

Hill Farming Research Organisation

Farm Reports and summary of flock
records

1984

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I FARM REPORTS 1984

GLENSAUGH FARM

1. WEATHER

After a very mild and sunny start to the winter, the weather turned colder in late December with wind and rain and snow showers. Snow fell heavily on 14th January and daily for several days thereafter to accumulate to level falls of over two feet. Areas had to be cleared with snow ploughs for stock-feeding. Intermittent snow storms continued into February after which March was mild and sunny and warm.

The spring weather was the best for a long time, with few showers and high temperatures. The dry sunny weather continued right through until the end of August by which time severe drought conditions prevailed. This is the third year in succession in which severe drought has affected Glensaugh.

September was mild with some rain and October, apart from a few very wet days was mild and sunny. November was the wettest ever recorded in the northeast - 10 to 12 inches of rain fell in the first 20 days of the month. Winds were frequently gale force but temperatures were exceptionally high for the time of year. The absence of frost and the mild and wet conditions favoured grass growth which continued well into December. The mild, misty weather continued until the middle of December.

2. SHEEP

(a) Tupping 1983. The weather was excellent, grass was plentiful and the ewes tupped well on most hefts. Ewes were in better condition than in the previous year. There were few returns to first service in the Cheviots and the cross-breds, but the Cairn B.F. ewes were slower to tup.

(b) Winter Feeding. The Cairn and Birnie hefts were again fed concentrates during tupping. Hay consumption on all hefts was up on last year due to the prolonged snow cover. Both hay and concentrates were more expensive than last year, and this coupled with the increase in consumption resulted in a very much higher feed cost per ewe. The details are shown in Table 1.

(c) Lambing. Some 1188 lambs were born alive to the 1140 ewes put to the tup. The weather was excellent throughout and few lambs died after birth. However there was an unusually large number of yeld ewes on the Cairn hirsel with a resultant shortfall in the number of lambs marked. The reproductive performance of the flocks is shown in Table 2.

TABLE 2

Weaning percentages and lamb liveweights 1984

Flock	Ewe Breed	Ewes to tup	Lambs weaned			Weaning weights	
			No.	%	%	Singles	Twins
Cairn	BF	262	167	63.7	62.3	25.8	23.9
Birnie	BF	203	192	94.6	98.5	29.8	24.5
Finella	BF	257	188	81.7	87.5	28.4	22.9
	NCC	147	150	102.0	72.8	29.9	28.2
	EFxBF	46	67	145.7	-	41.1	33.5
	EFxNCC	67	92	137.3	125.5	37.0	32.3
	GF	61	78	127.9	100.0	38.8	34.1
	NCCxShet	88	118	134.1	-	32.7	27.8

(d) Wool Crop. The wool clip was well down on last year partly as a result of a reduction in ewes and gimmers and partly because of the replacement of the Texel cross ewes with the NCC x Shetland sheep. A total of 2,618 kg were graded and sold for £2,591 or £0.99/kg.

(e) Weaning. Although lambs got off to a good start in the spring, the severe drought conditions greatly retarded grass production during July and August. The effect was particularly severe on the Finella reseeds. As a result, the Finella lambs were only slightly better, whereas the Cairn BF and the NCC and GF lambs were all significantly heavier than at weaning last year. The percentages and weaning weights of all hefts are shown in Table 2 above.

(f) Lamb Losses. These were well down on last year and are about normal for the farm, with the exception of the East Friesland cross ewes which were mated to Suffolk rams. The perinatal losses in this group were particularly high and it may be that these ewes will require more than normal supervision at lambing, possibly indoors since these lambs sell for very high prices. The lamb losses on each heft are detailed in Table 3.

TABLE 3
Lamb Mortality 1984

Flock	Ewe Breed	Born Alive	Birth to Marking	Deaths Marking to Weaning	Total	%
Cairn	BF	183	12	4	16	8.7
Birnie	BF	225	30	3	33	14.7
Finella	BF	212	21	3	24	11.3
	NCC	159	7	2	9	5.7
	EFxBF	84	16	1	17	20.2
	EFxNCC	111	17	2	19	17.1
	GF	89	9	2	11	12.4
	NCCxShet	125	4	3	7	5.6
Totals		1188	116	20	136	11.4

*100%
 100%
 100%
 100%*

(g) Lamb Crop Disposal and Prices. Fewer lambs were sold since more ewe lambs were retained for flock replacements. The wet mild autumn which followed the drought produced good gross growth and considerably more lambs were sold fat this year, mostly suffolk crosses. The details are shown in Table 4.

TABLE 4
Lamb Disposal 1984

Breed	Sold		Stock Ewe Lambs	Deaths from Weaning to Disposal	Total
	Fat	Store			
BF	6	284	168	14	472
NCC	2	64	49	1	116
EFxBF	-	31	10	1	42
EFxNCC	1	15	17	1	34
GF		23	4	1	28
Suff.X	255	103	-	2*	360
Totals	264	520	248	18+2	1052

*Retained for fattening.

As usual, store lambs were offered for sale at Edzell and Laurencekirk Marts. Store prices rose sharply in the late autumn. The prices obtained are summarised in Table 5.

TABLE 5
Store Lamb Prices

Date	Breed	Top	Average
1.9.84	NCC	£29.30	£28.15
	BF	23.95	23.90
	GF	27.70	26.74
	Suffolk X	26.30	26.30
20.9.84	NCC	22.80	18.60
	BF	20.60	18.03
	EF x BF	20.50	20.50
20.10.84	Suffolk X	37.70	36.85

*low price of
store lambs
of F Suffolk
also lower than
of farms*

All the lambs sold fat were finished off grass and were sold on the hook or through the fat ring. The details are given in Table 6.

TABLE 6
Prices of Lambs Sold Fat

Date	No.	Breed	Price/hd	Subsidy	Total Price
2. 8.84	6	Suffolk X	£26.25	£11.47	£37.72
20. 8.84	32	"	£25.80	£11.35	£37.15
27. 8.84	33	"	£22.00	£10.48	£32.48
3. 9.84	33	"	£21.37	£9.02	£30.39
10. 9.84	19	"	£20.63	£9.58	£30.21
8.10.84	32	"	£22.62	£7.41	£30.03
15.10.84	37	"	£25.01	£7.60	£32.61
5.11.84	9	"	£28.66	£3.24	£31.90
6.11.84	28	"	£34.18	£ -	£34.18
12.11.84	11	"	£28.00	£2.21	£30.21
26.11.84	18	"	£32.81	£4.28	£37.09

(h) Stock Ewe Lambs. A total of 248 ewe lambs were retained for flock replacements. In recent years the practice has been to send these lambs to Cleish to graze there until November. This year with the excellent flush of grass, the ewe lambs were held on the inbye at Glensaugh and are now the best for some years. Because of the very wet weather in November, the hogs were all housed in the new hogg house. Hogg weights are shown in Table 2 of the Summary of Flock Records section.

