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*Sheep*

*Gift*

Agricultural Enterprise Studies  
in England and Wales  
Economic Report No.1

# LOWLAND SHEEP

PRODUCTION POLICIES AND PRACTICES

Lowland Sheep Study Group  
Editor: W.J.K.Thomas

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AN INTRODUCTION TO "AGRICULTURAL ENTERPRISE STUDIES IN ENGLAND AND WALES"

University departments of agricultural economics in England and Wales, which formed the Provincial Agricultural Economics Service, have for many years conducted economic studies of farm and horticultural enterprises. Such studies are now being undertaken as a co-ordinated programme of investigations commissioned by the Ministry of Agriculture, Fisheries and Food. The reports of these studies will be published in a new national series entitled "Agricultural Enterprise Studies in England and Wales" of which the present report is the first.

The studies are designed to assist farmers, growers, advisors, and administrators by investigating problems and obtaining economic data to help in decision making and planning. It is hoped that they will also be useful in teaching and research. The responsibility for formulating the programme of studies rests with the Enterprise Studies Sub-Committee, on which the Universities, the Ministry (including the National Agricultural Advisory Service) are represented.

Copies of the reports may be obtained from the University departments concerned, whose addresses are given at the end of this report.

THE LOWLAND SHEEP STUDY GROUP

Agricultural Economics Unit  
University of Exeter (the co-ordinating Unit)

Agricultural Economics Research Unit  
University of Bristol

Farm Management Unit  
University of Nottingham

School of Rural Economics and Related Studies  
Wye College (University of London)

Meat and Livestock Commission

Ministry of Agriculture, Fisheries and Food (including  
the National Agricultural Advisory Service)

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LOWLAND SHEEP

Production policies and practices

A report on a postal survey of 829 lowland  
sheep flocks in England describing some of  
the production policies and practices in 1968-69

Lowland Sheep Study Group

October 1970

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**Lowland sheep on the move, but where lies the future for the industry?**

**Photo H.G. Clarke.**

## FOREWORD

Supplies of home produced mutton and lamb have been declining since 1966 following a period of rising production dating back to the end of the war. In 1966/67 United Kingdom farms produced 263,000 tons of mutton and lamb but production was expected to drop back to 213,000 tons in 1969/70. The Parliamentary Select Committee on Agriculture noted this as a matter of some concern not the least because of rising imports which were forecast to reach 362,000 tons in 1969/70, nearly 17 per cent more than in 1965/66.

A great deal is heard about the unprofitability of sheep production but what are the real facts? Is it merely because of apparently low margins that sheep numbers have fallen in the lowlands? Have other forces been at work, such as a change in the relative importance of cattle, sheep and arable crops, the greater difficulty of recruiting shepherds, or a comparative lack of research activity pointing the way towards higher productivity in sheep production?

It was in order to study the problems of this important sector of British agriculture that the Lowland Sheep Study Group was set up in 1968. It comprises agricultural economists from the Universities of Bristol, Exeter, London and Nottingham, together with representatives of the Ministry of Agriculture, Fisheries and Food, including the National Agricultural Advisory Service, and the Meat and Livestock Commission.

The Group's first undertaking was to carry out in mid-1969 a survey, by post, into the existing patterns of sheep production in representative areas of the lowlands of England. This report is concerned with the results of that survey. It is hoped by repeating the survey at intervals to reveal the nature and significance of any trends in sheep production.



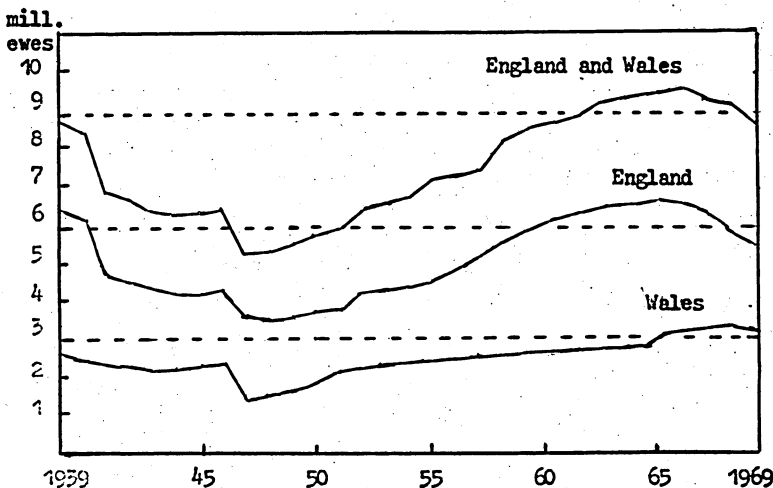
The report has been prepared by Mr. W. J. K. Thomas, University of Exeter, with the help of Messrs. R. Broughton, University of Bristol, J. D. Sykes, Wye College (University of London) and R. O. Wood, University of Nottingham. Valuable assistance has been provided by the other members of the Study Group, and not least, our thanks are due to the sheep farmers who very conscientiously provided the basic information for this study.

S. T. Morris  
Chairman  
Lowland Sheep Study Group

THE NATIONAL SHEEP FLOCKEngland and Wales

At the end of the war in 1945 the population of breeding ewes in England and Wales was 28 per cent less than in 1939, for during the war sheep suffered heavily as a result of the ploughing-up campaign. The numbers of ewes increased moderately in 1946 but then many flocks were decimated by the disastrous winter of 1947. Thousands of sheep died during the prolonged snow, severe cold and floods. Had it not been for these losses the sheep population would, no doubt, have risen more rapidly than it did as more and more fields reverted to grassland. Even so, as shown in Figure 1, from 1948 there was a steady growth in

Figure 1 Numbers of breeding ewes in England and Wales 1939-69



the breeding ewe flock which continued until 1965 in England. At that date the ewe population was 85 per cent greater than in 1945, but it is interesting to note that it was not until 1962 that the number of ewes in England exceeded its pre-war (1939) level of 6.2 million.

The ewe population in England at June 1966 showed a decrease over the previous year for the first time for 17 years and a smaller flock has been recorded at each of the agricultural censuses to June 1969. At that date there were nearly 14 per cent fewer ewes than in June 1965. In Wales the ewe numbers increased until 1968 when they were 92 per cent above the 1948 figures, but the June 1969 census showed that there had been a slight decline in the ewe population during 1968-69. (i)

### Regional variations in England

The rate of increase in the size of the breeding ewe flock since the early post-war years varied considerably from region to region in England (Table 1). In the south of England and the Midlands the

Table 1 England:

#### Numbers of breeding ewes by region 1950-69

Region	No. of ewes '000			Percentage change		
	1950	1965	1969	1950-65	1965-69	1950-69
Eastern	93.4	184.4	129.8	+ 97.4	- 29.6	+ 39.0
South East	324.0	710.9	583.3	+ 119.4	- 18.0	+ 80.0
East Midlands	349.6	658.5	500.0	+ 88.3	- 24.1	+ 43.0
West Midlands	487.3	972.3	827.6	+ 99.5	- 14.9	+ 69.8
South West	717.3	1423.7	1277.0	+ 98.5	- 10.3	+ 78.0
Northern	1315.0	1719.5	1562.9	+ 30.8	- 9.1	+ 18.9
Yorks and Lancs.	540.0	814.2	717.7	+ 50.8	- 11.9	+ 32.9
England	3826.6	6483.5	5598.3	+ 69.4	- 13.7	+ 46.3

Source: Agricultural Statistics M.A.F.F.

See Appendix C for composition of regions by counties.

(i) The June 1970 agricultural census showed that ewe numbers had declined during 1969-70 by about 4 per cent in England and by nearly 3 per cent in Wales.

numbers of ewes doubled between 1960 and 1965, the increase ranging from 119 per cent in the South East to 88 per cent in the East Midlands. In the North there was a much smaller growth in ewe numbers, the increase being less than 37 per cent in two northern regions taken together.

The regional trends in the ewe population over the last few years have been almost complete contrasts to the growth patterns in the period 1950-55 (Table 1). The greatest reductions have been in the three eastern regions where previously ewe numbers had grown more rapidly than on average. The northern ewe flocks have suffered lower than average declines, while those in the West Midlands and South West have fallen at the average rate for England as a whole. In other words the sheep population has been more stable in the hill and upland areas.

The extent of changes in the pattern of agricultural production, as exemplified by increasing or decreasing livestock populations, will show more local variations than is revealed by the broad regional trends. The map (Figure 2) shows what has happened to the numbers of ewes in each county <sup>(i)</sup> in England and Wales in the period 1965 to 1969. The heavier the shading the greater the percentage decline. The map clearly shows how substantially the ewe flock has been reduced in the eastern part of the country. The reduction in ewe numbers began much earlier in these areas and by 1965 the small flock in the eastern region was already 11 per cent lower than at its peak reached in 1962.

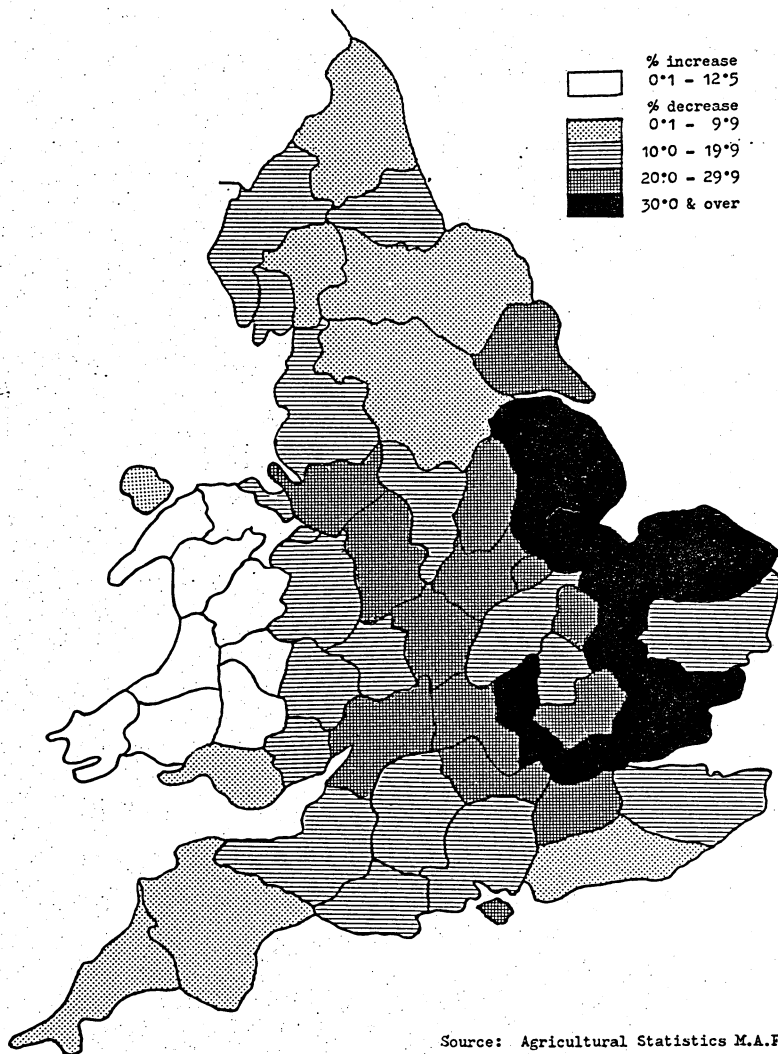
The changing distribution of the breeding sheep population shown in Figure 2 contrasts with that in Figure 3. The latter map shows

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(i) Counties are a convenient geographical area for which to examine the statistics in a report of this kind, but there is evidence to show that within counties parish statistics would reveal significant differences.

**Figure 2** ENGLAND AND WALES

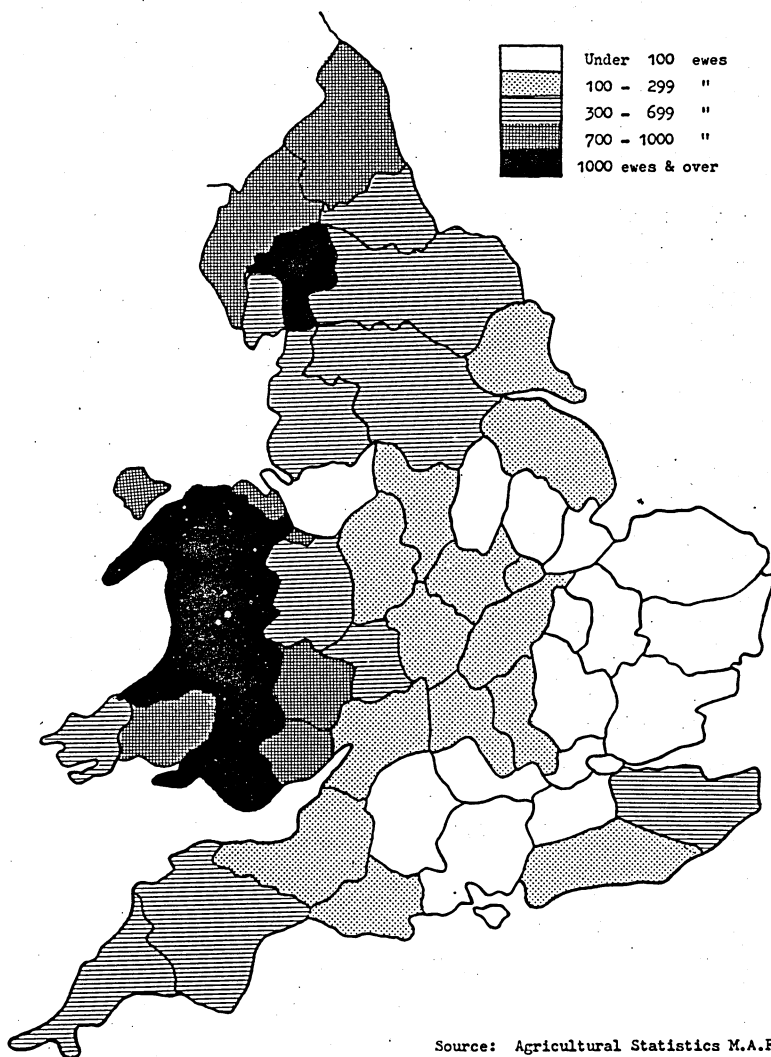
Percentage changes in numbers of breeding ewes 1965-69



Source: Agricultural Statistics M.A.F.F.

Figure 3 ENGLAND AND WALES

Numbers of breeding ewes per 1000 acres crops and grass June 1969



Source: Agricultural Statistics M.A.F.F.

the density of the ewe population per 1000 acres of crops and grass at June 1969, the heavier the shading the greater the stocking rate. The lightly stocked arable areas of Eastern England and the East Midlands contrast with the heavily stocked livestock farming areas of the North and West and exceptionally Kent.

### Numbers of flocks

Regional information on the numbers of flocks, or more strictly the number of holdings with breeding sheep recorded at June, is available from 1963. Between 1963 and 1969 the total number of such holdings dropped from 88.1 to 66.8 thousand i.e. by almost one-quarter. While no doubt a large part of this reduction was due to farmers going out of sheep production altogether a part will also have been due to the reduction in the number of agricultural holdings which are recorded at the agricultural censuses, this number dropped from 335.7 to 246.2 thousand over the same period. As a result it is of interest to note that the percentage of all agricultural holdings with breeding sheep has remained virtually unchanged in this period, being 26.5 and 27.0 per cent in 1963 and 1969 respectively. Table 2 shows the regional distribution of holdings by flock size at 1969 together with the percentage changes in these numbers since 1963.

In England the average decline in the number of sheep holdings between 1963 and 1969 was 26 per cent, but the change varied considerably from region to region and by size of flock. Not unnaturally the greatest reductions in flock numbers were in the three eastern regions where, as already noted, the greatest decline in sheep numbers has occurred. The fall in the number of flocks was less than average in Wales, the Northern and South West regions.

