

A TRANSPORT SURVEY
OF
SOUTH ISLAND FARMERS

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Research Report No. 90
Agricultural Economics Research Unit
Lincoln College
December 1979

ISSN No. 0069 3790

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Lincoln College, Canterbury, N.Z.

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ACKNOWLEDGEMENTS

Without the co-operation of the 1,664 farmers who completed the questionnaire, this survey could not have been successful. Many of the replies clearly showed that time was generously given to produce an accurate and comprehensive return. These efforts are gratefully acknowledged with thanks.

Summarising the mass of information generated by the survey was a daunting task. Pat Campbell contributed a great deal towards overcoming various problems, as did George Gregg and his staff of the Lincoln College Computer Laboratory. The contributions made by Susan Freath, Russell King and Gavin Hampton in the latter stages of computer analysis are also gratefully acknowledged.

PREFACE

Late in 1975 the Agricultural Economics Research Unit surveyed 3,156 randomly chosen South Island sheep farmers to obtain information on their transport needs and problems. Adjusting for known address list errors, and ignoring unusable replies, an encouraging 59.2 per cent response rate was obtained. In all, 1,664 usable replies were returned. This report presents the results of analysing these replies.

The primary aim of the survey was to quantify the volume and flow patterns of the two major South Island farm commodities: livestock and wool. The survey was successful in generating a wealth of fresh information to satisfy this aim. A summary of this information is presented in this volume.

The survey's questionnaire also sought a range of specific transport related statistics from respondents to give further insight into farm transport needs and problems. Farm management practices, and the basis for certain farm management decisions, were also investigated in the survey to clarify their impact on transport efficiency. As well, the opinions of farmers were sought on a number of important farm transport issues. The resulting findings in this variety of matters are presented in this report.

Farming and road transport are industries both characterised by fragmented ownership. As a result, there is very little comprehensive statistical information available on farm transport. This project has shown that such information can be successfully obtained by means of a mail survey of farmers. This report

of the survey's findings presents fresh information that will contribute towards more informed discussion, research and decision making in the field of farm transport.

J. B. Dent
Director

CHAPTER 1

INTRODUCTION

The 1974 Report of the Commission of Inquiry into the Meat Industry (Anon., (1974a) reached the following conclusions on the transport of livestock:

" 276. It was apparent from the number of organisations that gave evidence to the Commission on this matter that there was anxiety about the amount of transporting livestock throughout the country.

277. The Ministry of Agriculture and Fisheries rightly pointed out that there was concern over the possible spread of an exotic disease and the difficulties which long-distance transport would cause in controlling an outbreak, should it occur.

278. Farmer organisations also expressed concern that livestock was often being transported out of the district in which it had been raised and fattened and taken to works that were not normally competing for stock in that district.

279. It was obvious to the Commission that at times livestock was being transported unnecessarily long distances and it was therefore important, particularly in regard to the risks of spreading disease, that every effort should be made to minimise this danger by endeavouring to rationalise livestock transport. "

The Commission recommended that transport firms, meat export operators and the Ministry of Transport undertake studies aimed at rationalising livestock transport.

Similar conclusions would apply to wool transport. In the case of wool there are two additional key issues: the reduced transport and selling costs said to be attainable from sale by sample; and the increasing containerisation of exported wool.

Basic to studies aimed at rationalising livestock and wool transport is the need for comprehensive information on existing movement patterns. Without this information it is not possible to carry out the necessary analysis of the costs and benefits of changing the existing distribution patterns.

Sufficiently comprehensive data on livestock and wool movements does not currently exist. The Wilbur Smith Transport Policy Study reported the tonnages of livestock and wool moving between large regions in 1973 (Wilbur Smith et al., 1973). However, these livestock movements do not include details of livestock types nor seasonal patterns and wool movements are recorded only in aggregation with several other commodities. Some specific studies detailing livestock and wool movement patterns have been made - for instance, Johnston's (1967) study of transport to and from North Canterbury farms. This study was limited to a particular geographical area. A study of livestock transport by Millar (1970) concentrated on competition between road and rail rather than on inter-regional flow patterns.

Accordingly, the Agricultural Economics Research Unit undertook the task of collecting comprehensive data on livestock and wool flows for the South Island.

Chapter 2 describes the method of data collection and Chapter 3 describes the characteristics of farms surveyed. Chapters 4, 5 and 6 present the results for livestock transport and

Chapter 7 reports and discusses the wool transport findings. The extent of seasonal peaking in both livestock and wool transport is considered in Chapter 8. Chapters 9 and 10 present the findings on the methods of transport used for livestock and wool cartage and the details of farm truck ownership, respectively. The concluding chapter suggests areas for further research in the field of farm transport.

The data collected are available in further detail from the Agricultural Economics Research Unit, Lincoln College.

CHAPTER 2

METHOD

2.1 Objectives of the Project

The range of objectives established for the project included:

1. to construct origin - destination matrices for livestock movements in the South Island in the year ended 30 June 1975, with details of seasonal patterns, type of livestock, and reasons for movements.
2. to construct origin - destination matrices for wool movements in the South Island in the year ended 30 June 1975, with details of seasonal patterns and of wool type.
3. to investigate the responsibility for, and decision behaviour relating to, the choice of:
 - (i) Mode of Transport
 - (ii) Transport Operator
 - (iii) Freezing Works
4. to estimate the availability of on-farm covered stock holding facilities with grated floors as well as on-farm wool-storage capacity.
5. to assess farmers' views on the performance of road and rail transport systems.
6. to investigate farm truck ownership.

2.2 Project Design

Some information on livestock movements to slaughter, and on wool flows, is available. This information, however, is not comprehensive. There are a large number of transport companies engaged in livestock and wool transport. The quality of their records varies widely and it would be a daunting task to attempt to collate them, or even to sample from them. (Wilbur Smith et al., 1973^b). Even given this information, the amount of transport undertaken by farmers themselves would not be ascertained. Freezing companies have records of livestock movements to slaughter. However, these unpublished records relate to large origin regions with limited detail on seasonal patterns and categories of livestock. Moreover, records kept by freezing works do not cover store stock movements.

Farmers approached directly were considered to be the best source of comprehensive information on livestock and wool movements. In order to survey a large number of widely dispersed farmers economically and efficiently a mail survey was considered to be the only feasible technique. Personal visits were considered too time consuming and costly while telephone surveys are not suitable for collecting large quantities of detailed data which require recourse to records. The efficacy of mail surveys was tested in a pilot survey of Ashburton county farmers in 1974. (Ambler, 1975). The results of this survey confirmed that a mail questionnaire could successfully generate the required information.

Accordingly, in November 1975 a twelve page questionnaire was mailed to 3,156 South Island livestock farmers. Details of the questionnaire are contained in Appendix 1. In addition to

general information, the questionnaire requested details of individual livestock and wool movements to and from each farm for the year ended 30 June 1975.

However, because of the nature of the survey, the results still do not cover certain components of wool and livestock transport. In particular, the survey excluded details of livestock and wool flows carried out by non-farmers such as butchers or woolbuyers buying at the farm gate and carrying out their own transport. All flows beyond the first wool store entered from the farm were not included. Nor did the survey include speculative movements of livestock between saleyards by non-farmers or movements to slaughter from saleyards.

It should also be noted that some double counting of movements between farms did occur, although this can be corrected by appropriate interpretation of results in the analysis.

2.3 Definition of Regions and Sample Sizes

Inter-regional flow data obtained from the survey could be presented using counties as the origin and destination regions. Greater statistical accuracy for a given sample size is obtained with some loss in specific detail by using regions containing several counties. Hence the samples were drawn from the regions illustrated in Figure 1 and defined in Table 1. It should be noted that the regions adopted here correspond (with appropriate aggregation) to the regions suggested by the Local Government Commission for "farming - livestock numbers, forecasting regions" (Anon., 1973).

Samples were drawn from address lists for each region compiled from the Producer Board Electoral College voting roll

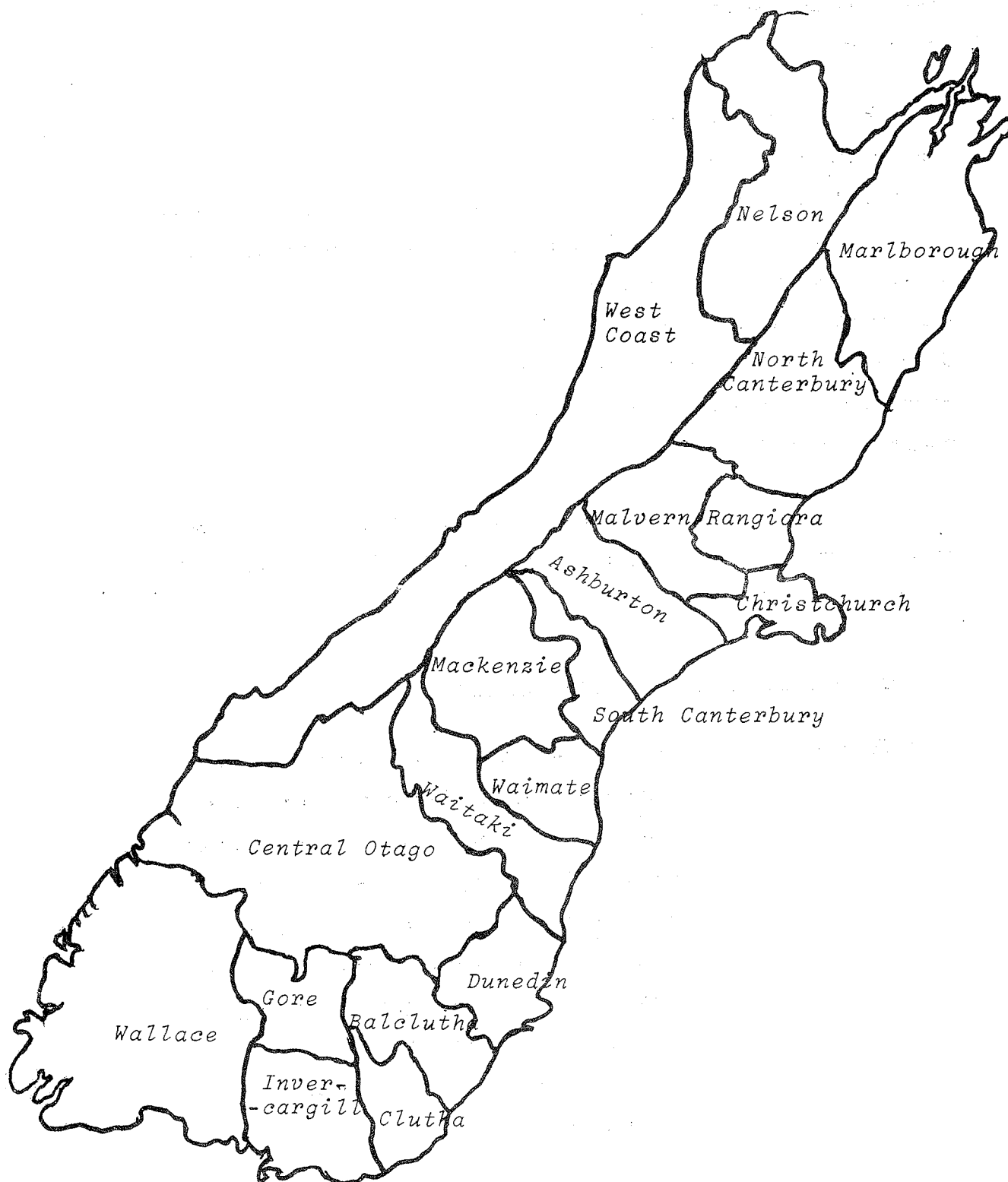


Figure 1: Survey Regions

TABLE 1
Detail of Survey Regions and Sample Coverage

Region	Counties included	Number of addresses ^a	Sample Size	Number of Valid Responses	Number of sheep on survey farms (with valid replies) as % of total sheep in region
Marlborough	Marlborough, Awatere, Kaikoura	1 016	171	80	11.1
Nelson	Golden Bay, Waimea	1 052	174	69	9.2
West Coast	Buller, Inangahua, Grey, Westland	574	157	69	14.5
North Canterbury	Amuri, Cheviot, Waipara	792	142	94	11.8
Rangiora	Ashley, Rangiora, Eyre, Oxford	1 032	167	97	14.5
Malvern	Malvern, Tawera	551	140	71	17.3
Christchurch	Paparua, Waimairi, Heathcote, Mt Herbert, Akaroa, Waiwera, Ellesmere	852	182	101	10.4
Ashburton	Ashburton	1 464	179	84	5.7
South Canterbury	Strathallan	918	172	96	10.9
Mackenzie	Mackenzie	301	134	85	32.4
Waimate	Waimate	766	165	97	13.8
Waitaki	Waitaki	957	170	83	12.4
Dunedin	Waihemo, Waikouaiti, Taieri, Otago Peninsula	868	169	64	10.2
Balclutha	Taupeka, Bruce	1 000	169	85	8.7
Clutha	Clutha	761	167	103	19.2
Central Otago	Lake, Maniototo, Vincent	735	164	93	13.7
Gore	Gore	1 531	176	102	7.3
Invercargill	Southland	1 963	181	80	4.4
Wallace	Wallace, Fiord	1 184	177	110	11.1
TOTALS		18 317	3 156	1 663	

^a Number of addresses on producer board electoral college rolls supplied by Ministry of Agriculture and Fisheries. A number of farms were found to be outside the regions suggested by the address.

as at 31 January 1975. These lists comprised owners of at least 100 sheep and hence represented 86.2 per cent of livestock farms in the South Island. Since only 3.3 per cent of farms produce beef exclusively, and beef is more frequently run in conjunction with sheep, the transport movements of beef cattle are considered to be adequately represented in the basic address list.

Dairy producers, and mixed dairy and beef producers, comprise 8.2 per cent of all holdings, or 9.9 per cent of livestock farms. Of those farms engaged in dairy farming, only 16.8 per cent combine dairy and sheep farming. This means that dairy farmers are inadequately represented by the sheep owners' address list. Moreover, since pig farming is frequently operated in conjunction with dairy farming, the address list may also under-represent pig producers. Since dairy livestock and pig movements are unlikely to be adequately surveyed from the sample, they have been omitted from the analysis.

Very little advance knowledge of movement volumes and patterns was available to estimate a sample size giving an acceptable average error range. The only reliable guide available was the result of the earlier pilot survey conducted for a small sample.

A very broad indication of the necessary sample size from each region was obtained using the pilot survey's findings in the following formula (Hansen et al., 1970, p. 127):

$$n = \frac{Z^2 N V^2}{ND^2 + Z^2 V^2}$$

where n is the required sample size.

Z is the level of confidence with which it can be stated that the error will be $\pm (D \times 100)\%$ expressed as the standard normal deviation.

N is the size of the population from which the sample is being drawn.

D is the acceptable error in the estimate of the mean of the population characteristic being measured, expressed as a fraction of the mean.

V^2 is the coefficient of variation in the population characteristic being measured.

$$V^2 = \frac{S_x^2}{\bar{x}^2}$$

where S_x^2 is an a priori estimate of the variance of the mean of the population characteristic.

$\bar{x}$ is an a priori estimate of the mean of the population characteristic.

The population size (n) was determined from the number of addresses on the Producer Board Electoral Roll for each region.

A priori estimates of the mean ($\bar{x}$) and variance (S_x^2) were based on the results of the pilot survey conducted in Ashburton County. The numbers of lambs coming off each of 29 farms during the year ended 30 June 1974 were expressed as ratios of the number of sheep on each of the farms at 31 January 1974. The mean ratio was 0.596 and the variance 0.126. These estimates were applied uniformly to all 20 regions in the absence of a priori information by region.

12.

A 95 per cent confidence interval was considered an acceptable degree of certainty with which to be able to state the error range. From the standard normal distribution, Z took the value 1.96.

D was set to give a 10 per cent error range. The sample size necessary to provide a five per cent error range was estimated to increase the cost of the survey by 2.5 times and was, therefore, not considered acceptable.

A further adjustment to the sample size was made in anticipation of a 70 per cent response rate, an anticipation that proved to be optimistic.

Actual sample sizes varied from the planned levels because of varying response rates and discrepancies between actual farm locations and the locations indicated by the address lists. The sample sizes by region are given in Table 1.

2.4 Questionnaire Format

A copy of the questionnaire appears in Appendix 1. The questionnaire was printed on both sides of white A4 paper with the introductory letter being an integral part. Pages 1 - 8 included the letter, questions covering the characteristics of the farm, stock numbers and types, shearing practices, farm truck ownership, background to freezing works and transport company choice, livestock and wool storage capacity on the farm, assessment of rail and road livestock transport performance, background to the use of saleyards, attitudes on a number of transport matters, market shares of livestock transporters and a space for comments. Pages 9 - 12 requested details of

livestock and wool flows with livestock movements being grouped into tables for "to slaughter", "to saleyards", "to other farms", "from saleyards", "from other farms" and "other".

2.5 Mail Survey Technique

For the majority of those surveyed, reminder letters were forwarded to non-respondents 21 days and 54 days after the initial mailing. Copies of these letters are given in Appendix 1.

There was some variation in the forwarding of reminders as a mail survey technique experiment was simultaneously conducted. A control group was first selected, and a standardised mail survey technique applied to it. Experimental groups were then established and the survey was mailed in exactly the same way as standardised for the control group, except for the technique variation being tested.

The experiments conducted were selected as those areas seen to be in most need of attention due to their assessed likely impact on cost-effectiveness. Table 2 presents the groupings and their sizes.

TABLE 2
Experimental Groups

<u>Experimental Group</u>	<u>Group Size</u>
Control Group	500
Postcard Reminder	500
Brown Outward Envelope	500
White Franked Reply Envelope	250
Brown Stamped Reply Envelope	250
Brown Franked Reply Envelope	250
Airmail Stamped Reply Envelope	250
Airmail Franked Reply Envelope	250
Handwritten Prompt on First Reminder	226
No First Reminder Sent	180
	3,156

A detailed report giving further details of this experimentation and its outcome is separately published (Ambler, 1977).

2.6 Response Rates

Table 3 shows the overall response rates. The raw response rate is simply the number of replies returned by the 3,156 farmers surveyed. However, some farms had to be eliminated from the potential sample because of address list errors such as the inclusion of hobby farms, deceased farmers, sold farms etc. These exclusions resulted in the effective sample size. Not all of the replies were usable. Those unusable had to be deleted from the effective response rate to give a net valid response rate.

TABLE 3
Response Rates

	Sample Size	No. of Replies	Percentage Response
Raw Response Rate	3,156	2,074	65.7
Effective Response Rate	2,811	2,074	73.8
Net Valid Response Rate	2,811	1,663	59.2

The number of valid responses by region is shown in Table 1.

2.7 Accuracy of Results

The results discussed in subsequent chapters are estimates of regional and/or South Island totals. These were calculated by multiplying the sample traffic volumes from each origin region by the following factor:

Census estimate of sheep in region (Anon, 1974 b)

Number of Sheep Reported from Survey Farms in Region

The lack of adequate data for the complete population of farmers from which the sample was drawn means that the precision of estimates from the survey cannot be assessed. Even if this were feasible, the estimated precision would relate only to results for the sample year (the twelve months to 30 June 1975), which happened to be one of recession for the farming and transport industries. Hence, the results reported correspond to a lower volume of livestock and wool movements than that for an "average" year. As this is the first survey of this nature conducted for the South Island, it is not possible to ascertain whether the pattern of livestock and wool movements was influenced by the nature of the season.

CHAPTER 3

SURVEY FARM CHARACTERISTICS

3.1 Type of Farm

Table 4 shows the farm type of the survey respondents. The largest proportion of farmers - 42.4 per cent - were engaged in fattening and breeding sheep. The other major category was mixed cropping and fattening, accounting for 34.2 per cent of all respondents.

TABLE 4
Type of Farm

	Number	Relative Frequency %
High Country	53	3.2
Foothills	152	9.1
Fattening - Breeding	704	42.4
Intensive - Fattening	99	6.0
Mixed Cropping and Fattening	568	34.2
Other	83	5.0
TOTAL	1,662	100.0

The above information is somewhat more meaningful when presented on a disaggregated, regional basis, as in Table 5. The distribution of farming activity by region reflects the regional, geographical, and climatic features.

TABLE 5: Type of Farm By Region

Region	Categories					Other
	High Country	Foothills	Fattening - Breeding	Intensive Fattening	Mixed Cropping and Fattening	
	Relative Frequencies (Per Cent)					
Marlborough	8.8	22.5	41.3	2.5	17.5	7.5
Nelson		17.4	42.0	1.4	24.6	14.5
West Coast		1.5	64.7	7.4		26.5
North Canterbury	2.2	8.6	50.5	2.2	35.5	
Rangiora	1.0	3.1	24.7	5.2	55.7	9.3
Malvern	8.5	15.5	21.1	2.8	52.1	
Christchurch		4.0	39.6	5.9	41.6	8.9
Ashburton	1.2	4.7	24.7	3.5	65.9	
South Canterbury	1.0	9.4	21.9	2.1	59.4	6.3
Mackenzie	12.9	25.9	38.8		22.4	
Waimate		14.4	32.0	2.1	51.5	
Waitaki	9.6	4.8	30.1	8.4	45.8	1.2
Dunedin	3.1	15.6	57.8	6.3	6.3	9.4
Balclutha	3.5	7.1	58.8	4.7	24.7	1.2
Clutha		2.9	65.0	5.8	25.2	1.0
Central Otago	11.8	14.0	46.2	6.5	19.4	2.2
Gore		3.9	52.9	9.8	27.5	5.9
Invercargill		3.7	46.3	23.7	22.5	3.7
Wallace		2.7	48.2	11.8	32.7	4.5

3.2 Size of Farm

The average size of all surveyed farms was 65.7 hectares. As would be expected, average farm size by county showed considerable variation. These figures are given in Table 6.

For some counties, the average figures may not be accurate due to the small numbers of respondents involved. In any case, comparison with other sources of average farm size figures is difficult because of farm definitional problems.