(i) Cast Ewe Prices. Pregnancy scanning of the ewestocks allows barren ewes of draft age to be sold in the early spring when prices are often elevated. The prices obtained are detailed in Table 7.

TABLE 7

<u>Cast ewe prices</u>				
Date	No.	Breed	Top Price	Average
<u>Spring Sales</u>				
March 1984	56	BF	£32.30	£26.40
March 1984	7	NCC	£31.50	£26.21
March 1984	2	GF	£37.00	£37.00
<u>Autumn Sales</u>				
Sept. 1984	87	BF	£25.25	£17.71
Sept. 1984	3	NCC	£25.20	£25.20
Sept. 1984	8	GF	£19.60	£19.25
Sept. 1984	13	EF x NCC	£22.60	£22.60
Nov. 1984	8	BF	£25.25	£23.87
Nov. 1984	1	NCC	£22.10	£22.10

Note - The best 30 of the BF ewes found to be barren after scanning were retained and sold for £27.50 in May to the Animal Production Department for use in the scanning courses held in the autumn at HQ.

(j) Additional Purchases. Another 25 North Country Cheviot x Shetland gimmers were purchased at the annual sale in Aberdeen held by the Shetland Sheep Breeders Society, at a cost of £74.00/head.

In order to keep numbers of ewes up to target, 25 North Country Cheviot gimmers were purchased at Aberdeen Mart at a cost of £63/head.

(k) Tupping 1984. The ewe stocks and most of the gimmers came to the tup in better condition than last year. Apart from the NCC x Shet sheep which were slow to come to the tup, the other hefts appeared to tup well, with few returns to date. The tups were placed with the ewes on the following dates:-

1st November 1984	-	NCC x Shetland) EF x BF) GF)	Suffolk tups
16th November 1984	-	Cairn BF	BF tups
19th November 1984	-	Birnie BF	BF tups
20th November 1984	-	Finella BF	BF and EF tups
		Finella NCC	NCC and EF tups
		Finella EF x NCC	Suffolk tups

3. CATTLE

(a) Cows. The 20 Blue-grey cows all calved as predicted but two calves were stillborn and Friesian bull calves were purchased locally and successfully fostered.

Two of the old Luing cows died just prior to calving - both were carrying sets of twins. One Luing cow died from a tetanus infection shortly after giving birth to a calf which also died. The nine bought-in Blue-grey heifers all calved down with no losses. There were no further calf losses through to weaning in October when 50 suckled calves were weaned from the 51 cows. The weaning weights of the calves are detailed in Table 8.

TABLE 8

Calf weaning weights (kg) (Numbers)

Heft	Luing		Blue-grey	
	Heifers	Bullocks	Heifers	Bullocks
Cairn	180 (6)	186.25 (8)	-	-
Allardyce	230 (5)	200 (2)	230 (18)	244 (9)

Note - All calves are by a Charolais Bull.

(b) Summer Grazing. Fifteen of the Luing cows and their calves were summered on the Cairn hill for the first time as part of a new development on the Cairn Systems Experiment.

The remaining 36 cows and their calves were summered away at Mains of Allardyce as in the previous year.

(c) Weaned suckled calves. The 50 home-bred calves were put into the cattle courts in November and will be wintered on the silage and barley refusals from the experimental cattle and on ration of urea treated barley straw.

(d) Experimental calves. Fifty-four suckled calves were purchased from Hartwood for the winter nutrition/grass finishing experiment and all housed individually in the cubicle shed. They are being fed different levels of silage and barley to achieve three levels of growth over the winter period.

(e) Cattle sales. During the year a total of 15 cattle were sold fat direct to AMMCO at Banchory. Another 53 cattle were sold store through Kincardineshire Auction Mart, at Laurencekirk. The numbers, weights and prices obtained are detailed in Table 9.

TABLE 9

<u>Cattle sale prices</u>						
<u>Date of Sale</u>	<u>Breed</u>	<u>No./Sex</u>	<u>Weight (kg)</u>	<u>Price per kg</u>	<u>Price per head</u>	
<u>Sold Store</u>			<u>L.W.</u>			
19.5.84	Here. cross	10B	319	106.3	£339.50	
"	Char. cross	1B	318	104.7	£333.00	
"	Here. cross	10H	304	98.8	£300.80	
"	Char. cross	2H	258	97.3	£251.00	
29.9.84	Char. cross	13B	436	99.1	£432.40	
"	Luing cross	2B	394	96.7	£381.00	
"	Here. cross	1B	278	94.9	£264.00	
"	Char. cross	11H	391	101.4	£396.60	
"	Luing cross	3H	326	87.8	£286.30	
<u>Sold fat</u>			<u>D.C.W.</u>	<u>Price/kg</u>	<u>Subsidy</u>	<u>Total Price</u>
22.2.84	Char. cross	6	314	173.2	£68.87	£544.80
15.5.84	Char. cross	2	248	180.5	£40.34	£447.64
1.10.84	Char. cross	2	244	178.4	£39.64	£435.39
20.11.84	Char. cross	5	253	178.6	£34.17	£486.50

(f) Bulls. Two Charolais bulls were placed with the cows, one on the Cairn and the other on Allardyce on 2nd of April and removed on 23rd of July.

4. LAND USE

Some 350 tonnes of silage were made with the precision chop forage harvester and 154 round bales were secured for feeding to the suckler herd. To make up for the deficit in silage production barley straw is being fed to the cows after treatment with a urea based additive. The straw will be fed until the beginning of February.

Some 28 acres of hill land was reseeded on East Finella.

5. BUILDINGS

(a) The old hogg wintering shed collapsed during the winter with the weight of snow on the roof. An extension to the new hogg accommodation was made to replace the lost accommodation. All the replacement ewe hoggs can now be in-wintered.

(b) Electric lights and power points were fitted in the feed storage shed.

(c) The outside walls, windows and doors of the hostel building were all repainted during the summer.

(d) The Bows cottage was partly redecorated, and the new porch was tiled and painted.

(e) The Old Lodge and House No. 2 were both sold in the spring.

