision is also made for carrying out those practices followed and advocated by the most successful farmers of the district.

(1) See Appendix Tables XX and XXI.

Acreage Under Cultivation.—Farm budgets have been prepared having different amounts of cultivated land, namely: 75, 150, and 225 acres of cultivated land on farms emphasizing grain production; and 50, 75, 100, and 150 acres of cultivated land for farms emphasizing livestock production.

Crop Rotation Plan.—A workable crop rotation has been chosen for each type of farming. The proportion of the cultivated acreage seeded to a legume-grass mixture for hay and pasture is considered sufficient to maintain the soil fertility. The rotation plan for farms emphasizing field crop production is an eight-year one, while for farms emphasizing livestock production the rotation plan is a six-year one.

Livestock.—In the budgets set out for the grain farms, some livestock and livestock products are to be produced for sale in addition to grain; for the livestock type of farms, livestock and livestock products are to be sold, but no grain. All the crop is to be fed. It was noted that this was the practice in the Debolt area. With some farms in this district, feed had to be purchased from surplus grain producing areas, during the year of the survey.

Receipts.—In the budgets, the estimated price of wheat is 89.1 cents per bushel less freight to Vancouver of 16.2 cents[1] per bushel. This is the average price of No. 3 northern wheat for the period 1926 to 1942 inclusive.

Cattle are sold at one-and-one-half years of age in the fall of the year, in order that they may be finished for market on pasture at a low cost. It is estimated that the weight would be 1,000 pounds and that cattle would sell at 5.5 cents per pound less 35 cents[2] per 100 pounds freight to Edmonton. This is the twenty-year average price for medium steers up to 1,050 pounds at Edmonton.

In most instances it is assumed that sows raise two litters a year, depending upon the availability of feed. Hogs would sell at 200 pounds for 8.5 cents per pound less 35 cents per 100 pounds freight to Edmonton. This is the average twenty-year price at Edmonton for bacon hogs.

Surpluses of cream, eggs, and poultry over and above estimated family requirements are sold. From the number of cattle and hogs raised, provision is made for some being used on the farm and for some losses.

(1) The freight rate to Vancouver is 16.2 cents per bushel which is the cost averaged from Grande Prairie and Fairview.

(2) The freight rate to Edmonton is 35 cents per 100 pounds which is the cost averaged from Grande Prairie and Fairview.

Fig. 21.—Mature apples ready for picking at the Dominion Experimental Station, Beaverlodge.

Expenses.—*Farm Operation.*—Current farm operating costs are based on those found by the study. Taxes are estimated at $30 per quarter. On farms with less than 75 acres of improved land, provision is made for hiring the seeding and cutting done, as it is felt this acreage of cultivated land is too small to warrant the farmer owning a drill and a binder. Rates of 50 cents per acre for seeding and 75 cents per acre for cutting, are used.

Fig. 22.—A stand of wheat in the Bear Lake District during July, 1942.

Depreciation.—The depreciation rate charged should be sufficient to make necessary replacements over the average life of buildings and equipment.

Buildings.—Provision is made for an investment of $1,000 in farm buildings. It is estimated that this is a minimum amount required for the construction of necessary buildings. Depreciation is calculated at 5 per cent on the valuation or $50 per year.

Equipment.—The minimum investment in equipment considered necessary, at a second-hand valuation is $800. At 14 per cent, depreciation on the equipment would be approximately $112. Depreciation would be somewhat less for the budget farm of 50 acres, for which it is suggested it would be more economical to hire the seeding and cutting done.

Living.—In the Fringe Areas of the Peace River the cash living expenses amounted to approximately $10 per adult month. The average farm family was about five persons consisting of two adults and three children, or three-and-one-half adult units per month. Thus, on the average, cash living expenses amounted to approximately $420 per year, and this amount is used in the budget. The level of living which this amount will permit is not unreasonably high.

Family Net Income from Farm.—is the difference between farm receipts and expenses. (Expenses include current operating costs, capital expenditures, and family living expenses.)

Non-Farm-Income.—The non-farm income for the Commercial farms in the Fringe Areas of the Peace River averaged approximately $75 per farm. This amount has been allowed to all farms irrespective of size.

Family Net Income from all Sources or Surplus.—is the sum of the family net income from farm (as defined above) and non-farm income. Hence, it is the total 'net' from all sources available for payments of debts or for savings.

Budgets for Grain Type Farms.—The operating statements of the budget farms of the cash grain type are given in Table 38.

Table 38.—Suggested Budgets for Farms Emphasizing Grain Production of Various Cultivated Acreages

	Acres Cultivated		
	75	150	225
Receipts:	$	$	$
Grain sold	328	656	984
Yearlings sold	155	257	361
Pigs sold	98	196	391
Farm produce: cream	50	100	100
eggs and poultry	75	75	75
Total	706	1,284	1,911
Expenses:			
Farm operation	311	593	882
Depreciation	162	162	162
Living	420	420	420
Total	893	1,175	1,464
Family net income from farm	*—187*	109	447
Non-farm income	75	75	75
"Surplus" for Payment of Debts or for Savings	*—112*	184	522

The estimated surplus by acres cultivated is: 75 acres, $–112; 150 acres, $184; and 225 acres, $522. It may be concluded from this that the minimum acreage a settler should have under cultivation in a grain type farm is approximately 150 acres. A surplus of $184 over and above the farmer's operating and living expenses is not a large one, particularly if the settler must pay capital debts which may have been incurred at time of settlement. He can hardly be expected to get along on much less, particularly in view of the modest amount of $420 which has been allowed as cash living expenses for himself and family.

Budgets for Livestock Farms.—The operating statements for the budget farms emphasizing livestock production are shown in Table 39.

The estimated surplus on these farms by acres cultivated per farm is: 50 acres, $–258; 75 acres, $–21; 100 acres, $144; and 150 acres, $276. A farmer on a livestock-type of farm, it would seem, should have at least 100 acres under cultivation in order to pay farm operating and living expenses, and still have a small surplus for payment of debts or for savings.

On both types of farms, the opportunity of the average settler to earn a greater surplus is indicated, as a larger acreage is placed under cultivation. This should be an incentive for the individual to improve more land over and above the minimum suggested, in order that he may raise his level of living, pay off more rapidly any debts, or save for the satisfying of future desires.