3.3 Farm Accessibility

The survey reported the average distance of farm from the nearest Post Office to be 11.6 km. On average, the nearest railhead was further away, at 26.3 km. Disaggregated, these results show considerable uniformity in the average distance of farms from the nearest Post Office (Table 7). However, the average distance from the nearest railhead was much more variable - ranging from an average of 170.5 km in the Nelson region to only 9.5 km in the Dunedin region.

Farmers were also asked to state the class of road leading to their farm gate. These results are presented in Table 8.

The majority of farms are serviced by either a Class 1 or Class 2 road and only a small proportion have a Class 3 road. Surprisingly, a quarter of all farmers surveyed were unaware of the highway class at their farm gate. These results showed considerable variation on a regional basis - from a high 49.3 per cent of farmers living by a Class 1 highway on the West Coast to a low 14.6 per cent in Clutha and 15.5 per cent in Waimate (Table 9). The Invercargill region had the highest proportion of farmers living by a class 3 highway - 26.3 per cent - and the West Coast had the lowest proportion of 7.2 per cent.

TABLE 6
Average Size of Farm By County

County	Average Size of Sample Farms (hectares)	Number Surveyed in County
Marlborough	396.5	41
Awatere	1,280.5	23
Kaikoura	879.8	16
Golden Bay	536.9	10
Waimea	272.4	59
Buller	272.1	5
Inangahua	350.4	11
Grey	369.7	18
Westland	344.7	31
Amuri	957.9	25
Cheviot	582.0	18
Waipara	422.4	50
Ashley	556.9	32
Rangiora	153.3	26
Eyre	262.3	17
Oxford	698.7	21
Malvern	980.7	71
Paparua	185.8	16
Waimairi	441.0	2
Mt Herbert	317.7	5
Akaroa	319.2	18
Wairewa	287.6	10
Ellesmere	185.9	48
Ashburton	338.6	84
Strathallan	219.8	96
Mackenzie	1,847.4	84
Waimate	386.2	97
Waitaki	890.8	81
Waihemo	1,242.1	11
Waikouaiti	443.2	22
Taieri	808.5	26
Dunedin	77.8	5
Bruce	263.9	42
Clutha	313.7	103
Tuapeka	970.7	43
Maniototo	2,279.7	35
Vincent	1,197.8	35
Lake	6,525.3	23
Southland	254.1	180
Wallace	255.4	107

TABLE 7
Average Distance of Survey Farms From Nearest
Post Office and Railhead, by Region

Region	Average Distance from Nearest Post Office	Average Distance from Nearest Railhead
	(km)	(km)
Marlborough	15.3	22.5
Nelson	10.4	170.5
West Coast	12.0	31.3
North		
Canterbury	12.1	10.6
Rangiora	9.6	16.2
Malvern	9.0	14.3
Christchurch	7.8	30.0
Ashburton	12.5	14.9
South		
Canterbury	10.0	15.5
Mackenzie	13.1	63.1
Waimate	15.1	16.4
Waitaki	13.7	15.1
Dunedin	9.9	9.5
Balclutha	10.2	22.9
Clutha	11.6	17.5
Central Otago	12.2	25.0
Gore	10.1	16.7
Invercargill	12.6	17.1
Wallace	13.0	13.2

TABLE 8
Class of Road at Farm Gate

Class	Frequency (Per Cent)
Class 1	30.1
Class 2	30.6
Class 3	13.4
Don't Know	25.9

TABLE 9
Class of Road at Farm Gate By Region

Region	Class 1	Class 2	Class 3	Don't Know
Relative Frequencies (Per Cent)				
Marlborough	36.7	32.9	13.9	16.5
Nelson	27.9	41.2	11.8	19.1
West Coast	49.3	24.6	7.2	18.8
North Canterbury	28.7	40.4	9.6	21.3
Rangiora	38.5	21.9	9.4	30.2
Malvern	33.8	29.6	14.1	22.5
Christchurch	35.6	15.8	9.9	38.6
Ashburton	31.3	24.1	13.3	31.3
South Canterbury	25.0	37.5	11.5	26.0
Mackenzie	27.1	35.3	17.6	20.0
Waimate	15.5	46.4	11.3	26.8
Waitaki	30.1	26.5	18.1	25.3
Dunedin	34.4	17.2	10.9	37.5
Balclutha	31.8	28.2	18.8	21.2
Clutha	14.6	48.5	16.5	20.4
Central Otago	32.3	18.3	15.1	34.4
Gore	26.5	38.2	11.8	23.5
Invercargill	25.0	22.5	26.3	26.3
Wallace	36.4	25.5	10.0	28.2

CHAPTER 4

SOUTH ISLAND LIVESTOCK TRANSPORT

4.1 Importance of Livestock Transport

The pilot survey showed that livestock comprised 22.2 per cent of the total tonnage moving to and from Ashburton County farms (Ambler (1975), p. 13). This was the largest share held by any commodity. Because of the relative importance of wheat in Ashburton County (14.4 per cent of all tonnage), the dominance of livestock over other farm commodities transported was thought likely to be greater in regions where farming is more pastoral. The current survey has not further investigated the relative importance of different commodities transported to and from farms.

4.2 Livestock Transport Categories

There are several major categories into which livestock transport flows between farms, saleyards, slaughterhouses and overseas can be divided:

1. Farm to farm for agistment, store and breeding (including cull for age) purposes.
2. Farm to export works or abattoirs of fat and culled stock.
3. Farm to saleyard of fat, store and breeding stock, and vice versa.
4. Saleyard to export works or abattoirs of fat stock.

Since the survey was only concerned with livestock transport to and from farms, the following results convey no information on the livestock movements from saleyards to works.

Other livestock transport flows are relatively minor. They include racehorses, show stock, stock imported or exported and old or lame stock sold for pet food. These movements are not recorded in the following results which are confined to sheep and cattle flows.

4.3 Accuracy of Results

As a guide to the accuracy of the survey's results, the numbers of South Island Livestock estimated as being sent to slaughter have been compared with actual statistics for the year ended 30 June 1975. The survey overestimated the number of sheep sent to slaughter at export works by 4.5 per cent, and understated the number of cattle by 10.6 per cent. The understatement of cattle numbers probably reflects the movement of some cattle to slaughter from saleyards - a transport flow not investigated by the survey.

The survey results for numbers of livestock transported to individual works, and over specific routes, can be expected to have greater errors because of the smaller samples obtained. Although slaughtering statistics by works are not officially published, estimates range from very accurate in some cases to errors of up to a third in others. Because smaller numbers of cattle were sampled, greater variability emerged, although reliable and detailed actual cattle slaughtering figures by works were not available.

Accordingly, the volumes of sheep transported reported can be taken to reflect actual volumes and patterns of movement reasonably well. For cattle, the smaller samples render the survey's results less reliable. Nevertheless, the volumes and

patterns of movement revealed, do highlight the main features of South Island cattle transport.

4.4 Distances of South Island Livestock Transport Movements

As shown in Table 10, of the 13,379 transport movements of livestock reported by the sample surveyed, 75.0 per cent took place over a distance of under 80 km (50 miles). Lambs accounted for 41.6 per cent of livestock transport movements, and sheep of all categories accounted for 75.3 per cent of the reported movements. Cattle transport, mostly beef cattle, accounted for the remaining quarter of livestock transport movements. The average distance of all livestock movements reported was 76.2 km.

4.5 South Island Sheep Transport

Table 11 shows that just over 19 million sheep were transported in the South Island for the year ended 30 June 1975. This estimated total amounts to two-thirds of the South Island sheep population at 30 June 1975.

Transport within individual regions accounted for 43.2 per cent of sheep transport. There was a clear tendency towards more long-distance sheep transport originating from regions to the south of Dunedin.

TABLE 10: Number of Livestock Transport Movements By Distance

Distance (km)	Number of Movements										Total	%
	Lambs	Hoggets	Ewes	Rams	Wethers	Bobby Calves	Weaners	Beef Cattle	Dairy Cattle	Bulls		
1 - 80	4,117	262	2,661	524	109	62	608	1,476	72	154	10,045	75.0
81 - 160	1,022	34	423	89	33	5	90	430	8	52	2,186	16.3
161 - 240	226	4	96	36	12	6	13	98	3	22	516	3.9
241 - 320	133	6	73	23	6	2	12	77	6	21	359	2.7
321 - 480	50	2	61	22	3	4	3	29	2	5	181	1.4
481 - 640	15	1	15	8	-	1	3	5	2	3	53	0.4
641 - 800	1	-	-	5	-	-	-	1	-	-	7	-
801 - 1200	-	-	-	2	-	-	-	1	1	-	4	-
1201 - +	-	1	2	2	-	-	-	1	-	1	7	-
Unknown	4	-	3	4	-	-	1	7	-	2	21	0.2
Total	5,568	310	3,334	715	163	80	730	2,125	94	260	13,379	100.0
Percentage	41.6	2.3	24.9	5.3	1.2	0.6	5.5	15.9	0.7	1.9	100.0	

TABLE 11: Total Numbers of Sheep Transported in Year Ending 30.6.75 ('000)

Origin Destination	Marlborough	Nelson	W. Coast	N. Canty	Rangiora	Malvern	Chch	Ashburton	S. Canty	Mackenzie	Waimate	Waitaki	Dunedin	Balclutha	Clutha	C. Otago	Gore	Inverc.	Wallace	TOTAL
Marlborough	474.1	12.5		3.2																489.8
Nelson	19.9	251.2	8.5																	279.6
W. Coast	1.8	28.7	27.6						.2				11.7							70.0
N. Canty	2.6			44.3	5.5															52.4
Rangiora	0.4			234.1	104.3	4.3	52.0		2.2	.3							3.3	8.7	10.3	419.9
Malvern	2.8			9.2	12.0	53.6	2.5													80.1
Chch	192.3	26.3	119.3	619.6	414.7	350.6	586.0	396.4		2.5	0.7	2.5	3.6	32.6	2.3	7.7	.6	72.4	1.5	2831.6
Ashburton	2.6	7.7		0.8	4.6	6.9	62.3	1084.3	38.6	12.4	12.6	5.9	1.0	22.3	2.9	34.9	20.0		3.7	1323.5
S. Canty				1.5		.1	19.4	278.5	721.4	310.7	494.0	153.2	113.3	54.8	5.6	239.4	50.4	8.0	34.3	2484.6
Mackenzie										56.5										56.5
Waimate						3.7	.2			2.4	74.0		1.5	2.3	.7	1.9		.4		87.1
Waitaki							6.8	25.2	19.2	13.4	250.1	632.1	190.3	31.8	4.5	100.2		2.9	6.3	1282.8
Dunedin							9.9	19.9	0.7		2.8	7.2	291.3	217.4	58.0	205.1	72.8	92.3	35.8	1013.2
Balclutha												0.1	110.9	854.4	456.7	118.0	77.5	2.8	8.5	1628.9
Clutha					0.7								0.6	12.2	47.2		8.9		4.5	74.1
C. Otago									0.1			12.1		2.3		68.0			1.0	83.5
Gore								3.4	5.8		.4		7.4	3.2	11.6	10.1	151.6	2.4	2.3	198.2
Inverc.														356.2	293.1	216.7	1883.2	2213.3	1485.3	6447.8
Wallace																.7	12.8	2.6	69.2	85.3
N. Island	6.6						1.1		0.4				0.2							8.3
Overseas	2.6			1.1			0.2	33.8												37.7
Unknown				0.2																0.2
TOTAL	705.7	326.4	155.4	914.0	541.8	419.2	740.4	1841.5	788.6	398.2	834.6	813.1	731.8	1589.5	882.6	1002.7	2281.1	2405.8	1662.7	19035.1

28.

4.6 South Island Cattle Transport

The estimated total number of cattle transported of 584,100 amounts to approximately 40 per cent of the South Island cattle population at 30 June 1975. The substantially lower ratio for cattle than for sheep probably reflects the longer finishing period required for cattle.

Only 47 per cent of the total cattle transported consisted of intra-regional movements. However, there appeared to be fewer long-distance movements of cattle than was the case for sheep transport.

TABLE 12: Total Numbers of Cattle Transported in Year Ending 30.6.75 ('000)

Origin Destination	Marlborough	Nelson	W. Coast	N. Canty	Rangiora	Malvern	Chch	Ashburton	S. Canty	Mackenzie	Waimate	Waitaki	Dunedin	Balclutha	Clutha	C. Otago	Gore	Inverc.	Wallace	TOTAL
Marlborough	25.8	2.6	0.4	0.7																29.5
Nelson	0.2	26.3	1.5																	28.0
W. Coast	0.2		14.7																	14.9
N. Canty	0.7	0.5	0.5	4.8	1.4															7.9
Rangiora	0.2		0.6	0.4	2.5								4.5							8.2
Malvern		0.6				3.6														4.2
Chch	5.9	0.6	26.9	34.4	6.8	8.4	29.3	44.9	0.3		0.3			0.8				0.2		158.8
Ashburton						1.0		20.6		0.1		3.0								24.7
S. Canty						0.9		2.3	12.5	9.9	5.0	0.5	2.8			1.9				35.8
Mackenzie	0.5									2.4									0.3	3.2
Waimate											4.5	0.3								4.8
Waitaki											3.5	12.0	1.3			1.3				18.1
Dunedin	0.1								0.8	0.3		1.2	17.7	8.4	2.7	8.2				39.4
Balclutha													2.3	20.4	11.9	0.4	0.4		0.2	35.6
Clutha														3.9	3.6	0.8	0.1		1.5	9.9
C. Otago		0.1										2.5				14.5				17.1
Gore			0.2											0.2	7.1	1.6	30.4	18.9	6.7	65.1
Inverc.														4.8	0.9	3.0	26.7	25.6	8.3	69.3
Wallace																3.9	0.5		3.9	8.3
Overseas				1.0						0.3										1.3
TOTAL	33.6	30.7	44.8	41.3	10.7	13.9	29.3	67.8	13.6	13.0	13.3	19.5	28.6	38.5	26.2	35.6	58.1	44.7	20.9	584.1

CHAPTER 5

REASONS FOR LIVESTOCK TRANSPORT

5.1 Introduction

This chapter considers the movement of livestock for all reasons except transport to slaughter. The movement of livestock to slaughter is discussed in Chapter 6 in conjunction with other issues relating to the freezing works.

The reasons for sheep transport will be considered first, followed by a discussion of cattle movements.

5.2 Reasons for Sheep Transport

The majority of sheep transported were destined for slaughter at the works - 85.5 per cent of all sheep moved.

TABLE 13
Reasons for Sheep Transport

Reason for Transport	Number of Sheep	Per Cent
Slaughter	16,295,800	85.5
Store	754,200	4.0
Flock Replacements	601,800	3.2
Cast for Age	479,300	2.5
Agistment	310,500	1.6
Cull, Dry, etc.	205,400	1.1
Stud	20,200	.1
Reason Unknown	389,100	2.0
	19,056,300	100.0

5.3 Store Sheep Transport

Tables 14 and 15 show that about a third of store sheep transport movements were between farms while about two thirds involved a saleyard. In all, the survey estimated that 0.7 m sheep were transported annually as store stock.

According to the survey, Addington, Lorneville, Temuka and Tinwald saleyards had a combined market share of 61.7 per cent of the total annual saleyard throughput.

Of the 256,300 store sheep moved between farms, 142,500, or 55.6 per cent, were transported out of the origin county.

5.4 Sheep Flock Replacement Transport

About half of the 595,800 sheep transported for flock replacement purposes in the South Island travelled directly from farm to farm. The other half were sold through saleyards, and were, therefore, transported twice in the course of their sale. (See tables 16 and 17).

Of the sales occurring directly between farms, 64.3 per cent of the total numbers moved were transported only within the region of origin.

Substantial movements of breeding stock overseas were also reported in the survey. Most of this stock came from Ashburton County.

The flock replacements reported as being sold through saleyards showed a larger proportion of long distance movements. Sales through Addington, for instance, came from as far afield as Marlborough, the West Coast and Ashburton. Addington showed the

TABLE 14: Store Sheep Transported From Farms to Saleyards in Year Ending 30.6.75 ('000)

Origin Saleyards	Marlborough	Nelson	W. Coast	N. Canty	Rangiora	Malvern	Chch	Ashburton	S. Canty	Mackenzie	Waimate	Waitaki	Dunedin	Balclutha	Clutha	C. Otago	Gore	Inverc.	Wallace	TOTAL
Addington	29.6		3.3	33.3	7.3	24.1	17.4	15.0												130.0
Allanton													0.5							0.5
Amberley				12.0																12.0
Balclutha															0.8					0.8
Blenheim	29.3																			29.3
Brightwater		10.7																		10.7
Burnside											0.6									1.6
Castle Rk													0.7	0.3			1.7		4.4	6.8
Clinton															2.5					2.5
Cromwell																9.6				9.6
Duntroon												2.5								2.5
Fairlie										1.8										1.8
Gore																	0.9			0.9
Hawarden				3.3																3.3
Kaikoura	2.7																			2.7
Lorneville																	26.4	40.8	12.9	80.1
McNab																	13.8			13.8
Methven								3.6												3.6
N. Sthland																			2.3	2.3
Omarama												19.8								19.8
Otautau																			3.1	3.1
Oturehua																1.8				1.8
Oxford					4.9															4.9
Riversdale																	14.0			14.0
Studholme											8.9									8.9
Tapawera		1.5																		1.5
Tekapo										10.4										10.4
Temuka									29.5	11.7	6.0									47.2
Tinwald						1.4	5.5	31.1			6.3	2.9								47.2
Waihoa Fks											2.6									2.6
Waireka												3.7								3.7
Winton																		13.4		13.4
TOTAL	61.6	12.2	3.3	48.6	12.2	25.5	22.9	49.7	29.5	23.9	24.4	28.9	1.2	0.3	3.3	12.1	56.8	54.2	22.7	493.3

TABLE 15: Store Sheep Transported From Farms to Other Farms in Year Ending 30.6.75 ('000)

Origin Destination	Marlborough	Nelson	W. Coast	N. Canty	Rangiora	Malvern	Chch	Ashburton	S. Canty	Mackenzie	Waimate	Waitaki	Dunedin	Balclutha	Clutha	C. Otago	Gore	Inverc.	Wallace	TOTAL
Marlborough	8.7																			8.7
Nelson		7.4																		7.4
W. Coast			0.4																	0.4
N. Canty	1.6			14.8																16.4
Rangiora				10.5	1.2		0.7													12.4
Malvern				0.6		12.2														12.8
Chch	4.2			3.4			5.7													13.3
Ashburton		7.7						29.8	3.4	0.1										41.0
S. Canty									6.7											6.7
Mackenzie										1.9										1.9
Waimate										0.9	4.6									5.5
Waitaki										2.4		4.8								10.2
Dunedin													15.2	3.0						20.3
Balclutha														1.7		5.1				1.7
Clutha															6.7					6.7
C. Otago																				12.1
Gore																	4.3			18.8
Inverc.								3.4	5.8								8.0	12.6	23.2	43.8
Wallace																	10.6		3.8	14.4
Overseas	1.8																			1.8
TOTAL	16.3	15.1	0.4	29.3	1.2	12.2	6.4	33.2	15.9	5.3	4.6	16.9	15.2	7.9	8.8	5.1	22.9	12.6	27.0	256.3

TABLE 16: Flock Replacement Sheep Transported From Farms to Saleyards in Year Ending 30.6.75 ('000)

Destination	Marlborough	Nelson	W. Coast	N. Canty	Rangiora	Malvern	Chch	Ashburton	S. Canty	Mackenzie	Waimate	Waitaki	Dunedin	Balclutha	Clutha	C. Otago	Gore	Inverc.	Wallace	TOTAL
Addington	5.2		32.7	23.4	12.7	9.7	14.3	0.3		0.9										98.3
Albury																				0.9
Amberley				5.1																5.1
Ashburton								3.2												3.2
Balclutha													0.1		0.7	0.6		0.4		1.8
Blenheim	9.4																			9.4
Brightwater		2.3																		2.3
Chch					0.2		0.5								1.7					0.7
Clinton																				1.7
Coalgate					7.9	2.8						3.4								10.7
Duntroon											3.6									3.4
Fairlie										5.3										3.6
Geraldine																		0.2		5.3
Gore																				0.2
Hawarden				0.6										2.1						0.6
Heriot																		3.3		2.1
Inverc.																				3.3
Kaikoura	9.0																			9.0
Little Rvr							0.8													0.8
Lorneville																	8.0	12.4	2.9	23.3
McNab															1.6		5.7			7.3
Methven								15.3												15.3
Oamaru												0.3						0.4		0.7
Otautau																		0.6	6.5	7.1
Palmerston																1.7		0.3		2.0
Riversdale															1.2		4.8			6.0
Temuka									18.9	1.6	0.2									20.7
Teviot							0.2					0.1						0.3		0.6
Timaru								27.9										0.4		27.9
Waimate							0.2					0.1								0.7
Waireka												2.7								2.7
Whataroa			1.1																	1.1
Winton																	3.6	0.4	4.5	8.5
Wyndham																		0.3		0.3
TOTAL	23.6	2.3	33.8	29.1	20.8	12.5	16.0	46.7	18.9	7.8	3.8	6.6	0.1	2.1	5.2	2.3	22.1	19.0	13.9	286.6

TABLE 17: Flock Replacement Sheep Transported from Farms to Other than Saleyards in Year Ending 30.6.75 ('000)

	Marlb.	Nelson	W. Coast	N. Canty	Rangiora	Malvern	Chch	Ashb.	S. Canty	Mackenzie	Waimate	Waitaki	Dunedin	Balclutha	Clutha	C. Otago	Gore	Inverc.	Wallace	TOTAL
Marlb.	25.1																			25.1
Nelson		2.3																		2.3
W. Coast			9.6	.																9.6
N. Canty	0.2			3.6	4.1															7.9
Rangiora					4.3	0.8														5.1
Malvern				1.9	4.1	2.8	1.0													9.8
Chch				3.8			8.4													12.2
Ashb.					4.6			13.5								14.0				32.1
S. Canty						0.1			8.3							1.3		3.7		13.4
Mackenzie																				
Waimate											1.2			2.3	0.7					4.2
Waitaki												2.0	1.4							3.4
Dunedin													10.7			1.0		13.5		25.2
Balclutha														6.4						6.4
Clutha														2.8	5.9					8.7
C. Otago									0.1					2.3		17.4				19.8
Gore																5.1	14.8	1.9		21.8
Inverc.																	3.9	53.7	1.3	58.9
Wallace																		2.0	8.7	10.7
N. Island							1.1		0.4											1.3
Overseas	0.8						0.2	30.1												31.1
TOTAL	26.1	2.3	9.6	9.3	17.1	3.7	10.7	43.6	8.8		1.2	2.0	12.1	13.8	6.6	38.8	18.7	74.8	10.0	309.2

highest annual throughput of flock replacement sales - 34.3 per cent of the total - with Timaru, Lorneville, Temuka and Methven dominating the remainder.