The analysis of the numbers of flocks by size of flock shows an interesting development. The decrease in numbers was generally

associated with flocks of less than 200 breeding sheep, with a smaller percentage reduction in the 200-399 ewe flocks. In several

Table 2 England and Wales:

Distribution of holdings with breeding ewes in 1969  
and percentage changes 1963 to 1969

Flock size group Region		Nos. of breeding sheep per holding			All holdings
		1 - 199	200 - 399	400 & over	
Eastern	A	931	136	56	1123
	B	- 29.9	- 34.0	- 15.2	- 29.9
South East	A	2919	505	343	3767
	B	- 41.1	- 27.1	+ 4.6	- 37.0
East Midlands	A	4822	430	141	5393
	B	- 34.2	- 18.4	- 31.9	- 33.1
West Midlands	A	7692	796	217	8705
	B	- 29.4	- 10.7	+ 51.7	- 28.2
South West	A	10087	1167	452	11708
	B	- 24.5	+ 5.2	+ 52.7	- 20.7
Yorks and Lancs	A	5893	640	288	6821
	B	- 28.7	- 16.8	+ 10.3	- 26.6
Northern	A	8380	1274	902	10556
	B	- 23.5	- 8.8	+ 17.0	- 19.6
England	A	40724	4950	2399	48073
	B	- 28.9	- 11.5	+ 15.8	- 26.0
Wales	A	15640	3221	1904	18765
	B	- 26.0	- 0.6	+ 26.6	- 19.0
England and Wales	A	54364	8171	4303	66838
	B	- 28.2	- 7.5	+ 20.3	- 24.2

- A) Number of holdings with breeding sheep at June 1969.  
B) Percentage changes in numbers of holdings 1963-1969.

Source: M.A.F.F.



regions, however, ~~the~~ numbers of large flocks of over 400 ewes increased over this period, in the South West and West Midlands the number of these flocks went up by one-half. But it may be noted that the numbers of these flocks is counted in hundreds and not in thousands as for the smaller flocks, even so they accounted for about one-third of the ewe population in England and Wales.

### Concentration of enterprises

This process of concentration in agricultural enterprises is extensively documented in the Ministry of Agriculture's latest "Structure" report from which the information in Tables 3 and 4 is taken.

Table 3 England and Wales:

#### Distributions of sheep producers and ewes 1960-1968

Percentages

No. of ewes per holding	Sheep producers				Ewe numbers			
	1960	1963	1965	1968	1960	1963	1965	1968
1 - 99	70.4	66.1	63.9	60.5	29.5	25.3	22.9	19.6
100 - 499	27.6	31.3	33.1	35.5	54.6	55.8	56.2	55.5
500 - 999	1.7	2.1	2.4	3.3	11.3	12.7	13.7	16.7
1000 & over	0.3	0.5	0.6	0.7	4.7	6.2	7.2	8.2
Totals	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: The Changing Structure of Agriculture. H.M.S.O. London 1970.

Over the period 1960 to 1968 the proportion of producers with flocks of 500 or more ewes grew from 2.0 to 4.0 per cent, and their share of the total ewe population increased from 16 to 25 per cent. At the other end of the scale the proportion of producers with less than 100 ewes has fallen from 70.4 to 60.5 per cent and they farmed less than one-fifth of the total ewes in 1968.

The changing structure of the national sheep flock is a part of the rationalisation process which is taking place in all forms of agricultural production. Similar changes for example have been taking place in the other grazing livestock enterprises, particularly in dairying. For comparative purposes these developments are briefly outlined in Table 4.

Table 4 England and Wales:

Changes in grazing livestock enterprises 1960-68

	Dairy cows			Beef cows			Breeding ewes		
	1960	1968	% change	1960	1968	% change	1960	1968	% change
No. of producers '000	140.1	96.8	- 30.9	64.1	55.3	- 13.7	87.8	70.8	- 19.4
No. of stock '000	2595	2695	+ 3.9	518	606	+ 17.0	8798	9253	+ 5.2
Average no. per enterprise	19	28	+ 47.4	8	11	+ 37.5	100	131	+ 31.0
	Average annual increases in size of enterprise (% per annum)								
1960-63	5.0			3.0			2.1		
1965-68	6.3			6.1			4.6		
1960-68	5.2			3.8			3.4		

Measured solely in terms of stock numbers the rate of growth in the average size of unit of production of grazing livestock enterprises was slowest for sheep. But this simple measure of change reveals little of the economic impact of these developments on farm output or income.

The sheep enterprise by type of farming

It is of interest to examine how the growth in the average size of enterprise has varied by type of farming and it is possible to study this from 1963. As shown in Table 5 the average number of ewes on full-time holdings with ewes (as distinct from all agricultural holdings) increased by 25 per cent between 1963 and 1968. The flocks on Mixed and Horticultural holdings increased proportionately more than on other types of farm.

Table 5 England and Wales:

Average size of flock by type of farming 1963-68

Type of farming	Average Nos. of ewes per holding with ewes			% increase 1963-68	% of all ewes 1968
	1963	1965	1968		
Dairying	58	60	68	+ 17	13
Livestock	228	226	262	+ 15	59
Pigs and poultry	62	64	71	+ 14	1
Cropping	124	124	133	+ 7	11
Horticulture	98	102	120	+ 22	1
Mixed	101	107	129	+ 28	8
Full-time holdings	129	135	161	+ 25	88
Part-time holdings	36	35	41	+ 14	12
All holdings	107	111	131	+ 22	10

Sources: Farm classification in England and Wales 1963. H.M.S.O. 1965.  
The Changing Structure of Agriculture. H.M.S.O. 1970.

The average flock on Cropping farms grew to only a limited extent over the five years, the extra 9 ewes representing only a 7 per cent increase. The additional 36 ewes in the average flock on Livestock farms, however, amounted to a 15 per cent increase. These trends

suggest that the comparative advantage of a sheep flock is a subject deserving of further analysis.

### Specialisation in farming

The concentration of enterprises into fewer units and the growth in the average size of units of production are aspects of the trend towards

Table 6 England and Wales:

#### Changes in grassland acreages 1960-69

Region	Acres of grassland			Grassland as % of total crops & grass	
	1960	1969	% change	1960	1969
	'000				
Eastern	1099	725	- 34.0	28.1	19.0
South East	1776	1458	- 17.9	57.9	48.9
East Midlands	1595	1244	- 22.0	52.6	41.7
East	4470	3247	- 27.4	44.6	35.0
West Midlands	2076	1829	- 11.9	71.5	65.0
South West	3209	3050	- 5.0	75.5	72.2
West	5285	4879	- 7.7	73.8	69.4
Northern	1797	1665	- 7.3	74.7	69.5
Yorks & Lancs.	1580	1203	- 12.8	61.9	56.3
North	3177	2868	- 9.7	68.5	65.2
England	12951	11175	- 13.6	59.2	52.3
Wales	2257	2285	+ 1.2	92.3	88.7
England & Wales	15188	13460	- 11.4	62.6	56.2

Source: Agricultural Statistics N.A.F.F.

specialisation in farming which is taking place in both the livestock and cropping sectors of the industry. It has been shown that the decreases in sheep numbers were much greater in the predominantly arable farming

areas of eastern and southern England, and the decline in sheep is associated with a marked trend from livestock to crop production. Statistics on crop acreages could be given to show this but the significant facts from the point of view of grazing livestock is the decline in the grassland acreage and this is shown in Table 6.

The figures clearly indicate the striking decline in the grassland acreage in eastern England in the 1960's, amounting to 1.2 million acres, 27 per cent of 1960 area. In 1969 approximately only one acre in three in the East was down to grass, clear evidence of the arable character of farming in that part of the country. The grassland acreage declined to a much lesser extent in the North and West, by just over 8 per cent or by a total of some 700 thousand acres. While some of this grassland will have been permanently lost to agriculture through urban and road development, in the main it represents a loss of grazing for livestock.

The intensification of use of the remaining grassland in both the arable and livestock areas of the country has more than offset this loss of grazing. For some farmers the economic necessity to grow more crops has led to the cutting down of their grass acreage, with consequent and variable effects on the livestock pattern of their farming. For many arable farmers sheep have been the first to go. For other farmers the increasing ability to keep stock on fewer acres has enabled them to free land for cropping. Whichever way it has been brought about the stocking rate on grassland has risen and Table 7 shows the regional changes in the utilisation of grassland in the 1960's.

The regional stocking rates of cattle and sheep on grassland suggest a sub-division of the country into three areas; East, West and North. The predominantly arable East has the least intensively stocked grassland compared with the traditional livestock areas of the North and

West. The inclusion of an allowance for rough grazings into the grassland acreage would not materially affect this comparison though bringing down the rates, particularly in the North. The relationship between cattle and sheep in the different regions can be deduced from the figures in the table, with sheep being comparatively less important in the East and West, with 1 livestock unit of sheep to 6.4 and 5.4 units of cattle respectively, while in the North this ratio becomes 1 to 2.8.

Table 7 England and Wales:Stocking rates on grassland 1960-69

Region	Livestock units per 1000 acres grassland					
	1960		1969		% change 1960-69	
	Cattle and Sheep	Sheep	Cattle and Sheep	Sheep	Cattle and Sheep	Sheep
Eastern	471	39	516	38	+ 9.6	- 2.6
South East	471	79	539	85	+ 14.4	+ 7.6
East Midlands	457	72	532	85	+ 16.4	+ 18.1
East	466	67	532	75	+ 14.2	+ 11.9
West Midlands	524	92	602	97	+ 14.9	+ 5.4
South West	507	83	575	88	+ 13.4	+ 6.0
West	514	86	584	91	+ 13.6	+ 5.8
Northern	607	196	661	199	+ 8.9	+ 1.5
Yorks & Lancs.	547	118	610	123	+ 11.5	+ 4.2
North	582	162	641	168	+ 11.0	+ 3.7
England	514	98	583	106	+ 13.4	+ 8.2
Wales	527	264	591	299	+ 11.0	+ 13.3
England & Wales	531	123	601	139	+ 12.2	+ 13.0

Source: Agricultural Statistics M.A.F.F.

The improvement in stocking rates on grassland can be seen from the percentage changes between 1960 and 1969 given in Table 7. For all grazing livestock in England the percentage increase was 13, with above average increases in the East and West (14 per cent) and a smaller improvement of 11 per cent in the North. Wales compares in this respect with the North of England with which it has other similarities.

Considering only the stocking with sheep per 1000 acres of grassland the percentage changes over the period 1960-69 were more variable. The two extremes, a small percentage decrease and the largest increase both incurred in parts of eastern England. The improvements in the North and West were fairly minimal, + 3.6 and + 5.8 per cent respectively, reflecting the stable nature of the sheep population in these traditional sheep areas.

Summing up this brief historical examination, the past twenty or so years has seen the national sheep flock recover from its sacrifice during the war years, to be followed by contraction and adaptation in the changing economic climate of the immediate past. It remains to be seen how the sheep enterprise will adapt itself to the changes that agriculture will continually face in the future.

Chapter 2  
THE POSTAL SURVEY

The statistical review of the national flock in the first chapter shows that the main set-back has occurred in the lowland sector of the industry. This review was based on information derived from the agricultural census but this source provides little or no information about the wide variety of sheep keeping systems and nothing about the relative profitability of sheep production under different systems of farming.

There are thus many gaps in our knowledge of sheep production for, although surveys have been carried out in the past, they were on a fairly small scale and localised. As a consequence the results were not easy to co-ordinate. It appeared, therefore, that the greatest single need was for information on the economics of lowland sheep production to be collected systematically and simultaneously in several parts of the country. As a preliminary step the Study Group considered it was necessary to determine the existing pattern of lowland sheep production on which to base future economic studies. For this purpose an extensive survey was carried out in mid-1969 in the four areas of England outlined below by agricultural economists from the Universities mentioned:-

East Midlands (Nottingham University) comprising the counties of Leicester, Lincoln (Kesteven), Lincoln (Lindsay), Nottingham, Northampton, Rutland (Derbyshire was excluded because of its predominantly hill sheep flocks).

South East (Wye College, London University) comprising the counties of Kent, Surrey and Sussex.



Western (Bristol University) comprising the counties of Gloucester, Hereford, Somerset, Warwick, Wiltshire, Worcester.

South West (Exeter University) comprising the counties of Cornwall, Devon, Dorset.

The sheep population in the four provinces accounted for upwards of 60 per cent of the lowland sheep population in England. The survey areas also embrace all farming conditions in which lowland sheep are kept, from the arable parts in the East Midlands to the grassland and upland areas of the West and including the South East which contains the unique pastures of the Romney Marsh. The four areas are also representative of all lowland sheep areas in another way inasmuch as the East Midlands is an area in which the interest in sheep has been declining more rapidly than on average, whilst in the other areas the decrease in sheep has been about average or less.

In view of the large number of flocks involved it was necessary to obtain the required information by means of a postal survey. (i) A random sample was selected from the agricultural holdings which had recorded 50 or more breeding ewes at the June 1968 agricultural census, and it was stratified by size of flock. The structure of the sample and the actual sampling fraction used are shown in Table 8, together with the number of sheep producers contacted.

The sample of holdings as chosen, represented 13.6 per cent of the population. Between flock size-groups the percentage varied from 5.5 per cent of the holdings with the smallest flocks to a virtually complete coverage of the holdings with 700 or more ewes. In total 1,616 question-

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(i) A copy of the questionnaire used is included at Appendix A.

naires were sent to sheep producers in the four provinces and 1,051 replies were received, an overall response rate of 65 per cent. The usefulness of the survey was enhanced by this excellent co-operation on the part of the sheep farmers.

Table 8 Selection of sample for postal survey

	No. of ewes per holding					Totals
	50-99 <sup>(i)</sup>	100-199	200-399	400-699	700 & over	
No. of holdings at June 1968	2,727	5,485	2,716	757	230	11,895
Sampling fractions	1 in 18.1	1 in 8.2	1 in 8	1 in 3.1	1 in 1.1	1 in 7.4
No. of holdings selected	151	667	339	244	215	1,616

(i) Restricted to flocks on holdings of less than 100 acres crops and grass, a flock of this size on holdings above 100 acres was considered to be a minor enterprise.

Note: Details for each province are given in Appendix D, Tables 1 (a-d).

For the purpose of the survey a lowland sheep flock was simply defined as one which was not in receipt of a Hill Sheep Subsidy. As there are hill sheep flocks in the four areas of the survey, particularly in the Western and South West, the random sample inevitably included some hill flocks and they were identified and discarded from the survey.

Table 9 gives the summary of the initial analysis of the replies and shows that 43 replies, or 4.1 per cent, stated that sheep were no

longer kept, a decision which had been taken and carried out between the time of the June 1968 census and tugging time in the Autumn of the same year. As the table shows most of the flocks given up were between 100-199 ewes but a few very large ones had also been dispersed.

Table 9 Analysis of replies to survey questionnaires

	No. of ewes per holding					Totals
	50-99 <sup>(i)</sup>	100-199	200-399	400-699	700 & over	
No. of replies received	98	428	209	170	146	1,051
No. of holdings with no sheep	3	29	7	2	2	43
No. of holdings with hill sheep	7	19	32	28	39	125
No. of unusable replies	12	26	7	7	2	54
No. of replies analysed (a)	76	354	163	133	103	829
(a) as a % of total flocks	2.8	6.5	6.0	17.6	44.8	7.0

(i) On holdings of less than 100 acres of crops and grass.

Note: Details for each province are given in Appendix D, Tables 1 (a-d).

It was not possible to use a further group of replies for a variety of reasons, for example, the land was let as keep and grazed by sheep not belonging to the occupier; occupancy changes; incomplete questionnaires.

The exclusion of the hill sheep flocks, the "no-sheep" holdings and the unusable replies left 829 usable questionnaires available for analysis. This represented an effective response rate of 51.6 per cent from the original sample. It also represented 7.0 per cent of the total number

of sheep flocks in the four areas at June 1968.<sup>(i)</sup> As the latter included an unknown number of hill sheep flocks, particularly in the Western and South West areas, the survey coverage of lowland flocks in the four areas would be much greater than the 7 per cent.

### Flock sizes

Farmers were asked to state the numbers of ewes put to the ram in 1968 and to include in this number ewes running on any other jointly operated holding(s). The size distribution of flocks at tupping time in Autumn 1968 was markedly different from that at June 1968 (Table 10). It is not possible to say how many of the differences are due to a policy change and how much due to recording.