Table 39.—Suggested Budgets for Farms Emphasizing Livestock Production of Various Cultivated Acreages

Operating Statement	Acres Cultivated			
	50	75	100	150
Receipts:	$	$	$	$
Yearlings sold	155	206	257	309
Pigs sold	196	391	587	782
Farm produce: cream	50	150	200	250
eggs and poultry	50	75	75	75
Total	451	822	1,119	1,416
Expenses:				
Farm operation	239	336	468	633
Depreciation	125	162	162	162
Living	420	420	420	420
Total	784	918	1,050	1,215
Family net income from farm	*—333*	*—96*	69	201
Non-farm income	75	75	75	75
"Surplus" for Payment of Debts or for Savings	*—258*	*—21*	144	276

Choice of Unit.—It has been shown that for farms of a grain type in the pioneer fringe a minimum of 150 cultivated acres is required to give a small surplus above current operating, capital maintenance, and living costs; and one would have to be very frugal to live on the cash allowed for the farm family living. Earlier in this report it was stated that approximately 85 per cent of the occupied land was arable. This is equivalent to about 136 acres per quarter section. In general, then, it would require more than one quarter-section of land to obtain the minimum cultivable acreage. In addition to the cultivable acreage, pasture land would be required; for even on the grain-type farm, livestock is kept for home use and for revenue. It takes from 8 to 12 acres of ordinary bush land to provide pasture for one head of stock. More than twenty head of horses and cattle were suggested for the organization of the 'budget farm' with 150 cultivated acres. This includes some cultivated pasture, but additional pasture would be required for the livestock suggested. It would appear that in the pioneer farming districts a half section would be required to accommodate the organization suggested and to provide for a moderate expansion in the farm enterprises to meet the increasing needs of a growing family.

A livestock type of farming is usually associated with land of rougher and more rolling topography and less arable acreage per unit or land with less fertile soil than is the grain type. Soil appears to be the determining factor in the Peace River area. While a somewhat smaller acreage of cultivated land has been estimated for the livestock type, a total occupied acreage as large as for the grain-type farm is required, namely, a half-section of land. This would provide for the cultivated acreage suggested and for additional pasture required for livestock. The average size of the Mixed-Livestock and Livestock types of Commercial farms covered in the four districts in the pioneer fringe of the Peace River was approximately one-half section (Table 26).

Farm Earnings Necessary to Pay for Bush Land Improvement

Previously, in this report, it was shown that improvement of bush land in the Peace River has been both slow and laborious. The clearing of land, for the most part in the past, has been done by hand methods, with the result that only four to eight acres per farm have been improved each year, depending upon the type of cover. It is obvious that if new settlers were to follow the custom of the pioneers it will take many years to bring into cultivation the minimum acreage suggested in the previous section as adequate.

It was found that on a farm emphasizing grain production with 150 acres improved, there would be a surplus of approximately $184; and on a farm emphasizing livestock production with 100 acres improved, there would be a surplus of about $144. The surplus earnings determine the ability of the settler to repay, over a period of years, the initial cost of land improvement.

The 150-acre grain-type farm described in the budget might be cleared and broken at a cost of $9 an acre, and the 100-acre mixed-livestock type at a cost of $12 an acre.[1] Provided there were very few other debts to meet, the surplus earnings indicated by the budgets for these sizes of farms of their respective types, would be sufficient to pay out the cost of land improvement in 15 years at 5 per cent interest. The annual amortized payments to cover the costs of clearing and breaking on farms having estimated surplus income (See Tables 38 and 39) is shown in Tables 40 and 41.

(1) Acton, B.K., "The Use of Power Equipment in the Improvement of Alberta Bush Lands," Publication No. 766, Department of Agriculture, Ottawa, 1944. Different costs of clearing and breaking land have been used because of differences in cover in grain farming and in livestock farming areas. See page 36.

TABLE 40.—ANNUAL APPROPRIATION OF SURPLUS TO PAY INITIAL LAND IMPROVEMENT COSTS ON FARMS EMPHASIZING GRAIN PRODUCTION

	Acres Cultivated	
	150	225
	$	$
Surplus [1]	184	522
Annual amortized payment for initial land improved (period of payment, fifteen years at 5 per cent)	126	233
Balance available for payment of other debts or for savings	58	289

(1) See Table 38.

TABLE 41.—ANNUAL APPROPRIATION OF SURPLUS TO PAY INITIAL LAND IMPROVEMENT COSTS ON FARMS EMPHASIZING LIVESTOCK PRODUCTION

	Acres Cultivated	
	100	150
	$	$
Surplus [1]	144	276
Annual amortized payment for initial land improvement (period of payment, fifteen years at 5 per cent)	112	168
Balance available for payment of other debts or for savings	32	108

(1) See Table 39.

Total Capital Required for the Minimum Size of Farm

It is suggested that settlers in new areas should be established on partially improved farms of a minimum size, namely, a half section, with 150 acres of cropland for the grain-type and 100 acres for the livestock-type. The average cost of clearing and breaking land in areas in which grain-type farms might be established, that is in parkland areas, is estimated at $9 per acre. Livestock farms would be developed in grey wooded soil areas where, with heavier cover, land improvement costs might average $12 per acre. Total land improvement costs would then be $1,350 for the grain-type farm and $1,200 for the livestock farm. The initial capital required in each case would include the investment in buildings, livestock, and machinery, as well as working capital to finance the first year's operations. Total capital required either in the form of cash or credit is estimated at $4,000 for each type of farm, (exclusive of any provision for purchase price of the virgin land) and a distribution of this by type is summarized in Table 42.

Table 42.—Total Capital Required for Grain and Livestock Farms

	Grain Farms	Livestock Farms
	$	$
Land improvement	1,350	1,200
Buildings[1]	1,000	1,000
Livestock	450	600
Machinery	800	800
Working capital	400	400
Total Capital	4,000	4,000

(1) See page 59.

A Description of Farming in an Old Established District—The Bear Lake District or M.D. 740[1]

The Bear Lake District is representative of the old established communities in the Peace River. Settlement of such areas commenced about 1910, and most lands were occupied by the time the railroad arrived. The Bear Lake District and other similar areas (Spirit River, Fairview, Berwyn) were settled first because the soil was dark and parkland-like in nature, and land improvement was relatively easy. These were the choice lands of the region. As settlement commenced in the Bear Lake District upwards of thirty years ago, "old established district" is used in describing the district in contradistinction to more recently settled areas to which reference has been made.

Sexsmith, Clairmont, Grande Prairie, and Wembley are business and market towns within the Bear Lake District. Community services as roads, schools, churches, and so forth are indicative of a well established farming district. The farms, particularly the farmsteads, having well constructed and modern homes, suggest that the district is far removed from the pioneer stage of development.

At the time of the survey, the average size of farm was 429 acres of which approximately a half-section was owned by the operator. There was an average of 286 acres or roughly 70 per cent improved on each farm.

(1) See Appendix for tables on farming in the Bear Lake District.

FIG. 23.—Typical country in the Bear Lake District.
(An old established district.)

FIG. 24.—Typical farmstead in the Bear Lake District.