Stud sheep transport is not included in the tables. The numbers of stud sheep transported were estimated at 20,000 head by the survey; about a third being sold through Addington while the bulk of the remainder were sold directly between farms in the region of origin.

5.5 Cast for Age Sheep Transport

Tables 18 and 19 show that, of the 474,100 cast for age sheep estimated to have been transported in the South Island, 68 per cent were sold through saleyards. Of the third estimated to have been sold directly between farms, there was a pattern of long distance transport that reflects the sale of cast for age stock from high country farms to easier country. In Ashburton county such a move can be accomplished within the region, but, for cast for age ewes from the mostly high country Mackenzie region, the destinations were further afield to the Christchurch, Ashburton, South Canterbury and Waimate regions.

Cast for age sheep were sold at saleyards throughout the South Island, but Addington Saleyard had the highest annual throughput - 21 per cent of the total market.

TABLE 18: Cast For Age Sheep Transported from Farms to Saleyards in Year Ending 30.6.75 ('000)

Origin Destination	Marlborough	Nelson	W. Coast	N. Canty	Rangiora	Malvern	Chch	Ashburton	S. Canty	Mackenzie	Waimate	Waitaki	Dunedin	Balclutha	Clutha	C. Otago	Gore	Inverc.	Wallace	TOTAL
Addington	20.5			14.6	1.6	6.5	25.8			5.8			6.9			2.7				69.0
Albury																				5.8
Allanton																				9.6
Amberley				14.5	3.2									7.0	2.4					17.7
Balclutha																				9.4
Blenheim	7.3																			7.3
Brightwater		4.0																		4.0
Castle Rock																			3.1	3.1
Clinton															4.4					4.4
Clutha														4.2						4.2
Cromwell																6.9				6.9
Duntroon											3.7	3.9								7.6
Fairlie										2.8										2.8
Geraldine									6.1											6.1
Gore																	3.7			3.7
Hawarden				8.8																8.8
Holme Stn									1.3		0.6									1.9
Invertiel															0.4					0.4
Lorneville																		7.8	2.3	10.1
Lumsden																1.2				1.2
McNab																	0.5			0.5
Methven								5.4												5.4
Milton														13.8						13.8
Murchison		2.4																		2.4
N. Southland																3.8				3.8
Omarama												15.7								15.7
Oturehura																5.4				5.4
Oxford					10.5															10.5
Palmerston													12.5							12.5
Pleasant Pt										0.2										0.2
Riversdale																	2.3			2.3
Sheffield						5.6														5.6
Studholme						3.7														3.7
Tekapo										2.5										2.5
Temuka									6.7	1.1	0.7									8.5
Tinwald						1.1		7.3		3.5	4.7									16.6
Waihao Fks											5.1									5.1
Waipiata																2.7				2.7
Waireka												3.0								3.0
Waitahuna														5.7						5.7
Winton																	9.5			9.5
Wyndham																		4.4		4.4
TOTAL	27.8	6.4		37.9	15.3	16.9	25.8	12.7	14.1	15.9	14.8	22.6	19.4	30.7	7.2	22.7	16.0	12.2	5.4	323.8

TABLE 19: Cast For Age Sheep Transported from Farms to Other than Saleyards in Year Ending 30.6.75 ('000)

	Marlb.	Nelson	W. Coast	N. Canty	Rangiora	Malvern	Chch	Ashburton	S. Canty	Mackenzie	Waimate	Waitaki	Dunedin	Balclutha	Clutha	C. Otago	Gore	Inverc.	Wallace	TOTAL
Marlb.	21.4																			21.4
Nelson		8.7																		8.7
W. Coast		3.9																		3.9
N. Canty				3.0																3.0
Rangiora	0.4			1.8	5.6															7.8
Malvern	2.8			6.6		5.4														15.9
Chch							1.1			2.5		2.5								7.1
Ashburton	2.6						2.1	10.4	2.8	0.8	1.5			5.8						26.0
S. Canty							2.1		4.7	1.5	0.7								5.0	11.9
Mackenzie										2.3										2.3
Waimate										1.4	5.7									7.1
Waitaki												4.0								5.0
Dunedin													1.0							6.4
Balclutha													5.3		1.1					
Clutha																				
C. Otago																1.8				1.8
Gore															0.8		2.0			2.8
Inverc.																	8.4	6.1	4.4	18.9
Wallace																				
TOTAL	27.2	12.6		11.4	5.6	5.4	5.3	10.4	7.5	8.5	7.9	6.5	6.3	5.8	1.9	1.8	10.4	6.1	9.4	150.0

5.6 Culled and Dry Sheep Transport

A total of 201,600 culled and dry sheep were estimated to have been transported in the South Island for the year ended 30 June 1975. (See Tables 20 and 21).

Three quarters of the culled and dry stock reported by the survey were transported for sale at saleyards. This higher proportion than for flock replacement and cast for age sheep, reflects the lower number of sales of such stock directly from farm to farm.

The inter farm movements of culled and dry stock occurred amongst properties of close proximity, with very few long distance hauls recorded.

A number of culled and dry stock - 4,700 - were sent overseas. These sheep came mainly from Ashburton County, with a few from the North Canterbury region.

5.7 Sheep Transport for Grazing

Sheep were transported only locally for grazing purposes, as illustrated by Table 22. Where transport movements were reported other than within the region, as in the south of the South Island, the destinations were nearby regions.

TABLE 20: Culled and Dry Sheep Transported from Farms to Saleyards in Year Ending 30.6.75 ('000)

	Marlb.	Nelson	W. Coast	N. Canty	Rangiora	Malvern	Chch	Ashburton	S. Canty	Mackenzie	Waimate	Waitaki	Dunedin	Balclutha	Clutha	C. Otago	Gore	Inverc.	Wallace	TOTAL
Addington	1.2		0.6	17.1	7.8	1.8	7.7	0.5		0.7										36.7
Albury																				0.7
Allanton													10.8							10.8
Amberley				3.4																3.4
Ashburton								3.0												3.0
Balclutha														6.6	1.9					8.5
Blenheim	3.3																			3.3
Brightwater		7.5																		7.5
Burnside												0.2	0.1	1.4	0.4					2.1
Clinton															0.7					0.7
Clutha														2.8						2.8
Coalgate						4.0														4.0
Cromwell																2.9				2.9
Culverden				4.2																4.2
Dunroon											0.7	0.5								1.2
Fairlie										2.6										2.6
Geraldine									0.7											0.7
Gore																	1.0			1.0
Hawarden				1.6																1.6
Holme Stn											0.7									0.7
Little Rvr							1.4													1.4
Lorneville																	0.1	10.3	5.5	15.9
McNab																	0.4			1.0
Methven								1.8							0.6					1.8
Milton														2.8						2.8
Murchison		0.4																		0.4
Omarama												1.9								1.9
Otautau																				2.0
Palmerston												1.2	2.2						2.0	3.4
Riversdale																	3.4			3.4
Studholme J.											0.6									0.6
Tekapo										0.6										0.6
Temuka								7.9	2.5	1.4	0.8									4.7
Tinwald																				7.9
Waipata																1.9				1.9
Waireka												2.0								2.0
TOTAL	4.5	7.9	0.6	26.3	7.8	5.8	9.1	13.2	3.2	5.3	2.8	5.8	13.1	13.6	3.6	4.8	4.9	10.3	7.5	150.1

TABLE 21: Culled and Dry Sheep Transported from Farms to Other Farms in Year Ending 30.6.75 ('000)

	Marlb.	Nelson	W. Coast	N. Canty	Rangiora	Malvern	Chch	Ashburton	S. Canty	Mackenzie	Waimate	Waitaki	Dunedin	Balclutha	Clutha	C. Otago	Gore	Inverc.	Wallace	TOTAL
Marlb.	3.6																			3.6
Nelson																				
W. Coast	1.8																			1.8
N. Canty	0.7			2.4	1.3															4.4
Rangiora				1.6	0.4															2.0
Malvern																				
Chch	1.5						0.3													1.8
Ashburton								2.6								1.1				3.7
S. Canty							1.0			1.2										2.2
Mackenzie										0.6										0.6
Waimate											0.2		1.5							1.7
Waitaki												9.4								9.4
Dunedin													5.4	1.7						7.1
Balclutha															0.3					0.3
Clutha														2.2						2.2
C. Otago																0.6				0.6
Gore																			5.4	5.4
Inverc.																				
Wallace																				
Overseas				1.1				3.6												4.7
TOTAL	7.6			5.1	1.7		1.3	6.2		1.8	0.2	9.4	6.9	3.9	0.3	1.7			5.4	51.5

TABLE 22: Sheep Transported for Grazing in Year Ending 30.6.75 ('000)

Origin Destination	Marlb.	Nelson	W. Coast	N. Canty	Rangiora	Malvern	Chch	Ashburton	S. Canty	Mackenzie	Waimate	Waitaki	Dunedin	Balclutha	Clutha	C. Otago	Gore	Inverc.	Wallace	TOTAL
Marlb.	4.5																			4.5
Nelson		19.1																		19.1
W. Coast																				
N. Canty																				
Rangiora					4.3															4.3
Malvern						20.5														20.5
Chch							12.7													12.7
Ashburton								71.3												71.3
S. Canty									6.3											6.3
Mackenzie										6.0										6.0
Waimate											40.2									40.2
Waitaki												6.0								6.0
Dunedin													0.2							0.2
Balclutha																			8.5	8.5
Clutha															10.8		6.8			17.6
C. Otago																				
Gore																	56.6			58.6
Inverc.																	4.9	14.2	5.8	24.9
Wallace																			8.9	8.9
TOTAL	4.5	19.1			4.3	20.5	12.7	71.3	6.3	6.0	40.2	6.0	0.2		12.8		68.3	14.2	23.2	309.6

5.8 Reasons for Cattle Transport

Transport to the freezing works for slaughter was also the major reason for the movement of cattle (see Table 23). However, it accounted for a significantly smaller proportion of all cattle movements than was the case for sheep - only 47.1 per cent compared with 85.5 per cent. This difference arises from the greater importance of store stock transport (30.6 per cent) for cattle than for sheep (only 40 per cent).

TABLE 23
Reasons for Cattle Transport

Reason for Transport	Number of Cattle	Per Cent
Slaughter	281,100	47.1
Store	182,200	30.6
Herd Replacement	49,100	8.2
Agistment	22,400	3.8
Cast for Age, Cull, Dry, etc	5,500	.9
Stud	1,800	.3
Reason Unknown	54,200	9.1
	<u>596,300</u>	<u>100.0</u>

Except for the transport of store cattle, the survey reported relatively few movements of cattle. Hence, although the movements of store cattle have been detailed by origin and destination, the numbers of cattle moved for other reasons are given only in aggregate form since the small numbers reported by region were not considered an adequate basis from which to estimate the origin-destination matrix of total numbers of cattle transported.

5.9 Store Cattle Transport

The survey estimated that 175,800 store cattle were transported during the 1974/75 year in the South Island. About a fifth of the store cattle movements were from farm to farm, the remainder were through saleyards. This split suggests a greater use of saleyards for trading in store cattle than for store sheep. This is consistent with the widespread practice of buying store cattle for wintering on non-breeding farms.

Table 24 details the movements of store cattle from farms to saleyards. As for sheep, Addington and Lorneville saleyards had the highest annual store cattle throughput of all South Island saleyards - 41 per cent of the total annual throughput.

Of the 39,100 store cattle transported between farms, 69.8 per cent of the movements were within the same region. This is a higher proportion than for farm-to-farm store sheep movements.

5.10 Cattle Herd Replacement Transport

The survey estimated that 46,800 head of cattle were transported as herd replacements during the 1974/75 year in the South Island.

Transport of these stock directly between farms accounted for 38 per cent of the total numbers moved, and 75 per cent of these cattle were transported within the region of origin.

The remaining cattle were sold through saleyards, a third of all herd replacements being sold through Addington.

Negligible numbers of stud cattle movements were estimated to occur by the survey, and these mainly took place within the county of origin.

TABLE 24: Store Cattle Transported From Farms to Saleyards in Year Ending 30.6.75 ('000)

Origin Destination	Marlb.	Nelson	W. Coast	N. Cnty	Rangiora	Malvern	Chch	Ashburton	S. Cnty	Mackenzie	Waimate	Waitaki	Dunedin	Balclutha	Clutha	C. Otago	Gore	Inverc.	Wallace	TOTAL
Addington	3.2		2.2	13.2	1.2	6.3	5.9	7.9												39.9
Alexandra		0.1																		0.1
Ashb.								0.1												0.1
Balclutha														2.6	0.7					3.3
Blenheim	4.9	1.2																		6.1
Brightwater			2.6																	2.6
Burnside													6.4	1.5	0.1					8.0
Castle Rk																3.8	0.5		2.4	6.7
Charlton																	0.4			0.4
Clinton															1.9					1.9
Coalgate						3.4														3.4
Cromwell																3.6				3.6
Culverden			0.5	0.8																1.3
Gore																	0.8			0.8
Hakataramea												0.2								0.2
Kaikoura	1.2			0.2																1.4
Kurow												0.6								0.6
Lorneville															0.1					16.3
McNab															0.1		14.8	1.3	0.1	2.8
Methven								1.0									2.7			1.0
Milton														1.1						1.1
Mt Benger														2.6						2.6
Murchison		2.2																		2.2
Nelson		0.1																		0.1
Ngahere			0.2																	0.2
N. Sthland																0.5			0.6	1.1
Oamaru												0.3								0.3
Omakau																1.0				1.0
Omarama										0.3		1.5								1.8
Owaka															2.0					2.0
Palmerston													1.5							1.5
Pleasant Pt									2.3	5.1										7.4
Studholme											2.5									2.5
Temuka									1.2	0.4	0.3									1.9
Tinwald								0.8												0.8
Totara Flat			0.1																	0.1
Waipiata																0.9				0.9
Waipuna			0.2																	0.2
Waireka												4.8								4.8
Whataroa			2.6																	2.6
Wyndham																		1.1		1.1
TOTAL	9.3	3.6	8.4	14.2	1.2	9.7	5.9	9.8	3.5	5.8	2.8	7.4	7.9	7.8	4.9	9.8	19.2	2.4	3.1	136.7

5.11 Cast for Age, Cull and Dry Cattle Transport

Only 4,400 cast for age, cull and dry cattle were transported in the South Island in the survey year. Of these, only 13.3 per cent were moved directly between farms, mainly within the same region, or to a nearby region.

The remaining stock were sold through the saleyards. Addington had the largest annual throughput, comprising 83.3 per cent of the total saleyard market. Only one long distance movement to a saleyard was reported - from Dunedin region to Oxford.

5.12 Cattle Transport for Grazing

The survey estimated that 21,100 cattle were transported for grazing during the 1974/75 year. All cattle were transported within the region of origin, or to a nearby region, for grazing.

5.13 Livestock Transport for Unknown Reasons

The survey estimated that 389,100 sheep and 54,200 cattle were transported for no recorded reason.

Of the 389,100 sheep in this category, 41 per cent moved directly between farms, and 61 per cent of these stock were transported within the region.

Fifty-seven per cent of these sheep transported moved from farms to saleyards. Lorneville saleyards had a major share of this market, accounting for 22 per cent of the annual throughput. Burnside, Methven and Omarama handled another 24.5 per cent of the total.

The remaining 4,500 sheep went to Alliance and Makarewa freezing works.

Of the 54,200 cattle transported, for an unknown reason, only 19 per cent travelled directly between farms. Except for a large movement of 4,500 cattle from Dunedin region to Rangiora region, most cattle were moved within a region.

The majority of cattle moving for unknown reasons travelled to the saleyards - 25 per cent of this total going to Burnside saleyards.

CHAPTER 6

LIVESTOCK TRANSPORT TO SLAUGHTER

6.1 Sheep Transport to Slaughter

Table 25 shows that an estimated 16.3 million sheep were transported to slaughter from South Island farms during the year ended 30 June 1975. This estimate excludes the slaughter of livestock purchased from saleyards. Chudleigh et al (1978, pp 23, 27) estimated 16.0 million sheep were transported to South Island works during the same period.

Only 1.4 per cent of these livestock travelled to abattoirs. Christchurch region was the major supplier to the abattoirs - providing nearly 34 per cent of the total supply to abattoirs.

Alliance Works had the largest throughput of all freezing works - 10.8 per cent of the total throughput. Pareora, Finegand, Mataura, Makarewa and Ocean Beach Works together accounted for another 45 per cent of the throughput.

6.2 Cattle Transport to Slaughter

Only 280,100 cattle were estimated by the survey to have been transported to slaughter from South Island farms during the year ended 30 June 1975 (Table 26). As for sheep, these estimates exclude the slaughter of cattle purchased from saleyards. Chudleigh et al (1978, p. 28) estimated that 279,417 beef animals were killed by South Island works in the same period.

Nearly 17 per cent of the cattle for slaughter were sent to the abattoirs, with Ashburton County providing 27 per cent of this supply.

TABLE 25: Sheep Transported to Slaughter in Year Ending 30.6.75 ('000)

Origin Works	Marlborough	Nelson	W. Coast	N. Canty	Rangiora	Malvern	Chch	Ashburton	S. Canty	Mackenzie	Waimate	Waitaki	Dunedin	Balclutha	Clutha	C. Otago	Gore	Inverc.	Wallace	TOTAL
Nelson	19.4	203.9	8.5																	231.8
Picton	325.0	12.5		3.2																340.7
Kaiapoi	113.1		26.6	184.9	69.1	3.5	51.3	89.8	2.2	0.3							3.2	8.7	10.3	563.0
Belfast	14.4		23.8	310.9	230.4	204.7	222.6	63.9			0.7		0.6	11.6	0.5					1084.1
Islington	1.9	26.3	26.4	207.1	144.0	103.0	190.1	190.9					3.0	21.0	1.8	7.7	0.6	72.4	1.5	997.7
Fairfield						4.3	54.7	809.2	32.4	0.2		3.0	1.0	16.5	2.9	5.4	20.0		3.7	953.3
Smithfield				1.5			11.6	150.6	312.0	171.7	165.2	35.2	20.3	30.0	0.8	22.6	36.8	4.0	20.6	982.9
Pareora							6.6	127.9	305.0	111.8	316.2	117.9	93.0	24.8	4.8	215.5	13.6		8.7	1345.8
Pukeuri							6.8	25.2	19.2	11.0	235.4	514.1	187.8	28.8	4.5	100.2		2.5	6.3	1141.8
Burnside							8.7	19.9			1.3	4.9	188.7	206.6	49.0	193.4	67.4	73.5	35.8	849.2
Finegand													107.7	795.1	442.1	118.0	77.0	2.4		1542.3
Mataura													2.0	183.5	170.7	10.7	629.8	329.4	4.7	1330.8
Alliance													5.4	26.4	101.2	69.2	658.6	361.0	509.6	1731.4
Makarewa														1.5	3.9	90.6	321.7	648.7	484.4	1550.8
Ocean Beach														144.1	14.4	44.6	190.2	647.0	380.5	1420.8
Gear (Wgtn)	6.6																			6.6
Abattoirs	25.3	4.3	22.6	5.8	5.1	0.8	75.0	40.1	2.4	0.1	0.5	2.2	13.1	1.3	0.5	15.1	0.5	6.1	1.0	221.8
TOTAL	505.7	247.0	107.9	713.4	448.6	316.3	627.4	1517.5	673.2	295.1	719.3	677.3	622.6	1491.2	797.1	893.0	2019.4	2155.7	1467.1	16294.8

TABLE 26: Cattle Transported to Slaughter in Year Ending 30.6.75 ('000)

Origin Works	Marlb.	Nelson	W. Coast	N. Canty	Rangiora	Malvern	Chch	Ashburton	S. Canty	Mackenzie	Waimate	Waitaki	Dunedin	Balclutha	Clutha	C. Otago	Gore	Inverc.	Wallace	TOTAL
Nelson	0.2	10.4	1.5																	12.1
Picton	1.9	0.3																		2.2
Kaiapoi	0.2		0.3																	0.5
Belfast	0.7		9.7	8.7	2.5	1.1	5.4	23.2												51.3
Islington	0.3	0.6	9.8	2.9	1.8		3.5	1.2	0.2		0.2									20.5
Fairfield																				
Smithfield										0.5	0.5									1.0
Pareora						0.5		2.3	4.9	1.4	4.1	0.4	2.2			1.9				17.7
Pukeuri											1.9	3.1	1.3			1.3				7.6
Burnside	0.1								0.4	0.3		1.2	2.5	2.1	0.3	3.3				10.2
Finegand													2.3	9.6	8.0	0.4	0.4			20.7
Mataura														3.8	4.5	0.1	14.9	10.5	0.1	33.9
Alliance														1.0	2.0	1.0	7.9	6.1	6.0	24.0
SFM																3.0	3.9	16.1	7.1	30.1
Ocean Bch																		0.7	0.2	0.9
Gear																				
Abattoirs	6.3	3.3	8.0	1.3	0.4	0.3	3.8	12.7	0.6	0.3	0.6	0.7	2.7	2.8	0.6	1.7	0.2	1.0	0.1	47.4
TOTAL	9.7	14.6	29.3	12.9	4.7	1.9	12.7	39.4	6.1	2.5	7.3	5.4	11.0	19.3	15.4	12.7	27.3	34.4	13.5	280.1

Belfast Works had the largest throughput of all freezing works - 18.3 per cent of the total throughput. Mataura, Alliance and Makarewa Works together accounted for another 31 per cent of cattle slaughtered.