Table 10 Survey flocks:

Distribution by size in Autumn 1968 compared with June 1968

Flock size Autumn 1968 Flock size at June 1968 census	No. of ewes per holding					Totals
	50-99 <sup>(i)</sup>	100-199	200-399	400-699	700 & over	
50 - 99 ewes <sup>(i)</sup>	67	9	-	-	-	76
100 - 199 "	60	266	23	4	1	354
200 - 399 "	2	19	122	8	2	163
400 - 699 "	1	-	27	95	10	133
700 & over "	-	2	7	15	79	103
Totals	130	306	179	122	92	829

(i) On holdings of less than 100 acres of crops and grass.

(i) The 7 per cent representation understates the true coverage of all flocks because a number of holdings had gone out of sheep during the period between the June census and the date of tupping in 1968.

The table shows, for example, that of the 354 flocks, which had between 100 and 199 ewes at June, only 266 were still of this size at tugging time. Sixty flocks, or nearly 17 per cent had decreased in size, and these reductions must be due to changes in farming policy. Twenty-eight flocks (7.9 per cent) were bigger than at the June census and several explanations can be suggested. Firstly some will be the result of a deliberate decision to increase the flock. Second some flocks which had appeared to increase to over 400 ewes were in fact the aggregation of two or more flocks which had been recorded separately in the census. Thirdly there will be a tendency for flocks at June to be at a low level because of mortality and culling and at this time replacement ewes will not have been bought and a few flocks will therefore have moved into the next higher size group at the later date.

The size distribution of flocks for which the information was available for detailed analysis is given in Table 11, and this also shows that the five flock size-groups as sampled were amalgamated into three for the purpose of analysis.

Table 11 Numbers of flocks in postal survey sample

Flock size-groups	Province				Totals
	East Midlands	South East	Western	South West	
50 - 199 ewes	102	39	125	170	436
200 - 399 "	45	26	55	53	179
400 & over "	33	93	61	27	214
Totals	180	158	241	250	829

Type of farming classification

The analysis of the agricultural census includes a type of farming

classification <sup>(i)</sup> for each holding which was made available for the holdings in the survey. The information is given in Table 12.

Table 12 Distribution of survey holdings  
by province and type of farming

Numbers of flocks

Province Type of farming	East	South	Western	South	Totals
	Midlands	East		West	
Livestock <sup>(i)</sup>	57	66	96	108	327
Mixed	30	22	60	74	186
Cropping	83	46	47	10	186
Dairying	7	9	21	38	75
Pigs & poultry	-	-	6	7	13
Part-time	3	15	11	15	42
Totals	180	158	241	250	829

Percentages of flocks

Livestock <sup>(i)</sup>	32	42	40	43	40
Mixed	16	14	25	31	22
Cropping	46	29	19	4	22
Dairying	4	6	9	15	9
Pigs & poultry	-	-	2	3	2
Part-time	2	9	5	4	5
Totals	100	100	100	100	100

(i) Livestock rearing and fattening.

The composition of the samples by type of farming reflects to some extent the differences between farming in the East and West. In a sample drawn from holdings which had sheep (among other enterprises) it is natural that the Livestock type of farm would be well represented in all four provinces, and 40 per cent of the survey holdings were of this

(i) See Farm Classification in England and Wales 1963. H.M.S.O. 1965. Appendix B gives details of the type of farming classes.

type. Apart from this, cropping farms were relatively more important in the East while in the West the Mixed (mixed livestock) and Dairying farms were more frequent.

It is of some interest to compare the distribution of survey holdings by type of farming with that for all holdings with sheep in England and Wales (Table 13). However, as the latter includes all sheep and the survey is concerned only with lowland sheep a close similarity would not be expected.

Table 13 Distribution of holdings by type of farming  
Percentage of holdings

Type of farming	Survey sample	England & Wales 1968 (i)
Livestock	40	30
Mixed	22	10
Cropping	22	9
Dairying	9	25
Pigs & poultry	2	1
Part-time	5	25
Totals	100	100

(i) The Changing Structure of Agriculture 1968, H.M.S.O. London 1970.

Compared with the national distribution the survey sample contained a much greater representation of the Livestock, Mixed and Cropping types of farming. The prominence of the Cropping type of farm in the survey sample was primarily due to the inclusion of the East Midland farms and to a lesser extent those in the South East and Western regions. Consequently the Dairying type of farm was less well represented in the survey sample. The table reveals interesting facets of the sheep industry, in that in 1968 of the holdings with sheep in England and Wales 25 per cent were

predominantly Dairying in type and a similar percentage were part-time holdings. The flocks on these types of holdings were fairly small, averaging 68 breeding ewes (in 1968) on Dairying farms and 41 on part-time holdings. The relatively poor representation of part-time holdings with sheep in the sample survey compared with the national proportion is due to the low sampling fraction taken of the holdings with flocks of 50-99 ewes and the complete omission of holdings with flocks of less than 50 ewes. Despite the large number of part-time sheep holdings they accounted for only 8 per cent of the population of breeding ewes in 1968.

A national distribution of lowland sheep flocks by type of farming is not available and it can only be assumed that the survey distribution is some approximation to it.

The survey holdings were also analysed by size of flock and by type of farming and this distribution, Table 14 also reflects the geographical differences briefly noted in relation to Table 12.

As would be expected flocks of all sizes were kept on Livestock farms (Table 14). The greatest proportion of the largest flocks, 46 per cent, were found on Livestock farms and these were mostly in the West. It is significant that a large proportion, one-third, of the flocks of over 400 ewes were kept on Cropping farms mainly in the East. Apart from those on the Livestock farms, the small flocks were primarily kept on the Dairying and Mixed (mixed livestock) farms mainly in the West. Over the year as a whole a sheep enterprise is not labour intensive and a small flock of ewes would appear to be ideal for someone interested in but not fully engaged in farming. The survey information confirms this since 9 per cent of the flocks of



50-199 ewes were kept on part-time holdings.

Table 14

Distribution of survey holdings  
by size of flock and type of farming

Numbers of flocks

Flock size groups Type of farming	No. of ewes per holding			All flocks
	50 - 199	200 - 399	400 & over	
Livestock (i)	159	71	97	327
Mixed	107	36	43	186
Cropping	63	52	71	186
Dairying	55	17	3	75
Pigs & poultry	11	2	-	13
Part-time	41	1	-	42
Totals	436	179	214	829

Percentages of flocks

Livestock (i)	36	40	46	40
Mixed	25	20	20	22
Cropping	14	29	33	22
Dairying	13	9	1	9
Pigs & poultry	3	1	-	2
Part-time	9	1	-	5
Totals	100	100	100	100

(i) Livestock rearing and fattening.

The lowland sheep industry as portrayed from the flocks surveyed is one of much variety, with large and small flocks being kept on all types of farms.

Chapter 3BREEDS OF SHEEP IN LOWLAND FLOCKS

The information on breeds of sheep is some of the most important and interesting derived from the survey. The heterogeneity of breeds summarised in Table 15 is both a strength and weakness to the industry. It is a strength in that it allows the producer a wide choice from which to select the pure or cross-bred ewe best suited to his particular farming conditions and system of production. It is a weakness in that the great variety of fat lamb carcasses available must create marketing difficulties although this feature will be offset to some extent by differing regional and seasonal demands for type and weight of carcass.

The ewe flock in each province had its own peculiarities but one common feature was the prevalence of the Half-bred ewe, either Scotch (Border Leicester x Cheviot) or Welsh (Border Leicester x Welsh Mountain). These Half-breds together accounted for, at the extremes, nearly 29 per cent of the sample flock in the Western area to just under 7 per cent in the South-East.

In the East Midlands, the breeds of ewe were derived between longwool x mountain types and down types. The former are mainly the well known first crosses, Scotch Half-bred (Border Leicester x Cheviot), Greyface or Mule (Border Leicester x Blackface), Masham (Wensleydale x Swaledale), Welsh Half-bred (Border Leicester x Welsh) and the hardier types of Kerries and Cluns. The replacement stock for these flocks is imported from the breeding areas. Closely related to these are the Suffolk crosses derived from them, frequently maintained by saving the best ewe lambs bred on the farm. The down types found mainly in the eastern arable areas of the East

Table 15 Survey flocks:Distribution of ewes by breed

East Midlands		South East	
Breed of ewe	%	Breed of ewe	%
Suffolk crosses <sup>(i)</sup>	24.1	Kent (Romney Marsh)	75.7
Scotch Half-bred <sup>(ii)</sup>	19.0	Scotch Half-bred	5.5
Masham, Mule, Greyface	18.5	Kent crosses <sup>(iii)</sup>	3.9
Suffolk x Scotch Half-bred <sup>(ii)</sup>	9.7	Clun Forest (& crosses)	3.9
Kerry Hill (& crosses)	6.0	Masham, Greyface	2.6
Welsh Half-bred	4.4	Border Leicester crosses	2.3
Suffolk	3.4	Kerry Hill	1.8
Clun Forest	2.1	Welsh Half-bred	1.2
Dorset Horn crosses	1.4	Swaledale	1.0
Lincoln	1.1	Dorset Down	0.6
Kent	0.8	Suffolk (& crosses)	0.5
Welsh Mountain	0.8	Cheviot	0.2
Colbred	0.7	Hampshire Down	0.1
Thornber-Colbred	0.7	Colbred	0.1
Cheviot	0.6	Breeds not given	0.6
Other breeds	0.6		
Breeds not given	6.1		
Total	100.0	Total	100.0
No. of ewes in survey flocks '000	42.4	No. of ewes in survey flocks '000	90.8

(i) Other than Suffolk x Scotch Half-bred.

(ii) Including some locally called "Border Leicester" and "Border Leicester cross".

(iii) Including Kent or Romney Half-breds.

Table 15 (ctd.) Survey flocks:Distribution of ewes by breed

Western		South West	
Breed of ewe	%	Breed of ewe	%
Clun Forest	31.2	Devon Closewool	13.8
Scotch Half-bred	17.8	Devon Longwool	12.3
Welsh Half-bred	11.0	Welsh Half-bred	7.6
Suffolk crosses	11.0	Scotch Half-bred	7.2
Kerry Hill	7.2	Clun Forest (& crosses)	6.9
Border Leicester crosses	5.0	Suffolk (& crosses)	6.3
Dorset Horn	2.6	Dartmoor	6.2
Masham	2.6	Exmoor Horn (& crosses)	6.0
Speckleface	2.0	South Devon (& crosses)	5.6
Kent	1.4	Devon Closewool crosses	5.6
Clun crosses	1.3	Border Leicester crosses	4.5
Suffolk	1.2	Devon Longwool crosses	4.0
Colbred crosses	1.2	Dorset Horn	4.0
Radnor	1.0	Dorset Horn crosses	2.3
Hampshire Down	0.6	Dorset Down (& crosses)	1.8
Cheviot	0.6	Kerry Hill	0.6
Kerry Hill crosses	0.6	Cheviot	0.3
Dorset Down	0.4	Other breeds & cross-breeds	5.0
Devon Closewool	0.3		
Border Leicester	0.2		
Other breeds			
Total	100.0	Total	100.0
No. of ewes in survey flocks '000	76.2	No. of ewes in survey flocks '000	50.5

Midlands go back to the local longwool breeds, mainly the Lincoln. Considerable crossing has taken place, particularly with Suffolk and Oxford rams used alternatively together with a return, in some instances, to the original longwool. These flocks are maintained from home bred or local bred stock.

Little else need be said about the breeds in the South East other than to emphasise the dominance of the Kent (or Romney Marsh) ewe which, with the relatively few of its crosses, accounted for nearly four-fifths of the sample flock. This breed still retains its hold on the Weald and on the rich pastures of the Romney Marsh where it was developed.

The ewe breeds kept in the Western areas were, if anything, more diverse than those found in the Eastern parts. In the Western province the Clun Forest and the Kerry Hill bred along the English-Welsh borderland prevail in large numbers. Besides pointing to the suitability of these breeds to the area this must also reflect the availability of pure-bred replacements from the native territories of these ewes. It is likely that the availability of flock replacements from Wales must also account in part, at least, for the relatively large numbers of Welsh Half-bred ewes kept in this area.

In the South West the native breeds, the Devon Closewool, Devon Longwool, South Devon, Dartmoor and Dorset Horn figured prominently and were the most numerous pure-breds, together they accounted for 40 per cent of the sample flock. Many ewes of these local breeds have been crossed with rams of other breeds, particularly the Border Leicester, and these local Half-breds, together with other cross-bred ewes, were as important numerically as the native breeds in the South West.

The heterogeneity of the ewe flock is further reflected by the number of different breeds kept in individual flocks, this is shown for each

province and by size of flock in Table 16.

Table 16 Distribution of survey flocks according to the number of breeds of ewe kept

		Percentages of flocks					
Province	No. of ewe breeds	East Midland			South East		
		50-199 ewes	200-399 ewes	400 & over ewes	50-199 ewes	200-399 ewes	400 & over ewes
	One	50	44	13	80	61	63
	Two	23	34	39	13	35	25
	Three	19	20	29	7	4	8
	Mixed	8	2	19	-	-	4
	Totals	100	100	100	100	100	100
Province	No. of ewe breeds	Western			South West		
		50-199 ewes	200-399 ewes	400 & over ewes	50-199 ewes	200-399 ewes	400 & over ewes
	One	53	41	29	53	32	37
	Two	32	24	38	29	32	37
	Three	10	31	16	14	25	11
	Mixed	5	4	17	4	11	15
	Totals	100	100	100	100	100	100

In the areas other than the South East where the predominance of the Kent breed has already been noted, the single-breed flock is in a majority only among the smaller flocks. Among the larger flocks the multi-breed flock is the rule rather than the exception. A part of a larger flock may be of a different breed of ewe for the purpose of rearing replacements, while the major part of the flock is used to produce either fat lambs or store lambs. Thus the multi-breed flock represents the normal policy of some sheep farmers while for others it may represent an effort to find a productive ewe producing a more marketable lamb.

Breeds of ram

Of equal importance to the ewe in the breeding flock is the ram. The only characteristics of the rams used in the sample flocks that can be commented upon are the breeds for which a distribution is given in Table 17.

Table 17 Survey flocks:Distribution of rams by breed<sup>(i)</sup>

Breed of ram \ Province	Percentages			
	East Midlands	South East	Western	South West
Suffolk	83.0	10.5	55.0	33.6
Dorset Down	4.9	25.7	12.4	29.2
Hampshire	3.7	2.1	8.7	8.8
Kent	0.8	36.3	0.5	-
Southdown	-	20.1	0.7	-
Clun	0.9	1.4	12.4	2.7
Dorset Horn	0.9	-	1.8	6.0
Devon Closewool	-	-	-	5.7
Devon Longwool	-	-	-	3.6
Dartmoor	-	-	-	2.2
South Devon	-	-	-	2.2
Lincoln	0.9	-	-	-
Colbred	0.6	1.6	2.7	1.2
Cheviot	0.6	2.1	-	0.4
Oxford	1.3	0.4	0.7	-
Ryeland	-	0.5	-	-
Kerry Hill	-	0.4	0.8	-
Shropshire	-	-	2.0	-
Border Leicester	-	-	-	1.8
Cross-bred	-	-	-	1.5
Others	2.4	0.9	2.3	1.3
Totals	100.0	100.0	100.0	100.0

(i) The numbers of rams was not asked for in the survey, their numbers were estimated from the number of ewes put to them.

The Suffolk was the predominant breed of ram used in the East Midlands, Western and South Western flocks. In the East Midlands it was overwhelmingly the most popular breed accounting for over four-fifths of the rams

kept. As a contrast, in South East England the Kent was the most frequently used, while the Suffolk was very much a minority ram breed. Here the Down breeds of ram, the South Down and Dorset Down were extensively used for crossing with the local Kent ewes for fat or store lamb production.

In the Western area Clun rams were second (equally with the Dorset Down) in importance to the Suffolk but far from attaining the pre-eminent position of the Clun ewe. The latter were more often mated with Suffolk, Dorset Down or Hampshire Down rams for fat lamb production. The South Western flocks showed a greater multiplicity of ram breeds than any other area. The crossing breeds, the Suffolks, Dorset Downs and Hampshire Downs predominated but considerable numbers of rams of the local breeds, the Closewool, Longwool, Dartmoor and South Devon, were also kept. The South West also had significant numbers of Dorset Horn rams, as this breed and its crosses formed the basis of the early and out-of-season fat lamb production carried on in this region.