6. EQUIPMENT

The old drum mower has been replaced with an almost new FAHR KM 24 drum mower.

7. STAFF

Two Agricultural Training Board courses were held on the farm, one on fire prevention and one on first aid on the farm.

SOURHOPE FARM1. WEATHER

The autumn and early winter periods were mainly dry, mild and warm with only short periods of frost. January was a cooler month, with snow first falling on the hills early in the month, and with a severe blizzard on 23rd with drifting snow. February and March were mixed months, cold frosty periods alternating with dull showery ones and the occasional light falls of snow. April and May were mainly dry with excellent weather throughout the lambing period. June was a mixed month with average rainfall. July and August were very warm and dry, and this fine weather continued until mid-September when it became cooler and duller. October was also dull with few light frosts recorded.

RAINFALL (mm)

1983	November	17.6	
	December	142.3	
1984	January	160.0	
	February	56.3	
	March	136.8	
	April	22.6	
	May	40.1	
	June	57.5	
	July	48.2	
	August	55.1	
	September	106.3	
	October	71.6	
		<hr/>	
		914.4	<u>36.0 in</u>
		<hr/>	
	Ten year mean	<u>966.8</u>	<u>38.1 in</u>

2. SHEEP

(a) Tupping 1983. After another very dry summer the hill grazings were bare and it was feared that the ewes would be slow to recover body condition after weaning. However, the excellent weather during the autumn and early winter must have greatly benefited the stock, the majority of the ewes going to the tup in very good body condition indeed.

(b) Winter feeding. Storm feeding of hay almost immediately coincided with feed blocks being out to the ewes mid-January, sugar beet pulp cubes being introduced a week later. A change to protein cobs was made in the second half of March. Concentrate feeding continued through lambing, ewes nursing twins being fed high protein concentrate pencils till the end of May. Hoggs were introduced to feed at the beginning of December and fed until returned to their hefts at the beginning of April.

A total of 73.0 kg dry matter (hay, sugar beet nuts, concentrates and feed blocks combined) was fed on average to all outwintered ewes at a cost of £9.75 per head. This compares with 68.3 kg dry matter at a cost of £8.08 for the winter of 1982/83.

With the average feed cost for 1637 outwintered ewes and gimmers at £9.75, the range for individual hefts was from £8.04 to £11.17.

The average feed cost for all outwintered hogs was £6.11 compared with £4.91 the previous year.

All stock from Rigg and Gairs was again inwintered, Rigg ewes being housed on 19th January and Gairs ewes on 23rd January. The hogs from these hefts were housed on 18th January.

The draft age ewes (1978) from Rigg and Gairs, together with 100 overage drafts from all Blackface hefts, had been housed in early autumn for work investigating the effects of passive immunisation against testosterone on the ovulation rate and litter size of ewes in high and low body condition at mating. The overage drafts were slaughtered (after scanning) in January to allow examination of their reproductive tracts.

All Rigg and Gairs ewes were scanned in January to determine foetal numbers. The level of feeding of a supplementary protein concentrate was increased as lambing approached, with a high protein concentrate (18%, M.E. 12-12.5) being fed from the 21st March to twin bearing ewes at the same daily rate as the medium protein concentrate (14%, M.E. 11.5-12.0) being fed to the single bearing ewes. Over the 35 days to the average lambing date, the extra cost of feeding the higher protein concentrate compared with the medium protein concentrate was 38 pence per ewe.

Lamb birthweight data for 1984 is shown as follows, together with comparable data for 1983, in which year no differentiation in pre-lamb feeding between single and twin bearing ewes had been practised.

	<u>Rigg</u>		<u>Gairs</u>	
	Twins (kg)	Singles (kg)	Twins (kg)	Singles (kg)
1983	3.5	4.3	3.6	4.5
1984	3.5	4.3	3.5	4.3

The dry matter fed to 554 inwintered ewes was on average 129.2 kg per head at a cost of £13.79 per head compared with 140.5 kg dry matter and £12.50 the previous year.

For the inwintered hogs feed costs were £8.00 compared with £7.47 in 1982/83.

Feed data for both inwintered and outwintered sheep are shown in the following tables, the feed items being costed as follows, with 1982/83 prices in parenthesis.

	<u>Per tonne</u> £	<u>Per tonne</u> £
Hay	67.50	(54.50)
Green keil*	163.00	(145.00)
Ewebol cobs**	165.40	(154.57)
Ewebol pencils	156.92	(150.08)
Super ewebol pencils***	190.22	(125.91)
Sugar beet pulp cubes	146.00	(125.91)
Ewe and lamb food	199.50	(186.00)
Lamb supplement pencils	160.29	(155.63)
Barley	149.57	(139.97)
Colborn feed blocks	206.57	(196.00)
Rumevite H.E. blocks	184.79	(188.89)
Special tup feed	182.50	(166.00)

* Mixture of dried molasses, sugar beet pulp and dried grass with added minerals, in cube form.

** Concentrates fed to outwintered ewes in cob form, to inwintered ewes in pencil form.

*** Super ewebol pencils fed to twin-nursing ewes, post lambing.

TABLE 1

Hogg feed data

	Hay kg	Green keil kg	Ewe cobs or pencils kg	Ewe and lamb food kg	Av. cost per ewe
Outwintered	17.8	28.5	1.1	0.4	£6.11 (£4.91)*
Inwintered	50.6	27.7	-	0.3	£8.00 (£7.47)*

* 1982/83 costs

Total weight dry matter fed : Outwintered 47.8 kg
Inwintered 78.6 kg

TABLE 2

		<u>Ewe feed data</u>				Av. cost per ewe
		Hay kg	Feed blocks kg	Beet pulp kg	Conc. kg	
Outwintered ewes and gimmers	Storm feed to 29/2 incl	15.0	2.2	15.3	-	£3.68 (£2.82)*
	Pre-lambing feed 1/3 to 16/4 incl	5.4	1.9	5.9	15.5	£4.12 (£3.72)*
	Post-lambing feed from 17/4 incl that fed to twins	1.4	0.4	0.1	9.9	£1.95 (£1.54)*
	Total	21.8	4.5	21.3	25.4	£9.75 (£8.08)*
Inwintered ewes and gimmers	Pre-lambing feed to 16/4 incl	66.7	-	23.3	16.7	£10.64 (£9.93)*
	Post-lambing feed from 17/4 incl that fed to twins	7.7	-	2.7	12.2	£3.15 (£2.57)*
	Total	74.4	-	25.9	28.9	£13.79 (£12.50)*

*1982/83 costs

Total weight dry matter fed : Outwintered 73.0 kg

Inwintered 129.2 kg

Total expenditure on feed for all outwintered sheep, i.e. ewes, gimmers, ewe hoggs and tups, expressed per outwintered ewe to the tup was £12.22. When outwintered wethers are included, this figure becomes £13.00 per ewe mated.