6.3 Transport of Livestock Beyond the Nearest Freezing Works

Transport of livestock beyond the nearest freezing works has been, and remains, a contentious issue. From Tables 25 and 26 it is possible to estimate the proportion of livestock travelling out of the supply region for slaughter. This proportion is not necessarily equivalent to the percentage of livestock bypassing the nearest works since, for some farmers living near the boundary between two regions, the freezing works in the next region may, in fact, be closer. Conversely, where there is more than one freezing works in a region, it is not known if livestock in that region is travelling to the nearest works or not. In addition, some regions do not have a freezing works. In this case, the appropriate destination was assumed to be the nearest works in the adjacent region (or regions, if two works are equidistant).

With these limitations on the definition of nearest freezing works, Tables 25 and 26 give some indication of the excess transport involved in the movement of livestock to slaughter at freezing works.

Only 9,658,500 sheep, or 60 per cent, were sent to the "nearest freezing works". Movements of sheep for slaughter beyond the county of origin were particularly noticeable for Southland and Otago farms.

A slightly smaller proportion of 56 per cent, or 129,200 head, of cattle travelled to the "nearest freezing works".

These proportions varied slightly when the movements were expressed in terms of tonne - kilometres. Table 27 shows that 12,672,986.00 million tonne - kilometres were involved in transporting sheep to works during the year ended 30 June 1975. Of this only 40.38 per cent travelled to the "nearest works".

Table 28 shows that 395,725.51 million tonne - kilometres were involved in transporting cattle to works in the year ended 30 June 1975. Of this 61.04 per cent travelled to the "nearest works".

Since "tonne - kilometres" are a more accurate measure of transport costs than just numbers of different types of livestock, the above figures give some indication, within the limitations of the definition of "nearest freezing works", of the excess transport involved in moving livestock from South Island farms to freezing works.

Using this data, Inness and Zwart (1979) have calculated the excess transport costs arising from this pattern of livestock movement to slaughter to be \$2,452,506 in the 1977/78 year, that is 24 per cent of estimated actual transport costs from farm to freezing works. Seasonal peaks, as a cause of excess transport, were estimated to contribute only \$509,738 or 4.9 per cent of total transport costs. Inness and Zwart (1979, p. 36) concluded that:

"Other factors - notably, those associated with spatially inefficient flows - appear to be very substantial. Rationalization of livestock collection,

TABLE 27: Tonne - Kilometres of Sheep Transported

Origin Works	Marlb.	Nelson	W. Coast	N. Canty	Rangiora	Malvern	Chch	Ashburton	S. Canty
Nelson	21,486.09	77,360.36	5,781.60						
Picton	170,392.22	6,060.96		6,098.24					
Kaiapoi	167,162.85		36,728.82	129,285.14	17,103.54	2,221.12	11,972.52	39,320.49	2,765.03
Belfast	64,164.44		16,741.95	296,594.61	107,896.14	199,724.92	77,578.59	18,866.35	
Islington	2,356.53	28,226.75	52,483.28	163,563.64	92,956.14	54,405.10	38,499.85	57,564.09	
Fairfield						4,447.11	14,554.02	113,783.46	70,758.24
Smithfield				4,289.90			24,957.24	37,126.29	116,278.14
Pareora							16,588.60	39,160.62	104,614.88
Pukeuri							41,913.48	16,222.42	12,318.13
Burnside							57,837.92	3,881.42	
Finegand									
Mataura									
Alliance									
S.F.M.									
Ocean Beach									
Gear	11.70								
Abattoirs	31,959.93	401.47	39,483.28	8,370.45	2,579.02	36.00	37,618.51	4,187.00	312.88
TOTAL	457,533.76	112,049.54	151,218.93	608,201.98	220,534.84	260,834.25	321,520.73	330,112.14	307,047.3

to Slaughter in Year Ending 30.6.75 (millions)

Mackenzie	Waimate	Waitaki	Dunedin	Balclutha	Clutha	C. Otago	Gore	Inverc.	Wallace	TOTAL
										104,628.06
										182,551.42
1,855.75							1,718.40	12,153.92	65,279.04	487,566.62
	627.69		3,024.61	20,086.57	6,079.04					811,384.91
			6,252.29	33,872.19	71,555.88	72,148.39	513.34	4,597.25	12,079.44	691,074.16
2,827.61		3,359.40	1,016.40	48,805.12	21,143.46	23,681.48	87,031.36		51,274.30	442,681.96
422,453.16	76,461.64	42,159.37	33,794.16	85,725.37	1,731.36	176,054.31	149,753.06	8,156.99	116,921.91	1,295,862.9
332,720.93	172,314.04	74,690.69	196,320.69	130,610.47	45,855.67	726,411.88	39,850.66		55,574.64	1,934,713.8
46,221.73	92,161.29	165,946.03	118,324.71	104,040.18	17,171.44	249,186.79		6,361.20	38,825.80	908,693.2
	2,025.52	1,032.48	69,320.87	162,326.59	83,753.09	406,548.91	95,309.21	52,684.22	84,678.82	1,019,399.10
			113,146.34	369,286.03	246,627.48	456,084.00	99,660.58	500.53		1,285,305.0
			1,604.40	133,777.29	119,556.26	29,214.02	107,302.53	42,615.95	6,286.99	440,357.44
			3,493.50	36,665.84	136,459.06	170,967.36	284,234.74	449,692.00	333,962.63	1,415,475.6
				728.84	15,591.52	310,281.71	111,875.32	55,408.20	240,406.71	734,292.3
				93,734.69	21,196.18	174,830.24	128,194.67	93,362.92	275,839.04	787,157.74
										11.70
30.03	478.82	40.80	626.51	13.08		2,669.48		2,996.16	29.03	131,832.45
806,109.21	344,069.00	287,228.77	546,924.48	1,219,672.00	786,720.54	2,798,078.3	1,105,443.8	728,529.34	1,281,158.2	12,672,986.00

TABLE 28: Tonne - Kilometres of Cattle Transported

Origin Works	Marlb.	Nelson	W. Coast	N. Cnty	Rangiora	Malvern	Chch	Ashburton	S. Cnty
Nelson	7.15	31,497.71	6,507.49						
Picton	841.8	596.78						99.28	
Kaiapoi	579.9		1,838.82		1.64				
Belfast	881.81		60,768.95	21,235.39	426.1	2,245.08	3,386.12	13,856.99	
Islington		1,819.08	19,188.54	2,894.02	12,491.5		3,925.17	123.54	36.48
Fairfield								0.10	
Smithfield						4,908.16			3.31
Pareora								528.10	7,139.31
Pukeuri									
Burnside									434.67
Finegand									
Mataura									
Alliance									
S.F.M.									
Ocean Beach									
Gear									
Abattoirs	2,694.35	11,524.87	25,553.74	963.26	81.08	13.9	757.35	7,074.58	51.37
TOTAL	5,005.01	45,438.44	113,857.54	25,092.67	13,000.32	7,167.14	8,068.64	21,682.59	7,665.14

to Slaughter in Year Ending 30.6.75 (millions)

Mackenzie	Waimate	Waitaki	Dunedin	Balclutha	Clutha	C. Otago	Gore	Inverc.	Wallace	TOTAL
										38,012.35
										1,537.86
										2,420.36
2.25										102,802.69
141.48	250.98									40,870.79
										0.10
1,656.68	338.41	30.64								6,937.2
7,014.26	7,838.66	137.79	4,653.99		31.80	4,922.00				32,265.91
205.20	554.90	2,691.80	886.44			6,730.27				11,068.61
1,436.72		1,321.12	1,217.58	1,339.57	649.44	10,685.34	10.56			17,095.00
			1,985.36	24,820.01	5,602.16	1,308.72	218.07			33,934.32
				1,977.54	3,079.43	105.39	1,821.67	684.99	98.50	7,767.52
				331.94	5,356.92	2,081.14	4,747.34	643.24	2,401.28	15,561.86
					12.47	26,548.43	1,180.66	1,391.60	3,404.86	32,538.02
								98.48	59.99	158.47
119.06	33.82	3.69	999.46	593.22	30.21	2,254.36	.64	5.49		52,754.45
10,575.65	9,016.77	4,185.04	9,742.83	29,062.28	14,762.43	54,635.65	7,978.94	2,823.8	5,964.63	395,725.51

it appears, is less a question of intractable supply peaks than of conscious decisions of suppliers and freezing works to support long distance supply links".

This estimation of losses arising from a non-optimal transport flow does not take account of foreign exchange savings from reduced fuel consumption. Neither does it consider the trade-off between the higher transport costs incurred from bypassing the nearest works and the potential economies-of-scale associated with maintaining a higher throughput at larger works.

6.4 The Zoning of Freezing Works

The questionnaire asked farmers to indicate how important they considered competition between works to be, relative to the potential transport cost savings of zoning farms to ensure livestock travels to the nearest works. Table 29 shows that a majority of farmers considered competition to be less important than transport cost savings (46.1 per cent, compared with 34.9 per cent considering competition to be more important).

TABLE 29

Competition Amongst Freezing Works Versus the Potential Transport Cost Savings From Zoning

	No. Replies	Percent
<u>Competition Amongst Freezing Works:</u>		
Much more important	250	15.0
More important	330	19.9
Less important	431	25.9
Much less important	335	20.2
Don't know	316	19.0
No Reply	2	-
TOTAL	1664	100.0

However, zoning of works was clearly not a strong issue among farmers as the fairly even spread of opinion shown in the previous table attests. Part of the explanation may lie in the fact that farmers are not confronted directly with the excess transport costs caused by livestock bypassing the nearest works. For further discussion of this point, see Inness and Zwart (1979).

6.5 Choice of Freezing Works

The survey asked farmers to indicate their reasons for their choice of freezing works during the last season. Table 30 presents the results for all regions combined.

Tradition was the major factor influencing farmers' choice of works. This was true for all regions except Marlborough, Dunedin and Gore where "available space" was the main reason.

Other important reasons given for choice of freezing works were "available space" and "industrial stability". This pattern was consistent in a regional breakdown except for five regions - West Coast, North Canterbury, Malvern, Christchurch and Ashburton - where the "company's stock buyer approaching first" was the next most significant factor, after "tradition", in determining choice.

TABLE 30
Reasons for Choice of Freezing Works (%)

Reasons	True	False	Don't Know	Total
The company was offering the best price when your stock were ready	16.9	38.1	44.9	100.0
The company owns the nearest works to your farm	46.7	30.2	23.0	100.0
Past experience shows that the company has profitable pooling arrangements	19.3	22.3	58.3	100.0
The company has lower killing and processing charges	5.8	33.0	61.0	100.0
You traditionally use the same company	65.9	15.4	18.6	100.0
You are a shareholder in the company	17.4	55.4	27.1	100.0
The company had the nearest works with available killing space when your stock were ready	45.8	24.0	30.0	100.0
The company's stock buyer approached you first	21.7	48.6	29.6	100.0
Your stock buyer recommended the company	18.6	50.0	31.3	100.0
The company has the lowest carcase rejection rates	7.6	26.6	65.6	100.0
The company has fewer industrial disputes	34.4	22.1	43.3	100.0

6.6 Meat Hygiene Regulations

As might be expected, an overwhelming majority of farmers disagreed that higher meat hygiene standards are required in New Zealand. Table 31 summarises their answers.

TABLE 31

"That Higher Meat Hygiene Standards Are Required"

	No. Replies	Percent
Strongly Agree	27	1.6
Agree	271	16.4
Disagree	664	40.0
Strongly Disagree	531	32.0
Don't know	166	10.0
No reply	5	-
	<u>1664</u>	<u>100.0</u>

This question often stimulated comment opposing higher standards on the questionnaire forms. It is clear that farmers, who ultimately bear the costs (in the form of lower net returns) of higher meat hygiene standards, are not convinced of their necessity. It was evident that at the time of the survey there was a need for greater communication to justify higher standards to farmers. A lack of communication in this matter was one of the conclusions resulting from the seminar on the Meat Hygiene Regulations held at Lincoln College in May 1975.

From 1 October 1976, adult sheep and cattle were required to arrive at export slaughterhouses not less than 24 hours prior to slaughter. From 1 November 1977, these regulations were

eased to permit stock arriving before noon to be slaughtered the following day, or, in the case of cattle, the following afternoon if the stock arrived between noon and 4 p.m. This waiting period was designed to permit livestock to empty and rest prior to slaughter.

A number of problems are raised for transport operators in meeting these requirements, including the high cost of Sunday working during the killing season which disrupts the personal lives of drivers and adds to weekend road congestion. Hence, the question of using on-farm facilities for standing livestock arises. While the use of such facilities would not meet the resting requirements prior to slaughter, they would meet the emptying requirements. To do so, the facilities would need to be covered and gated to deny stock access to food and water.

Asked if they would be prepared to stand stock to reduce transport costs, farmers gave the following responses.

TABLE 32
Willingness to Stand Livestock in order to Save Transport
Costs

	Ewes		Cattle	
	No. Replies	Percent	No. Replies	Percent
Yes	1266	76.1	380	22.8
No	233	14.0	333	20.0
No reply	165	9.9	951	57.2
	<u>1664</u>	<u>100.0</u>	<u>1664</u>	<u>100.0</u>

Some three quarters of farmers would therefore be prepared to stand ewes if it would reduce their transport costs, but less than a quarter would stand cattle. Part of this difference is explained by the fewer farmers running cattle, let alone possessing suitable standing facilities, relative to those running sheep.

6.7 Farm Capacity for Holding Livestock

Farmers were also asked to indicate the number of ewes and adult cattle they could safely stand overnight under cover on a grated floor before sending them to slaughter. The following results were obtained:

TABLE 33

Mean Proportion of Flock Which could be Stood under Cover on Grates on Surveyed Farms

	Proportion	No. Replies *
Ewes	17.69%	1539
Cattle	3.41%	1038
Cattle (only those prepared to stand cattle)	8.66%	303

* The number of replies varies because of the question set being answered. The number of replies is significantly smaller for cattle because fewer South Island farms carry cattle.

The number of stock on the surveyed farms at 30 June 1974 is given in the following table, with the implied average standing capacity in numbers of head.

TABLE 34
Average Standing Capacity Per Farm

	Average No. Head Per Farm 30.6.74	No. Farms in Sample	Standing Capacity (Head)
Sheep	2,016	1,567	358
Beef Cattle (over 1 Year)	73	1,567	3

Since some discord has developed over the appropriate stringency of the meat hygiene regulations, alternative solutions, perhaps utilizing the existing standing capacity on farms, should be considered. Several alternative possibilities are listed below.

1. Works, or nearby farmers could hold stocks of livestock accumulated over the working week. During the weekend, sufficient of these stock could be placed under cover on grates, with little effort, to enable slaughtering to commence early on Monday. The stock numbers so placed should be adequate to keep the works operating until further stock arrives after being transported from early Monday.
2. Farmers could be permitted to hold stock for part of the requisite period under cover on grates. Once transported to the works for slaughter, the stock would only need resting to be ready. The side effects of this proposal would be: less spillage from stock trucks en route; less need for washing stock trucks between loads, and cleaner stock being presented for slaughter.

3. Standing time off pasture could be extended from standing time at the works' yards only to including the time from when stock are denied food. This extension would enable time standing in approved farmers' yards, on grates under cover on farms (or in carriers' facilities and on trucks in transit). This redefinition of standing time would satisfy the time requirements for emptying but would still require a specified resting period at the works prior to slaughter.

CHAPTER 7

SOUTH ISLAND WOOL TRANSPORT

7.1 Importance of Wool Transport

The pilot survey estimated that wool comprised only 1.3 per cent of the total tonnage moving to and from farms in Ashburton County (Ambler 1975, p. 13). This was a relatively insignificant transport flow and was superseded in importance by livestock, lime and fertilizer, grain, hay, shingle, peas and small seeds. However, although not contributing greatly in terms of tonnage, wool was one of the more valuable items transported. This was also noted by Johnston (1967) who found that wool was the fifth, in terms of volume, of all commodities transported from North Canterbury farms, but the first in terms of value.

7.2 Distances of South Island Wool Transport Movements

Eighty-one per cent of all sample wool movements from origin region to final selling centre took place over a distance of under 80 km (Table 35). This was a slightly higher proportion than was the case for livestock where only 75 per cent of all movements occurred over a distance of less than 80 km. Fewer long distance movements of wool were recorded than for livestock as no wool was transported over a distance greater than 480 km.

TABLE 35

Number of Wool Transport Movements from Farm to
Final Selling Centre by Distance

Distance (km)	Number of Movements	Relative Frequency (per cent)
1 - 80	2281	81.3
81 - 160	319	11.4
161 - 240	137	4.9
241 - 320	53	1.9
321 - 480	14	0.5
TOTAL	2804	100.0

The average distance of all wool movements was 60.3 km.

7.3 South Island Wool Transport

Over 700,000 bales of wool were estimated by the survey to have been moved during the year ended 30 June 1975. Table 36 shows the types and amounts of wool moving off farms in each region.

As would be expected, the largest producers of wool were the most southern regions, with Gore region producing 9.6 per cent of the total wool moved; Invercargill region 9.2 per cent, and Balclutha 8.7 per cent. The other three major wool producing areas in the South Island were Central Otago, Ashburton and North Canterbury.

Coarse wool accounted for a high 64.4 per cent of all wool moved. Only 1.0 per cent of wool was Drysdale while

TABLE 36: Total Wool Transported from South Island Farms in Year Ending 30.6.75
('000 bales)

Origin Wool Type	Marlb.	Nelson	W. Coast	N. Canty	Rangiora	Malvern	Chch.	Ashb.	S. Canty	Mackenzie	Waimate	Waitaki	Dunedin	Balclutha	Clutha	C. Otago	Gore	Inverc.	Wallace	TOTAL
Fine	25.6			44.7	15.5	12.8	11.5	31.4	1.3	7.8	11.5	16.3	8.2	5.7		37.1				229.4
Drysdale	1.9	.1							4.4	.3	.8									7.5
Coarse	11.5	13.8	6.8	4.6	6.0	7.1	12.2	26.8	24.9	12.1	20.7	13.0	20.8	53.0	30.1	11.6	67.9	65.6	52.5	461.0
Unknown	.6	.6	.4	.5	1.3	.6	.3	2.0	.5	.4	.9	.6		3.7	1.4	1.0	1.2		2.8	18.8
TOTAL	39.6	14.5	7.2	49.8	22.8	20.5	24.0	60.2	31.1	20.6	33.9	29.9	29.0	62.4	31.5	49.7	69.1	65.6	55.3	716.7

31.9 per cent was fine wool. Whereas all regions produced coarse wool, the production of fine and Drysdale wools was confined to the central and northern South Island regions. North Canterbury produced 19.6 per cent of all fine wool and South Canterbury produced 61.0 per cent of all Drysdale wool.

7.4 Transport of Wool to Destination Store

Table 37 shows the movement of wool from region of origin to destination store. Three principal wool stores emerged: Christchurch, providing 27.0 per cent of all wool storage; Invercargill 26.8 per cent, and Dunedin 25.7 per cent. In addition, each of these storage centres served a well-defined area - Christchurch collecting mainly from the northern half of the South Island; Dunedin from the central South Island, and Invercargill from the southern regions. Wool transport appeared to be characterised by fewer long-distance hauls bypassing the nearest depot than was the case for livestock transport.

7.5 Transport of Wool to Final Selling Centre

The movement of wool to final selling centre reflected the same origin - destination pattern noted above for the movement of wool to store. That is, the 27.6 per cent of all wool which was sold through Christchurch came mainly from the northern half of the South Island; the 25.6 per cent of all wool sold via Dunedin came mainly from the central South Island, and the 24.8 per cent sold through Invercargill came entirely from the southern regions except for 200 bales from Marlborough (Table 38).

TABLE 37: Wool Transported From Farms to Destination Stores in Year Ending 30.6.75 ('000 bales)

Origin Destination Store	Marlb.	Nelson	W. Coast	N. Canty.	Rangiora	Malvern	Chch.	Ashburton	S. Canty.	Mackenzie	Waimate	Waitaki	Dunedin	Balclutha	Clutha	C. Otago	Gore	Inverc.	Wallace	TOTAL
Ashburton							.2	5.7												5.9
Balclutha															.4					.4
Blenheim	8.6	3.4																		12.0
Bluff																			.6	.6
Chch.	25.2	6.5	7.1	49.2	22.9	20.4	23.8	35.2											.6	193.3
Dunedin							.1				1.7	21.2	28.6	58.1	24.5	48.7	.3		.5	183.7
Gore															.8		3.4	.1		4.3
Hokitika			.1																	.1
Inverc.														1.7	4.7	1.6	65.5	65.5	52.8	191.8
Nelson		2.8																		2.8
Oamaru												3.2	.4							3.6
Richmond																				
Timaru	.2	.5		.1				18.6	28.3	20.3	31.3	5.4								104.7
Waimate											.1									.1
Wellington		1.2																		1.2
Winton																			1.5	1.5
Waihi	.9	.1		.2				.8	2.7	.3	.8									5.8
Milton														2.9	1.0					3.9
Winchester									.1											.1
Waikiri				.3		.1														.4
Greymouth			.1																	.1
TOTAL	37.9	14.5	7.3	49.8	22.9	20.5	24.1	60.3	31.1	20.6	33.9	29.8	29.0	62.7	31.4	50.3	69.2	65.6	55.4	716.3

TABLE 38: Wool Transported From Farms to Selling Centres in Year Ending 30.6.75
(' 000 bales)

Origin Selling Centre	Marib.	Nelson	W. Coast	N. Canty	Rangiora	Malvern	Chch	Ashb.	S. Canty	Mackenzie	Waimate	Waitaki	Dunedin	Balclutha	Clutha	C. Otago	Gore	Inverc.	Wallace	TOTAL
Wellington	.2	1.7																		1.9
Chch	34.0	8.8	7.0	48.1	21.1	19.5	23.6	35.1			.6									197.8
Timaru		.5		.1		.1		18.6	24.8	18.8	29.1	3.7								95.7
Dunedin	.7						.1				1.8	22.6	28.5	57.4	22.7	48.7	.4		.5	183.4
Inverc.	.2													1.7	4.7	1.6	62.7	60.0	46.6	177.5
Broker	2.6	3.5	.2	.5	2.1	.9	.3	5.8	6.3	1.8	2.2	3.2	.5	2.9	2.4		6.1	5.6	7.6	54.5
U.K. Own A/C	.6			1.1				.8			.3	.4		.1	1.7				.6	5.6
TOTAL	38.3	14.5	7.2	49.8	23.2	20.5	24.0	60.3	31.1	20.6	34.0	29.9	29.0	62.1	31.5	50.3	69.2	65.6	55.3	716.4

7.6 Capacity for On-farm Storage of Wool

In order to assess the feasibility of smoothing peak wool flows, farmers were asked to indicate their reactions to the payment of a storage increment for their wool clip. The suggested reactions, and the responses to them, are reported below.