#### New breeds of sheep

Despite the proliferation of the native sheep breeds and crosses, not all of which were represented in the survey flocks, it is well known that some sheep producers have not been satisfied either with the genetic potential in sheep or the way in which it has put to use in the past. As a consequence they have, in recent years, either developed new breeds of sheep or are looking to foreign breeds in an attempt to produce the quantity and quality of output they require.

The analysis in Table 18 shows the extent to which these non-traditional breeds have been introduced into the survey flocks. Calculated on a percentage basis the numbers of ewes and rams of these breeds and crosses would be negligible, the tables, therefore, show



Table 18 Number of survey flocks with new or continental breeds of sheep

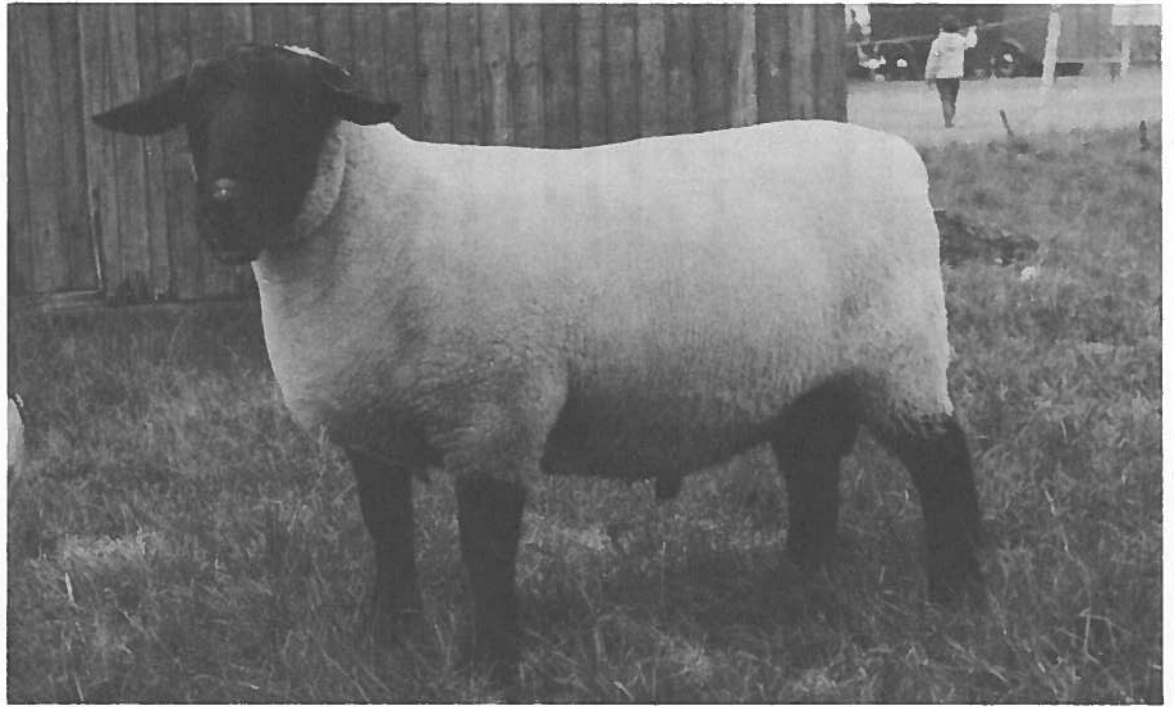
Province and size of flock  Breed of ewe or ram	East Midland		South East	
	Flocks of:- Under 400 ewes	400 & over ewes	Flocks of:- Under 400 ewes	400 & over ewes
Colbred or Colbred cross ewes	4	1	-	1
Colbred or Colbred cross rams	5	1	2	5
T.C. ewes	4	-	-	1
T.C. Down ram	1	-	-	-
Cadzw Improver cross ewes	-	-	1	1
Cadzw Hybrid ram	-	-	1	-
Finnish Landrace ram	1	1	-	-
Finnish Landrace cross ewes	-	-	-	1
Ile de France or cross ewes	1	1	-	-
Ile de France rams	1	1	-	1
Oldenburgh cross ewes	-	1	-	-
Oldenburgh ram	-	1	1	-
Number of flocks involved	7	3	3	9
Number of flocks as per cent of all survey flocks	4.1	9.1	4.5	9.8
Province and size of flock  Breed of ewe or ram	Western		South West	
	Flocks of:- Under 400 ewes	400 & over ewes	Flocks of:- Under 400 ewes	400 & over ewes
Colbred or Colbred cross ewes	5	7	2	2
Colbred or Colbred cross rams	4	7	1	3
T.C. Down ram	1	-	1	-
Cadzw-Colbred ram	1	-	-	-
Cadzw Improver ram	-	1	1	1
Cadzw Improver cross ewes	-	1	1	-
Cobb ram	-	-	-	1
Ile de France rams	-	1	-	-
Finnish Landrace cross ewes	-	-	1	1
Finnish Landrace cross rams	-	-	1	-
Improver x Finnish ram	-	1	1	-
Number of flocks involved	8	12	4	4
Number of flocks as per cent of all survey flocks	4.8	16.5	1.8	11.8

the number of times each breed is recorded in the survey and the number of flocks in which they were kept.<sup>(i)</sup> Overall about one in ten of the large flock owners, rising to one in six in the Western province, were experimenting with these breeds. This is considered quite a high proportion bearing in mind the hitherto traditional character of sheep farming. The proportion of the smaller producers, keeping these breeds was much less, varying from less than 2 per cent in the South West to between 4 and 5 per cent in the other provinces, still fairly significant figures except in the South West where tradition, perhaps, dies harder.

There are, of course, widely differing opinions on the necessity or desirability of introducing these newer breeds. Evidence for, is provided by the numbers of producers in the survey who were actively interested in the breeds, on the other hand the case against may be said to be proven by the large numbers of sheep farmers still keeping traditional breeds. It is sufficient at this stage to point out another development taking place in the sheep industry.

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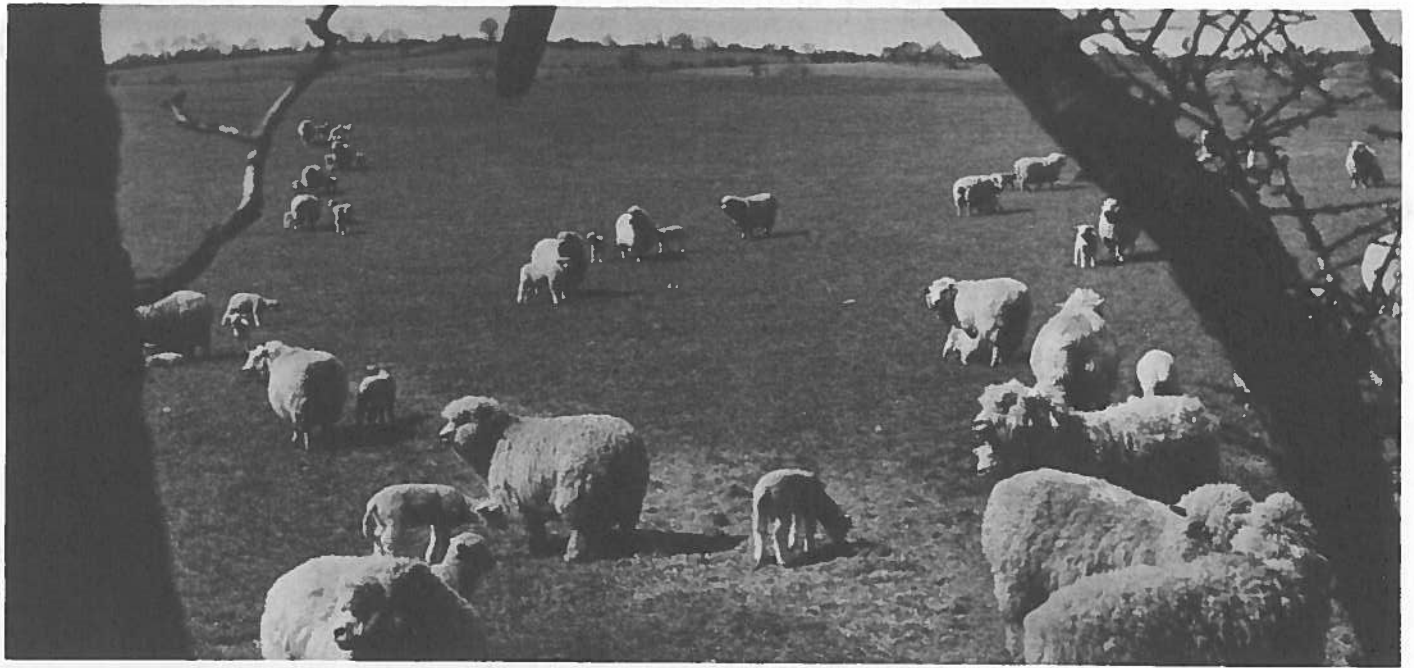
(i) One flock may contain more than one breed or cross of ewe and/or ram.



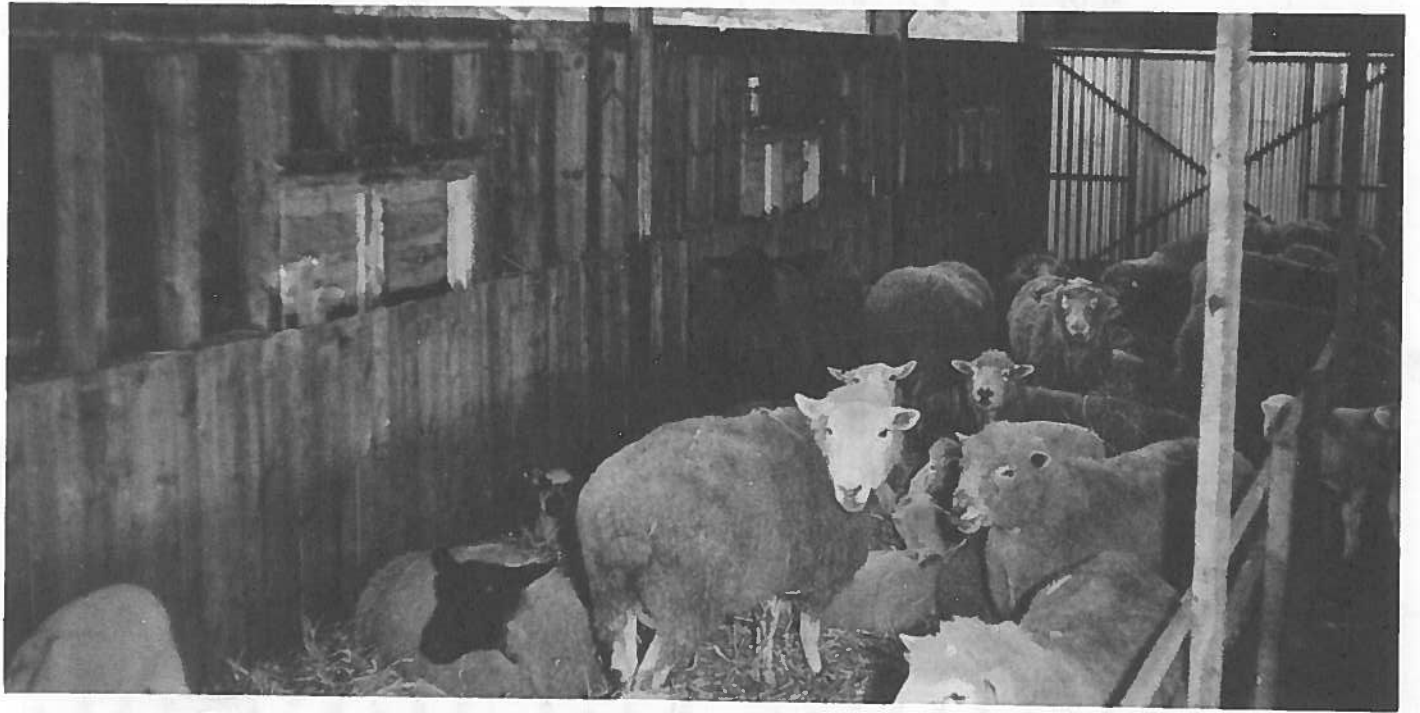
**A Suffolk ram , "the predominant breed of ram used in the East Midlands, Western and South Western flocks" (p.80).  
Photo C.David Edgar.**



Scotch Half-bred ewes, a popular ewe in each area of the survey (p. 25). Note also their Suffolk cross lambs. Photo. H.G. Clarke.



**The Romney Marsh was the predominant breed in South East England (p.28) but it is being used for crossbreeding (Table 15), note the Romney x Welsh (clean faced) ewes with the pure breeds in this flock. Photo. Farmers Weekly**



**"Overall in about one-sixth of the flocks some winter housing of ewes was undertaken"p.45**

Chapter 4  
MANAGEMENT OF EWE FLOCKS

Management in sheep farming includes the day to day husbandry of the flock and the longer term policy-making including the integration of the sheep enterprise into the farming system. Both make vital contributions to the economic outcome of the sheep enterprise but the survey was primarily concerned with the basic management policies. The information given applies essentially to 1968-69 but the stated policies are likely to be the usual ones adopted for the flock which will not, in general, change very much from year to year. The data is presented mainly on a provincial and size of flock basis but some aspects are looked at by type of farming. The pattern of analysis follows the flock through the sheep year beginning with the make-up and management of the breeding flock and ending with the disposal of the lamb crop.

Flock replacement policy

The sheep year begins when the ewe flock is made up prior to the preparation of the ewes for tupping. Table 19 illustrates the policy adopted towards providing flock replacements.

For the sample flocks as a whole the buying of all replacements was the most common practice followed, exactly one-half of the flocks adopting this method. This was so in three of the provinces while in the South West a slightly greater percentage of the sheep farmers stated that they reared all of their replacement ewes. However, if the proportion of flock-masters who reared some or all of their replacement ewes is considered, then in the South East and South West the majority of farmers did some rearing. The policy adopted towards replacement ewes is largely dependent on the breed composition of the flocks, and in the two Southern areas more pure-bred ewes were available for foundation stock than in the other areas. The East Midlands flocks were very highly

reliant on purchased replacements, 82 per cent of the flocks buying all or some of their replacement stock.

Table 19 Survey flocks:

Flock replacement policy by province and by size of flock

Percentages of flocks

Flock replacements	Province				Flock size-group			
	East Mid	South East	West-ern	South West	Number of ewes per flock			All flocks
					50-199	200-399	400 & over	
Bought	60	45	55	40	54	47	42	50
Reared	18	34	26	43	31	31	31	31
Bought and reared	22	21	19	17	15	22	27	19
<b>Totals</b>	100	100	100	100	100	100	100	100

Considering replacement policy by size of flock, the percentage of flocks for which all replacements were bought was greatest in the smallest flocks, with the proportion falling as the flocks become larger. As the proportion of flocks rearing all their replacements did not vary with the size of flock it followed that some rearing was undertaken in a majority of large flocks but only in a minority of small flocks.

Flushing of ewes before tupping

Farmers were asked if they adopted the practice of flushing their ewes before tupping. This is the practice of improving the nutrition of the ewes for some weeks to get them in good condition before the rams are turned in, the object being to increase the fertility of the ewes, to shorten the tupping period and thus the lambing season. No details of the procedure were asked for nor was an explanation of the term



"flushing" given, it being assumed that it would be readily understood. In the event it appeared to be so for the majority of flock-owners said that they carried out this practice (Table 20), a few explaining it was simply a matter of turning the ewes on better pastures.

Table 20 Distribution of survey flocks which were flushed before tupping

Flock size-group	Percentages of flocks					
	Province	East Mid	South East	Western	South West	All flocks
50 - 199 ewes		57	71	48	52	52
200 - 399 "		53	73	67	57	61
400 & over "		70	56	75	85	67
All flocks		59	58	59	57	58

#### Dates of tupping

The choice of the date at which the rams are turned in with the ewes is one of the more important policy decisions for the flock-master. It will largely determine the season of lamb marketings. This latter feature is taken up in Chapter 5 but a brief summary, Table 21, shows that in the East Midlands, Western and South West areas the main tupping periods were the months of September and October. In the South East tupping took place about one month later, the rams being turned in to 86 per cent of the flocks in the months of October and November, with nearly two-fifths of the flocks in November.