Although this district may be described as a mixed-farming one, the chief source of revenue was from cash grain. Of the 90 farmers interviewed, 24 were classified as Grain, 31 as Mixed-Grain, 25 as Mixed-Livestock, and only 9 as Livestock farmers.[1] Approximately 36 per cent of the improved acreage was devoted to the production of wheat and 35 per cent to summerfallow. The acreage seeded to oats amounted to 20 per cent, and the remaining 9 per cent was in hay and other crops, mainly barley and rye.

(1) See definitions of types of farming. (Page 42).

The average capital investment in Bear Lake farms was a substantial amount. Farm real estate (including buildings) averaged $8,077 per farm, livestock $1,168, equipment $2,175, and feed, seed, and supplies on hand $773. These equalled a total average capital investment of $12,133 per farm. Thirty-five per cent of the farm homes were classified as good, with an average value of $2,213; 42 per cent were fair, with an average value of $909; and 23 per cent were poor, with an average value of $315.

Farmers, generally, in the Bear Lake District were able to maintain a reasonably high level of living. Cash living expenses averaged $723 and the value of perquisites used amounted to $478 per farm. (Perquisites included a sum of $190 for the use of the house.) The total value of living when reduced to an adult month basis (this takes into account size of family) was $28 per adult unit per month. Cash expenses made up $17 of this total and perquisites $11 per adult unit per month.

Although the Bear Lake District has been settled for approximately thirty years, the average period of settlement of those farmers interviewed was eighteen years. This is not unusual as some shifting of the rural population through sales of property and acquisition of farms by children from parents may be considered a normal situation. The Bear Lake farmers were able to increase their net worth at an average rate of $401 per year per farm over the eighteen-year period since the time settlers started on their present farms.

The current farm earnings should be a fair appraisal of the productivity of a farming district, excepting where unusual circumstances affect the earnings for the year being reviewed. Farm earnings in the Bear Lake District for the business year in which the survey was conducted were affected by certain abnormal factors. The crop year 1941 was exceptionally wet at harvest time, resulting in many acres of wheat not being cut or threshed. It is customary in this district to carry stocks of grain into the following year before marketing. Thus the short crop of 1941 did not affect greatly the current year's farm receipts, but it did cause a considerable decrease in the usual inventory of stocks of grain on hand. During the business year 1941–42 there was practically no decrease in the relatively high operating costs due to comparatively high investment in buildings and farm equipment associated with these highly improved and productive farms.

In spite of the adverse conditions that occurred in the year of the survey, a high level of living was maintained. This affected directly the 'family net incomes from farm' of farmers in the Bear Lake District. As a result, the 'family income from farm' was only $607. The 'family net income from farm' was $–71.

The same adverse factors that reacted on farm earnings also lowered the change in net worth of farmers for the business year 1941–42. The net worth of farm operators for this one-year period increased by only an average of $18 per farm. It will be remembered that the average rate of progress of these farmers since time of settlement was $401 per year per farm.

In summarizing, it may be said that the Bear Lake District is an old established farming community with well developed rural services and farms. Farmers in this area were able to improve their financial position on an average by $401 per year, and at the same time were able to maintain a reasonably high level of living. Because the type of farming practised emphasized grain production, farm incomes for the year under review were adversely affected by a wet harvest in the fall of 1941.

The Fringe Areas Compared with an Old Established Area

A settler in a new area does not consider the immediate difficulties and hardships associated with pioneering, but thrives on his vision of the future. The future implies to him an improved farm and a prosperous family in the midst of a well established community. A comparison of Fringe Area farms with those of an old established district in the Peace River indicates the present position of the pioneer, in relation to what he expects his position will be at some future time.

Natural Characteristics.—Although each settler may feel that he can develop his farm to equal the productiveness of the average or best farms in a country, there are certain factors beyond his control that determine the productivity of land. Weather and soil quality are two such factors. It will be recalled that earlier in this report it was stated that the old established areas of the Peace River were on the choice lands of the region. The soils of these districts are black and parkland-like in nature and are very productive. On the other hand the Fringe Areas surveyed were located on grey wooded soil of varying quality. The grey wooded soils are somewhat inferior in productivity to the black soils. Thus they require special treatment and special crops in order to maintain and improve their fertility. It is not to be construed from this that the Fringe Areas surveyed cannot be developed into profitable farms and prosperous communities, but it is doubtful if their development will ever quite reach the ideal as typified by an old established area, such as the Bear Lake District. Nevertheless, some interesting comparisons may be made between the Fringe Areas in the pioneer stage of development and the Bear Lake District which has passed this stage.

Facilities.—Access to transportation and marketing facilities favour the first settled communities. In the Bear Lake District no farmer is more than 15 miles from the railroad, whereas in the Fringe Areas this distance varies from 30 to 75 miles. Market and trunk roads are frequent and graded in an old established area as compared with a few trails in a pioneer region. The towns such as Grande Prairie, Peace River, and Fairview that provide essential services such as stores, doctors, hospitals, schools, and distributing

Fig. 25.—The Town of Sexsmith in the Bear Lake District.
(Note the number of grain elevators for the convenience of farmers.)

FIG. 26.—The hamlet of Notikewin in the Battle River district. (This settlement is approximately 70 miles from the shipping point of Grimshaw.)

wholesales are located on the railroad passing through the older settled districts. The settlers on the fringe, excepting for monthly or yearly trips to the larger centres, must be content with the local general store and the mail order catalogue. Rural schools, churches, and community halls are more numerous and of more elaborate construction in the Bear Lake District than in the Fringe Areas, where logs are an important building material.

FARMSTEADS.—The appraisal of a farmstead takes into account the plan of the farmstead with respect to location, drainage and convenience, and permanent improvements such as buildings, windbreaks, and access to water. In a pioneer district the farmstead is usually temporary in nature, and permanency awaits the development of the farm and an increase in the settler's financial resources. Bear Lake farmers, as shown in Table 43, had 27 per cent of their farmsteads rated as excellent and 29 per cent as good. Farmsteads of Fringe Area settlers were classified as 4 per cent excellent and 31 per cent good. A higher proportion of the farmsteads in the Fringe Areas fell into the fair and poor grades than in the old established district.

TABLE 43.—DISTRIBUTION OF FARMSTEAD CLASSIFICATIONS ON COMMERCIAL FRINGE AREAS AND BEAR LAKE FARMS

	Fringe Areas	Bear Lake
Number of farms.....No.	230	90
FARMSTEAD CLASSIFICATION:		
Excellent.....%	4	27
Good.....%	31	29
Fair.....%	51	40
Poor.....%	14	4
TOTAL.....%	100	100

There was a considerable difference between the number and value of homes in the various classifications, of the Fringe Areas and the Bear Lake District (Table 44). It is evident from this table, that not only was the distribution of farm homes in the Fringe Areas and an old established district different but also that different levels of valuation were applied. This appeared necessary in practice because of the considerable difference in type of construction of buildings; for example log construction predominated in the pioneer regions, while frame buildings were numerous in the Bear Lake District. Only 6 per cent of the farm homes were classified good with an average value of $787 in the pioneer regions, whereas 35 per cent were similarly rated in the old established district with an average value of $2,213. Capital investment in homes and farm buildings was approximately four times greater in the Bear Lake District than in the Fringe Areas.