TABLE 39
Reactions to the Payment of a Storage Increment
for Wool

Suggested Reactions	Percentage Response (frequencies)
Sell all wool promptly for cash	38.5
Store all wool to acquire full storage increment	17.3
Store as much wool as need for cash permits	44.2
(Number of replies = 1,564)	

Over a third of all farmers would not consider storing their wool at all. At the other extreme, only a small proportion would store all their wool in order to earn the maximum storage subsidy. The largest group of farmers was prepared to trade-off the need for cash against the inducements to store wool on the farm.

The current capacity for on-farm wool storage of varying duration is shown below:

TABLE 40

Average Number of Bales of Wool Per Thousand
Sheep Which Could be Stored Under Cover on
Surveyed Farms

Time Period	Average Number of Bales Per Thousand Sheep	Number of Replies
Less than 1 month	37.26	1 393
1 to 2 months	35.45	1 392
2 to 3 months	33.33	1 391
Over 3 months	29.41	1 388

Although the average on-farm storage capacity does show some inverse relationship with the amount able to be stored, the length of time of storage is clearly not a significant constraint. More important are the farmer's willingness to store wool and the availability of suitable storage facilities on his property.

CHAPTER 8
SEASONAL PATTERNS OF PRODUCT MOVEMENTS
IN THE SOUTH ISLAND

8.1 Seasonal Patterns of Sheep Transport

Table 41 shows the total numbers of sheep transported by month for the year ended 30 June 1975. The table reveals a well-defined season for the industry from mid-November through to mid-June - peaking in February when a fifth of all sheep moved throughout the year were transported. Clearly this seasonal peak in sheep transport reflected the killing season and the 85.5 per cent of sheep numbers that were transported for purposes of slaughter.

TABLE 41
Seasonal Pattern of Sheep Transport

Month of Movement	Number of Sheep	Percent
January	3,163,700	17.7
February	3,626,700	20.3
March	3,031,900	17.0
April	2,092,600	11.7
May	1,552,400	8.7
June	737,200	4.1
July	120,300	0.7
August	92,500	0.5
September	103,400	0.6
October	174,300	1.0
November	941,000	5.2
December	2,229,700	12.5
Subtotal	17,865,700	100.0
Unknown month	1,190,300	
Total	19,056,000	

The graphs in Figure 2 illustrate the seasonal movements of sheep by region. Although the sheep movements from each region tended to confirm the well-defined industry season noted above, there were considerable variations in this pattern, both in the time and size of regional peaks and troughs.

The southern South Island regions - Central Otago, Balclutha, Clutha, Gore, Invercargill and Wallace - conformed best to the seasonal pattern for the total industry, except for Central Otago's marked seasonal peak in March and a somewhat higher than average February peak for Invercargill.

The central South Island regions - Ashburton, South Canterbury, Mackenzie, Waimate, Waitaki and Dunedin - departed from the February peak. The seasonal peak occurred either earlier, in January, or later, in March, except in Waitaki which had a higher than average February peak. The peak season also began a month earlier in Ashburton, South Canterbury and Waimate regions.

Most variation in the seasonal pattern of sheep movements was concentrated in the northern South Island regions - Marlborough, Nelson, West Coast, North Canterbury, Rangiora, Malvern and Christchurch. Within the November to June season, these regions experienced numerous peaks and troughs instead of a steady increase and then decline in sheep numbers transported. The West Coast showed a particularly unusual pattern of sheep movements with a shorter season, peaking exceptionally high in February, followed by a smaller peak in June.

FIGURE 2: Seasonal Movements of Sheep By Region

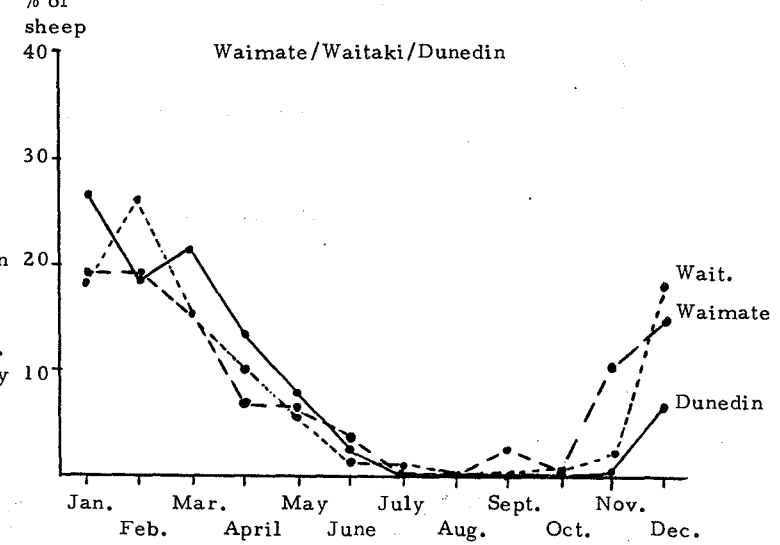
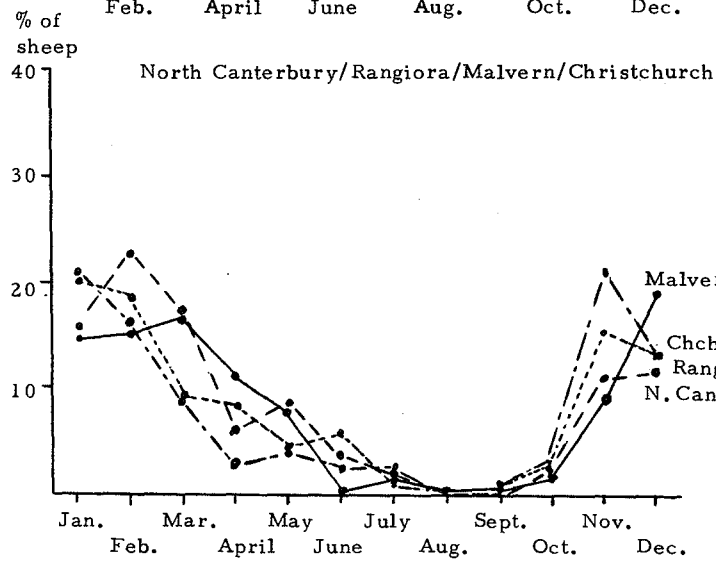
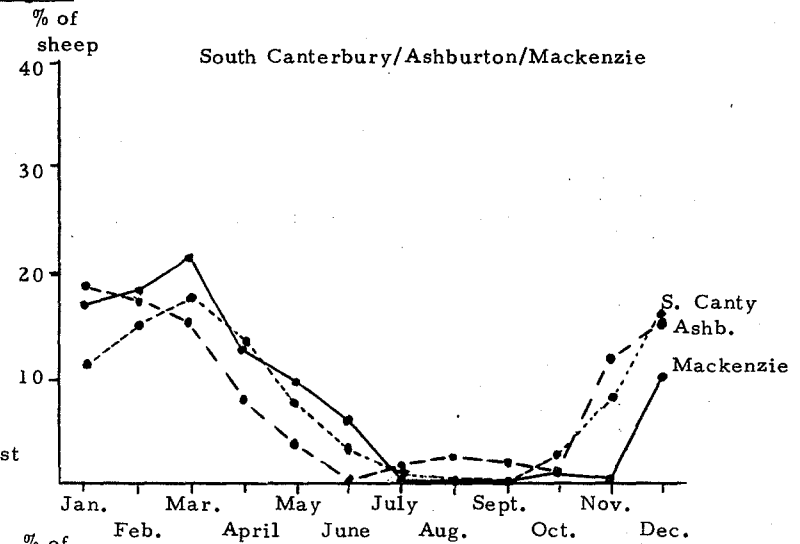
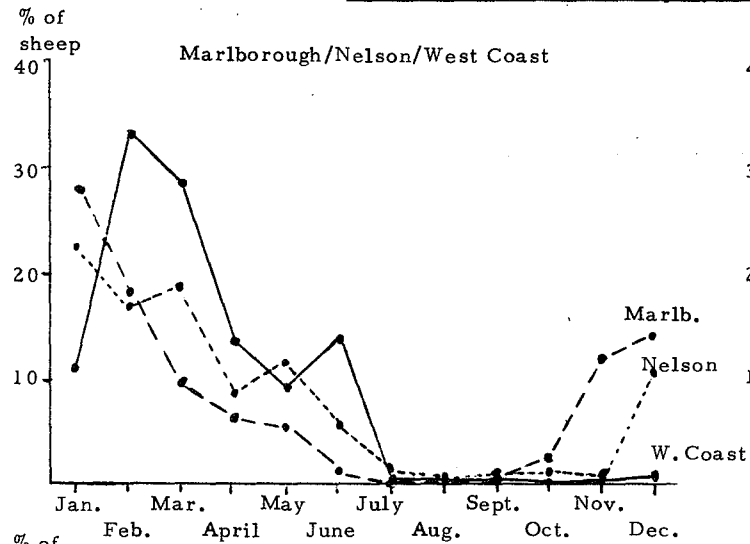
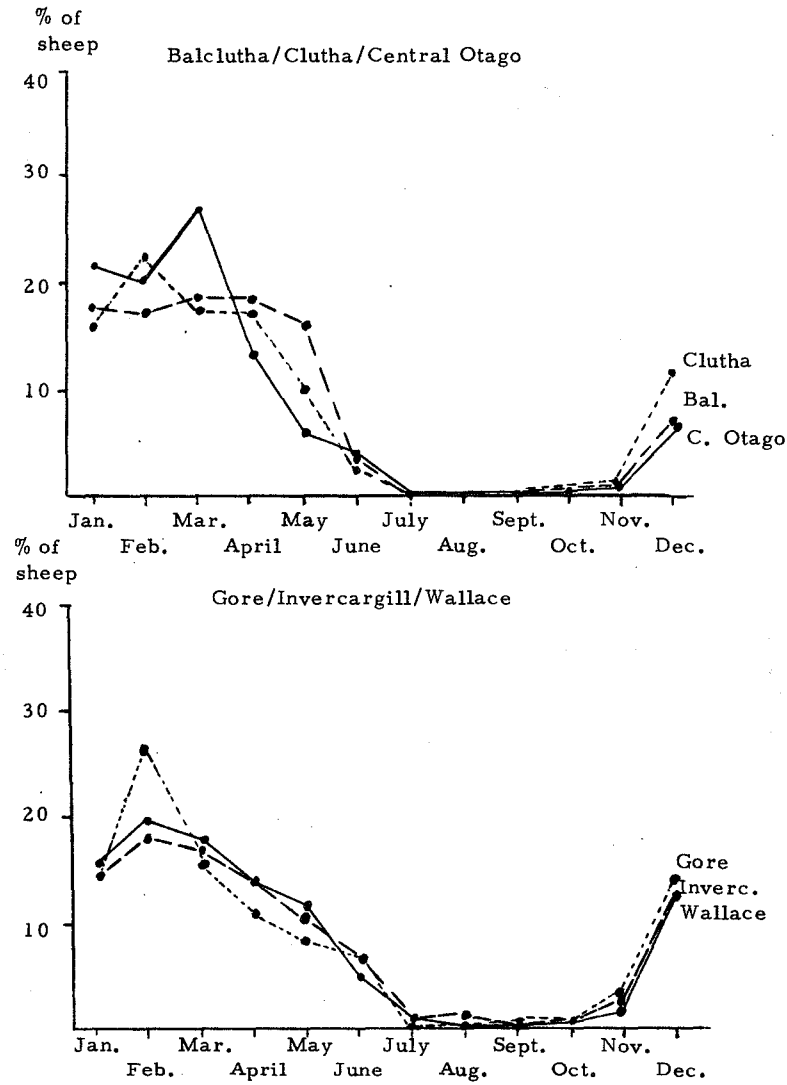


FIGURE 2 (cont'd): Seasonal Movements of Sheep By Region



8.2 Seasonal Patterns of Cattle Transport

The seasonal pattern for cattle movements peaked later than was the case for sheep. Cattle numbers transported increased from March and declined from June. The peak month, accounting for 30.4 per cent of cattle numbers transported, was April. Again, as for sheep, the peaking in cattle transport coincided with the killing season for cattle.

Figure 3 illustrates the seasonal movement of cattle by region. Although all regions experienced a large peak in cattle movements in April, there was substantial variation in the demand for cattle transport during the remainder of the year.

TABLE 42
Seasonal Pattern of Cattle Transport

Month of Movement	Number of Cattle	Percent
January	15,600	2.9
February	24,900	4.6
March	64,400	12.0
April	163,600	30.4
May	74,400	13.9
June	64,000	11.9
July	12,500	2.3
August	22,100	4.1
September	16,700	3.1
October	25,300	4.7
November	41,400	7.7
December	12,800	2.4
Subtotal	537,700	100.0
Unknown	58,300	
Total	596,000	

FIGURE 3: Seasonal Movements of Cattle By Region

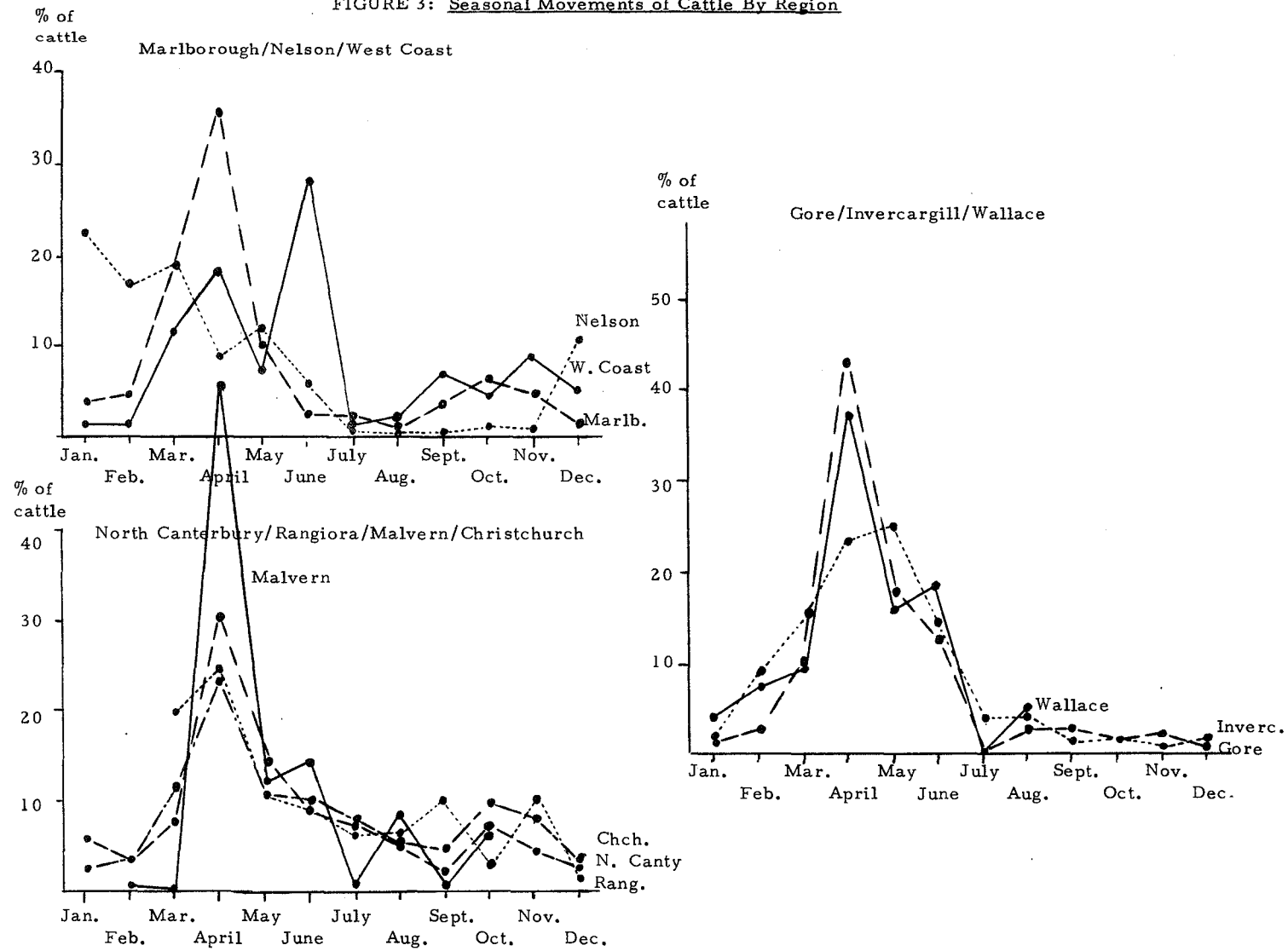
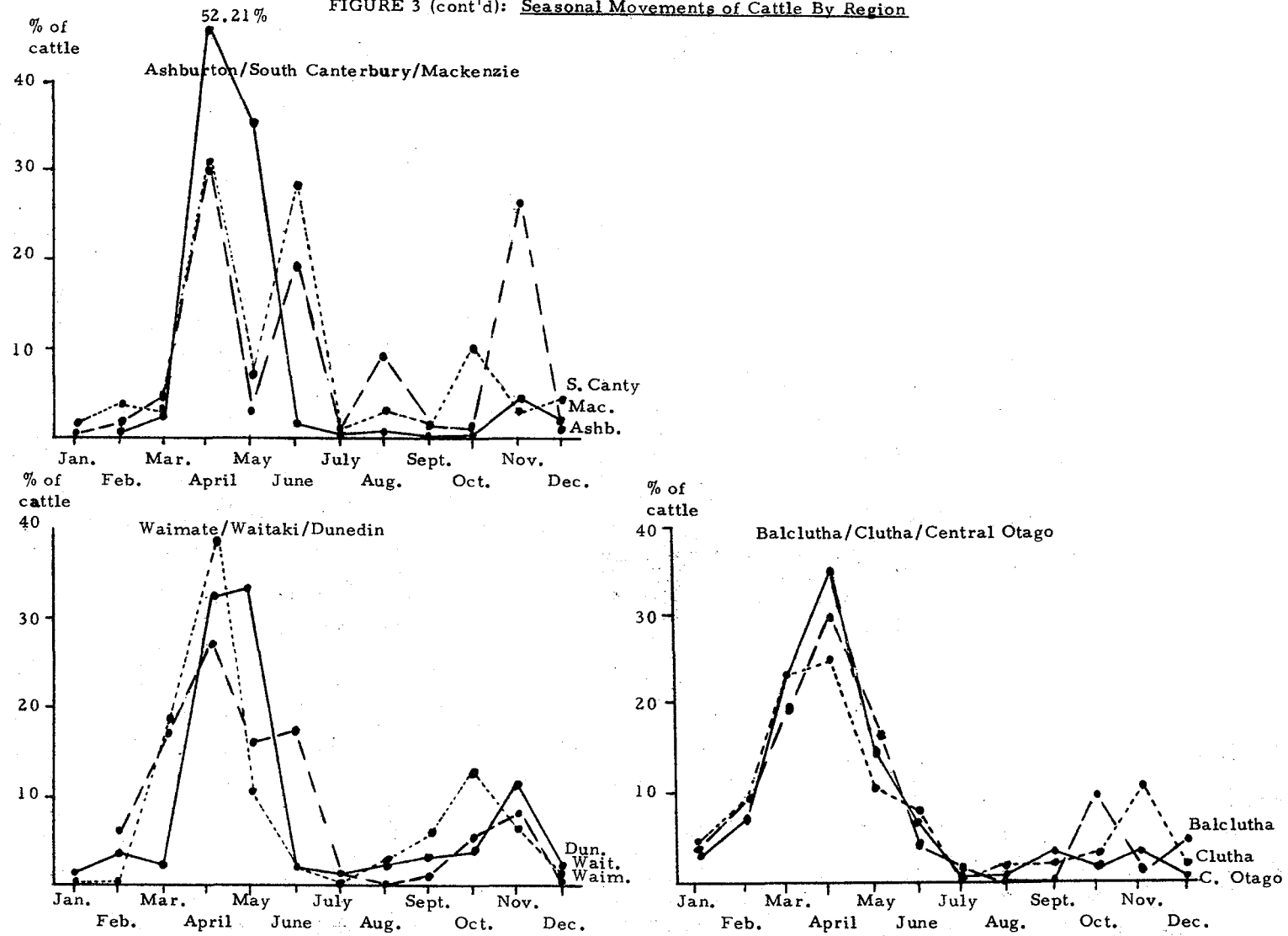


FIGURE 3 (cont'd): Seasonal Movements of Cattle By Region



The southern regions of Gore, Invercargill and Wallace experienced a prolonged peak season from March to June with only a small continuous flow during the remainder of the year, and nothing at all from Wallace county after August. The remaining southern and central South Island regions experienced the same main peak season as well as a series of minor peaks during the remainder of the year. In Ashburton county 26.44 per cent of its total cattle were, in fact, transported during November. A similar pattern was repeated in the northern South Island with a slightly shorter main peak season, and a somewhat more erratic flow during the remainder of the year.

8.3 Seasonal Patterns of Wool Transport

Total South Island wool flows by month are presented in Table 43. The wool industry has a well-defined season from August to February when 83.2 per cent of the year's total wool was transported. The peak of this season was in January when 17.7 per cent of all wool was moved.