In the great majority of flocks the rams are turned in at a specific date to the whole flock. A few flocks particularly the larger ones, were divided at this time and in them some of the ewes were tupped at an interval varying from a few weeks to two or three months later than the first part of the flock. This was done either to spread the work load at

lambing or to get some of the lambs away fat for the early spring market. It was a common practice to tup the ewe lambs later than the main flock and some two-tooth ewes were similarly treated.

Table 21: Distribution of survey flocks by date of tupping in 1968

Date of tupping (i)	Percentages of flocks			
	Province East Mid	South East	Western	South West
July or earlier	1.7	-	4.1	11.0
August	11.7	2.5	8.3	22.4
September	19.5	11.4	15.4	34.3
Early October	39.1	22.8	39.4	27.3
Late October	20.1	24.0	21.2	2.9
November	7.9	39.3	11.6	2.1
Totals	100.0	100.0	100.0	100.0

- (i) For flocks which were divided at tupping the date at which the main part of the flock was put to the ram is taken.

In a very few flocks the date of tupping was indeterminate in as much the rams "ran" with the ewes throughout the year.

#### Winter feeding and housing

Following the sheep year through to the winter management flock-owners were asked:-

- i) What were the main winter feeds for ewes, and
- ii) Whether they undertook any winter housing of ewes and/or lambs.

With regard to winter feeding, only a few flocks were expected to winter mainly on grazing. The large majority of ewes were given a supplementary feed which varied considerably, ranging from purchased

or home-mixed concentrates to crop by-products such as sugar beet tops and pea haulm silage. For the purpose of analysis winter feeds were grouped as follows:-

- i) Hay.
- ii) Concentrates - purchased (e.g. ewe cobs) and home-grown corn.
- iii) Roots, green fodder crops, sugar beet tops (either singly or in combination, denoted as "R.F." in the table).
- iv) Various combinations of (i) to (iii).
- v) Mainly grazing.
- vi) Other - combinations of (i) to (iii) and usually including silage.

The winter feeding regimes as outlined in Table 22 are an aspect of the variability of lowland sheep enterprises. As already mentioned very few flocks depend on grazing as their main winter feed except in the South East where the percentage of such flocks was just under 10. Here a considerable number of sheep were sent away to winter on other farms and their keep was assumed to be grazing although a supplementary feed could also have been fed.

Concentrates either alone or in combination with hay and/or roots/fodder crops were fed to over 71 per cent of all flocks surveyed, with relatively more concentrate fed flocks in the South West than in the other provinces. Hay was the other main winter-feed, rarely fed alone but more usually fed in combination with other feeds. Concentrates and hay formed the most popular winter ration, being fed to one-third of all flocks, the proportion varying slightly between the provinces and by size of flocks. In 13 per cent of the flocks hay, concentrates and a fodder crop (roots or green fodder) were fed, this combination of feeds being far more frequent in the two Western areas than in the East. In the East Midlands sugar beet tops

Table 22 Survey flocks:

Distribution by type of winter feed for ewes  
By province

Percentages of flocks

Province \ Winter feed	Hay & conc's	Conc's only	Hay conc's & R.F.	Conc's & R.F.	R.F. only	Hay & R.F.	Hay only	Other (i)	mainly grazing	Totals
East Midland	29.4	24.4	7.2	7.2	16.7	4.5	1.7	7.8	1.1	100.0
South East	31.4	26.8	5.9	4.6	6.5	1.3	7.2	6.5	9.8	100.0
Western	41.6	7.8	16.4	3.0	2.6	8.2	7.4	10.0	3.0	100.0
South West	29.2	15.6	19.7	12.8	9.1	4.5	2.1	3.3	3.2	100.0

## By size of flock

50 - 199 ewes	36.1	21.5	12.0	8.1	7.4	4.6	3.8	3.6	2.9	100.0
200 - 399 "	30.2	12.3	20.7	6.7	11.2	3.3	5.0	9.5	1.1	100.0
400 & over "	30.0	13.8	10.0	5.7	8.1	7.1	5.2	11.0	9.1	100.0
All flocks	33.2	17.5	13.4	7.2	8.4	5.0	4.5	6.8	4.0	100.0

(i) Usually including silage.

Table 23 Survey flocks:

Distribution by type of winter feed for ewes and by type of farming

Percentages of flocks

Winter feed Type of farm	Hay & conc's	Conc's only	Hay conc's & R.F.	Conc's & R.F.	R.F. only	Hay & R.F.	Hay only	Other (i)	mainly graz- ing	Totals
Dairy	35.6	21.9	15.1	4.1	4.1	1.4	5.5	6.8	5.5	100.0
Livestock (ii)	36.5	19.4	13.3	7.0	3.8	4.8	3.5	6.7	5.0	100.0
Cropping	25.7	10.4	11.5	8.2	16.9	6.5	6.0	10.4	4.4	100.0
Mixed	29.0	18.0	16.9	7.7	12.0	6.5	2.7	4.9	2.2	100.0
All flocks (iii)	33.2	17.5	13.4	7.2	8.4	5.0	4.5	6.8	4.0	100.0

(i) Usually including silage.

(ii) Livestock rearing and fattening.

(iii) Including flocks on pig and poultry holdings and part-time holdings.

were sometimes fed to ewes in place of a root or green fodder crop and, including these, this group of winter-feeds was fed to 33 per cent of all flocks, the percentage varying from 17 in the South East to 42 per cent in the South West.

Winter feeding policies varied by type of farming (Table 23). The proportion of concentrate-fed flocks was greater than average on the Dairying and Livestock farms, about average on the Mixed farms and much below average on the Cropping farms. Roots and/or fodder crops were grown for winter feeding on relatively more Cropping and Mixed farms than on other types of farm. Hay was fed to very similar proportions of flocks on all types of farm, within 5 percentage points of an average of 53.

#### Winter housing

As for the winter housing of ewes, the intention was to discover the number of flocks which were housed continuously for a period over the winter months. But in retrospect the phrasing of the question was insufficiently precise. It was evident from the affirmative replies to the question that it included flocks brought inside for lambing, flocks housed at night only during the lambing period and to flocks which were housed continuously. The figures in Table 24 must, therefore, only be taken to mean that some degree of winter housing was undertaken in the proportions of flocks stated.

Overall in about one-sixth of the flocks some winter housing of the ewes was undertaken, but the proportion in the South West was much less than the average. From the climatic point of view there is, of course, much less reason to house the ewes in this region but the other reasons for housing sheep i.e. ease of shepherding, freeing the pastures from sheep for a period of time, apply equally in the

milder South West as to the other areas in the survey. Relatively fewer of the smaller flocks seem to be housed.

Table 24 Distribution of survey flocks with some winter housing

Province Flock size-group	Numbers of flocks				
	East Mid	South East	Western	South West	All flocks
50 - 199 ewes	15	5	17	11	48
200 - 399 "	9	7	13	9	38
400 & over "	4	20	13	6	43
Totals	28	32	43	26	129

Province Flock size-group	Percentages of flocks				
	East Mid	South East	Western	South West	All flocks
50 - 199 ewes	15	13	14	6	11
200 - 399 "	20	27	24	17	21
400 & over "	12	22	21	22	20
All flocks	16	20	18	10	16

#### The management of the flock at grass

The next stage in the sheep calendar concerns the management of the ewes and lambs during the spring and summer. This aspect was briefly covered in the survey by asking farmers for the following information:-

- i) What was the stocking rate of ewes grazing per acre during the months of May and June.
- ii) Whether the ewes were paddock grazed.
- iii) Whether the lambs had access to creep grazing.

During the May - June period with grass growth at its peak the pastures on most farms will be very heavily stocked at this time of year

because:- i) all winter housed cattle will have been turned out, ii) the sheep population will be at its highest annual level with all the lambs, except the earliest sold, on hand, iii) some grass fields will be shut-up for hay or silage.

Thus the stocking rate on the grazing fields will represent about the maximum rate achieved at any one time of the year, and the sheep farmers were asked to state how heavily they stocked their ewes per acre of grazing during this period. Where mixed grazing with cattle and sheep was practised it was not possible to give an answer to this question, nevertheless over 80 per cent of the farmers replied to it and the replies are analysed by province and by size of flock in Table 25.

Table 25 Survey flocks:

Intensity of grazing with ewes in May-June  
by province and by size of flock

Percentages of flocks

Province	Stocking rate	No. of ewes grazing per acre				Totals
		2 - 4	4 - 6	6 - 8	8 & over	
East Midlands		39	42	13	6	100
South East		25	46	25	4	100
Western		32	42	17	9	100
South West		29	43	19	9	100

Flock size-group

50 - 199 ewes	37	40	16	7	100
200 - 399 "	30	40	22	8	100
400 & over "	25	46	24	5	100
All flocks	31	43	19	7	100



Consistently over the four regions the most frequently achieved stocking rate was between four and six ewes per acre, 43 per cent of all flocks being grazed at this density, with little variation between the four regional samples of flocks. For 29 per cent of the flocks in the South East the stocking rate was six or more ewes per acre with a relatively small proportion of the flocks getting up to eight or more ewes per acre. If an overall average stocking rate was calculated for each regional sample, that for the East Midlands would be marginally the lowest since 39 per cent of the flocks were grazed at the lowest stocking rate, between two and four ewes per acre.

Considering stocking rates on the basis of size of flock, they are generally higher for the flocks of over 200 ewes, except that at the highest stocking of eight or more ewes per acre, the differences between the small proportions of flocks achieving this rate are probably not significant.

Examining the ewe stocking rate in May - June by type of farming, Table 26, it is noted that ewes were kept most intensively on Dairying farms. Very few flocks on this type of farm were kept at the lowest stocking rate, whereas nearly two flocks in five were stocked at six or more ewes per acre. The Mixed farms had the next highest average stocking rate with over one-third of the flocks being grazed at six or more ewes to the acre. On both these types of farm, cattle will be the predominant grazing animals and the heavy stocking with sheep reflects the competition for grass at this time of the year, with the cows usually getting the "pick". It is this clash of interest between cattle and sheep at this time of year that has been advanced as one reason for the declining number of flocks on lowland farms.

Table 26 Survey flocks:Intensity of grazing with ewes in May - June by type of farming

Percentages of flocks

Type of farming	No. of ewes grazing per acre				Totals
	2 - 4	4 - 6	6 - 8	8 & over	
Dairying	15	47	23	15	100
Livestock (i)	39	40	16	5	100
Cropping	29	49	17	5	100
Mixed	22	44	26	8	100
Other (ii)	42	36	12	10	100
All flocks	31	43	19	7	100

(i) Livestock rearing and fattening.

(ii) Pig and poultry holdings and part-time holdings.

It is also of interest to consider the stocking rate with ewes in May - June by type of production and this information is summarised in Table 27. The overall average stocking rate would be lowest, but only marginally so, in the Store lamb flocks, 81 per cent of which were stocked at four ewes or less per acre. Any comment on this feature necessitates anticipating analyses of the flocks by size of flock, by type of farming and by province, which are examined later in the report. The first point to note is that the sample of Store lamb flocks included a considerable number in the South East and that they were larger than average. Table 25 has shown that the flocks in this province were kept at above average stocking rates, reflecting, no doubt, the characteristic of the Romney Marsh grazings. From the same table it is also seen that larger flocks were also stocked more heavily than the average. In contrast, the Store lamb flocks on

Cropping farms in the East Midlands were characterised by below average stocking rates, while the Western Store lamb flocks were about average in this respect. A simple statement concerning the stocking rate per acre by type of flock therefore conceals many features and a degree of caution is required in its interpretation.

Table 27 Survey flocks:

Intensity of grazing with ewes in May - June  
by type of lamb production

Type of production	No. of ewes grazing per acre				Totals
	2 - 4	4 - 6	6 - 8	8 & over	
Early fat lambs	14	43	30	13	100
Fat lambs	33	42	18	7	100
Fat hoggets	30	35	28	7	100
Store lambs	36	45	14	5	100
Breeding lambs	35	39	18	8	100
Mixed output <sup>(i)</sup>	24	51	20	5	100
All flocks	31	43	19	7	100

(i) Flocks which did not specialise in the production of one type of lamb.

It is noted that 43 per cent of the Early fat lamb flocks were stocked at six or more ewes per acre compared with an average of 26 per cent over all flocks. This heavier stocking reflects in part the more intensive management of this type of flock. It may also be partly explained by the fact that some ewes in these flocks will be dry by May - June and they can be kept thicker on the ground than ewes with lambs.

Paddock grazing

Paddock grazing is a system which involves the relatively heavy

grazing of limited areas of pasture for short periods on a rotational basis, each area then being rested and fertilised for regrowth. This is a practice which has grown in prominence in grassland sheep husbandry in recent years. As shown in Table 28 it was practised by about one in seven (14 per cent) of the sheep farmers in the survey.

Table 28 Distribution of survey flocks paddock-grazing ewes

Numbers of flocks

Province Flock size-group	Province				Totals
	East Mid	South East	Western	South West	
50 - 199 ewes	15	12	10	9	46
200 - 399 "	7	5	7	8	27
400 & over "	10	15	13	6	44
Totals	32	32	30	23	117

Percentages of flocks

50 - 199 ewes	15	31	8	5	11
200 - 399 "	16	19	13	15	15
400 & over "	30	16	21	22	21
All flocks	18	20	12	9	14

The analysis by province and by size of flock shows that the practice of paddock-grazing ewes was generally adopted more frequently in the larger flocks and as between East and West, more frequently in the two Eastern areas. In the East Midlands paddock-grazing of the ewe flock was practised more frequently on the Cropping farms than on other types of farm. This suggests that they had a limited area of grassland which was being utilised intensively. In the South East the practice is followed on all types of farm, the highest frequency, in fact, being on dairy farms where 44 per cent of the very small sample adopted this technique.

Creep grazing of lambs

The one question asked directly about the management of lambs concerned creep-grazing. This is the practice of allowing the lambs to graze fresh pastures ahead of the ewes so that the lambs get the "best of the pick" and before the pastures are worm-contaminated by the ewes. A very few farmers interpreted this as "creep-grazing" i.e. providing trough-feed to which the lambs alone have access. In neither system are the lambs which are suckling totally separated from the ewes; both practices represent methods in intensive sheep husbandry and Table 29 shows the numbers of flocks in which they were practised.

Table 29 Distribution of survey flocks creep-grazing lambs

Province Flock size-group	Numbers of flocks				
	East Mid	South East	Western	South West	Totals
50 - 199 ewes	18	7	23	21	69
200 - 399 "	7	3	10	16	36
400 & over "	12	13	15	4	44
Totals	37	23	48	41	149

Percentages of flocks					
50 - 199 ewes	18	18	18	12	16
200 - 399 "	16	12	18	30	20
400 & over "	36	14	25	15	21
All flocks	26	14	20	16	18

Nothing very conclusive can be drawn from the figures shown. Overall the practice seems to be more common in the larger flocks. Regionally creep-grazing was practised relatively more frequently in the East Midlands and rather less so in the South East. The practice was more commonly

followed in those flocks in which fat lamb production was important. In the South West these included about one-half of the Early fat lamb producers. In the Western and South Eastern provinces about 18 per cent of the Store lamb producers allowed their lambs to creep-graze.

The survey has revealed the extent to which some of the practices leading to the intensification of sheep production have been adopted, but one survey at a point in time cannot identify any trends in these developments and it is hoped that further similar studies will be able to do so.

#### Flock recording

Over the last few years farmers have been literally "bombarded" with advice on the value of keeping records about their farm enterprises and a final question on ewe management in the postal survey asked farmers whether they undertook any flock recording, the percentages of farmers who did so are shown in Table 30.

Table 30 Distribution of producers undertaking some form of flock recording

Percentages

Province Flock size-group	East	South	Western	South	All
	Mid	East		West	flocks
50 - 199 ewes	5	15	3	4	5
200 - 399 "	9	15	11	13	12
400 & over "	15	9	16	11	12
All flocks	8	11	8	7	8

Flock recording was not defined in the questionnaire and the term could refer to any system from simply recording the number of lamb births and lamb sales over the whole flock to a more sophisticated recording of data on individual ewes and their progeny as a basis for breeding. The table shows that only a very small minority, 8 per cent of flock-owners did any recording, the proportion tending to rise as the flocks increased in size.