TABLE 44.—DISTRIBUTION OF FARM HOME CLASSIFICATIONS, AVERAGE VALUE OF HOMES BY CLASSIFICATION, AND TOTAL AVERAGE VALUE OF FARM BUILDINGS ON COMMERCIAL FRINGE AREA AND BEAR LAKE FARMS

	Fringe Areas			Bear Lake		
Number of Farms	230			90		
Classification	Farm Homes		Farm Buildings	Farm Homes		Farm Buildings
	Percentage	Average Value	Average Value	Percentage	Average Value	Average Value
	%	$	$	%	$	$
Good	6	787	595	35	2,213	2,367
Fair	51	355		42	909	
Poor	43	153		23	315	
TOTAL	100	293	595	100	1,222	2,367

WATER.—The difficulty in securing water for house and stock use is a problem associated with farming in the Peace River. Settlers in a new area use those temporary or easily acquired water supplies that are available such as shallow wells, sloughs, and creeks. Gradually they plan for more permanent sources of water by the construction of dams, dugouts, and finally deep wells.

TABLE 45.—DISTRIBUTION OF SOURCES OF FARM WATER ON COMMERCIAL FRINGE AREA AND BEAR LAKE FARMS

	Fringe Area	Bear Lake
Number of farms.....No.	230	90
SOURCE OF FARM WATER:		
Shallow well, up to 25 feet in depth.....%	24	5
Deep wells, over 25 feet in depth.....%	12	56
Dugout.....%	18	8
Lake, slough, creek, dam.....%	40	25
Haul water.....%	6	6
TOTAL.....%	100	100

Table 45 sets forth the different sources of water used by Peace River farmers. Deep wells were used on 56 per cent of the Bear Lake farms, as compared with 12 per cent in the more recently settled regions. Less permanent methods of securing water were used in the pioneer districts.

Improved Land in Farms.—Fringe Area farms (including rented land) averaged 317 acres in size with 116 acres of cropland (Table 46). The Bear Lake farms had 429 acres with 286 acres cultivated. The amount of land owned by the operators was proportionately greater in the old established areas than in the more recently settled ones.

Table 46.—Use of Land in Commercial Fringe Area and Bear Lake Farms Compared

	Fringe Area	Bear Lake
Number of farms.....No.	230	90
Total acres:		
Acres cropland, 1941.....Ac.	116	286
Total acres operated.....Ac.	317	429
Land owned by operator:		
Cropland, 1941.....Ac.	94	231
Farmstead.....Ac.	3	4
Improved.....Ac.	97	235
Unimproved.....Ac.	148	100
Total Owned.....Ac.	245	335

Capital Investment.—The capital investment in Bear Lake farms averaged $12,133 per farm, whereas in the Fringe Areas this sum amounted to $4,429 (Table 47). Values of farm real estate and of equipment were much greater on farms in the old established districts.

Table 47.—Distribution of Farm Capital on Commercial Fringe Area and Bear Lake Farms Compared, as of May 1, 1942[1]

	Fringe Area	Bear Lake
Number of farms.....No.	230	90
Farm real estate.....$	2,557	8,017
Livestock.....$	845	1,168
Equipment.....$	797	2,175
Value of feed, seed, and supplies.....$	230	773
Total.....$	4,429	12,133

(1) Farm capital is calculated on a farm unit basis.

Level of Living.—The level of living of a region is associated with the size of income the population obtains. Farmers in the Bear Lake District were able to maintain a higher level of living than were settlers in the Fringe Areas. In Table 48 both gross living costs and average monthly costs per adult unit are compared. In the old established district the total value of living was $28 per adult unit per month, and in the pioneer regions it was $17. Cash living expenses were $7 per adult unit per month greater in the Bear Lake District than in the Fringe Areas, and perquisites were $4 per adult unit per month greater.

FIG. 27.—Self-propelled combine cutting wheat on the parklands near Berwyn.

FIG. 28.—Improvised power and binder cutting wheat within two miles of the end of settlement in the Battle River district.

FINANCIAL PROGRESS.—It is difficult to compare the progress of farmers in the Bear Lake District to that of settlers in the Fringe Areas, since the time each started on his respective farm. In the first place the period of settlement is different. Bear Lake farmers have been on their farms for an average of 18 years (Table 49), and development of the District commenced about 30 years ago. Fringe Area farmers have been established for an average of 12 years, and previous to this time their lands were unoccupied. Settlers in the newer regions were attempting to build up their farms during the depression period, whereas those in the old established district were well improved by 1929.[1]

(1) B.K. Acton, "A Comparison of Farms in the Grande Prairie District of Alberta 1930 and 1942," The Economic Annalist, August, 1943.

B.K. Acton, "A Comparison of Farms in the Battle River District of Alberta 1930 and 1942," The Economic Annalist, May, 1944.

TABLE 48.—CASH AND NON-CASH LIVING COSTS ON COMMERCIAL FRINGE AREA AND BEAR LAKE FARMS COMPARED

	Fringe Area	Bear Lake
	No.	No.
Number of farms	230	90
AVERAGE PER FARM:	$	$
Cash board	202	315
Other family expenses	198	408
Total cash expenses	400	723
Use of house	44	190
Farm produce used	265	288
Total perquisites	309	478
TOTAL LIVING	709	1,201
AVERAGE PER ADULT UNIT PER MONTH:		
Cash board	5	7
Other family expenses	5	10
Total cash expenses	10	17
Use of house	1	4
Farm produce used	6	7
Total perquisites	7	11
TOTAL LIVING	17	28

Bear Lake farmers on the average had more capital with which to commence farming than did Fringe Area settlers. This additional capital, no doubt, facilitated these farmers in becoming more quickly established. The financial progress of the operators in this old established district amounted to $401 per year per farm, and in the pioneer regions the increase in net worth per year per farm was $250.

TABLE 49.—FINANCIAL PROGRESS OF SETTLER SINCE STARTING ON FARM, COMMERCIAL FRINGE AREA AND BEAR LAKE FARMS COMPARED[1]

		Fringe Area	Bear Lake
Number of farms	No.	120	49
Average number of years settler on farm	Yrs.	12	18
Net worth beginning	$	762	2,388
Net worth May 1, 1942	$	3,741	9,734
Change in net worth per year	$	250	401
Average outside income per year	$	91	78

(1) A smaller sample was used in this case.