As for livestock transport, wool movements also showed considerable variation by region (see Figure 4).

Gore, Invercargill and Wallace regions experienced a very regular pattern of wool movements - peaking in January; steadily declining until April-May; peaking slightly in August, and then increasing continuously from September - October.

Balclutha, Clutha and Central Otago regions followed a similar, although less regular, pattern. Central Otago experienced only small movements of wool from November to July but had a concentrated season in August and September when 66.45 per cent of total wool was moved.

FIGURE 4: Seasonal Movements of Wool By Region

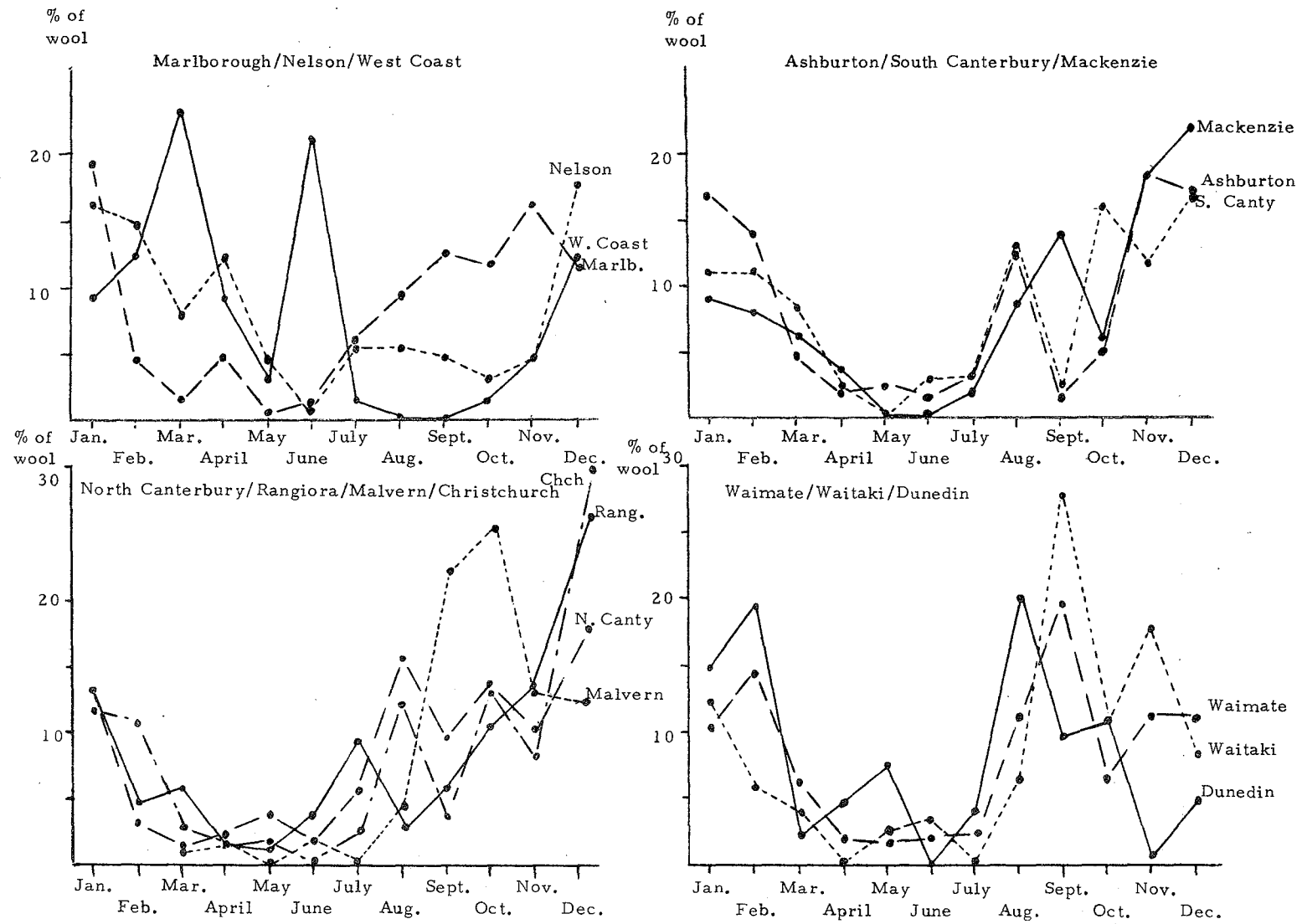


FIGURE 4 (cont.): Seasonal Movements of Wool By Region

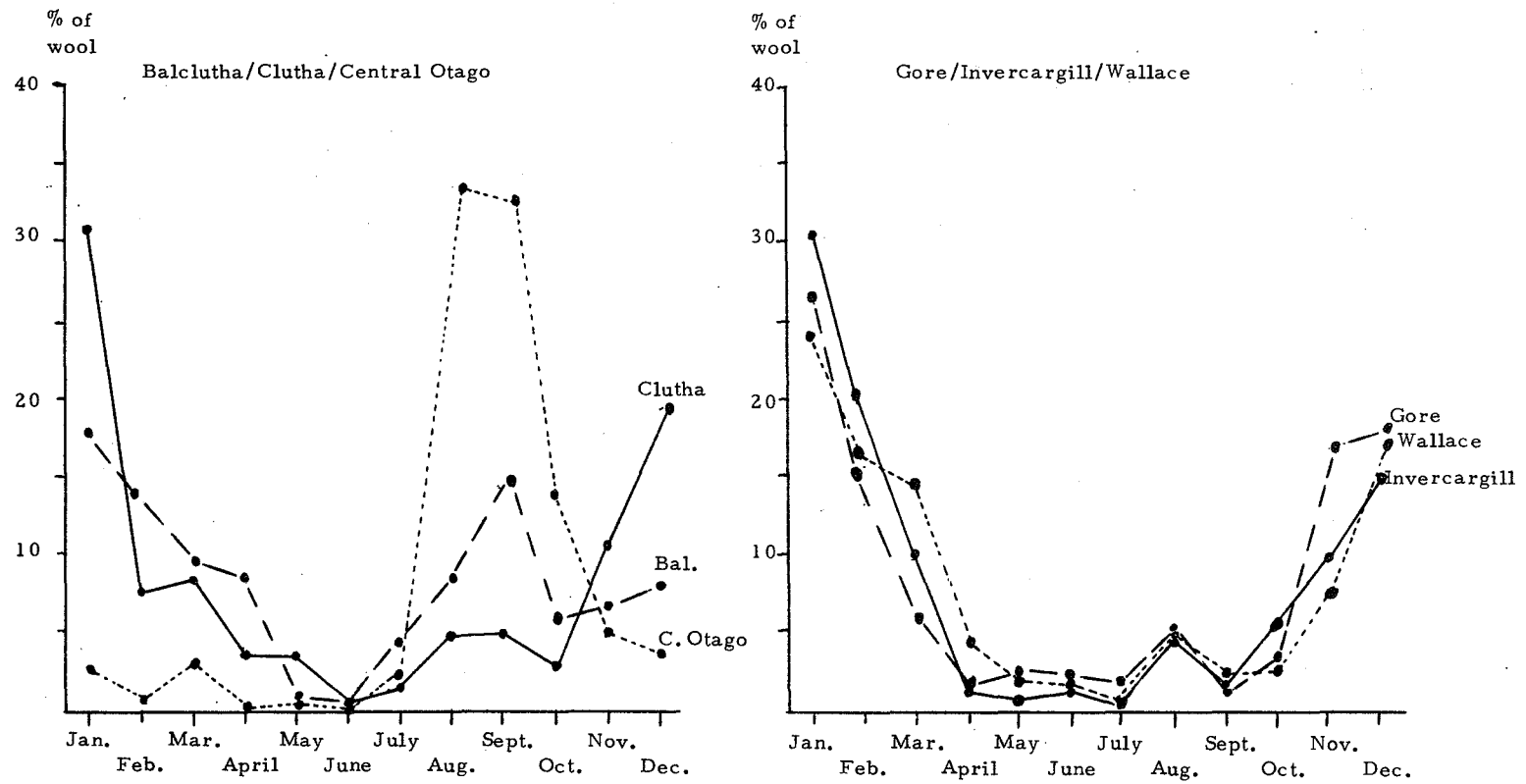


TABLE 43
Seasonal Patterns of Wool Transport

Month of Movement	Number of Bales	Per Cent
January	117,300	17.7
February	72,100	10.9
March	43,700	6.6
April	21,600	3.3
May	13,600	2.1
June	11,800	1.8
July	20,800	3.1
August	70,200	10.6
September	65,200	9.8
October	54,100	8.2
November	75,500	11.4
December	98,000	14.8
Subtotal	663,900	100.0
Unknown Month	52,400	
Total	716,300	

Waimate and Waitaki wool flows also peaked in September, and Dunedin, one month earlier, in August. However, these counties also experienced substantial wool movements at other times of the year.

The central South Island regions of Ashburton, South Canterbury, Mackenzie, North Canterbury, Rangiora, Malvern and Christchurch generally conformed to the August - February season, although different months within this season proved to

be busier in different counties. For instance, December saw the largest percentage of wool transported in Mackenzie, South Canterbury, Christchurch and Rangiora regions.

Marlborough, Nelson and West Coast regions exhibited the most irregular transport flows. The West Coast, in particular, had an unusual pattern of wool movement, with two very large peaks in March and June accounting for 44.62 per cent of all wool moved.

8.4 Conclusion

The significant regional and seasonal variations in demand for transport raise the question of whether the current system of Goods Service Districts confining the operations of transport firms is efficient. Instead of supplying maximum transport capacity in every region, only to be under-utilised for a large part of the year, it may be more economical to remove the restrictions on areas of operation.

CHAPTER 9

METHOD OF TRANSPORT

9.1 Method of Sheep Transport

The survey estimated that road transport had a market share of 95.6 per cent for sheep transport in the South Island. Road carriers accounted for 82.8 per cent of this proportion and farm trucks comprised the other 12.9 per cent. Rail was used for transporting only 1.8 per cent of sheep and droving for 1.9 per cent of the sheep moved (Table 44).

TABLE 44
Method of Sheep Transport

Method of Transport	Number of Sheep	Percent
Road carrier	15,774,300	82.8
Farm truck	2,463,300	12.9
Droving	361,300	1.9
Droving and rail	166,900	0.9
Road carrier and rail	153,400	0.8
Farm truck and rail	20,500	0.1
Buyer's own truck	89,400	0.5
Other	27,000	0.1
	<u>19,056,100</u>	<u>100.0</u>

9.2 Method of Cattle Transport

Road transport comprised a smaller proportion of the cattle transport market - 91.0 per cent compared with 95.6 per cent for sheep. This difference was due to the higher 5.7 per cent market share of cattle transport held by the New Zealand Railways (Table 45). Because multiple decks can not be used to load cattle more densely as with sheep, New Zealand Railways retained some market strength probably through price competition. However, its involvement was almost entirely limited to long distance transport movements to or from the West Coast and Central Otago.

TABLE 45
Method of Cattle Transport

Method of Transport	Number of Cattle	Percent
Road carrier	457,400	77.2
Farm truck	82,100	13.8
Droving	12,600	2.1
Road carrier and rail	24,400	4.1
Farm truck and rail	8,700	1.5
Droving and rail	300	0.1
Other	5,500	0.9
Unknown	1,600	0.3
	<u>592,600</u>	<u>100.0</u>

9.3 Method of Wool Transport

Unlike livestock transport, wool was carted in significant quantities by transport modes other than commercial road carriers. Table 46 shows the amounts of wool moved by each transport mode during the year ended 30 June 1975.

TABLE 46
Method of Wool Transport

Method of Transport	Number of Bales of Wool	Per Cent
Road carrier	290,900	40.6
Farm truck	219,800	30.7
Road carrier and rail	156,000	21.8
Farm truck and rail	25,500	3.6
Buyer arranged	19,900	2.8
Other	4,300	.6
	<u>716,400</u>	<u>100.0</u>

Commercial road carriers still controlled a major share of the wool transport market, but faced keen competition from the farmer and his own vehicle. Together, these two modes gave road transport a 71.3 per cent share of the market. The New Zealand Railways carted a relatively high 25.3 per cent of all wool - 21.8 per cent being carted by road carrier and rail, and 3.6 per cent by farm truck and rail.

The importance of the railways in wool cartage varied significantly by region. The central South Island regions - Rangiora, Malvern, South Canterbury, Mackenzie and Waitaki used either negligible or no rail transport. On the other hand, for some regions - notably Marlborough, Waimate, Balclutha and Invercargill - rail carted between 55 and 65 per cent of all wool moving from farms.

9.4 The Road Transport Sector

Farmers appear not to be critical of the road transport sector and report a stable and co-operative relationship with transport operators.

Table 47 shows that the majority of farmers used only one transport firm for their cartage requirements.

TABLE 47

The Number of Transport Firms Used by Farmers

The Proportion of Farmers Using only:	Per Cent
One Transport Firm	54.0
Two Transport Firms	31.3
Three Transport Firms	10.9
Four Transport Firms	3.3
Five Transport Firms	0.5

Number of Valid Responses = 1,664

From the reasons given for choice of road carrier, "good service" emerged as the most important factor influencing choice (See Table 48). Only a small proportion of farmers - 14.8 per cent - actually spent time in searching for the cheapest available carrier.

TABLE 48
Reasons for Choice of Road Carrier

Reasons	True (Percentage)	False
Mostly use one transport firm that in return gives you good service	96.1	3.9
Mostly use one transport firm because it gives you good credit facilities	28.6	71.4
Mostly use one transport firm because you are one of its shareholders	3.1	96.9
Mostly use one transport firm because there is no choice in your district	22.7	77.3
Mostly use the first transport firm able to do the job when you want it done	27.7	72.3
Mostly obtain quotes from several firms and choose the cheapest available	14.8	85.2

Number of Valid Responses = 1,664

When asked to assess various aspects of the road transport sector's performance, farmers found little to complain about. (Refer to Table 49). Only in one instance - not surprisingly that of restraining freight rate increases - did more than 50 per cent of all farmers describe the road transport sector's performance in this respect as either fair or poor. An overwhelming majority of farmers - 96 per cent - assessed truck drivers' co-operation and service as being either excellent or good. A significant proportion of farmers did not know about the road transport sector's performance in paying out compensation for stock damage and providing credit. This would imply that they had not had occasion to request such facilities.

TABLE 49

Farmers' Assessment of the Road Transport Sector's Performance

	Road Transport's performance is ...				
	Excellent	Good	Fair	Poor	Don't Know
	Frequencies (Per Cent)				
At letting farmers know what livestock transport services are available	17.9	42.5	19.3	7.8	12.6
At providing co-operation and service from office staff	31.8	46.2	11.2	2.5	8.2
At providing co-operation and service from drivers	40.8	45.2	5.8	0.4	7.9
At reducing the advance notice required by carriers for transporting livestock	18.2	42.4	15.0	2.3	22.0
At keeping stock crates clean	19.5	48.6	21.3	2.3	8.2
At keeping equipment modern and in good repair	25.6	50.5	15.3	1.6	7.0
At providing drivers skilled in stock handling	26.2	49.2	16.5	1.8	6.3
At caring for stock during the journey	17.7	48.2	18.1	1.8	14.2
At reducing the time taken to reach the destination	26.5	50.9	7.7	1.3	13.7
At reducing deaths, bruising and injury en route	16.6	47.7	18.4	2.5	14.9
At keeping down freight rates	6.2	16.4	32.7	20.1	24.7
At paying out compensation for stock deaths and damage	8.9	20.2	9.5	8.9	52.4
At providing credit to farmers	8.1	24.9	12.5	6.1	48.4

Number of valid responses = 1,664

The questionnaire also provided farmers with an opportunity to support or dissent from some frequently made criticisms of the road transport industry structure. The posited criticisms, and their degree of support are presented in Table 50.

TABLE 50
Farmers' Criticisms of the Road Transport Sector

Comment	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know
Frequencies (Per Cent)					
Carriers make excessive profits	1.9	7.9	50.4	5.2	34.7
Carriers make too little effort to cut their costs	4.8	28.4	37.5	3.0	26.3
There is not enough competition between carriers	9.1	31.7	40.9	5.4	12.9
Large carrying firms give better service than small firms	3.2	14.9	48.2	17.0	16.7
It is usually cheaper for a farmer to own his own truck than to use a carrier	5.0	13.8	47.5	12.5	21.3
Co-operation between carriers and farmers is poor	1.4	6.6	67.6	15.3	9.1
Licencing of carriers increases transport costs for farmers	7.0	38.2	14.2	1.6	39.0
The 40 mile restriction on carriers increases transport costs for farmers	19.2	43.3	7.9	1.4	28.2
Carriers should concentrate on short distance traffic leaving long distance traffic to rail	5.2	14.1	44.3	22.7	13.7
Fuel prices for carriers should be lower than for farmers' trucks	3.7	15.0	45.0	23.7	12.5
Farmers need railway branch line competition to keep down prices charged by road carriers	8.1	25.4	36.4	9.4	20.7

Number of Valid Responses = 1,664

Once again, farmers seemed to have few criticisms to levy at the structure of the transport industry. On only two counts - the responsibility of licensing and the 40 mile restriction for increased transport costs - did more farmers agree than disagree with the statement.

Tables 49 and 50 indicate that farmers were content with the status quo in the road transport sector in every respect except for costs which they considered excessive.

Farmers were also asked whether they agreed or disagreed with the removal of the 40 mile road restriction on livestock transport in 1961. As shown in Table 51 the majority of farmers strongly agreed with the removal.

TABLE 51

Farmers' Attitudes Towards Removal of the 40-mile Road
Restriction on Livestock Transport

	Frequency (Per cent)
Strongly Agree	43.5
Agree	36.1
Disagree	5.4
Strongly Disagree	3.2
Don't Know	11.9

Number of Valid Responses = 1,664

Some rural goods cartage rate schedules allow rate discounts if the farmer provides a suitable stock loading ramp. The amount of discount varies but it was usually between a half and one cent per head. While this was small, it could amount to a significant sum relative to the cost of constructing a ramp for farms with a high throughput of stock.

Farmers were asked whether or not they possessed sheep or cattle loading ramps. The replies indicated that stock loading ramps were fairly common:

TABLE 52
Ownership of Stock Loading Ramps

	Sheep Loading Ramp		Cattle Loading Ramp	
	No. Replies	Percent	No. Replies	Percent
Yes	608	36.5	823	49.5
No	966	58.1	715	43.0
No reply	90	5.4	126	7.5
Total	1664	100.0	1664	100.0

Cattle loading ramps were more common on farms, with nearly half of those surveyed possessing one, than sheep loading ramps. This is partly due to the relative simplicity and flexibility of the portable sheep loading ramps carried by stock trucks compared to the robust fixed level loading ramps required for the efficient loading of cattle.

9.5 The New Zealand Railways

As would be expected from the market shares of rail and road transport, few farmers used the railways for livestock transport. Over the past five years, nearly 85 per cent of farmers never used rail for livestock transport and only 3.9 per cent of all farmers used rail transport often. These results are presented in Table 53.

TABLE 53

Frequency of Rail Use for Livestock Transport over
past Five Years

Category	Frequency (Per Cent)
Often	3.9
Sometimes	4.2
Rarely	6.9
Never	84.9

Number of Valid Responses = 1,664

On disaggregating these results to a regional level, considerable variation in the pattern of rail use emerged, as is evident from table 54.

TABLE 54

Frequency of Rail Use for Livestock Transport over
past Five Years by Region

Region	Category			
	Often	Sometimes	Rarely	Never
	(Frequency Per Cent)			
Marlborough	2.5	12.5	21.3	63.8
Nelson		1.4	5.8	92.8
West Coast	53.6	23.2	5.8	17.4
North Canterbury	2.1	3.2	18.1	76.6
Rangiora	2.1	2.1	1.1	94.7
Malvern		1.4	1.4	97.2
Christchurch			5.0	95.0
Ashburton		2.4	5.9	91.8
South Canterbury			3.1	96.9
Mackenzie		1.2	2.4	96.5
Waimate	1.0	3.1	4.1	91.8
Waitaki			8.5	91.5
Dunedin	4.7	10.9	9.4	75.0
Balclutha	2.4	1.2	9.4	85.9
Clutha	1.0	3.9	9.7	85.4
Central Otago	7.5	17.2	12.9	62.4
Gore	2.0		2.0	96.1
Invercargill	1.3	1.3	1.3	96.3
Wallace	2.7	1.8	5.5	89.1

Number of Valid Responses = 1,664

No farmers in Nelson, Malvern, Christchurch, Ashburton, South Canterbury, Mackenzie and Waitaki regions reported using rail for livestock transport "often". In fact, no-one in Christchurch, South Canterbury and Waitaki reported as even using the railways "sometimes".

The only exception to the general neglect of rail transport was in Westland where 53.6 per cent of the farmers reported using rail transport "often" and only 17.4 per cent as "never". This reflects Westland's relative isolation from product markets and the comparative advantage of the railways in long distance haulage.

When asked to assess various facets of railway performance, a large proportion of farmers "did not know", reflecting the infrequent usage of rail freight transport. These results are presented in table 55.

TABLE 55

Farmers' Assessment of the Railway's Performance

	Railways performance is				
	Excellent	Good	Fair	Poor	Don't Know
	(Frequencies Per Cent)				
At letting farmers know what livestock transport services are available	0.5	1.6	4.9	40.2	52.8
At providing co-operation and service from railway staff	1.9	5.8	11.0	23.6	57.7
At reducing the advance notice required to order wagons for livestock transport	0.5	1.7	7.5	12.9	77.4
At keeping stock wagons clean	0.8	4.1	9.0	11.4	74.7
At keeping stock wagons modern and in good repair	0.8	4.2	9.3	15.4	70.3
At providing good loading facilities	1.9	7.1	10.6	19.0	61.4
At providing assistance with loading	0.5	1.3	3.2	27.8	67.1
At reducing the time taken to reach the destination	0.5	3.0	7.2	22.3	66.9
At reducing deaths, bruising and injury en route	0.8	2.8	8.2	14.4	73.8
At keeping down freight rates	5.1	9.3	7.8	9.9	68.1
At paying out compensation for stock deaths and damage	0.8	1.8	2.9	10.2	84.3
At providing credit for farmers	0.2	0.3	1.4	13.0	85.0

Number of Valid Responses = 1,664

Adjusting for those respondents who "did not know", more than 50 per cent of farmers rated rail performances as only "fair" or "poor" on all counts. On only one point - that of restraining freight increases - did any significant number of farmers rank the railways performance as excellent. This could have been associated with the "freezing" of railway rates in 1972.