It cannot be said that sheep-recording was very popular among the farmers surveyed but it may be noted that the utility of recording is less obvious for the "extensive" livestock, beef cattle and sheep, than for the "intensive" livestock such as dairy cattle, pigs and poultry where the ratio of output to feed use is so important and relatively easy to establish.

Chapter 5DISPOSAL OF THE LAMB CROP

The lowland sheep farmer is primarily in business to produce lambs<sup>(i)</sup> and the type of lamb and date of marketing will reflect the basic policy decisions determining the system of production. In addition to the sale of lambs, sales from a flock of ewes will include wool, draft and cast ewes. The only way to measure such differing outputs is in financial terms. However there are obvious difficulties in asking for these details in a postal survey and information was, therefore, asked only about the physical disposal of the lambs from the 1968 crop. For the purpose of statistical analysis the lambs were classified into the following categories:-

- i) fat lambs sold
- ii) fat hoggets sold
- iii) store lambs sold
- iv) ewe and ram lambs sold for breeding
- v) ewe lambs retained for breeding
- vi) other lambs (ram lambs kept, late finishers)

The farmers were also asked to give the months of sale of fat lambs and hoggets. In addition to their own lambs some sheep farmers bought in store lambs for fattening either for sale along with their own lambs or at a later date, and in the analysis of lamb sales it has not been possible to distinguish between the sale of home-bred and purchased lambs. Table 31, showing the percentage of farmers who purchased lambs and the average numbers of lambs involved, illustrates the

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(i) By definition a "lamb" is a young sheep until the end of a calendar year in which it was born, from the January following it becomes a "hogget". The terms generally refer to sheep in a "fat" or more correctly "finished" condition i.e. for sale for slaughter. Young breeding sheep have a nomenclature of their own.



extent of this practice.

Table 31 Percentages of survey flocks purchasing store lambs for fattening

Size of flock	East Midlands		South East	
	% of flocks	Average No. of lambs bought	% of flocks	Average No. of lambs bought
50 - 199 ewes	27	138	10 (i)	38
200 - 399 "	22	131	4	-
400 & over "	12	236	12	290
<b>All flocks</b>	<b>23</b>	<b>146</b>	<b>10</b>	<b>231</b>
	Western		South West	
	% of flocks	Average No. of lambs bought	% of flocks	Average No. of lambs bought
50 - 199 ewes	14	113	15	78
200 - 399 "	16	330	25	126
400 & over "	7	438	25	422
<b>All flocks</b>	<b>13</b>	<b>218</b>	<b>18</b>	<b>138</b>
	All flocks			
	% of flocks	Average No. of lambs bought	% of flocks	Average No. of lambs bought
50 - 199 ewes	17	109		
200 - 399 "	18	183		
400 & over "	12	338		
<b>All flocks</b>	<b>16</b>	<b>170</b>		

(i) One flock.

Overall, one in six of the farmers in the survey bought store lambs, the proportion being the highest in the East Midlands, additional lambs being bought on some of the Cropping farms in this province to utilise crop residues and specially grown crops such as kale and turnips. The

size of flock analysis simply shows that, on average, a larger number of store lambs were bought on farms where there was already a large flock of ewes.

Table 32 gives the analysis of the disposal of lambs in each province and for each flock size-group, while the sales of fat lambs are further sub-divided according to the time of the year when they took place.

The disposal of all lambs from the 829 flocks surveyed, totalling nearly 350 thousand in all, showed that 54 per cent were sold as fat lambs, 21 per cent as store lambs, 12 per cent as fat hoggets. A further 12 per cent were either kept or sold for breeding purposes, the majority being kept on the farm where they were reared.

These overall figures are the collective result of each producer's decisions and actions. Each has a basic policy and a production plan which determine the date of tupping, the feeding practices and the breeds of both ewes and rams. Four basic policies can be defined by reference to the end product and individual policies will be variations or combinations of these.

- (i) The production of early fat lambs, the ewe lamb in January and the lambs are sold fat by mid-June.
- (ii) The production of fat lambs, flocks lamb in March and April and the lambs are sold fat, mainly from June to October.
- (iii) The rearing of store lambs for winter fattening mainly on arable crops, flocks lamb in March and April and the lambs are sold as stores at special sales taking place between

Table 32 Survey flocksDisposal of 1968 lambs

Percentages of lambs

Type of lamb	Province				No. of ewes per flock			All flocks
	East Mid	South East	West-ern	South West	50-199	200-399	400 & over	
Fat lambs	63.5	38.7	55.0	66.4	63.1	59.3	48.3	53.6
Fat hoggets	13.3	9.9	14.4	12.6	13.0	13.3	11.9	12.4
Store lambs	16.1	31.0	20.5	9.1	15.0	17.8	24.1	20.9
Breeding lambs sold	2.5	4.1	1.9	1.1	1.1	2.0	3.2	2.6
Ewe lambs kept (i)	3.9	14.0	7.5	9.5	6.5	6.9	11.0	9.2
Any other lambs	0.7	2.3	0.7	1.3	1.3	0.7	1.5	1.3
<b>Totals</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<b>Fat lambs sold:-</b>								
Before April	-	-	1.5	1.7	0.6	3.0	0.1	0.8
April - June	19.4	14.7	21.9	31.7	26.7	22.4	19.3	21.9
July - September	51.9	51.7	47.6	39.9	45.2	47.1	49.4	47.8
October - December	28.7	33.6	29.0	26.7	27.5	27.5	31.2	29.5
<b>Totals</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
'000 Lambs	68.7	109.7	104.6	63.4	75.2	68.5	202.7	346.5

(i) Ram lambs kept, late finishers.

August and October. Otherwise they are retained on the farm for winter fattening and sale as fat hoggets mainly from December to April.

- (iv) The rearing of lambs for breeding, included in these flocks are the ones producing pedigree rams and those producing female breeding stock, either pure bred or particular crosses, to supply replacement stock for the flocks used for the production of early fat lambs, fat lambs and stores.

The final product from a flock will be determined by the success with which the policy is carried through. From year to year weather conditions, particularly at tupping and lambing time, will influence the proportion of lambs sold at the time desired. Also the skill of the shepherd, particularly in the control of disease, plays an important part in determining the quality of the final product and in the timing of fat lamb sales over the year. As a result of these influences the eventual distribution of lamb sales, by season and by type of lamb, from any particular flock will diverge to some extent from the basic policy planned. Thus sheep farmers who produce both store and fat lambs may fall into one of three groups:-

- (i) Fat lamb producers who have been unable to get the lambs into condition for sale at the planned time.
- (ii) Store lamb producers who have taken the opportunity to sell lambs which have grown and fattened sooner than planned.

(iii) Producers with a specific policy of producing both fat and store lambs, probably with a low cost policy in respect of supplementary feed.

Each province in the survey has a distinct pattern of tupping dates (Table 21) which indicates the basic policies to be found. The success, or otherwise, with which these policies have been followed through must be judged from the overall production pattern of lamb sales shown in Table 32 and also from Table 33 which shows the distribution of individual flocks classified by type of lamb production.

Table 33 Distribution of survey flocks by type of lamb production

Percentages of flocks

Type of production	Province				Flock size-group			All flocks
	East Mid	South East	West-ern	South West	50-199 ewes	200-399 ewes	400 & over ewes	
Early fat lambs	-	-	5	13	7	6	-	5
Fat lambs	54	29	44	52	52	46	34	46
Fat hoggets	11	4	10	8	10	7	7	9
Store lambs	9	26	19	5	11	14	21	14
Breeding lambs	3	22	7	11	7	11	16	10
Mixed output <sup>(i)</sup>	23	19	15	11	13	16	22	16
Totals	100	100	100	100	100	100	100	100

(i) Flocks which did not concentrate on the production of one type of lamb.

#### South West

The tups were turned to the ewes in two-thirds of the flocks from July to September, and almost all the rest of the ewes were tupped in early October. Two-thirds of the lambs were sold fat, and the South West showed the highest proportion of fat lambs sold in the period April to June,

31.7 per cent compared with 22 per cent or less in the other areas. Thus it is evident that the two main policies adopted in the South West were:-

- (i) early fat lamb production, associated with out of season lambing and intensive feeding methods.
- (ii) fat lamb production, mainly for sale in the period July to September.

As shown in Table 33, 13 per cent of the flocks produced early fat lambs as their main policy. Some of the early fat lambs would have also been produced from the Fat lamb flocks, since the majority of the flocks put to the tup in August would have lambed in January and have started selling fat lambs in May.

#### East Midlands

Here a much lower proportion of the flocks were put to the tup by mid-October than in the South West, 72 per cent as against 95 per cent. By the end of August, on the other hand only 13.4 per cent of the flocks were tupped in this region as compared with one-third in the South West.

Nearly the same proportion, 63.5 per cent, of lambs were sold fat in the East Midlands as in the South West, but in the East Midlands nearly one half of these were sold in the later summer months, between July and September. Thus, one would expect to find only a small number of flocks in the East Midlands aiming at fairly early fat lamb production i.e. selling most of their lambs by the end of July. The majority lambed later and sold fat lambs off grass from late June to the end of the year.

The production of store lambs, both for fattening on the farm of birth and for sale, was more frequent in the East Midlands than in the South West. These were mostly from the flocks (29 per cent) which were tupped in late October and November. It should be noted that just over 29 per cent of lambs were disposed of as fat hoggets and store lambs.

### Western

The Western province had a wider range of tupping dates than the East Midlands and it had features of both the South West and the East Midlands. There were for instance, a number of Early fat lamb flocks, 12.4 per cent of the flocks being tupped in July and August. After the South West, the Western province had the highest proportion of lambs (23.4 per cent) sold fat by the end of June. This suggests that in addition to the 5 per cent of flocks which produced the majority of their lambs for early sale, a number of the Fat lamb producers managed to sell a proportion of their lambs fat by the end of June.

In October 60.6 per cent of the flocks were put to the top. Some of those tupped in early October would have contributed to the later fat lamb sales in July to December but the main products of these flocks were the lambs sold as stores (20.5 per cent) and the 14.4 per cent fattened and sold as fat hoggets during the winter.

### South East

Tupping takes place much later in the South East and this reflects the particular nature of sheep farming in Kent, where climatic conditions can be difficult until late Spring. From a provincial point of view, the survey information shows that the overall production pattern in the South East was quite distinct from that in the other three areas. Here less than one-half of the lambs were disposed in a finished condition, either as fat lambs or fat hoggets. Correspondingly a greater proportion

of lambs were sold as stores, 31 per cent compared with only 9 per cent, for example, in the South West. Eighteen per cent were destined for breeding or nearly three times the proportion in this category in the East Midlands. The ubiquity of the Kent breed in the South East was noted earlier and this high percentage of breeding lambs reflects the fact that sufficient replacements must be produced in the region itself as there are none to be imported from elsewhere. Another feature of the South East lamb disposals is that the fat lambs were marketed rather later in the year. Over a third of them were sold in the October - December period as compared with less than 30 per cent in each of the other areas. This is in accord with the later tupping dates of flocks in the South East which were mentioned earlier.

#### The disposal of lambs by size of flocks

The production pattern by size of flock showed quite distinct differences. As flocks increased in size it was found that:-

- i) the proportion of lambs sold fat diminished and the later the fat lambs were marketed;
- ii) the proportion of store lambs increased;
- iii) the proportion of lambs reared for breeding increased.

To some extent these trends are due to the fact that the sample of larger flocks is heavily weighted by the flocks from the South East, which accounted for 43 per cent of largest flocks, though features were noted in the other regions. Only just over one-third of the largest flocks could be classified as Fat lamb flocks (early fat lamb and fat lamb), compared with 59 per cent of the small flocks. Less than half the lambs were



sold fat from the largest flocks against 63 per cent of the lambs from small flocks of under 200 ewes. Not one large flock could be classified as an Early fat lamb flock, although overall a significant proportion of the lambs from the largest flocks were sold before the end of June.

Twenty-one per cent of the flocks with 400 or more ewes were classified as predominantly Store lamb flocks while 24 per cent of the lambs from these large flocks were sold as stores. The greater proportion of lambs retained for breeding in the larger flocks confirms the observations already made that the majority of large flocks adopted a policy of rearing of replacements. The purchase of replacements was more frequent in the smaller flocks.

Clearly there must be economic and/or husbandry implications behind these differing systems of production and while some of these may be hinted at they cannot be substantiated without more detailed studies.

Summing up the examination of lamb disposals it shows that meat production was the primary concern of the lowland sheep farmers who took part in this study. Of the 1968 lamb crop surveyed 66 per cent of the lambs were sold in a finished condition as fat lambs or fat hoggets, and these formed the major part of sales from 60 per cent of the flocks. The progression of sales is from the earliest ones, before April, through the main bulk of fat lamb sales from July to December and ending with the fat hogget sales after the turn of the year. The timing of sales was linked with the geographical location of production, the earliest sales coming from the climatically kinder environment of the South West through to the later sales as one moves north and eastwards. This indicates a degree of inherent rationalisation of production and marketing, but the question may be posed is it sufficient to get the best returns from the market?

The production of store lambs was the next most important form of output, accounting overall for 21 per cent of the lambs and being the primary output from 14 per cent of the flocks in the survey. These lambs would be sold onto farms to supplement an existing sheep enterprise as well as to farms on which the sheep policy was the finishing of store lambs during the autumn and winter months. Information on the latter type of sheep enterprise is difficult to obtain as the farms involved with these sheep are not always recorded in agricultural censuses taken at specific dates.

Finally the production of flock replacements and breeding stock was the main function in about 10 per cent of the survey flocks, and overall, nearly 12 per cent of the lambs were destined for breeding.

The survey indicated that a significant number of producers, nearly 1 in 6 overall, did not concentrate on the production of one type of lamb. This suggests that some farmers pursued a flexible policy selling their lambs through various markets to obtain the best returns which, with the additional sales of cull ewes and wool, would achieve the maximum gross output potential of the sheep enterprise.

Chapter 6SUMMARY AND COMMENTS

The survey examines the policies and practices of lowland sheep production in 1968-69, a time when the numbers of lowland sheep were declining from the peak population in the early 1960's. This is part of a structural change taking place in farming in England and Wales in which a greater emphasis is being put on arable land at the expense of grassland. Thus, the decreases in ewe numbers were greater in the relatively small sheep populations of the predominantly arable farming areas of eastern and southern England which indicates a deliberate change from sheep to more crop production. At the same time there has been an intensification in the use of grassland, and it has been shown that stocking rates of cattle and sheep per acre of grassland have increased in both the arable and grassland areas of the lowlands.

While the number of flocks (hill and lowland together) is declining and the average size of flock is increasing the sheep industry still includes a high proportion of small producers. In 1968, 60.5 per cent of producers had less than 100 ewes but they accounted for only about 20 per cent of the ewe population, this compares with the quarter of total ewes farmed by the comparatively few (4 per cent) producers with over 500 ewes.

The survey shows that lowland flocks were kept on all types of farms, on Livestock farms which were predominantly cattle and sheep, on Cropping farms in the Eastern regions and on the Mixed and Dairying farms in the Western areas. The latter were mainly the smaller flocks of less than 200 ewes while flocks on Cropping farms tended to be larger.

This type of farming distribution of lowland sheep illustrates the flexibility of management as a result of which a flock can be fitted into any farming system. In its relationship with other farming enterprises a sheep flock can be either complementary or competitive. It is

complementary if the flock utilises spare resources such as "non-peak" labour or off lying land, or if the flock consumes the by-products of a major cropping enterprise. A flock of sheep may be considered complementary if it helps to sustain the output of other enterprises, for example by consuming break crops, enhancing soil fertility and soil structure, assisting the establishment of leys and in the general management of grassland. Such a relationship exists on Cropping, Mixed and Dairying farms. On the other hand the lowland flock may be competitive with other enterprises in its resource requirement. It may compete for land, labour and capital to such an extent that it inhibits the growth of the other enterprises and may lead to their decline. This situation will arise on farms with mixed livestock populations. In fact it is just this competition for spring grazing between cattle and sheep that has been put forward as a reason for the giving up or cutting back of sheep on some farms.

One of the main attributes of the survey is that it has thrown light on many important features of the lowland sheep industry. Inevitably it records the multiplicity of breeds, patterns of lamb disposals and so on which, at first glance, present a picture of an industry without an organised structure. Nevertheless the survey has outlined some general features of the lowland sheep industry and served its purpose by revealing aspects of sheep production which would appear to require further study.