In the preceding pages, the salient differences have been discussed between a pioneer area and an old established one. The Bear Lake District was more accessible to transportation and markets, the District and farms were more improved, the size of farm and acreage cultivated was greater, capital investment was more, and the level of living was higher than in the Fringe Areas. It is hoped that future years will see the present Fringe Areas developed into improved farms supporting prosperous families, that will be more comparable with the Bear Lake District of today.

Possibilities of Settlement in the Peace River Area

From time to time a great deal has been said respecting the settlement possibilities of the Peace River. It is commonly referred to as one of our largest 'pools' of potential lands. Just how extensive is the acreage available for the establishment of new farms? Two facts should be mentioned before any attempt is made to appraise the quantity of suitable agricultural land: (1) the choice lands in the vicinity of the areas settled are already occupied; and (2) detailed land surveys are lacking, with the result that any estimate of amount of land suitable for farming is only an approximate figure.

A review of soil survey material and Provincial Government reports indicates that in the Peace River roughly 20,000 quarter-sections of new land are available for settlement, or over three million acres. Particular areas are west of Hines Creek to the British Columbia boundary and west of Spirit River to the British Columbia boundary. There are, however, parcels of potential settlement land on the outskirts of all the present settled areas.

In the Fort Vermilion country, located in the far north of the province, it is estimated that there are approximately 15,000 quarter-sections of land suitable for farming.

The success of future new settlement in the Peace River will depend upon the amount of capital available to the settler for establishment, adequacy of transportation facilities for marketing, and the future demand for and prices of agricultural products. Any appraisal of settlement possibilities in the Peace River must associate these factors with the productivity of potential lands.

Appendix

TABLE I.—AVERAGE PROGRESS OF SETTLERS IN IMPROVEMENT OF LAND, DEBOLT DISTRICT

Years on Farm	Number of Farms	Acres Improved per Year	Cumulative Acres of Improved Land
	No.	Ac.	Ac.
First	43	2.6	2.6
Second	41	8.6	11.2
Third	40	6.0	17.2
Fourth	39	5.9	23.1
Fifth	37	3.2	26.3
Sixth	33	5.0	31.3
Seventh	28	3.0	34.3
Eighth	29	6.2	40.5
Ninth	29	3.8	44.3
Tenth	29	7.0	51.3
Eleventh	28	4.1	55.4
Twelfth	27	4.4	59.8
Thirteenth	13	3.5	63.3
Fourteenth	5	.2	63.5

Average acreage of land improved per year = 4.54 acres.

TABLE II.—AVERAGE PROGRESS OF SETTLERS IN IMPROVEMENT OF LAND, WAPITI–LYMBURN DISTRICT

Years on Farm	Number of Farms	Acres Improved per Year	Cumulative Acres of Improved Land
	No.	Ac.	Ac.
First	38	3.9	3.9
Second	37	7.8	11.7
Third	36	5.6	17.3
Fourth	34	5.1	22.4
Fifth	33	6.7	29.1
Sixth	29	4.1	33.2
Seventh	23	3.7	36.9
Eighth	20	6.4	43.3
Ninth	18	4.2	47.5
Tenth	18	3.6	51.1
Eleventh	18	2.0	53.1
Twelfth	16	2.4	55.5
Thirteenth	9	2.2	57.7
Fourteenth	7	2.6	60.3

Average acreage of land improved per year = 4.31 acres.

DEFINITIONS OF TERMS USED IN THE ANALYSIS OF THE FARM BUSINESS

PERQUISITES: are those non-cash items that the farm contributes to the family living, such as farm produce and fuel, as well as an allowance for the use of the house (rent).

ADULT UNIT: one adult month is the equivalent of one person over fourteen years of age in the home one month; children fourteen years of age or under equal one-half adult unit.

ANIMAL UNIT: an animal unit is one mature horse or cow, or the equivalent in other livestock, based upon the amount of feed consumed, manure produced, or other appropriate conversion factors.

Farm Inventory: a farm inventory is a list of the amounts and value of all items of farm property as of a given date.

Farm Capital: is the land with such permanent improvements as are ordinarily transferred with the title of the land, livestock, equipment, feed, other supplies, and cash constituting together a farm operating unit.

Measures of Farm Earnings.—*Family Income from Farm:* is the difference between the year's farm receipts and cash expenses, the latter including capital expenditures and the former taking into account the increase in farm inventory.

Family Net Income from Farm: is the Family Income from Farm less farm family's cash living expenses. The surplus is for paying debts or for savings.

Operator's Labour Income: is the Family Income from Farm less a wage and board allowance for unpaid (family) labour, and also a deduction for the use of capital. (Five per cent charged for the use of capital in this study.) The operator has in addition the use of the farm perquisites.

Operator's Labour Earnings: is the Operator's Labour Income as defined above, plus the value of the farm perquisites used by the family.

Net Worth: is the total value of all assets (farm and other) less the total liabilities.

Change in Net Worth: is the difference in Net Worth between any two points of time. It is an indication of progress or lack of progress.

Table III.—Average Progress of Settlers in Improvement of Land, Hines Creek District

Years on Farm	Number of Farms	Acres Improved per Year	Cumulative Acres of Improved Land
	No.	Ac.	Ac.
First	52	3.9	3.9
Second	51	11.9	15.8
Third	49	5.0	20.8
Fourth	46	5.9	26.7
Fifth	41	3.4	30.1
Sixth	38	3.0	33.1
Seventh	35	4.1	37.2
Eighth	32	3.2	40.4
Ninth	33	4.2	44.6
Tenth	31	4.0	48.6
Eleventh	30	3.1	51.7
Twelfth	29	4.0	55.7
Thirteenth	22	4.0	59.7
Fourteenth	11	.9	60.6

Average acreage of land improved per year = 4.33 acres.

Table IV.—Average Progress of Settlers in Improvement of Land, Battle River District

Years on Farm	Number of Farms	Acres Improved per Year	Cumulative Acres of Improved Land
	No.	Ac.	Ac.
First	74	4.1	4.1
Second	71	12.5	16.6
Third	69	13.8	30.4
Fourth	67	7.3	37.7
Fifth	63	7.0	44.7
Sixth	61	5.8	50.5
Seventh	57	6.1	56.6
Eighth	55	4.9	61.5
Ninth	52	7.6	69.1
Tenth	53	7.4	76.5
Eleventh	52	8.0	84.5
Twelfth	52	8.6	93.1
Thirteenth	44	8.4	101.5
Fourteenth	27	8.8	110.3

Average acreage of land improved per year = 7.88 acres.