9.6 Conclusions

The survey results have confirmed the importance of road transport in the cartage of major agricultural commodities off South Island farms. The predominance of road cartage was even more pronounced in livestock transport which is exempt from the then existing 40-mile road limit imposed on most other commodities, including wool.

This unequal division of farm commodity transport demand between road and rail was reinforced by farmers' attitudes towards these two transport sectors. There was almost unanimous praise for the service and performance of the road transport industry, and conversely for the railways. The only exception to this rule was the issue of freight rates. One might infer, therefore, that the cost of transport is of most concern to the farmer.

CHAPTER 10

FARM TRUCK OWNERSHIP

10.1 South Island Farm Truck Ownership

Of 1,640 valid replies to the question on farm truck ownership, 59.6 per cent of surveyed farmers reported owning at least one truck. As Table 56 shows, 47.4 per cent of farmers owned one truck and 12.2 per cent owned more than one. Applying these sample percentages to the total number of sheep farms in the South Island, (Anon., 1972), 10,002 holdings out of 16,782 holdings owned 12,586 farm trucks.

TABLE 56
South Island Farm Truck Ownership

No. Trucks Per Farm	Percent of Farms	Number of Farms	Number of Trucks
1	47.4	7,955	7,955
2	9.6	1,611	3,222
3	2.1	352	1,056
4	0.4	67	268
5	0.1	17	85
1 or more	59.6	10,002	12,586
0	40.4	6,780	-
Totals	100.0	16,782	12,586

10.2 Farm Truck Ownership by Region

The regional breakdown of farm truck ownership in Table 57 shows that Ashburton County had both the highest incidence of farm truck ownership and the largest number of farm trucks.

TABLE 57
Farm Truck Ownership By Region

Region	Percent of Total Number of Trucks	Number of Trucks Owned							Total
		(Percent of Farms)						0	
		1	2	3	4	5	1 or more		
Marlborough	5.1	43.0	3.8	6.3	-	-	53.1	46.9	100.0
Nelson	3.0	40.6	-	-	-	-	40.6	59.4	100.0
West Coast	1.7	40.3	-	1.5	-	-	41.8	58.2	100.0
N. Canterbury	4.1	45.7	11.7	1.1	-	-	58.5	41.5	100.0
Rangiora	5.5	48.4	16.1	3.2	-	1.1	68.8	31.2	100.0
Malvern	3.7	50.7	19.7	1.4	1.4	1.4	74.6	25.4	100.0
Christchurch	7.4	52.0	16.0	3.0	-	-	71.0	29.0	100.0
Ashburton	13.7	50.6	23.5	4.7	2.4	-	81.2	18.8	100.0
Strathallan	6.6	51.0	11.5	4.2	1.0	-	67.7	32.3	100.0
Mackenzie	1.6	44.7	7.1	2.4	1.2	-	55.4	44.6	100.0
Waimate	4.6	44.2	14.7	2.2	-	-	61.1	38.9	100.0
Waitaki	5.3	51.9	12.3	1.2	1.2	-	66.6	33.4	100.0
Dunedin	2.9	48.4	-	-	-	-	48.4	51.6	100.0
Balclutha	4.0	47.5	3.7	-	-	-	51.2	48.8	100.0
Clutha	3.8	53.5	5.1	1.0	-	-	59.6	40.4	100.0
Central Otago	4.3	46.2	8.6	2.2	1.1	-	58.1	41.9	100.0
Gore	9.4	57.4	9.9	1.0	-	-	68.3	31.7	100.0
Invercargill	7.7	41.0	5.2	-	-	-	46.2	53.8	100.0
Wallace	5.6	39.1	7.3	2.7	-	-	49.1	50.9	100.0
Total	100.0	47.4	9.6	2.1	0.4	0.1	59.6	40.4	100.0

It was followed by Malvern County, Christchurch (including Ellesmere County and Banks Peninsula), Rangiora, Gore (Northern Southland), Strathallan County and Waitaki County. These areas are characterised by greater cropping activity than the other South Island regions.

10.3 Farm Truck Ownership by Farm Type

From the 1,629 replies to questions concerning both truck ownership and type of farming activity, Table 58 confirms that a higher proportion of cropping farms owned farm trucks than did other types of farms. The proportion of high country farms owning farm trucks was only slightly less, and these farms showed the highest incidence of multiple farm truck ownership. It is likely that the relatively large size of high country farms had a more significant bearing on their higher incidence of farm truck ownership than the nature of their farming activity.

TABLE 58
Farm Truck Ownership by Farm Type

	Number of Farms	Percent Owning One or More Trucks	Percent Owning Two or More Trucks
Mixed Cropping & Fattening	562	68.7	17.3
High Country	53	66.0	22.7
Dairy	75	58.7	8.0
Foothills	148	55.4	8.1
Fattening & Breeding	692	54.1	9.8
Intensive Fattening	99	51.5	5.1
	<u>1,629</u>		

10.4 Farm Truck Ownership by Farm Size

From the 1,624 replies to questions concerning both truck ownership and farm size, Table 59 confirms that a large proportion of larger farms owned farm trucks. The proportion rose up to a farm size of about 200 hectares and then stabilised up to about 2,000 hectares. The above average proportion of truck ownership among high country farms was again reflected in the 72.2 per cent of farms of over 2,000 hectares that owned one or more trucks.

TABLE 59
Farm Truck Ownership by Farm Size

Farm Size (hectares)	Number of Farms	Percent Farms Owning One or More Trucks
Less than 40	85	27.1
40 - 79	111	43.2
80 - 119	165	55.2
120 - 159	193	55.4
160 - 199	184	64.1
200 - 399	479	66.8
400 - 799	198	62.6
800 - 1199	116	64.7
1200 - 1999	39	61.5
2000 - 8000	54	72.2
	<u>1,624</u>	

A very similar relationship between farm truck ownership and farm size was obtained when farm size was measured in terms of sheep numbers.

A larger proportion of farms divided into blocks, connected only by public roads, owned one or more farm trucks. One thousand, six hundred and twenty farmers answered both the questions on division of property and farm truck ownership. Of this total, a high 44.4 per cent reported that their farms were divided into separate blocks. Such farms also reported a higher incidence of multiple truck ownership, as Table 60 illustrates.

TABLE 60

Farm Truck Ownership where Farms Divided

	Number of Farms	Percent Owning One or More Trucks	Percent Owning Two or More Trucks
Separate Blocks	719	70.4	16.7
One Block	901	51.2	8.9
	<u>1,620</u>		

10.5 Characteristics of Farm Trucks

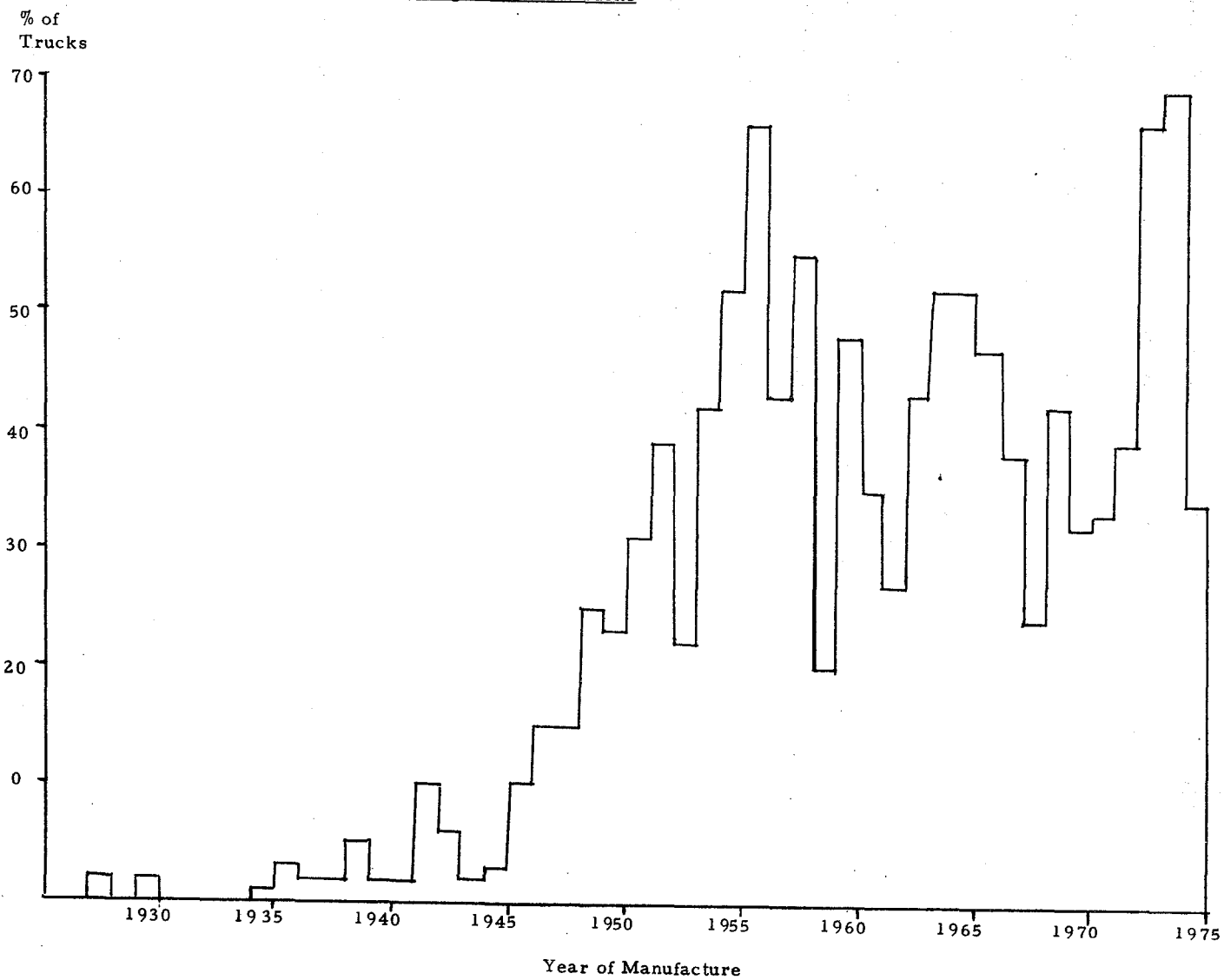
10.5.1 Age of Farm Trucks

Figure 5 illustrates the age distribution of the fleet of farm trucks reported by respondents. Age was determined from the year of manufacture. The graph plots the numbers of trucks reported in the survey by each year of manufacture.

The average farm truck was manufactured in 1961 giving an average age at the time of the survey of 15 years.

No particular period of manufacture was preferred after about 1950, but trucks built prior to 1950 clearly comprised only a small proportion of the total fleet of farm trucks.

FIGURE 5: The Age of Farm Trucks



10.5.2 Year of Farm Truck Purchase

Figure 6 shows the year in which the farm trucks owned were purchased. A markedly different pattern from the year of manufacture is evident when Figures 5 and 6 are compared.

The average truck was purchased in 1968 and had, therefore, been owned for nearly eight years at the time of the survey.

By taking the difference between the year of purchase and the year of manufacture for the trucks reported in the sample, it was found that 34.2 per cent of farm trucks were purchased new. The overall average age at the date of purchase was seven years. The average age of used trucks purchased as farm trucks was 11 years.

With the normal turnover of trucks, earlier cyclical patterns of truck purchase are suppressed in Figure 6. There is, however, some relationship evident between the year of truck purchase and the known periods of relative prosperity in farming.

10.5.3 Size of Farm Trucks

The average farm truck had a tare weight of 3,000 kg. Figure 7 shows the dominance of smaller vehicles in the farm truck fleet. Twenty-five per cent of truck owners reported a tare weight of 1,000 kg or less, and therefore belonged to the utility or pick-up category. It is possible that this proportion was understated since such vehicles might not have been regarded as trucks by a small proportion of the farmers replying to the survey. Only 14.5 per cent of farm trucks owned were over 5,000 kg unladen weight.

FIGURE 6: Year of Farm Truck Purchase

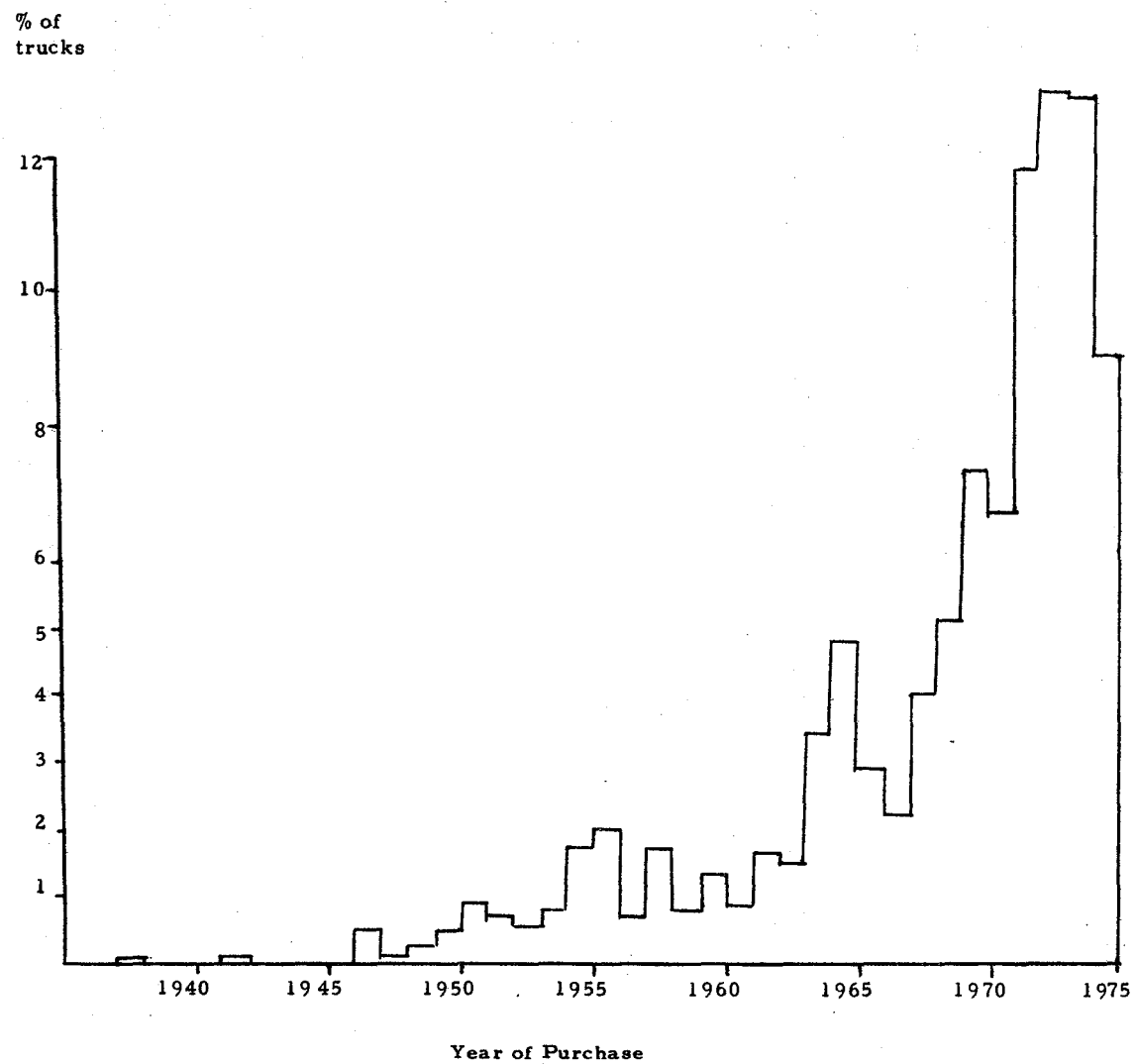
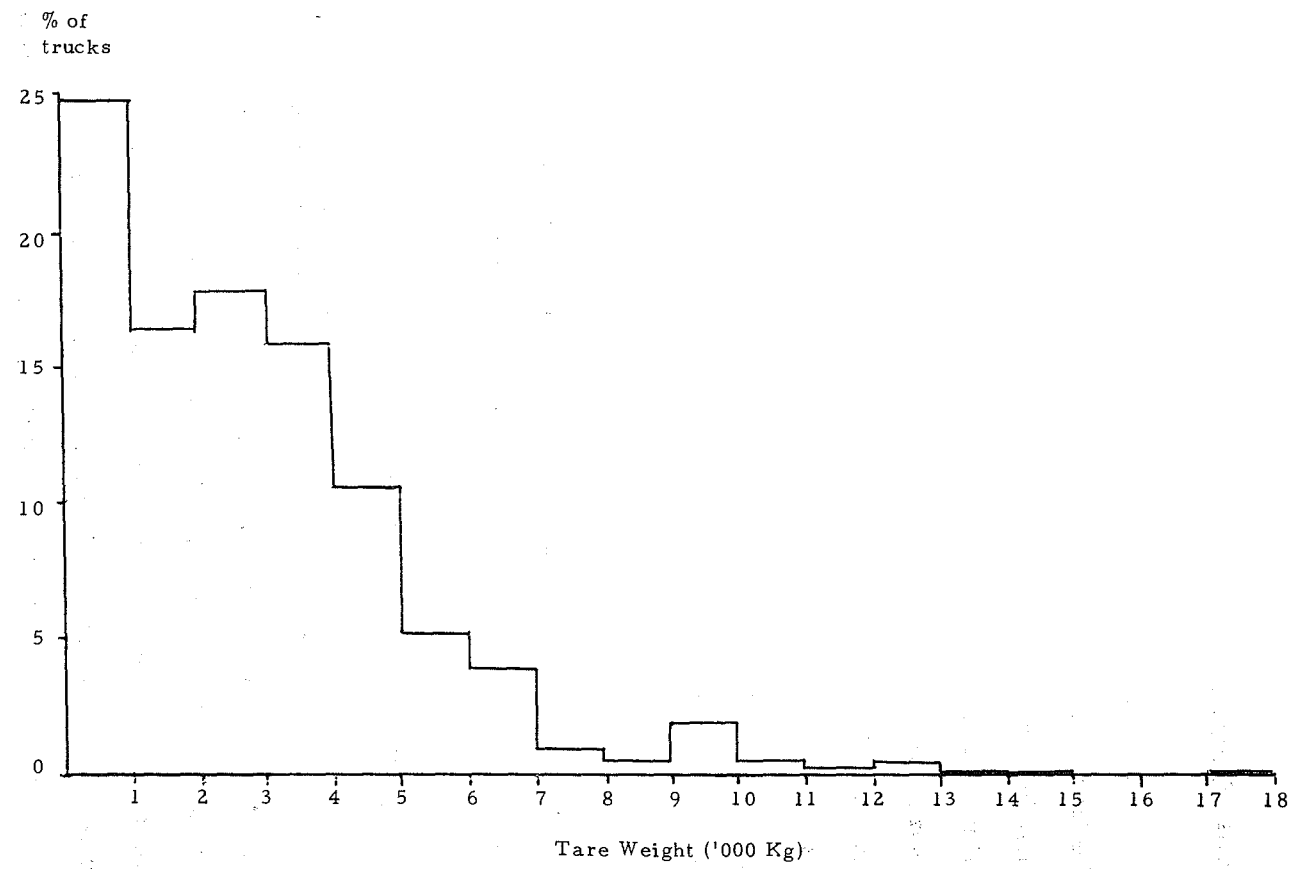


FIGURE 7: Size of Farm Trucks



10.5.4 Make of Farm Trucks

The most popular make of truck accounting for 38.1 per cent of the sample, was the Bedford range. For 16.5 of the sample, Austin (9.0 per cent) and Morris (7.5 per cent) were the next most popular makes, but lagged well behind the Bedford share. In view of its relatively short time on the market, and its limited model range, the Mazda, with a 4.6 per cent representation in the sample, had substantial popularity. In comparison, the similar sized, but longer established, Landrover had a 5.4 per cent representation. Table 61 compares the popularity of the different makes.

The surprisingly low representation of Holden (1.6 per cent) and Falcon (0.2 per cent) suggested that most farmers replying did not regard utility vehicles as farm trucks.

10.6 Farm Truck Utilisation

The intensity with which farmers use their farm trucks is best reflected in the annual distance travelled. On average, trucks in the sample travelled 8,320 km per year. Only 13.9 per cent of trucks exceeded 16,000 km per year, and a mere 1.1 per cent exceeded 32,000 km per year. Farm truck utilisation was therefore significantly lower than that obtained by licensed rural goods service trucks which averaged 30,880 km for the year ended 31.3.75 (Anon., 1975).

TABLE 61
Makes of Farm Trucks

Make of Truck	Percent of Sample
AEC	0.1
Albion	0.1
Austin	9.0
Bedford	38.1
Chevrolet	3.7
Chrysler	0.2
Commer	4.2
Datsun	2.4
De Soto	0.1
Dodge	0.9
Falcon	0.2
Ford	9.5
Fordson	0.1
GMC	0.2
Holden	1.6
International	5.4
Landrover	5.4
Leyland	0.4
Mazda	4.6
Mercedes	0.1
Morris	7.5
Nissan	0.5
Range Rover	0.1
Studebaker	0.1
Thames	2.3
Toyota	1.9
Vanguard	0.9
Volkswagen	0.3
	100.0

10.7 Cost Advantage of Farm Truck Ownership

Farmers were asked in the survey whether it was cheaper for a farmer to own his own truck or to use a carrier. Table 62 reports the views of the 1,664 farmers replying to this question.