A feature of the sheep industry in this country is the great number of pure breeds and their crosses which can be broadly classified according to their habitat and type into upland (hill and moorland) and lowland (short and longwool) breeds. The survey flocks illustrated this feature very well and furthermore demonstrated the close integration of the hill and lowland sections of the industry. For while the pure lowland breeds were well

represented in the South West and even more so in the South East, there were in all four areas of the survey numbers of ewes of the pure hill breeds and greater numbers of first cross ewes from the hill breeds. The prevalence of the two better known Half-breds, the Scotch and the Welsh, has been noted. Sales of female breeding stock to the lowlands forms an important source of output of the hill sheep farmer who cannot other than be very concerned to see the decline in lowland sheep production.

New breeds such as the Colbred and Cadzow which have recently been developed, and continental breeds e.g. Finnish Landrace, Ile de France which have been introduced into this country were represented in the survey flocks. Given the extensive genetic potential of our domestic breeds of sheep it is at least arguable whether these developments are necessary but their introduction illustrates that some sheep producers, at least, are alive to the necessity for change in this, hitherto, conservative of farming enterprises.

The survey method, as used in this study, mainly identified the extent of production practices which will be related to the production policies and to the circumstances of the individual farms. Feeding policies and grazing practices were, therefore, those more commonly associated with the production of fat and store lambs. In general farmers so organised the feeding and grazing that the spring and early summer grass made the greatest contribution to the total supply of feed. Hay and concentrates, fed from January to April were the main supplementary feeds used.

On stocking rates it was shown that the industry at which the sample ewe flocks were most frequently grazed during the May - June period was at the 4-6 ewe per acre level. The proportion of farms where the stocking density was greater than six ewes per acre ranged from 19 per cent of the farms in the East Midlands to just under 30 per cent of the farms in the South East and West. The greater proportion of the flocks

at the higher intensity level were on Dairying and Mixed farms. The higher stocking density with sheep suggests factors such as competition with other stock for grazing, or perhaps intensive grassland and livestock management, resulting from the integration of the sheep enterprise with other enterprises on the farms.

Paddock grazing was practised by 1 in 7 of the farms in the sample and more frequently in the East than in the West. This practice tended to be adopted in the management of larger flocks except in the South East region. Again it would appear that some relationship may exist in the practice of paddock grazing, type of farming and geographical location.

A number of cases of long term winter housing were recorded, though it was unfortunate that the replies confused this with the short term housing of ewes during lambing.

The survey showed the limited extent of innovations and special techniques. These are often re-introductions of old techniques brought about by changes in the nature and costs of resources, possibly as a result of new knowledge.

The sheep farmer determines a policy and adopts practices of husbandry in order to achieve it. The policy is often flexible and may be modified during the season by circumstances such as weather, disease or market prices. Many policies could be identified in the survey by an examination of the date of tupping, the breed of sheep, production practices and the pattern of disposal of the lamb crop. The main product of the lowland sheep industry is meat from lambs and hoggets and the sale of wool and fat ewes is incidental to this. Within the industry there are also specialist producers such as ram breeders, producers of store lambs for fattening by other farmers and producers of breeding

stock for flock replacement.

The pattern of lamb sales in the survey not only emphasised that fat lamb production off grass is the major section of the lowland sheep industry but it also identified regional differences. Both in the South West and in the East Midlands about two-thirds of the lamb crop was sold as fat lambs and one-eighth as fat hoggets, the latter including sales of home-bred sheep and sales from farms which fattened purchased stores. The difference between the two areas was in the seasonality of the fat lamb sales. Thus one-third of the fat lamb sales in the South West took place by the end of June and 40 per cent in the July-September quarter, whereas in the East Midlands only 20 per cent were sold by the end of June and just over half between July and September, leaving about 29 per cent to sell in the last three months of the year. In the Western area, a smaller proportion (55 per cent) of the lamb crop was sold fat with consequently a greater proportion sold as store lambs, presumably for fattening during the winter on other farms either in the area or elsewhere. In the South East, 39 per cent of the lamb crop was sold as fat lambs but the sale of store lambs was almost as important, many of these lambs being sold to other areas for breeding and fattening.

The fattening of hoggets on crop residues, catch crops and break crops was the main sheep enterprise in 9 per cent of the flocks surveyed, and from 16 per cent of the flocks both fat lambs and fat hoggets were produced. A number of these were from store lambs bought for the purpose, this was practised particularly in the East Midlands.

The postal survey was designed to produce a broad picture of the lowland sheep industry. It was done so and shown, see Table 34, that the industry is a complex one comprising many different sections. At the extremes these vary from a small intensive Early fat lamb flock on a Dairying farm in the South West to a large less intensive Store lamb

flock on a Cropping farm in South East England.

Table 34 Distribution of survey flocks by type of lamb production and type of farming.

Percentages

Type of production \ Type of farming	Live-stock (i)	Cropping	Mixed	Dairying	Other (ii)	All flocks
Early fat lambs	4	2	7	15	4	5
Fat lambs	47	35	49	56	49	46
Fat hoggets	9	14	6	3	2	9
Store lambs	13	19	9	12	22	14
Breeding lambs	14	5	13	5	5	10
Mixed output (iii)	13	25	16	9	18	16
Totals	100	100	100	100	100	100

(i) Livestock rearing and fattening.

(ii) Pig and poultry and part-time holdings.

(iii) Flocks which did not specialise in the production of one type of lamb.

The table shows that all types of flocks were kept on all types of farms and emphasises again the point made about the versatility of a flock of ewes which can be fitted into virtually any farming system. This is an important feature of a sheep enterprise and must not be overlooked in any comparison of its relative profitability with other farm enterprises. Although the "golden hoof" has been disappearing quite quickly from the English lowlands in the last few years, there is still a large core of farmers who have realised that the contribution sheep make to the well-being of their farming is not entirely measured by a simple financial assessment of the enterprise. Economic studies of these sheep enterprises as well as an examination of their integration into different farming systems are necessary



before either an opinion can be offered concerning the decline in lowland sheep numbers or pointers given to successful management. The survey has indicated the primary importance of fat lamb production among lowland sheep systems and this type of production is one of the first to be studied simultaneously in the four postal survey areas. Also initially smaller economic studies are being undertaken into fat hogget production in the East Midlands and also into the system of sheep husbandry which is peculiar to Kent. Future investigation will be concerned with the economy of those techniques which the survey showed were being adopted to intensify production e.g. winter housing and higher stocking densities on grassland. A movement to more intensive systems of production may well be a prerequisite to the continued existence of sheep on many lowland farms.

The decline in lowland sheep production cannot be wholly attributed to one factor or another, but it is certain that many farmers who have abandoned or curtailed their sheep production have done so in favour of more arable farming. However, this growing concentration on arable crops is not without its problems and doubts are being expressed about the feasibility of maintaining a very high cereal acreage in this country over a long period without a sound rotational basis. Temporary grass is a suitable break in a series of cereal crops and sheep are potentially one means of utilising such grass. Thus the introduction of a complementary flock into continuous cereal cropping systems may have a retarding effect on the decline of the lowland ewe population and make an effective contribution to the maintenance of soil fertility.

In considering the future of sheep a further factor should also be appreciated. In the competitively economic climate of the last few years it is logical to assume that it has been the less efficient producers of

sheep who have been among the first to switch resources from sheep to other enterprises. Those remaining in sheep production must be willing and capable of responding to changes in consumer demand for their products. Provided a good home market is maintained there is every reason to expect that, with technical innovation and improved husbandry to achieve acceptable levels of profitability, lowland sheep producers will make a significant contribution to the national meat supply.

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LOWLAND SHEEP STUDY

CONFIDENTIAL

Code Number .....

F/T .....

Please give the information only for the holding as addressed to you on the envelope unless you farm it with another holding(s). If this is the case please give below the address(es) of the other holding(s) and give the information for all the holdings farmed as one business.

.....  
.....  
.....

- (i) Do you still keep sheep on the holding?  
(Please tick whichever is applicable)

Yes	No
-----	----

If "No" please return the questionnaire stating briefly why you have given up keeping sheep .....

If "Yes" please see question (ii)

- (ii) Are your sheep eligible for the hill sheep subsidy?  
(Please tick whichever is applicable)

Yes	No
-----	----

If "Yes" please return the questionnaire.  
If "No" please complete the questionnaire and return it in the envelope provided.

QUESTIONNAIRE

## 1. SIZE OF BREEDING FLOCK

	Numbers put to ram in 1968	Date ram put in
Ewes	.....	.....
Two-tooth (yearling) ewes	.....	.....
Ewe lambs	.....	.....
Total flock	<u>.....</u>	

## 2. BREEDS AND BREEDING POLICY

Breed or Cross of ewe	Numbers put to ram in 1968	Breed of ram used
(i) .....	.....	.....
(ii) .....	.....	.....
(iii) .....	.....	.....

## 3. DISPOSAL OF 1968 HOME-BRED LAMB CROP

	Month of Sale	Approximate Numbers
Fat lambs sold	.....	.....
	.....	.....
	.....	.....
	.....	.....
Fat hoggets sold	.....	.....
	.....	.....
Store lambs sold for feeding		.....
Ewe lambs sold for breeding		.....
Ram lambs sold for breeding		.....
Ewe lambs retained for breeding		.....
Any other lambs		.....
Total lambs reared in 1968		<u>.....</u>

4. OTHER LAMBS

- (i) How many store lambs did you buy in 1968 for fattening? .....
- (ii) How many hill/upland lambs did you take in for wintering in 1968? .....

5. FLOCK MANAGEMENT

Please put a tick against any of the following practices you adopt.

- Winter housing of ewes or lambs
- Paddock grazing
- Creep grazing of lambs
- Ewes grazing per acre in May - June
 

2 - 4	<input type="checkbox"/>
4 - 6	<input type="checkbox"/>
6 - 8	<input type="checkbox"/>
over 8	<input type="checkbox"/>
- Flushing of ewes before tugging
- Out of season lambing with Dorset Horns
- Method of flock replacement
 

Purchased	<input type="checkbox"/>
Home-reared	<input type="checkbox"/>
- Flock recording
- Any other special practices .....
- .....
- .....

6. WINTER FEED

What are your main winter feeds for:-

- (i) Ewes .....
- (ii) Lambs (over 6 months old) .....

7. GENERAL

Please describe any recent changes in your sheep keeping policy e.g. a change in flock numbers, or a change in any of the practices mentioned in question 5.

.....

.....

.....

<u>Classes used in report</u>	<u>Type of farming classes</u>	<u>Proportions of total standard man-days</u>
<u>Full-time</u> (ii)		
Dairying	1 Predominantly dairying 2 Mainly dairying	75% or more in dairying more than 50% in dairying
Livestock rearing and fattening	3 Mostly cattle 4 Mostly sheep 5 General	More than 50% in livestock rearing and fattening (with specialisation)
Pigs and poultry	6 Predominantly poultry 7 General	75% or more in pigs and poultry (with specialisation)
Cropping	8 Mostly cereals 9 General 10 Predominantly vegetable 11 Predominantly fruit 12 General horticulture	More than 50% in Cropping (with specialisation) More than 75% in horticulture (with specialisation) 50-75% in horticulture
Mixed	13 Mixed	No more than 50% in any main enterprise
<u>Part-time</u> (iii)	14 Part-time	No sub-division by enterprise

(i) Farm classification in England and Wales 1963 H.M.S.O. 1965.

(ii) With 275 or more standard man-days in total.

(iii) With less than 275 standard man-days in total.



Ministry of Agriculture, Fisheries and Food regions by counties

- Eastern:** Bedford, Cambridge and Isle of Ely, Essex, Greater London (part), Hereford, Huntingdon and Soke of Peterborough, Lincoln (Holland), Norfolk, Suffolk.
- South Eastern:** Berkshire, Buckingham, Greater London (part), Hampshire, Isle of Wight, Kent, Oxford, Surrey, Sussex (East and West).
- East Midlands:** Derby, Leicester, Lincoln (Kesteven), Lincoln (Lindsay), Northampton, Nottingham, Rutland.
- West Midlands:** Cheshire, Hereford, Shropshire, Stafford, Warwick, Worcester.
- South Western:** Cornwall, Devon, Dorset, Gloucester, Somerset, Wiltshire.
- Northern:** Cumberland, Durham, Northumberland, Westmorland, Yorkshire (North Riding).
- Yorkshire and Lancashire:** Lancs, Yorkshire (East Riding), Yorkshire (West Riding).
- Wales:** All Welsh counties.

Postal survey statistics by province

- List of tables for each province:-
- (a) East Midlands
  - (b) South East
  - (c) Western
  - (d) South West

Table 1	Survey sample details.
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Table 3	Distribution of survey flocks by type of farming
Table 4	Distribution of survey flocks by type of lamb production
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Table 6	Distribution of ewes by breed
Table 7	Intensity of grazing with ewes in May - June
Table 8	Disposal of 1968 lambs.

South East flocksTable 1(b) Survey sample details

	No. of ewes per holding					All holdings
	50 - 99 <sup>(i)</sup>	100 - 199	200 - 399	400 - 699	700 & over	
No. of holdings:						
1. At June 1968	294	563	394	177	81	1509
2. In sample as selected	21	60	50	56	69	256
No. of replies from holdings which:						
3. had given up sheep	2	4	1	1	-	8
4. had hill sheep	-	-	-	-	-	-
5. had lowland sheep and gave:						
a) complete returns	7	33	26	40	52	158
b) incomplete returns (ii)	3	2	1	1	1	8
6. Total no. of replies	12	39	28	42	53	174
7. Actual sampling %'s ( $6 \div 1 \times 100$ )	4.1	6.9	7.1	23.7	65.4	11.5
8. Response %'s ( $6 \div 2 \times 100$ )	57.1	65.0	56.0	75.0	76.8	68.0
9. No. of holdings (5a) by size of flock at Autumn 1968	5	34	26	46	47	158

(i) On holdings of less than 100 acres crops and grass.

(ii) Including holdings on which grazing was let to another sheep farmer, occupier changes etc.

South East flocksTable 2(b) Number of ewes at June 1968 and in survey flocks

No. of ewes per holding	No. of ewes			Average no. of ewes per flock	
	June 1968	In survey flocks	% in survey flocks	June 1968	In survey flocks
	'000				
50 - 199	99.8	5.1	5.2	116	128
200 - 399	110.3	7.9	7.2	280	303
400 & over	188.6	77.8	41.3	731	836
Totals	398.7	90.8	22.8	264	575

Table 3(b) Distribution of survey flocks by type of farming

Flock size-group Type of farming	No. of ewes per flock			Totals
	50 - 199	200 - 399	400 & over	
Livestock (i)	8	9	49	66
Cropping	9	10	27	46
Mixed	2	4	16	22
Dairying	5	3	1	9
Part-time	15	-	-	15
Totals	39	26	93	158

(i) Livestock rearing and fattening.

South East flocksTable 4(b) Distribution of survey flocks by type of lamb production

Flock size group Type of production	No. of ewes per flock			Totals
	50 - 199	200 - 399	400 & over	
Fat lambs	14	9	23	46
Store lambs	9	7	25	41
Breeding lambs	5	4	26	35
Mixed output	9	6	15	30
Fat hoggets	2	-	4	6
Totals	39	26	93	158

Table 5(b) Distribution of survey flocks by type of farming and by type of lamb production

Type of farming Type of production	Live- stock (i)	Cropp- ing	Mixed	Dairy- ing	Part- time	Totals
Fat lambs	17	9	7	7	6	46
Store lambs	17	20	1	1	2	41
Breeding lambs	21	6	6	-	2	35
Mixed output	10	8	7	-	5	30
Fat hoggets	1	3	1	1	-	6
Totals	66	46	22	9	15	158

(i) Livestock rearing and fattening.