Table V.—The Number and Kind of Productive Animals that Equal One Animal Unit

	Animal Unit	Animal Unit if Animal Sold during Year
1 cow or bull	1.00	.5
1 heifer	1.00	.5
1 steer	1.00	.5
1 calf	.50	.2
1 sheep or goat	.14	.1
1 sow or boar	.20	.1
1 hog	.10	.1
100 hens	1.00	.5
50 fowl (other than hens)	1.00	.5

TABLE VI.—SOURCES AND AMOUNTS OF RECEIPTS ON SUBSISTENCE FARMS

	Self-sufficient	Pensioner	Part-time
	No.	No.	No.
Number of farms	9	9	78
FARM:	$	$	$
Cattle	47	23	35
Hogs	236	52	125
Total livestock	300	83	210
Crop	23	53	102
Other farm produce	35	6	27
Other	18	71	220
TOTAL	376	213	559
NON-FARM:			
Legacies, gifts, and so on	2	25	18
Pensions, 1941	.....	226	6
Non-farm labour	13	42	147
Prairie Farm Income bonus	14	14	22
Other non-farm receipts	2	18	128
TOTAL	31	325	321
TOTAL RECEIPTS	407	538	880

TABLE VII.—FARM EXPENSES AND CAPITAL EXPENDITURES ON SUBSISTENCE FARMS

	Self-sufficient	Pensioner	Part-time
	No.	No.	No.
Number of farms	9	9	78
	$	$	$
Taxes	27	30	39
Custom work	56	46	62
Paid labour	.....	20	26
Other	62	94	151
Cash farm expenses	145	190	278
Value of and board of unpaid labour	66	61	140
Farm expenses	211	251	418
Capital expenditures	82	79	241
TOTAL FARM EXPENSES	293	330	659

TABLE VIII.—SOURCES AND AMOUNTS OF RECEIPTS ON COMMERCIAL FARMS

	Grain Crops	Mixed–Grain	Mixed–Livestock	Livestock
	No.	No.	No.	No.
Number of farms	40	41	42	107
FARM:	$	$	$	$
Cattle	23	43	67	79
Hogs	86	247	381	504
Total livestock	133	315	465	605
Crop	956	442	239	32
Other farm produce	10	39	41	105
Other	339	349	198	119
TOTAL	1,438	1,145	943	861
NON-FARM:				
Legacies, gifts, and so on	.....	16	15	4
Pensions, 1941	2	1	14	7
Non-farm labour	4	16	4	25
Prairie Farm Income bonus	56	41	43	17
Other non-farm receipts	27	9	12	20
TOTAL	89	83	88	73
TOTAL RECEIPTS	1,527	1,228	1,031	934

TABLE IX.—FARM EXPENSES AND CAPITAL EXPENDITURES ON COMMERCIAL FARMS

	Grain	Mixed–Grain	Mixed–Livestock	Livestock
	No.	No.	No.	No.
Number of farms	40	41	42	107
	$	$	$	$
Taxes	51	38	50	41
Custom work	310	214	121	76
Paid labour	76	52	28	12
Other	229	231	209	211
Cash farm expenses	666	535	408	340
Value of and board of unpaid labour	8	92	72	91
Farm expenses	674	627	480	431
Capital expenditures	250	205	253	175
TOTAL FARM EXPENSES	924	832	733	606

TABLE X.—SOURCES AND AMOUNTS OF RECEIPTS ON COMMERCIAL FARMS EMPHASIZING GRAIN PRODUCTION, BY SIZE OF FARM

	Acres Cropland, 1941		
	100 and Under	101 to 200	201 and Over
	No.	No.	No.
Number of farms	18	37	26
FARMS:	$	$	$
Cattle	20	37	35
Hogs	80	143	262
Total livestock	100	180	297
Crop	202	575	1,209
Other farm produce	8	29	30
Other	182	293	608
TOTAL	492	1,077	2,144
Non-farm receipts	58	79	115
TOTAL RECEIPTS	550	1,156	2,259

TABLE XI.—FARM EXPENSES AND CAPITAL EXPENDITURES ON COMMERCIAL FARMS EMPHASIZING GRAIN PRODUCTION, BY SIZE OF FARM

	Acres Cropland, 1941		
	100 and Under	101 to 200	201 and Over
	No.	No.	No.
Number of farms	18	37	26
	$	$	$
Taxes	23	38	68
Custom work	103	249	391
Paid labour	3	100	131
Other	77	138	389
Cash farm expenses	206	525	979
Value of and board of unpaid labour	33	45	71
Farm expenses	239	570	1,050
Capital expenditures	161	150	383
TOTAL FARM EXPENSES	400	720	1,433

TABLE XII.—CASH AND NON-CASH LIVING COSTS ON COMMERCIAL FARMS EMPHASIZING GRAIN PRODUCTION, BY SIZE OF FARM

	Acres Cropland, 1941		
	100 and Under	101 to 200	201 and Over
	No.	No.	No.
Number of farms	18	37	26
AVERAGE PER FARM:	$	$	$
Cash board	148	199	261
Other family expenses	95	206	301
Total cash living expenses	243	405	562
Value of perquisites	150	266	380
TOTAL LIVING	393	671	942
AVERAGE PER ADULT MONTH:			
Total cash living expenses	10	12	13
Perquisites	6	8	9
TOTAL LIVING	16	20	22

TABLE XIII.—NET WORTH STATEMENT OF COMMERCIAL FARMS EMPHASIZING GRAIN PRODUCTION, BY SIZE OF FARM, AS OF MAY 1, 1942[1]

	Acres Cropland, 1941		
	100 and Under	101 to 200	201 and Over
Number of farms.....No.	18	37	26
Total assets.....$	2,537	5,189	8,067
Liabilities.....$	140	433	860
Net worth May 1, 1942.....$	2,397	4,756	7,207
Change in net worth, 1941–42.....$	87	81	195

(1) Net worth is calculated on an operator basis.

TABLE XIV.—FINANCIAL PROGRESS OF SETTLER SINCE STARTING ON FARM, COMMERCIAL FARMS EMPHASIZING GRAIN PRODUCTION, BY SIZE OF FARM[1]

	Acres Cropland, 1941		
	100 and Under	101 to 200	201 and Over
Number of farms.....No.	8	15	9
Average number of years on farm.....Yrs	12	14	17
Net worth beginning.....$	461	746	888
Net worth May 1, 1942.....$	2,413	5,003	8,717
Change in net worth per year.....$	168	209	449
Average outside income per year.....$	60	63	134

(1) Due to incomplete data on some of the records, a smaller sample was used in this analysis.