(c) Lambing. The normal pattern of bodyweight loss occurred between pre-tupping and the onset of winter feeding. Ewes responded well to pre-lambing feed and entered the lambing fields in very good condition. Very few problems were encountered during the lambing period, a period in which the weather was warm and sunny throughout. Just how successful the lambing was can be seen in the very high figure of 701 pairs of twins marked.

The inwintered ewes from the Rigg and Gairs hefts were again lambed in the inwintering sheds.

(d) Wool crop. Ewe and hogg fleece weights were similar to those of 1983 with the total weight of graded wool from the station being 5,514 kg at an average price of 97p/kg. This compares with 5,407 kg and 93p/kg in 1983. Total wool receipts showed a rise of £329 or 6.6% from the previous year.

(e) Weaning

(i) Performance. Marking the weaning weights were on average slightly higher than those of 1983 with 143 more lambs weaned. Grass keep was again tight throughout the spring and summer periods due to the low rainfall. The pressures were particularly noticeable on the in-bye land and by reseeds that had to carry a record number of ewes and their lambs. Weaning percentages for South Country Cheviot, North Country Cheviot (including NCC x SCC) and Blackface ewes were 117.0, 120.9 and 123.5 respectively, to give an overall weaning percentage of 121.9, which is the highest ever recorded for Sourhope.

A detailed breakdown, by heft, of weaning percentages and weaning weights is given in the following table.

TABLE 3

Weaning percentages and lamb liveweights

	Ewes to tup	Lambs weaned		Weaning weights		
		Total Number	Percentage 1983	Percentage 1984	Singles kg	Twins kg
SCC Fasset	200	234	101.0	117.0	28.3	25.5
NCC x SCC *NEHL/Auchope	662	777	110.5	117.3	27.3	26.8
NCC Park Law	151	206	121.9	136.4	30.2	26.4
Total NCC (+ NCC x SCC)	813	983	112.6	120.9	27.8	26.7
BF Alderhope	283	375	116.0	132.5	30.9	29.7
BF Banks	341	395	104.1	115.8	-	-
BF Rigg	268	311	125.9	116.0	28.8	27.9
BF Gairs	286	374	126.9	130.7	31.6	29.9
Total BF	1178	1455	117.4	123.5	30.4	29.4
Station total	2191	2672	114.1	121.9	-	-

* NEHL = Near End Hairney Law

(ii) Disposal of lambs. 1,483 lambs were sold store (502 Blackface, 770 NCC x SCC, 91 BF x Cheviot and 120 South Country Cheviot).

Average prices realised for these lambs were:

Blackface £30.56 per head at an average of £0.923 per kg liveweight (26.88 and £0.870 per kg in 1983)

Cheviot - NCC x SCC	£30.41 per head at an average of £1.061 per kg liveweight (£28.44 and £1.020 per kg in 1983).
BF x Cheviot	£30.63 per head at an average of £1.036 per kg liveweight (£27.80 and £0.958 per kg in 1983).
South Country Cheviot	£28.46 per head at an average of £1.019 per kg liveweight (£28.46 and £1.038 per kg in 1983).

One hundred and forty Blackface lambs were sold to HFRO (Animal Nutrition Department) at a price of £23.92 per head. Two lambs were sold as casualties and 7 unthrifty (shott) lambs were sold locally for £5.50 each.

The overall average for the above 1,632 lambs sold was £29.63 per head which compares with an average of £27.19 per head for comparable sales in 1983.

Twenty-two Blackface lambs were sold fat off grass and averaged £31.16 per head.

Two hundred and fourteen Blackface lambs were retained for fattening on a kale and swede crop, and a further 220, together with 27 tup and chaser lambs retained for finishing indoors. A total of 422 of these lambs have so far been finished at an average price of £33.85 per head.

A summary of the disposal of the 1984 lamb crop is as follows:

Ewe lambs retained as stock replacement	537*
Tup lambs for breeding	14
Lambs sold fat	444
Lambs sold to HFRO (Animal Nutrition Dept)	140
Lambs sold store	1492
Lambs as yet unsold	36
	<hr/>
	2663
	<hr/>

*Excludes purchased stock ewe lambs

It was necessary to purchase a further 20 South Country Cheviot ewe lambs this year from Skelfhill. This was because not only had one age group of Fasset ewes to be tupped in November 1983 by a Blackface tup as the result of a scrapie problem, but a second age group was crossed with a Hill North Country Cheviot in order to produce Cheviot tup lambs for Project I.

Reference has already been made to continuing work on the indoor finishing of Blackface lambs this autumn. In the 1983 trial, of the 199 lambs housed, there were two deaths and three lambs did not grade. On average the finishing period indoors extended to 32 days with lambs reaching an average dressed carcass weight of 15.5 kg. Valuing these lambs at housing at 70p/kg liveweight, then with all feed and veterinary costs deducted, a surplus of £2.83 per lamb was obtained.

(f) Draft and cast ewes. In the spring of 1984 twenty draft age eild ewes were sold to HFRO (Animal Production Department) for £30.00 per head. Details of the autumn sales of draft and cast ewes are as follows:

	£/head
41 Cheviot draft ewes 6½ years old (F.W.)	32.50
45 Cheviot draft ewes 6½ years old (warranted below)	21.80
22 Cheviot draft or cast feeding ewes	24.80
37 Blackface draft ewes 6½ years old (F.W.)	27.50
66 Blackface draft ewes 6½ years old (warranted below)	22.00
38 Blackface draft or cast feeding ewes	22.00
93 draft or cast Blackface and Cheviot ewes sold fat	22.56
8 shott ewes sold locally	6.00

There are 37 ewes remaining to be fattened.

(g) Death rates, veterinary treatment. The overall death rate of the sheep stock in 1983/84 has been 3.2%, with the death rate of ewes, gimmers and hoggs being 3.3%, 2.3% and 3.8% respectively.

The overall death rate in 1983 was 2.9%.

The entire sheep stock was worm drenched in the autumn, inwintered stock being re-dosed at housing. Outwintered stock were again dosed just before lambing. Twin lambs were dosed first at marking and then at 3-4 weekly intervals throughout the summer until weaning. Single lambs were dosed at marking, mid-July and at weaning.