## South East flocks

Table 6(b) Distribution of ewes by breed

Flock size-group  Breed of ewe	No. of ewes per flock					
	50 - 199		200 - 399		400 & over	
	Nos.	%	Nos.	%	Nos.	%
Kent	3040	59.2	3940	50.1	61727	79.2
Scotch Half-bred	-	-	976	12.4	4036	5.2
Kent crosses	141	2.7	-	-	3360	4.3
Clun Forest (& crosses)	574	11.2	1153	14.7	1797	2.4
Masham, Greyface	327	6.3	40	0.5	2048	2.6
Border Leicester crosses	507	9.9	498	6.3	1057	1.4
Kerry Hill	162	3.3	581	7.4	871	1.1
Welsh Half-bred	-	-	-	-	1130	1.5
Swaledale	-	-	-	-	940	1.2
Dorset Down	-	-	-	-	510	0.7
Suffolk (& crosses)	41	0.8	431	5.5	-	-
Cheviot	-	-	-	-	134	0.2
Hampshire Down	-	-	45	0.6	-	-
Colbred	-	-	-	-	90	0.1
Breeds not given	345	6.6	207	2.5	95	0.1
Totals	5137	100.0	7871	100.0	77795	100.0

South East flocksTable 7(b) Intensity of grazing with ewes in May - June

Numbers of flocks

Flock size-group	No. of ewes grazing per acre				Totals
	2 - 4	4 - 6	6 - 8	8 & over	
50 - 199 ewes	8	22	5	1	36
200 - 399 "	5	12	6	3	26
400 & over "	25	37	28	2	92
All flocks	38	71	39	6	154

Percentage of flocks

50 - 199 ewes	22	61	14	3	100
200 - 399 "	19	46	23	12	100
400 & over "	27	40	30	3	100
All flocks	25	46	25	4	100

South East flocksTable 8(b) Disposal of 1968 lambs

Type of lamb	No. of ewes per flock					
	50 - 199		200 - 399		400 & over	
	Nos.	%	Nos.	%	Nos.	%
Fat lambs	3424	50.8	4518	45.3	34546	37.2
Fat hoggets	489	7.3	853	8.5	9579	10.3
Store lambs	1955	29.1	3540	35.5	28471	30.6
Sold for breeding:						
Ewe lambs	105		202		3892	
Ram lambs	36		8		165	
	<u>141</u>	2.1	<u>210</u>	2.1	<u>4057</u>	4.4
Ewe lambs kept for breeding	493	7.3	745	7.5	14168	15.2
Other lambs <sup>(i)</sup>	229	3.4	101	1.1	2128	2.3
<b>Totals</b>	<b>6731</b>	<b>100.0</b>	<b>9967</b>	<b>100.0</b>	<b>92949</b>	<b>100.0</b>
<u>Fat lambs sold:</u>						
April - June	638	18.7	731	16.2	4886	14.2
July - September	1651	48.2	2448	54.2	17869	51.7
October - December	1135	33.1	1339	29.6	11791	34.1
<b>Totals</b>	<b>3424</b>	<b>100.0</b>	<b>4518</b>	<b>100.0</b>	<b>34546</b>	<b>100.0</b>

(i) e.g. late finishers, ram lambs kept.



Table 1(c) Survey sample details

	No. of ewes per holding					All holdings
	50 - 99 <sup>(i)</sup>	100 - 199	200 - 399	400 - 699	700 & over	
No. of holdings:						
1. At June 1968	840	1751	910	252	69	3822
2. In sample as selected	42	206	108	83	69	508
No. of replies from holdings which:						
3. had given up sheep	-	10	2	-	1	13
4. had hill sheep	2	6	14	11	17	50
5. had lowland sheep and gave:						
a) complete returns	20	98	50	45	28	241
b) incomplete returns (ii)	2	4	2	2	-	10
6. Total no. of replies	24	118	68	58	46	314
7. Actual sampling %'s ( $6 \div 1 \times 100$ )	2.9	6.7	7.5	23.0	66.7	8.2
8. Response %'s ( $6 \div 2 \times 100$ )	57.2	57.3	69.3	69.9	66.7	61.8
9. No. of holdings (5a) by size of flock at Autumn 1968	38	87	55	36	25	241

(i) On holdings of less than 100 acres crops and grass.

(ii) Including holdings on which grazing was let to another sheep farmer, occupier changes etc.

Western flocksTable 2(c) Number of ewes at June 1968 and in survey flocks

No. of ewes per holding	No. of ewes			Average no. of ewes per flock	
	(i) June 1968	(ii) In survey flocks	% in survey flocks	(i) June 1968	(ii) In survey flocks
	'000				
50 - 199	300.2	16.1	5.4	116	129
200 - 399	244.4	16.4	6.7	269	299
400 & over	196.4	43.7	22.2	612	716
Totals	741.0	76.2	10.3	194	316

(i) All ewes, hill and lowland.

(ii) Lowland ewes only.

Table 3(c) Distribution of survey flocks by type of farming

Numbers of flocks

Flock size-group Type of farming	No. of ewes per flock			Totals
	50 - 199	200 - 399	400 & over	
Livestock (i)	47	25	24	96
Mixed	31	13	16	60
Cropping	12	15	20	47
Dairying	19	1	1	21
Pigs and poultry	5	1	-	6
Part-time	11	-	-	11
Totals	125	55	61	241

(i) Livestock rearing and fattening.

Western flocksTable 4(c) Distribution of survey flocks by type of lamb production

Numbers of flocks

Flock size-group Type of production	No. of ewes per flock			Totals
	50 - 199	200 - 399	400 & over	
Fat lambs	55	23	28	106
Store lambs	24	9	12	45
Mixed output	16	11	10	37
Fat hoggets	11	7	6	24
Breeding lambs	7	4	5	16
Early fat lambs	12	1	-	13
Totals	125	55	61	241

Table 5(c) Distribution of survey flocks by type of farming  
and by type of lamb production

Numbers of flocks

Type of farming Type of production	(i) Live- stock	Mixed	Crop- ping	Dairy- ing	Pigs and Poultry	Part- time	Totals
Fat lambs	37	34	20	9	1	5	106
Store lambs	14	11	7	5	5	3	45
Mixed output	15	8	10	1	-	3	37
Fat hoggets	12	3	9	-	-	-	24
Breeding lambs	13	2	1	-	-	-	16
Early fat lambs	4	2	1	6	-	-	13
Totals	95	60	48	21	6	11	241

(i) Livestock rearing and fattening.

Western flocksTable 6(c) Distribution of ewes by breed

Flock size-group Breed of ewe	No. of ewes per flock					
	50 - 199		200 - 399		400 & over	
	Nos.	%	Nos.	%	Nos.	%
Clun Forest	5747	35.8	7293	44.3	10799	24.8
Scotch Half-bred	1010	6.3	1627	9.9	10950	25.1
Welsh Half-bred	1224	7.6	1939	11.8	5192	11.9
Suffolk crosses	1248	7.8	403	2.4	6783	15.5
Kerry Hill	2525	15.7	1064	6.4	1863	4.3
Border Leicester crosses	1225	7.6	1015	6.2	1591	3.6
Dorset Horn	520	3.2	1342	8.2	115	0.3
Masham	427	2.7	130	0.8	1434	3.3
Speckleface	-	-	-	-	1499	3.4
Kent	-	-	-	-	1069	2.4
Clun Forest crosses	214	1.3	418	2.5	359	0.8
Suffolk	892	5.5	100	0.6	-	-
Colbred crosses	-	-	-	-	905	2.1
Radnor	358	2.2	356	2.2	60	0.1
Hampshire Down	94	0.6	-	-	400	0.9
Cheviot	-	-	-	-	435	1.0
Kerry Hill crosses	40	0.2	390	2.4	-	-
Dorset Down	205	1.3	-	-	90	0.2
Devon Closewool	234	1.5	-	-	-	-
Border Leicester	116	0.7	-	-	-	-
Other breeds	-	-	378	2.3	130	0.3
Totals	16079	100.0	16455	100.0	43674	100.0

Western flocksTable 7(c) Intensity of grazing with ewes in May - June

Numbers of flocks

Flock size-group	No. of ewes grazing per acre				Totals
	2 - 4	4 - 6	6 - 8	8 & over	
50 - 199 ewes	35	40	12	10	97
200 - 399 "	13	19	10	4	46
400 & over "	13	20	11	4	48
All flocks	61	79	33	18	191

Percentages of flocks

50 - 199 ewes	36	41	13	10	100
200 - 399 "	28	41	22	9	100
400 & over "	27	42	23	8	100
All flocks	32	42	17	9	100

Western flocksTable 8(c) Disposal of 1968 lambs

Type of lamb	No. of ewes per flock					
	50 - 199		200 - 399		400 & over	
	Nos.	%	Nos.	%	Nos.	%
Fat lambs	13891	59.5	12265	53.2	31405	54.0
Fat hoggets	2960	12.7	4185	18.1	7868	13.5
Store lambs	4767	20.4	4598	19.9	12124	20.8
Sold for breeding:						
Ewe lambs	80	-	257	-	1315	-
Ram lambs	88	-	6	-	229	-
	<u>168</u>	0.7	<u>263</u>	1.1	<u>1544</u>	2.7
Ewe lambs kept for breeding (i)	1286	5.5	1626	7.0	4886	8.4
Other lambs	274	1.2	165	0.7	326	0.6
<b>Totals</b>	<b>23346</b>	<b>100.0</b>	<b>23102</b>	<b>100.0</b>	<b>58153</b>	<b>100.0</b>
<u>Fat lambs sold:</u>						
Before April	255	1.8	625	5.1	-	-
April - June	3881	27.9	2826	23.0	5913	18.8
July - September	6047	43.6	5728	46.7	15620	49.7
October - December	3708	26.7	3086	25.2	9872	31.5
<b>Totals</b>	<b>13891</b>	<b>100.0</b>	<b>12265</b>	<b>100.0</b>	<b>31405</b>	<b>100.0</b>

(i) e.g. late finishers, ram lambs kept.

South West flocksTable 1(d) Survey sample details

	No. of ewes per holding					All holdings
	50 - 99 <sup>(i)</sup>	100 - 199	200 - 399	400 - 699	700 & over	
No. of holdings:						
1. At June 1968	1311	2185	962	211	58	4727
2. In sample as selected	74	212	108	60	57	511
No. of replies from holdings which:						
3. had given up sheep	1	4	2	-	1	8
4. had hill sheep	5	13	18	17	22	75
5. had lowland sheep and gave:						
a) complete returns	43	122	51	23	11	250
b) incomplete returns (ii)	6	12	2	2	1	23
6. Total no. of replies	55	151	73	42	35	356
7. Actual sampling %'s ( $6 \div 1 \times 100$ )	4.2	6.9	7.6	19.9	60.3	7.5
8. Response %'s ( $6 \div 2 \times 100$ )	74.3	71.2	67.6	70.0	61.4	69.7
9. No. of holdings (5a) by size of flock at Autumn 1968	61	109	53	20	7	250

(i) On holdings of less than 100 acres crops and grass.

(ii) Including holdings on which grazing was let to another sheep farmer, occupier changes etc.

South West flocksTable 2(d) Number of ewes at June 1968 and in survey flocks

No. of ewes per holding	No. of ewes			Average no. of ewes per flock	
	(i) June 1968	(ii) In survey flocks	% in survey flocks	(i) June 1968	(ii) In survey flocks
50 - 199	389.6	19.4	5.0	112	114
200 - 399	253.9	14.8	5.8	164	278
400 & over	163.8	16.3	10.0	609	604
Totals	807.6	50.5	6.3	171	202

(i) All ewes, hill and lowland.

(ii) Lowland ewes only.

Table 3(d) Distribution of survey flocks by type of farming

Numbers of flocks

Flock size-group Type of farming	No. of ewes per flock			Totals
	50 - 199	200 - 399	400 & over	
Livestock <sup>(i)</sup>	68	21	19	108
Mixed	53	15	6	74
Dairying	27	10	1	38
Cropping	4	5	1	10
Pigs and poultry	6	1	-	7
Part-time	12	1	-	13
Totals	170	53	27	250

(i) Livestock rearing and fattening.



## South West flocks

Table 4(d) Distribution of survey flocks by type of lamb production

Numbers of flocks

Type of production \ Flock size-group	No. of ewes per flock			Totals
	50 - 199	200 - 399	400 & over	
Fat lambs	97	21	11	129
Early fat lambs	20	10	1	31
Breeding lambs	17	9	2	28
Mixed output	13	6	8	27
Fat hoggets	14	3	3	20
Store lambs	7	4	2	13
No information	2	-	-	2
Totals	170	53	27	250

Table 5(d) Distribution of survey flocks by type of farming  
and by type of lamb production

Numbers of flocks

Type of farming \ Type of production	(i) Live-stock	Mixed	Dairy-ing	Crop-ping	Pigs and Poultry	Part-time	Totals
Fat lambs	60	32	21	4	4	8	129
Early fat lambs	10	12	5	2	2	-	31
Breeding lambs	8	15	4	-	1	-	28
Mixed output	9	8	5	3	-	2	27
Fat hoggets	11	6	1	1	-	1	20
Store lambs	8	1	2	-	-	2	13
No information	2	-	-	-	-	-	2
Totals	108	74	38	10	7	13	250

(i) Livestock rearing and fattening.

South West flocksTable 6(d) Distribution of ewes by breed

Flock size-group Breed of ewe	No. of ewes per flock					
	50 - 199		200 - 399		400 & over	
	Nos.	%	Nos.	%	Nos.	%
Devon Closewool	2138	11.0	2185	14.8	2682	16.4
Devon Longwool	4433	22.8	1367	9.2	397	2.4
Welsh Half-bred	180	0.9	60	0.4	3583	22.0
Scotch Half-bred	-	-	1175	8.0	2452	15.0
Clun Forest (& crosses)	949	4.9	1242	8.4	1307	8.0
Suffolk (& crosses)	1124	5.8	1173	7.9	878	5.4
Dartmoor	1820	9.3	930	6.3	400	2.5
Exmoor Horn (& crosses)	931	4.8	170	1.2	1920	11.8
Devon Closewool crosses	1561	8.0	650	4.4	622	3.8
South Devon (& crosses)	1539	7.9	1025	6.9	260	1.6
Border Leicester crosses	565	2.9	1210	8.2	517	3.2
Devon Longwool crosses	1169	6.0	436	2.9	430	2.6
Dorset Horn	421	2.2	1143	7.7	475	2.9
Dorset Horn crosses	890	4.6	200	1.4	60	0.4
Dorset Down (& crosses)	465	2.4	440	3.0	-	-
Kerry Hill	215	1.1	80	0.5	-	-
Cheviot	132	0.7	-	-	-	-
Other breeds & cross-breeds	913	4.7	1293	8.8	336	2.0
Totals	19445	100.0	14779	100.0	16319	100.0

South West flocksTable 7(d) Intensity of grazing with ewes in May - June

Numbers of flocks

Flock size-group	No. of ewes grazing per acre				Totals
	2 - 4	4 - 6	6 - 8	8 & over	
50 - 199 ewes	36	52	26	10	124
200 - 399 "	13	18	7	5	43
400 & over "	7	12	4	1	24
All flocks	56	82	37	16	191

Percentages of flocks

50 - 199 ewes	29	42	21	8	100
200 - 399 "	30	42	17	11	100
400 & over "	29	50	17	4	100
All flocks	29	43	19	9	100

South West flocksTable 8(d) Disposal of 1968 lambs

Type of lamb	No. of ewes per flock					
	50 - 199		200 - 399		400 & over	
	Nos.	%	Nos.	%	Nos.	%
Fat lambs	16423	68.2	11161	63.7	14517	66.7
Fat hoggets	2906	12.1	2353	13.4	2706	12.4
Store lambs	1737	7.2	1707	9.8	2333	10.7
Sold for breeding:						
Ewe lambs	115	-	150	-	99	-
Ram lambs	104	-	207	-	1	-
	219	0.9	357	2.0	100	0.5
Ewe lambs kept for breeding (i)	2606	10.8	1850	10.5	1580	7.3
Other lambs	192	0.8	114	0.6	517	2.4
<b>Totals</b>	<b>24083</b>	<b>100.0</b>	<b>17542</b>	<b>100.0</b>	<b>21753</b>	<b>100.0</b>
<u>Fat lambs sold:</u>						
Before April	51	0.3	580	5.2	68	0.5
April - June	5550	33.8	3999	35.8	3789	26.1
July - September	6614	40.3	4193	37.6	5978	41.2
October - December	4208	25.6	2389	21.4	4682	32.2
<b>Totals</b>	<b>16423</b>	<b>100.0</b>	<b>11161</b>	<b>100.0</b>	<b>14517</b>	<b>100.0</b>

(i) e.g. late finishers, ram lambs kept.

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