TABLE XV.—SOURCES AND AMOUNTS OF RECEIPTS ON COMMERCIAL FARMS EMPHASIZING LIVESTOCK PRODUCTION, BY SIZE OF FARM

	Acres Cropland, 1941			
	50 and Under	51 to 100	101 to 150	151 and Over
	No.	No.	No.	No.
Number of farms	31	70	33	15
FARM:	$	$	$	$
Cattle	70	77	63	106
Hogs	322	452	586	599
Total livestock	409	554	666	715
Crop	23	47	139	323
Other farm produce	98	93	76	67
Other	57	118	204	298
TOTAL	587	812	1,085	1,403
Non-farm receipts	59	71	63	179
TOTAL RECEIPTS	646	883	1,148	1,582

TABLE XVI.—FARM EXPENSES AND CAPITAL EXPENDITURES ON COMMERCIAL FARMS EMPHASIZING LIVESTOCK PRODUCTION, BY SIZE OF FARM

	Acres Cropland, 1941			
	50 and Under	51 to 100	101 to 150	151 and Over
	No.	No.	No.	No.
Number of farms	31	70	33	15
	$	$	$	$
Taxes	28	40	53	72
Custom work	50	76	132	141
Paid labour	3	9	24	58
Other	160	180	228	417
Cash farm expenses	241	305	437	688
Value of and board of unpaid labour	68	69	124	114
Farm expenses	309	374	561	802
Capital expenditures	114	181	213	406
TOTAL FARM EXPENSES	423	555	774	1,208

TABLE XVII.—CASH AND NON-CASH LIVING COSTS ON COMMERCIAL FARMS EMPHASIZING LIVESTOCK PRODUCTION, BY SIZE OF FARM

	Acres Cropland, 1941			
	50 and Under	51 to 100	101 to 150	151 and Over
	No.	No.	No.	No.
Number of farms	31	70	33	15
AVERAGE PER FARM:	$	$	$	$
Cash board	172	186	221	265
Other family expenses	151	177	223	269
Total cash living expenses	323	363	444	534
Value of perquisites	262	327	371	371
TOTAL LIVING	585	690	815	905
AVERAGE PER ADULT MONTH:				
Total cash living expenses	8	8	10	12
Perquisites	7	8	8	8
TOTAL LIVING	15	16	18	20

TABLE XVIII.—NET WORTH STATEMENT OF COMMERCIAL FARMS EMPHASIZING LIVESTOCK PRODUCTION, BY SIZE OF FARM, AS OF MAY 1, 1942[1]

	Acres Cropland, 1941			
	50 and Under	51 to 100	101 to 150	151 and Over
Number of farms.....No.	31	70	33	15
Total assets.....$	2,284	3,501	4,563	6,593
Liabilities.....$	172	247	460	628
Net worth May 1, 1942.....$	2,112	3,254	4,103	5,965
Change in net worth, 1941–42..$	150	285	411	412

(1) Net worth is calculated on an operator basis.

TABLE XIX.—FINANCIAL PROGRESS OF SETTLER SINCE STARTING ON FARM, COMMERCIAL FARMS EMPHASIZING LIVESTOCK PRODUCTION, BY SIZE OF FARM[1]

	Acres Cropland, 1941			
	50 and Under	51 to 100	101 to 150	151 and Over
Number of farms.....No.	19	46	17	6
Average number of years on farm.....Yrs.	7	12	10	12
Net worth beginning.....$	675	656	642	512
Net worth May 1, 1942.....$	2,183	2,881	4,129	5,323
Change in net worth per year.....$	202	185	278	369
Average outside income per year.....$	119	79	99	126

(1) Due to incomplete data on some of the records, a smaller sample was used in this analysis.

TABLE XX.—DETAIL OF ORGANIZATION FOR SUGGESTED BUDGET ON FARMS EMPHASIZING GRAIN PRODUCTION OF VARIOUS CULTIVATED ACREAGES

	Acres Cultivated		
	75	150	225
LAND USE:			
Cultivated.....Ac.	75	150	225
Unimproved.....Ac.	245	170	95
TOTAL.....Ac.	320	320	320
CROP ROTATION:			
Wheat.....Ac.	28	56	84
Oats.....Ac.	11	22	33
Barley.....Ac.	8	16	24
Grasses and legumes mixed:			
Hay.....Ac.	5	9	14
Pasture.....Ac.	13	27	40
Fallow.....Ac.	10	20	30
TOTAL CROPPED.....Ac.	75	150	225
AVERAGE TOTAL YIELDS LESS SEED:[1]			
Wheat.....Bu.	518	1,036	1,554
Oats.....Bu.	374	748	1,122
Barley.....Bu.	184	368	552
Hay.....T.	10	18	28
SALEABLE GRAIN:			
Wheat.....Bu.	450	900	1,350
(Balance of grain and hay available for feeding.)			

[1]RATE OF SEEDING, YIELDS PER ACRE, AND GRADE OF GRAIN:

	Rate of Seeding	Yield per Acre	Grade of Grain
Wheat	1.5 bu.	20 bu.	No. 3 Nor.
Oats	3.0 bu.	37 bu.	No. 3 C.W.
Barley	2.0 bu.	25 bu.	No. 3 C.W.
Hay	.....	2 T.	.....

TABLE XX.—DETAIL OF ORGANIZATION FOR SUGGESTED BUDGET ON FARMS EMPHASIZING GRAIN PRODUCTION OF VARIOUS CULTIVATED ACREAGES (*Cont'd*)

	Acres Cultivated		
	75	150	225
KINDS AND NUMBERS OF LIVESTOCK:			
Horses.....No.	4	7	10
Cattle:			
Cows.....No.	4	7	10
Calves.....No.	4	7	10
Yearlings marketed.....No.	3	5	7
Hogs:			
Sows.....No.	1	1	2
Pigs.....No.	8	15	30
Pigs marketed.....No.	6	12	24
Poultry.....No.	100	100	100
FARM OPERATING EXPENSES:			
Taxes.....$	60	60	60
Hardware and blacksmith.....$	10	20	30
Repairs to wells, fences, and so on....$	7	15	23
Binder twine.....$	12	23	35
Breeding fees.....$	9	16	24
Stock foods.....$	7	15	25
Fertilizer.....$	19	38	56
Seed.....$	18	36	54
Threshing.....$	70	140	210
Equipment repairs.....$	20	35	50
Custom work (other than threshing, grinding feed, and so on).....$	12	25	35
Hired labour and board of hired labour.....$	.....	50	100
Trucking.....$	47	90	140
Miscellaneous.....$	20	30	40
TOTAL.....$	311	593	882

TABLE XXI.—DETAIL OF ORGANIZATION FOR SUGGESTED BUDGET ON FARMS EMPHASIZING LIVESTOCK PRODUCTION OF VARIOUS CULTIVATED ACREAGES

	Acres Cultivated			
	50	75	100	150
LAND USE:				
Cultivated.....Ac.	50	75	100	150
Unimproved.....Ac.	110	245	220	170
TOTAL.....Ac.	160	320	320	320
CROP ROTATION:				
Wheat.....Ac.	8	12	16	24
Oats.....Ac.	12	18	25	37
Barley.....Ac.	13	19	25	37
Grasses and legumes mixed:				
Hay.....Ac.	7	10	14	20
Pasture.....Ac.	10	16	20	32
(Included in pasture—fallow with cover crop).....Ac.	(8)	(12)	(17)	(25)
TOTAL CROPPED.....Ac.	50	75	100	150
AVERAGE TOTAL YIELD LESS SEED:[1]				
Wheat.....Bu.	124	186	248	372
Oats.....Bu.	324	486	675	999
Barley.....Bu.	234	342	450	666
Hay.....T.	14	20	28	40
(Grain and hay available for feeding.)				