The outwintered stock were not dipped against ticks in late March/early April because of the very wet conditions during that period. The entire sheep stock were dipped with a scab approved dip in late July/early August and again in October. All Blackface lambs were treated regularly throughout the summer to prevent headfly attack.

During October all ewe hoggs received their first, and 3 year old ewes, their second cobalt bullet. All sheep stock (except some Rigg and Gairs ewes on a HFRO veterinary trial) received a booster vaccination of 4 ml Heptavac-P before lambing. In the autumn all retained stock ewe lambs received an initial 4 ml vaccination of Heptavac-P (combined 7 in 1 clostridial plus pasteurilla vaccine) at weaning and a 4 ml booster six weeks later. All sale lambs received 2 ml of Ovivac-P vaccine (pulpy kidney, braxy, blackleg, tetanus and pasteurillosis) at weaning and a 2 ml booster six weeks later. This practice of giving lambs clostridial and pasteurillosis cover has proved very popular with buyers at store markets and is, we believe, reflected in the prices being paid.

Apart from giving all Alderhope twin lambs a 2 gm capsule of copper oxide needles at marking, no further work on copper with lambs has been carried out. This autumn, a trial in which one third of the Alderhope ewes have received copper oxide needles, one third a Cosecure bullet (Co, Cu and Se) and the remainder untreated, has been initiated.

This autumn all Rigg and Gairs ewes (except gimmer age) have been allocated to an experiment investigating the reproductive response of Blackface ewes in different body condition to treatment with different levels of anti-testosterone serum. Body condition was initially manipulated at pasture, with the ewes being housed at the end of October to allow more precise control of feed intake. Following the injection of the appropriate dose of serum in mid-November, the ewes have been subsequently mated within the house from November 22nd.

Serious eye trouble was again encountered in the ewe stock last autumn and early winter. Most of the trouble was with Cheviots but some outwintered Blackface ewes were affected. Again the symptoms were an initial "watering" of the eyes followed by cloudiness, and further swab tests again implicated *Mycoplasma conjunctivae* as being the principal causal organism of the condition. Repeated examination and treatment with antibiotics were necessary to contain the infection.

(h) Tupping 1984. October was a mixed month with average rainfall but November was very wet with nearly 10 inches of rain recorded. The breeding stock have, however, come to the tup in good condition with weights and condition scores similar to those of autumn 1983.

3. CATTLE

The suckler herd comprised 40 cows, 6 in-calf heifers and 7 bulling heifers in December 1983. The herd has been managed in the usual manner, being used extensively as a means of grazing control on the Development Projects and other areas.

(a) Winter feeding. High magnesium cow cobs were introduced in December and fed at 1.0 kg per day until the end of May. The herd was fed straw initially (supplemented with Granstock) and then hay until the end of January when a change to silage feeding was made.

Total feed costs (53)

Hay	28.30 tonnes at £ 67.50/tonne	= 1909.91
Cow Cobs	10.89 tonnes at £171.54/tonne	= 1867.73
Straw	10.45 tonnes at £ 29.00/tonne	= 302.96
Granstock	370 litres at £ 0.40/litre	= 148.00
		<hr/>
		4228.60
		<hr/>

Cost per cow excluding silage = £79.78

(b) Calving performance and calf growth. A Charolais bull was hired part way through the mating period because both Hereford bulls had become lame. Only one Charolais calf required assistance at birth. Scours were a problem at the start of the calving period, particularly in the Charolais calves which responded very slowly to treatment. One Hereford and one Charolais calf died, both of which had below average birth weights.

Two cows held off the bull were sold in January. This left 38 cows and 6 heifers of which 41 produced calves, there being 2 barren cows and 1 barren heifer.

Over the last five weeks prior to weaning and sale all calves were offered creep feed.

Some calf performance data for 1984 are given in Table 4.

TABLE 4

Breed	Numbers	Av. birth weight kg	Av. weaning weight kg	Av. LWG birth - weaning kg	Av. daily LWG kg
<u>Hereford</u>					
Bullock	10	39.3	276.8	237.5	0.96
Heifer	11	37.4	259.1	221.3*	0.85
All calves	21	38.3	268.0	229.4	0.90
<u>Charolais</u>					
Bullocks	8	45.8	292.0	246.2	1.07
Heifer	12	40.4	278.2	237.2*	0.98
All calves	20	42.6	284.0	241.0	1.02

*In calculating LWG to weaning the birth weight of the dead calf has been omitted.

(c) Calf disposal. Seventeen Hereford calves were sold at the October sales. They averaged £304.18, an increase from last year of £51.10. Sixteen Charolais calves were also sold averaging £326.56, an increase of £22.38 over the Herefords.

Because the ratio of bullock to heifer calves from which the above averages have been derived is different, then these sale averages are not strictly comparable. Were an equal number of bullock and heifer calves of each cross to have been sold, then on the day the difference between the sale averages would have been £46.92.

Yet again the Charolais calves sold were on average 16 days younger at the point of sale than their Hereford counterparts. Correcting for this age difference would have resulted in a further £18.58 accruing to the Charolais calves.

TABLE 5

	Number sold		Weights (kg)		Price per head (£)		Price per kg (£)	
	Charolais 1984	Hereford 1983	Charolais 1984	Hereford 1983	Charolais 1984	Hereford 1983	Charolais 1984	Hereford 1983
Bullocks	5	9	307	289	393.20	344.33	1.28	1.16
Heifers	11	8	277	272	296.54	270.25	1.07	0.99
All calves	16	17	287	281	326.56	304.18	1.14	1.08

* Weights given are those at sale ring entrance
Six calves are being overwintered

(d) Replacements, etc. During the spring one cast cow (mastitis) and one eild cow were sold. In the autumn one cow died and 4 cast cows were sold. At the end of November 7 Aberdeen Angus x Friesian bulling heifers were purchased.

Thus the herd at the close of the year comprises 37 cows, 7 in-calf heifers and 7 bulling heifers.

4. LAND USE

(a) Conservation. A total of 13.3 ha of grass has been ensiled, and 5.0 ha cut for hay.

(b) Forage crop. As a further step in the renovation of the Park Law area following completion of a major draining programme, the 3.2 ha comprising the Lower Cocklaw field was ploughed, and after the removal of large stones and boulders, sown out with a kale and swede mixture. Notwithstanding the very dry conditions experienced almost immediately after sow-out, and the attention of the turnip flea beetle, a very good forage crop resulted.