TABLE 62
" That Farm Trucks are Cheaper than Carriers "
 (per cent of farmers)

Strongly agree	7.5	
Agree	<u>23.0</u>	
Total agree		30.5
Disagree	32.9	
Strongly disagree	<u>9.1</u>	
Total disagree		42.0
Don't Know		<u>27.5</u>
Total		<u>100.0</u>

Of those who expressed a view, 57.9 per cent disagreed that farm truck cartage was cheaper than commercial carriers. There was a similar division of opinion in all regions. In Ashburton County, where the highest proportion of farms owned farm trucks, and where only 17.7 per cent recorded a "don't know" response, 64.3 per cent disagreed that farm trucks were cheaper.

10.8 Fuel Price Differences

At the time of the survey, it was the Government's policy to sell fuel at a lower price to commercial carriers than to farm truck owners. Again there was a fairly even pattern of response to a question on this issue in all regions, resulting in a clear disagreement with the policy, as shown in Table 63.

TABLE 63
"That Fuel Prices should be Lower
 for Carriers than for Farm Trucks"
 (per cent of farmers)

Strongly agree	3.7	
Agree	<u>11.2</u>	
Total agree		14.9
Disagree	47.4	
Strongly disagree	<u>27.0</u>	
Total disagree		74.4
Don't know		<u>10.7</u>
Total		<u>100.0</u>

10.9 Ambitions to Own a Farm Truck

Those farmers reporting that they did not own a farm truck were asked whether they considered they needed one. Their answers are summarised, by region, in Table 64. Overall about a fifth of those without a truck expressed ambitions to own a farm truck. Those neither owning, nor expressing the ambition to own a farm truck, amounted to 32.6 per cent of the replies received.

The region with the greatest ambition to own a farm truck was Malvern County. However, the proportion of truck ownership in this region was already high leaving only a small sample of 19 answering the question. The high ambition for truck ownership in the West Coast and Mackenzie regions (21.7 and 21.2 per cent of farms replying respectively) was more significant. Farmers in these areas face similar problems of remoteness.

Comments on the questionnaire indicated a widespread ambition among those already owning a farm truck to obtain a larger and newer vehicle.

TABLE 64
Ambitions to Own a Farm Truck

Region	No. of Replies	No. of Farms without Truck	Percent Replies of all Farmers	
			Do Need Truck	Don't Need Truck
Marlborough	80	37	27.0	73.0
Nelson	69	41	24.4	75.6
West Coast	69	38	39.5	60.5
N. Canterbury	94	36	8.3	91.7
Rangiora	97	30	13.3	86.7
Malvern	71	19	42.1	57.9
Christchurch	101	30	20.0	80.0
Ashburton	85	16	12.5	87.5
Strathallan	96	30	10.0	90.0
Mackenzie	85	47	38.3	61.7
Waimate	97	42	28.6	71.4
Waitaki	83	32	21.9	78.1
Dunedin	64	32	18.8	81.3
Balclutha	85	44	18.2	81.8
Clutha	103	45	24.4	75.6
Central Otago	93	40	12.5	87.5
Gore	102	33	6.1	93.9
Invercargill	80	42	19.0	81.0
Wallace	110	55	14.5	85.5
Total	1664	689	21.2	78.8

CHAPTER 11

FURTHER RESEARCH SUGGESTIONS

It is doubtful whether these data relating to livestock and wool flow patterns can be accurately projected into future years because the sample year (the twelve months to 30 June 1975) may not have been a typical year in that it corresponded to a period of recession for the farming and transport industries. This caveat must be heeded when using the data for further studies. Analysis using the data can be divided into short and long term studies.

Short term studies relate to increasing efficiency given the existing infrastructure. They concern such questions as the timing of forwarding wool to avoid last minute congestion before wool sales and the co-ordination of farmers, stock buyers and carriers to ensure an even work flow for all associated with livestock transport. The survey data will partially assist in such studies and will enable total savings from implementing changed physical distribution systems to be estimated.

Long term studies relate to major changes in the existing infrastructure and policies. Some specific studies using the survey data are:

- * Costs and benefits of zoning supply areas for freezing works
- * Optimising location of freezing works and implications of expansion/contraction of existing freezing works
- * Optimising location of saleyards
- * Optimising location of wool stores

- * Costs and benefits of using rail transport for long distance hauls of livestock
- * Effects of existing and proposed hygiene regulations on livestock transport costs and operations
- * Costs and benefits of greater co-ordination between road livestock transport operators between themselves, and with farmers
- * Effects of changed regulatory and pricing policies on livestock and wool transport costs
- * Effects of changed farming practices on livestock and wool transport costs.

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A P P E N D I X 1



LINCOLN COLLEGE

UNIVERSITY COLLEGE OF AGRICULTURE

123.

POSTAL ADDRESS
LINCOLN COLLEGE
CANTERBURY
NEW ZEALAND

TELEPHONE
HSL - 6020

Dear Sir,

As a farmer you will be well aware of the high and rapidly increasing costs of transport. We want to help you to find practical ways to reduce, or at least to hold, these costs. Right now we are working on livestock and wool transport costs.

Would you please help us by completing this questionnaire and returning it in the enclosed stamped addressed envelope. Please do not hesitate to pass it on to a partner, manager or lessee if you cannot complete it yourself. Should you have more than one farm, each operated independently or in different counties, it would be simpler if your answers related only to one, preferably the largest.

Your answers are vital. Without them we can do little to help overcome the very real threat to farming of rising livestock and wool transport costs. Be assured that your name was picked at random from a list of farmers and that your personal details will not go beyond Lincoln College research staff.

Why not get down to it right now? Let's face it, there will probably never be a more convenient time and an early reply would save our troubling you with reminders.

Thank you for your help.

Yours sincerely,

Owen McCarthy

Professor Owen McCarthy
Director

Agricultural Economics Research Unit

Firstly we would like to find out some facts about your farm. Please fill in the spaces

Your farm is located in _____ county.

The name of your nearest Post Office is _____.

It is _____ miles by road from your farm.

The name of your nearest railway station is _____.

It is _____ miles by road from your farm.

The area of your farm is _____ acres.

Is your farm in separate blocks so that
you have to use a public road to
travel between them?

☐ Yes

☐ (please tick one)
No

How would you describe your type of farming? (please tick one)

☐ High country

☐ Foothills

☐ Fattening-breeding

☐ Intensive fattening

☐ Mixed cropping and fattening

☐ Other (please specify)

Continuing with background facts about your farm

Please enter the livestock numbers on your farm in the spaces below:

	At 30 June 1974 head	At 30 June 1975 head
Breeding ewes		
Other sheep, hoggets & lambs		
Cattle under 1 year		
Dairy cattle over 1 year		
Beef cattle over 1 year		
Pigs		
Other (please specify)		

Please enter your shearing and crutching dates for the year ended 30 June 1975 in the spaces below:

Shearing Dates	No. Pales	Crutching Dates	No. Bales

What is the predominant breed of sheep shorn on your farm?

Now the questions turn to transport matters on your farm.

Roads are classified according to the permitted maximum axle load.

What class is the public road at your farm gate? (Please tick one)

☐ Class I ☐ Class II ☐ Class III ☐ Don't Know

What livestock loading ramps do you have on your farm?

(please tick
correct answers)

Sheep loading ramp? Yes ☐ No ☐

Cattle loading ramp? Yes ☐ No ☐

If you don't own a farm truck, do you think you need one? Yes ☐ No ☐

If you do own one or more farm trucks, please enter the details below:

Make of Truck	Year of Manufacture	Tare Weight (tons)	Year Purchased	Purchase Price Paid (\$)	Approximate Annual Mileage (miles)

Briefly, what are the main uses you have for your farm truck(s)?

The next questions relate to sending your stock to slaughter

How do you sell most of your prime livestock? (Please tick the most correct statement for each of your lambs, ewes and, if any, your cattle).

Lambs Ewes Cattle

- | | | | |
|--------------------------|--------------------------|--------------------------|---|
| ☐ | ☐ | ☐ | 1. Accept the freezing company schedule. |
| ☐ | ☐ | ☐ | 2. Accept a price at the farm gate offered by the stock buyer |
| ☐ | ☐ | ☐ | 3. Sell on own account |
| ☐ | ☐ | ☐ | 4. Use a freezing company pooling arrangement |
| ☐ | ☐ | ☐ | 5. Use a P.P.C.S. pooling arrangement |
| ☐ | ☐ | ☐ | 6. Sell to the local market through a saleyard |
| ☐ | ☐ | ☐ | 7. Other (please specify) |

Some have suggested that transport costs could be reduced if all livestock for slaughter had to go to the nearest works. This would prevent competition between works for your livestock.

How important is this competition to you compared with potential transport cost savings? (please tick one)

- ☐ much more important
☐ more important
☐ less important
☐ much less important
☐ don't know

Below are listed a number of reasons why you might patronise a particular freezing company. Please circle the number under the most appropriate column beside each statement to show whether or not you agree with it for your choice(s) of freezing works last season.

	True	False	Don't Know
The company was offering the best price when your stock were ready	1	2	3
The company owns the nearest works to your farm	1	2	3
Past experience shows that the company has profitable pooling arrangements	1	2	3
The company has lower killing and processing charges	1	2	3
You traditionally use the same company	1	2	3
You are a shareholder in the company	1	2	3
The company had the nearest works with available killing space when your stock were ready	1	2	3
The company's stock buyer approached you first	1	2	3
Your stock buyer recommended the company	1	2	3
The company has the lowest carcase rejection rates	1	2	3
The company has fewer industrial disputes	1	2	3
Other (please specify)	1	2	3
	1	2	3

Now some questions concerning on-farm storage to save transport costs

How many ewes could you safely stand overnight
on your farm UNDER COVER ON A GRATED FLOOR
before sending them to slaughter?

head of ewes

(for example in woolshed pens)

If you have these standing facilities, would you be
prepared to use them to reduce your sheep transport costs?

☐ Yes ☐ No

How many adult cattle could you safely stand
overnight UNDER COVER ON A GRATED FLOOR
before sending them to slaughter?

head of adult
cattle

(most woolshed pens are probably inadequate for cattle)

If you have these standing facilities, would you
be prepared to use them to reduce your cattle transport costs?

☐ Yes ☐ No

If a storage increment were paid to you to retain your wool clip on the farm
for several months, would you probably (tick one)

- ☐ 1. Sell all your wool promptly to get the cash quickly.
☐ 2. Store all your wool to get the full storage increment.
☐ 3. Store as much wool as your need for cash permits.

If you were to take advantage of this storage increment, how many bales of wool
could you store UNDER COVER on your farm after shearing, without unduly
disrupting farm operations for:

up to 1 month? 1 to 2 months? 2 to 3 months? over 3 months?
 bales bales bales bales

Next we would like to know how you go about choosing a road carrier from
your answers to the following questions

Below are listed a number of reasons why you might patronise a particular
road carrier. Please circle the number in the most appropriate column to
show whether or not you agree with it for your choice(s) of carrier(s) last
season.

	True	False
Mostly use one transport firm that in return gives you good service	1	2
Mostly use one transport firm because it gives you good credit facilities	1	2
Mostly use one transport firm because you are one of its shareholders	1	2
Mostly use one transport firm because there is no choice in your district	1	2
Mostly use the first transport firm able to do the job when you want it done	1	2
Mostly obtain quotes from several firms and choose the cheapest available	1	2
Other (please specify)	1	2
	1	2

When sending livestock to slaughter, do you usually: (Please tick the most
correct statement)

- ☐ 1. Choose and contact the carrier yourself when drafting is
complete and you know the number of stock to go?
☐ 2. Choose and book the carrier in advance giving an estimate
of the number of stock to go?
☐ 3. Leave arrangements for transport to the stock buyer?
☐ 4. Other (please specify)

One further question relating to meat production

There is a body of opinion, both overseas and in New Zealand, insisting in higher meat hygiene standards for New Zealand. Do you, as a farmer, agree that higher meat hygiene standards are required?

- ☐ Strongly Agree
☐ Agree
☐ Disagree
☐ Strongly Disagree
☐ Don't Know

Now, we would like your opinion on livestock transport by RAIL

Have you used rail for livestock transport over the past five years? (Please tick one)

- ☐ Often ☐ Sometimes ☐ Rarely ☐ Never

Below we have listed aspects of the livestock transport services provided by New Zealand Railways. Please circle the number under the appropriate column beside each aspect to show how you think railways perform:

	Railways performance is				
	Excellent	Good	Fair	Poor	Don't Know
At letting farmers know what livestock transport services are available	1	2	3	4	5
At providing co-operation and service from railway staff	1	2	3	4	5
At reducing the advance notice required to order wagons for livestock transport	1	2	3	4	5
At keeping stock wagons clean	1	2	3	4	5
At keeping stock wagons modern and in good repair	1	2	3	4	5
At providing good loading facilities	1	2	3	4	5
At providing assistance with loading	1	2	3	4	5
At reducing the time taken to reach destination	1	2	3	4	5
At reducing deaths, bruising and injury en route	1	2	3	4	5
At keeping down freight rates	1	2	3	4	5
At paying out compensation for stock deaths and damage	1	2	3	4	5
At providing credit for farmers	1	2	3	4	5
Other (please specify)	1	2	3	4	5
	1	2	3	4	5

In 1961 all restrictions on the distance over which road could transport livestock in competition with rail were removed. Looking back, do you now agree that this was the correct decision? (please tick one)

- ☐ Strongly Agree
☐ Agree
☐ Disagree
☐ Strongly Disagree
☐ Don't Know

And now for your opinion on livestock transport by ROAD

Below we have listed aspects of the service provided by road livestock carriers. Please circle the number under the appropriate column beside each aspect to show how you think road transport operators perform in each case:

	Road Transport's performance is				
	Excellent	Good	Fair	Poor	Don't Know
At letting farmers know what livestock transport services are available	1	2	3	4	5
At providing co-operation and service from office staff	1	2	3	4	5
At providing co-operation and service from drivers	1	2	3	4	5
At reducing the advance notice required by carriers for transporting livestock	1	2	3	4	5
At keeping stock crates clean	1	2	3	4	5
At keeping equipment modern and in good repair	1	2	3	4	5
At providing drivers skilled in stock handling	1	2	3	4	5
At caring for stock during the journey	1	2	3	4	5
At reducing the time taken to reach the destination	1	2	3	4	5
At reducing deaths, bruising and injury en route	1	2	3	4	5
At keeping down freight rates	1	2	3	4	5
At paying out compensation for stock deaths and damage	1	2	3	4	5
At providing credit to farmers	1	2	3	4	5
Other (please specify)	1	2	3	4	5
	1	2	3	4	5

Next we would like to know more about your use of saleyards

Some reasons why you might patronise a saleyard are listed below. Please estimate about how many times you have used a saleyard for each of these reasons over the past year.

No. times saleyard used over past year

To buy replacement breeding stock	
To sell culled breeding stock	
To sell prime stock	
To trade in livestock	
To buy store stock for fattening	
To sell store stock you cannot fatten	
Other (please specify)	

	<u>Sheep</u>	<u>Cattle</u>	
For your flock or herd replacements do you mostly	☐	☐	Breed own replacements
(please tick one answer for your sheep and <u>one</u> for your cattle)	☐	☐	Buy directly from breeder
	☐	☐	Buy at local sales
	☐	☐	Buy at sales in other areas
	☐	☐	Other

The next question relates to your management of stock numbers

Throughout the year the amount of feed you have available for stock varies. To get over this problem: (please tick)

	Yes	No
1. Do you limit your stock numbers to a figure that can be carried right through the year <u>without supplementary feed</u> ?	☐	☐
2. Do you give supplementary feed (such as hay)?	☐	☐
If you fed hay, did you have to buy in hay from other farms last season?	☐	☐
3. Do you buy and sell store stock as feed surpluses and shortages occur?	☐	☐
4. Do you send breeding stock off the farm to leased grazing at periods of feed shortages?	☐	☐
5. Other (please specify)	☐	☐
.....		

Next some general comments on rural road carriers

Below we have listed a number of criticisms of rural road transport operators. Please circle the number under the most appropriate column beside each criticism to show whether or not you agree with it.

	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know
Carriers make excessive profits	1	2	3	4	5
Carriers make too little effort to cut their costs	1	2	3	4	5
There is not enough competition between carriers	1	2	3	4	5
Large carrying firms give better service than small firms	1	2	3	4	5
It is usually cheaper for a farmer to own his own truck than to use a carrier	1	2	3	4	5
Co-operation between carriers and farmers is poor	1	2	3	4	5
Licensing of carriers increases transport costs for farmers	1	2	3	4	5
The 40 mile restriction on carriers increases transport costs for farmers	1	2	3	4	5
Carriers should concentrate on short distance traffic leaving long distance traffic to rail	1	2	3	4	5
Fuel prices for carriers should be lower than for farmers' trucks	1	2	3	4	5
Farmers need railway branch line competition to keep down prices charged by road carriers	1	2	3	4	5

Please give details of ALL LIVESTOCK SENT FROM YOUR FARM FOR SLAUGHTER during the year ended 30 June 1975

[illegible]

* Please specify whether lambs, hoggets, ewes, rams, bobby calves, weaners, beef cattle, dairy cattle, pigs or whatever.

** Please specify whether road carrier, farm truck, rail, droving, road carrier and rail, farm truck and rail, droving and rail or whatever.

PLEASE TURN OVER

Please give details of ALL LIVESTOCK SENT FROM YOUR FARM TO SALEYARDS during the year ended 30 June 1975

Date Transported	Type Livestock*	Number Head	Saleyard Where Sold	Reason for Movement**	Method of Transport Used***	Distance (miles)	Transport Cost Paid

Please give details of ALL LIVESTOCK SENT FROM YOUR FARM DIRECT TO OTHER FARMS during the year ended 30 June 1975

Date Transported	Type Livestock*	Number Head	Nearest Town to Farm That Livestock Sent To	Reason for Movement**	Method of Transport Used***	Distance (miles)	Transport Cost Paid

* Please specify whether lambs, hoggets, ewes, rams, bobby calves, weaners, beef cattle, dairy cattle, pigs or whatever.

** Please specify whether store, prime, cast for age, stud, flock or herd replacements, grazing or whatever.

*** Please specify whether road carrier, farm truck, rail, droving, road carrier and rail, farm truck and rail, droving and rail or whatever.

Please give details of ALL LIVESTOCK BROUGHT TO YOUR FARM FROM SALEYARDS during the year ended 30 June 1975

Date Transported	Type Livestock*	Number Head	Saleyard Where Bought	Reason for Movement**	Method of Transport Used***	Distance (miles)	Transport Cost Paid

Please give details of ALL LIVESTOCK BROUGHT TO YOUR FARM DIRECT FROM OTHER FARMS during the year ended 30 June 1975

Date Transported	Type Livestock*	Number Head	Nearest Town to Farm That Livestock Came From	Reason for Movement**	Method of Transport Used***	Distance (miles)	Transport Cost Paid

* Please specify whether lambs, hoggets, ewes, rams, bobby calves, weaners, beef cattle, dairy cattle, pigs or whatever.

** Please specify whether store, prime, cast for age, stud, flock or herd replacements, grazing or whatever.

*** Please specify whether road carrier, farm truck, rail, droving, road carrier and rail, farm truck and rail, droving and rail or whatever.

Please give details of ALL OTHER LIVESTOCK TRANSPORTED TO OR FROM YOUR FARM during the year ended 30 June 1975

Date Transported	Type Livestock*	Number Head	To or From Your Farm	Place*Where Livestock To or From	Reason for Movement**	Method of Transport Used***	Distance (miles)	Transport Cost Paid

- * Please specify whether lambs, hoggets, ewes, rams, bobby calves, weaners, beef cattle, dairy cattle, pigs or whatever.
 ** Please specify whether store, cast for age, stud, flock or herd replacements, grazing or whatever.
 *** Please specify whether road carrier, farm truck, rail, droving, road carrier and rail, farm truck and rail, droving and rail or whatever.

Please give details of ALL WOOL TRANSPORTED FROM YOUR FARM during the year ended 30 June 1975

Date Transported	Number Bales of Wool	Name of Buyer if Wool Sold at Farm Gate	Town of Woolstore Where Wool First Sent From Farm	Method of Transport Used *	Distance (miles)	Transport Cost Paid	Selling Centre Where Wool Eventually Sold

- * Please specify whether road carrier, farm truck, road carrier and rail, farm truck and rail or whatever.

TABLE



LINCOLN COLLEGE

(University of Canterbury)

Postal address:
LINCOLN COLLEGE,
CANTERBURY,
NEW ZEALAND.

Dear Sir,

A few days ago we sent you a questionnaire regarding your use of transport. If you have already returned the questionnaire please consider this a special "thank you" for your promptness. If, as we often do ourselves, you have put the questionnaire aside to finish later, why not complete it and return it today? There will probably never be a more convenient time. Thank you for your help.

Yours sincerely,

Owen McCarthy

Professor Owen McCarthy



LINCOLN COLLEGE

UNIVERSITY COLLEGE OF AGRICULTURE

POSTAL ADDRESS
LINCOLN COLLEGE
CANTERBURY
NEW ZEALAND

TELEPHONE
HSL - 8029

Dear Sir,

Two weeks ago we sent you a questionnaire relating to transport. To date we have not heard back from you. We would greatly appreciate having a reply if at all possible before Christmas.

Both the new Government and the transport industry will be interested in the opinions of farmers on present transport services and costs as revealed by the survey. For our part, we need both facts and your comments, as a practical farmer, from which to make recommendations for improvements.

Last season the cost of transporting livestock to works rose about 36% according to Meat Board estimates. For the coming season the Board has estimated a rise of 13%. However this increase could well be greater. By the time you receive this letter a substantial fuel price rise is likely to have been announced. Moreover rail rates, frozen for the past three years, can be expected to rise soon. Forthcoming meat hygiene regulations affecting livestock transport, for example truck washing requirements, will further add to costs. You will agree that something ~~must~~ be done to hold these costs. We want to contribute to this end but first we need your answers to our questionnaire.

If you are having trouble with the questionnaire please don't hesitate to drop us a note.

We look forward to hearing from you soon and I wish personally to thank you in advance for your co-operation.

Yours sincerely,

W Owen McCarthy

Professor Owen McCarthy
Director

Agricultural Economics Research Unit

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