[1]RATE OF SEEDING AND YIELDS PER ACRE:

	Rate of Seeding	Yield per Acre
Wheat	1.5 bu.	17 bu.
Oats	3.0 bu.	30 bu.
Barley	2.0 bu.	20 bu.
Hay	.....	2T.

TABLE XXI.—DETAIL OF ORGANIZATION FOR SUGGESTED BUDGET ON FARMS EMPHASIZING LIVESTOCK PRODUCTION OF VARIOUS CULTIVATED ACREAGES (*Cont'd*)

	Acres Cultivated			
	50	75	100	150
KINDS AND NUMBERS OF LIVESTOCK:				
Horses.....No.	3	4	6	7
Cattle:				
Cows.....No.	4	6	7	8
Calves.....No.	4	6	7	8
Yearlings marketed.....No.	3	4	5	6
Hogs:				
Sows.....No.	1	2	3	4
Pigs.....No.	15	30	45	60
Pigs marketed.....No.	12	24	36	48
Poultry.....No.	75	100	100	100
FARM OPERATING EXPENSES:				
Taxes.....$	30	60	60	60
Hardware and blacksmith....$	7	10	15	20
Repairs to wells, fences, and so on.....$	5	7	11	15
Binder twine.....$	8	12	17	25
Breeding fees.....$	10	16	20	24
Stock foods.....$	12	25	35	45
Fertilizer.....$	13	19	26	38
Seed.....$	16	24	34	50
Threshing.....$	45	67	91	135
Equipment repairs.....$	10	20	28	35
Custom work (other than threshing, grinding feed, and so on).....$	50	20	30	40
Hired labour and board of hired labour.....$	.....	.....	25	50
Trucking.....$	21	36	51	66
Miscellaneous.....$	12	20	25	30
TOTAL.....$	239	336	468	633

Table XXII.—Present and Potential Use of Land in Commercial Farms, Bear Lake District

(a) *Present Use—Average per Farm*		
Number of farms	No.	90
Total acres:		
Cropland, 1941	Ac.	286
Total operated	Ac.	429
Land owned by operator:		
Cropland, 1941	Ac.	231
Farmstead	Ac.	4
Total improved	Ac.	235
Total unimproved	Ac.	100
Total	Ac.	335

(b) *Potential Use—Average per Farm*		
Number of farms	No.	90
Land owned by operator:		
Improved	Ac.	235
Unimproved arable	Ac.	69
Total Arable	Ac.	304
Proportion of total acres improved	%	70
Proportion of total acres unimproved arable	%	21
Total Arable	%	91

Table XXIII. — Distribution of Crops on Commercial Farms for the Year 1941, Bear Lake District

Number of farms	No.	90
Wheat	%	36
Oats	%	20
Hay	%	3
Other crops	%	6
Summer fallow	%	35
Breaking	%	.....
Total	%	100

Table XXIV.—Distribution of Farm Capital on Commercial Farms as of May 1, 1942, Bear Lake District[1]

Number of farms	No.	90
Farm real estate	$	8,017
Livestock	$	1,168
Equipment	$	2,175
Value of feed, seed and supplies	$	773
Total Farm Capital	$	12,133

(1) Farm capital is calculated on a farm unit basis.

Table XXV.—Sources and Amounts of Receipts on Commercial Farms, Bear Lake District

Number of farms	No.	90
Farm:		
Cattle	$	98
Hogs	$	443
Total livestock	$	566
Crop	$	811
Other farm produce	$	82
Other	$	1,007
Total	$	2,466
Non-farm receipts	$	166
Total Receipts	$	2,632

Table XXVI. — Farm Expenses and Capital Expenditures on Commercial Farms, Bear Lake District

Number of farms	No.	90
Taxes	$	120
Custom work	$	233
Paid labour	$	178
Other	$	525
Cash farm expenses	$	1,056
Value of and board of unpaid labour	$	70
Farm expenses	$	1,126
Capital expenditures	$	590
Total Farm Expenses	$	1,716

TABLE XXVII.—OPERATING STATEMENT OF COMMERCIAL FARMS, BEAR LAKE DISTRICT

Number of farms	No.	90
Cash farm receipts	$	2,466
Increase in inventory	$	—213
Total receipts	$	2,253
Cash farm expenses	$	1,056
Capital expenditures	$	590
Total cash expenses	$	1,646
FARM FAMILY INCOME	$	607
Cash living expenses	$	723
Less cash board of paid labour	$	45
Cash family living expenses	$	678
NET INCOME (FAMILY)	$	—71

FARM FAMILY INCOME	$	607
Value of unpaid labour and board	$	70
Interest on capital	$	607
	$	677
OPERATOR'S LABOUR INCOME	$	—70
Value of perquisites	$	478
Less perquisites to paid and unpaid labour	$	68
Value of perquisites to farmer's living	$	410
OPERATOR'S LABOUR EARNINGS	$	340
NON-FARM INCOME	$	166

TABLE XXVIII.—CASH AND NON-CASH LIVING COSTS ON COMMERCIAL FARMS, BEAR LAKE DISTRICT

Number of farms	No.	90
AVERAGE PER FARM:		
Cash board	$	315
Other family expenses	$	408
Total cash expenses	$	723
Use of house	$	190
Farm produce used	$	288
Total perquisites	$	478
TOTAL LIVING	$	1,201

AVERAGE PER ADULT MONTH:		
Cash board	$	7
Other family expenses	$	10
Total cash expenses	$	17
Use of house	$	4
Farm produce used	$	7
Total perquisites	$	11
TOTAL LIVING	$	28

TABLE XXIX.—NET WORTH STATEMENT, AS OF MAY 1, 1942, BEAR LAKE DISTRICT[1]

Number of farms	No.	90
Total assets	$	12,559
Liabilities	$	1,470
Net worth	$	11,089
Change in net worth, 1941–42	$	16

(1) Net worth is calculated on an operator basis.

TABLE XXX.—FINANCIAL PROGRESS OF SETTLER SINCE STARTING ON FARM, BEAR LAKE DISTRICT[1]

Number of farms	No.	49
Average number of years settler on farm	Yrs.	18
Net worth beginning	$	2,388
Net worth May 1, 1942	$	9,734
Change in net worth per year	$	401
Average outside income per year	$	78

(1) Due to incomplete data on some of the records, a smaller sample was used in this analysis.

OTTAWA
EDMOND CLOUTIER, C.M.G., B.A., L.Ph., King's Printer and Controller of Stationery, 1947