(c) Fertiliser, lime, etc. Over the above routine fertiliser usage, and on the basis of soil analysis data, the following applications of lime were made. A total of 10.1 ha of inbye ground received, on average, 4.36 tonnes/ha of Ground Magnesium Limestone, 14.2 ha of hill reseeded ground received 4.65 tonnes/ha and 8.1 ha of ground in hill enclosures was given 5.68 tonnes/ha.

(d) Drainage. Existing field and hill drains have required their usual attention and some new drainage has been completed within the Schil Green.

(e) Fencing. Fencing repairs have continued throughout the year, with the fence between the Mid- and Far-Broom being completely renewed.

As a consequence of the very serious flooding (it is reported as the worst since 1948) of the valley bottoms which occurred over the weekend of November 3rd and 4th, when 127 mm (5 in) of rain fell in 36 hours, considerable damage to many fences occurred. Ten water-gate crossings in all were affected, and in the case of six of these the damage to the water-gate itself and to the fencing in the immediate vicinity was very considerable indeed. The major repairs to these have now been completed, and repairs to other fences which suffered damage is proceeding.

A further consequence of the severe flooding has been the accumulation of large quantities of rock and gravel at varying points along the course of the main burn which runs through the station, leading to an unwelcome re-alignment of the burn in a number of instances. Where the accumulation of gravel has not been unduly excessive, this had already been dealt with, but a stretch of some 90 metres will require special equipment.

5. HILL ROADS

(a) Banks road. In the spring of 1984 a further 600 tonnes of stone was used to surface further stretches of this road, the stone being compacted with a vibrating roller. With all restrictions on vehicle access lifted, use of the road through the summer proved completely satisfactory.

However, the exceptional deluge which occurred over the weekend of November 3rd and 4th, and already referred to, has posed fresh problems. The road surface itself suffered minimal damage, but the open drain down the length of the road on the high side of the road took a fearful pounding, as one by one a number of cross drains became blocked by rocks and gravel carried along in the cascading water. The result has been that over varying stretches of the open drain totalling in all approximately 450 metres, scouring out of the drain has occurred to varying depth - in one place to a depth of between 3.7 and 4.2 metres (12-14 feet).

A quotation for repairs, including infilling the scoured parts of the open drain with rock, and the installation of 14 additional 24" cross drains has been accepted, and the work will be put in hand at the earliest possible moment in the New Year, depending on suitable weather conditions.

6. BUILDINGS

No new building work has been carried out over the period covered by this report. In addition to routine building repair and maintenance work, the doors of the second of the two ewe-inwintering sheds were altered to allow the slatted floor of the shed to be raised by an additional 9".

Paint work carried out in 1984 is as follows : All paintwork associated with the main sheep yard complex has been renewed, as has all the exterior paintwork of both the large 'Potato' shed, and 'Home Office' building. The interior and exterior of the 'Portaloo' has been repainted, and the exterior of the Yorkshire boarding and woodwork associated with the silage shed given a coat of 50/50 creosote and black bitumastic paint.

Over and above routine electrical maintenance work being carried out by electricians, as and when necessary, the existing 5 and 15 amp electrical circuits within the main sheep yard complex have been replaced by a 13 amp circuit.

In the office building a room especially suitable for handling all but the largest of visiting parties has been created by the removal of an interval dividing wall. The room has been refloored with new tiles and this excellent visitors' facility has been used extensively throughout the year to the benefit of all.

Plans are being drawn up for the provision of housing accommodation for two bulls, with the intention that the necessary building work shall be completed with as little delay as possible.

7. EQUIPMENT

The following purchases of machinery have been made : A Vicon 802Vari-spreader and a PZ Hay Bob - 2 row tedder, both as replacements. Other purchases comprise a Scotkleen Hot Power washer, a Parmiter Swing round Post Driver and a Kidd 6/83 rear-mounted sawbench.

In concluding this report it is perhaps relevant to note that the stock sold from this research station in 1984 has never been of a higher quality - this has been clearly reflected at every lamb sale, and at the calf sales, in the prices obtained. Whilst it can never be a primary object of a field research station to produce only the best of stock there is little doubt that in so doing, the findings of the research work of HFRO will find more ready acceptance by those in the hill and upland farming industry. It is a real pleasure to acknowledge not only the great contribution to the production of such stock by the sustained efforts of the field staff at Sourhope throughout the year, but to the efforts of the same staff in ensuring the success of all the ongoing experimental work.

HOUSE O' MUIR FARM1. WEATHER

The winter of 1983-84 began with an extremely dry, mild November, allowing cattle to be held outside until the first week of December. Though December was wet and blustery, there were no frost or snow problems until early January, where after some moderately heavy snow showers, storm feeding was necessary for approximately a two week period.

The latter part of winter was mainly cold and wet with occasional sleet and strong winds, but this gave way to almost idyllic conditions by mid lambing, where air temperatures reached the low seventies and very little rain was experienced.

For the second consecutive year, the summer was very dry and some burning on the hill and higher pastures occurred though grass supply was always reasonable. As springs dried up, finding water for cattle became a problem.

As summer gave way to broken Autumnal weather, we experienced gale-force winds in October followed by persistent, torrential rain in November (see Table).

RAINFALL

1983	December	85.0 mm	
1984	January	114.1	
	February	62.0	
	March	117.4	
	April	19.7	
	May	46.9	
	June	58.6	
	July	17.1	
	August	28.9	
	September	86.8	
	October	97.8	
	November	193.8	(November '83 15.3 mm)
		<u>928.1</u>	

2. SHEEP

(a) Tupping 1983. A total of 517 ewes were put to the ram in 1983. As in 1982, 50 of these are surplus to experimental requirements and were mated to a Suffolk ram.

The weather was extremely good for the first three weeks of mating. Thereafter sleety windy conditions prevailed until after the New Year.

(b) Winter Feeding. Ewes were in good condition and maintained reasonable condition throughout the winter though storm feeding was required for a 2-3 week period during January, due to heavy snow cover.

As with the two preceding winters the levels of feeding are varied within the three hefts but the average cost/ewe was as follows:-

Concentrate	600 g/day at £178/tonne	£6.31
Hay	800 g/day at £ 80/tonne	£3.71
	Total cost/head	£10.02

This shows an increase of approximately £1.50/head on 1982, mainly due to the higher costs of feed.

(c) Lambing. The weather at the start of lambing was wet and windy but this quickly gave way to dry and very warm conditions with temperatures often in the seventies. A total of 643 lambs were marked. This shows an increase, at marking, of approximately 8% over recent years, mainly due to more weak lambs surviving than would do so in normal conditions.

(d) Weaning Performance. Although a total of 517 ewes were put to the ram in November 1983, eighteen not shown in the above table, were sold, in lamb, to the Animal Production Department in March 1984 for research purposes. Table 1 summarises the results for 1983 and 1984.

TABLE 1

Group	Ewes to ram Nov. 1983	<u>Weaning Percentages</u>			
		Lambs weaned			
		1984		1983	
		No.	%	No.	%
Hill	449	556	125	525	122
Market Park	50	82	164	70	140
All Groups	499	638	128	595	124

(e) Lamb Disposal. Generally speaking, ewes and lambs did well throughout the summer, despite drought conditions, but the ewes were slower to recover condition after weaning than usual.

The 638 lambs weaned were disposed of as follows:-

Sold Store	110
Sold Fat	250
Replacements	107
Ewe lambs sold to research	83
Wedder lambs sold to research	8
Ram lambs kept	4
On hand Dec. '84	66
Deaths	10
	<u>638</u>

The 110 B/F wedder lambs sold store made a top price of £30.20 and averaged £29.15.

250 lambs were sold fat at Biggar and averaged £30.73.

(f) Ewes were disposed of as follows:

Regular drafts sold to Animal Production Dept.	50
In-lamb ewes sold to Animal Production Dept.	18
Other ewes sold to Animal Production Dept.	4
Cast ewes	69
	<hr/>
	141

The average price obtained for the cast ewes was £17.40.

(g) Ewe Hoggs. As has been regular practice the ewe hoggs were away wintered and returned to House o' Muir on the 1st of March when they received a month's training to eat concentrates before being returned onto the hill at the beginning of April.

The cost of hay and concentrate was £3.80/head.

(h) Wool. The small increase in wool prices compensated for a reduction in the weight of clip and income was only slightly down on previous years.

1983	£2,057
1984	£2,003

3. CATTLE

Of the 34 Autumn calvers on hand at November '83, 20 were housed in early December. Those having AA x calves at foot, were joined with the Charolais bull in January and transferred to Hartwood at turn-out with calves at foot.

Twenty-one Hereford/Friesian and 10 Blue/Grey in-calf heifers were purchased in March 1984 and calved indoors. These were mated with the Charolais bull during the summer and transferred to Hartwood in October 1984 and their calves retained for disposal.

Eighteen bulling heifers, wintered in the "Daisy Dell" were calved in the Market Park and housed at the beginning of November. They will be joined with the Charolais bull in January.

A further 15 Blue/Grey and 15 Hereford/Friesian bulling heifers were purchased in October 1984 and are currently being mated with the A.A. bull in the "Daisy Dell".

In addition 10 A.A./Friesian in-calf heifers were purchased in November 1984 and are currently calving inside. These are intended as replacements for Bronydd Mawr.

The wintering costs were as follows:

Bulling heifers - outwintered

May	£20
Silage	-
Concentrate	£18.80
Cost/head	£38.80

Autumn-calvers with calves at foot - inwintered

Silage	-
Concentrate	£27.50
Barley	£15.00
Cost/head	£42.50

Calf Disposal

3 spring-born calves on hand in November 1983 were overwintered and sold in Spring 1984 at Lanark.

1 Friesian Bullock	£390
1 A.A. x Bullock	£345
1 A.A. x Heifer	£316

The 31 spring-born calves in 1984 were disposed as follows:-

Sold	20
On hand Dec. 1984	11
	—
	31
	—

Prices

No.	Breed	Sex		Price/head
4	A.A. x	Bullocks	@	£250
4	A.A. x	Bullocks	@	£200
5	A.A. x	Heifers	@	£240
7	A.A. x	Heifers	@	£180

4. LAND USE

(a) Fodder Conservation. A total of 11.3 ha were closed for silage in 1984 and this yielded 350 tonnes approximately in one cut. The silage was of poorer quality than in 1983 as silage making was some 10-14 days later than hoped, due to contractor's technical problems. Of the 11.3 ha, 3.2 ha were an area on the hill reseeded in 1982 and closed off by electric fence. This area proved to yield the best grass on the farm. 2.8 ha of the High field were closed and some 18 tonnes of very good quality hay for sheep made.

In addition 3.2 ha of poor quality second-cut silage was sold to E.S.C.A. for experimental purposes.

(b) Reseeding etc. The 3.2 ha area of "the field across the road" where rape was sown in 1983 was chisel-ploughed and put back to grass in June, when there was a wettish period between two very dry spells. A very good sward has been established. During the same spell, the 8.1 ha area of the hill at Turnhouse, scheduled for reseeded in 1983 but abandoned because of very dry conditions, was direct reseeded and an excellent sward established.

The 1.8 ha of the Steading field was ploughed and sown in rape immediately after silage making and liming. Though germination was sporadic during the very dry weather, eventually a very good crop was established. It is proposed to put this area back to grass, after tackling a fairly serious Dock~~er~~ problem in 1985.

(c) Building Maintenance - Main cattle court. On the side of the main court, previously designated for sheep, 36 tombstones were erected and a sliding-door constructed at the dungstead end to allow access for mucking-out silage etc. The main court is now used solely for cattle.

(d) Met Unit/Original Farm Buildings. In the Metabolism unit, 3 doors were refurbished and new locks put on the bulkhead lights and water proof switches were fitted in the "Old Stables" and Bullpen.

(e) A^cquisitions. In the spring of 1984 a heavy grassland roller was purchased.

(f) Fencing etc. The Garage field was completely refenced by contract labour with a contribution from E.C.R.E. on the Woodland side. Approximately 500 ac of existing fencing was either repaired or replaced by farm staff.

(g) Cattle Grids. On the Glen road, between Flotterstone and Loganlea reservoirs, two cattle grids have been erected where wooden gates existed. One is at the end of Glencorse reservoir and the other at the Carnethy March. As the gates were permanently left open this is a much more satisfactory arrangement.

HARTWOOD FARM1. WEATHER

The weather pattern in 1984 was very similar to 1983. A very wet but relatively mild winter was followed by a reasonably early spring then colder weather returned delaying spring growth.

Late May, June, July, August and the first half of September were exceptionally dry with virtually no rain. This resulted in water shortages in some fields and a very slow growth on silage and hay aftermaths.

Mid September rain, when ground temperatures were high, brought a heavy flush of grass all over. October and November were very wet months with flooding and associated problems affecting autumn ploughing.

2. SHEEP

(a) Mating 1983. The weather was better than average, especially November. Rams went out to small groups on 19th August and 9th October, but the main mating commenced 24th October.

(b) Winter feeding. The Systems and Systems Demonstration flocks were accommodated in the new sheep shed, on slats, the main roughage diet being silage. Most other ewes were housed in the large plastic shed with hay as the roughage diet. All wethers and rams were outwintered or off-wintered, their main diet also being silage. The Blackface ewe hoggs were housed in the small plastic shed and fed hay and concentrates.

Prior to housing or off-wintering, all ewes, gimmers and hoggs were fed barley from the beginning of December in various amounts, from 300 g - 500 g/hd/day.

Details of the various sub-flocks are given below.

(i) Reproductive Performance Study GF (152)

On housing (22nd Dec)

Hay at 1.1 kg/day 22nd December - 14th January

Hay at 1.4 kg/day 15th January - 23rd January

This flock was scanned in January. Differential feeding groups were dependent on foetal number. 1.0 kg/day of hay was fed until lambing and concentrate quantities varied from 600 g to 1000 g.

Sixty ewes from this flock were transferred to HQ (8/2/84) and returned to Hartwood in groups, with their lambs, from 23/3/84 until 29/3/84.

(ii) Non-experimental GF (333)

133 ewes were off-wintered in Buttercup wood and fed silage at 5.0 kg/hd/day from 29th December 1983 - 8th February 1984. These sheep were housed on 9th February 1984.

A further 200 ewes were housed on 22nd December, and fed as follows.

Hay at 1.1 kg/day	22nd December - 14th January
Hay at 1.4 kg/day	15th January - 10th February
Hay at 1.1 kg/day	11th February - until lambing
Balanced barley at 250 g/day	11th February - 20th February
Balanced barley at 350 g/day	21st February - 26th February
Concentrate at 500 g rising to 1 kg/day at lambing.	

(iii) Ram Fertility Study GF (40)

These sheep were housed on 29th December 1983.

Since these ewes were scanned and due to lamb 16 days early, their differential feeding began at the beginning of February 1984 and their feeding pattern was similar to (i) above.

(iv) Blackface Ewe Hoggs (78)

Winter feed (concentrate) commenced at the end of October 1983 (300 g/hd/day) and on housing (23/12/83) they received 500 g of hay/hd/day and 450 g of a barley/oat mixture until turnout at the end of March 1984.

(v) Blackface Wethers (87)

Between mid-December and mid-January 300 g rising to 1.0 kg hay per head per day was fed. Thereafter off-wintering in woods. 5.0 kg silage and 100 g barley was fed until the beginning of April 1984.

(vi) Blackface Wether Hoggs (60)

Ad lib bagged silage + Balanced barley 100 g	21st Dec - 30th Dec.
Ad lib bagged silage + Balanced barley 200 g	31st Dec - 12th Jan.
Ad lib bagged silage + Balanced barley 300 g	13th Jan - 14th Feb.
600 g hay + Balanced barley 300 g	15th Feb - 5th Apr.

(vii) Systems Study GF (240), Demonstration Flock GF (61)

Prior to housing (19th December 1983) some groups were fed hay and concentrates. Roughage diet was hay, then silage, and hay for the late pregnancy period. Concentrates at various levels were fed throughout.

- (c) Lambing. The weather in late March was cold and wet and improved only slowly throughout April. Concentrates were fed to most groups during April, and for some groups hay was also necessary. The poor weather caused some losses of lambs especially during late March. Kebbing was also at a higher than usual rate.

Lambing Performance (GF)

<u>Sub flock</u>	<u>Mating Date</u>	<u>No. Mated</u>	<u>% Lambs Born*</u>
Ram Fertility	9.10.83	40	123
Endocrine Studies	19. 8.83	27	148
Reproduction	29.10.83	152	184
Non-experimental	24.10.83	333	138
Systems	25.10.83	240	178
Systems Demo	25.10.83	61	180

*alive and dead

(d) Wool Crop

	<u>Mean wool wt (kg)</u>
Greyface ewes and gimmers	2.79

(e) Weaning(i) Performance Weaning %

The following flocks were merged:

Ram fertility	40)	118%
Endocrine	27)	
Reproduction	152)	
Non-experimental	333)	
Systems	240)	143%
Systems Demo	61)	

(ii) Disposal of lamb crop to date

<u>Sold Store</u>	<u>Av. price/hd</u>
15.6.84 British Rail (claim for lambs killed on railway line)	£40.00

(ii) Disposal of lamb crop to date (cont'd)

<u>Sold Store</u>			<u>Av. price/hd</u>
7.8.84	Animal Nutrition Dept.	15 lambs	£30.00
11.8.84	Biggar Auction Market	132 lambs	£32.87
14.8.84	Lanark Auction Market	135 lambs	£34.40
24.8.84	Hamilton Auction Market	100 lambs	£33.86
A total of 386 lambs sold store averaged			£33.96

Sold Fat

7. 6.84	Biggar Beef	20 lambs	(off grass)	£50.56
11. 6.84	Biggar Beef	40 lambs	(off grass)	£39.60
2. 7.84	Biggar Beef	52 lambs	(off grass)	£35.30
15. 8.84	Biggar Beef	59 lambs	(off grass)	£38.86
29.11.84	Biggar Beef	33 lambs	(off rape)	£38.77
A total of 204 lambs sold fat averaged				£38.93

(Balance of lambs on hand are on forage crop)

(f) Draft and Cast EwesDisposal

Greyface ewes Average price/head £31.92

- (g) Death rate. At over 6%, the ewe death rate was considerably higher in adult Greyfaces this year. Jaegsiekte remains a problem in the Greyface flock. Very few wethers, either adults or hoggs, are now being lost at any time of year.

(h) Mating 1984

<u>Ewe breed</u>	<u>Sub-flock</u>	<u>No.</u>	<u>Ram</u>	<u>Mating</u>	<u>Synchronise</u>
Greyface	Nutrients Supply (Autumn)	48	Suffolk Down	27.10	Yes
"	Reprod. Studies	126	Suffolk Down	27.10	Yes
"	Systems	240	Dorset Down	25.10	No
"	Systems Demo	60	Dorset Down	25.10	No
"	Non-experimental	130	Dorset Down	30.10	No
"	Non-experimental	235	Suffolk Down	30.10	No
Blackface	Reprod. Potential	76	Blackface	12.11	No

3. CATTLE

(a) Winter Feeding. Autumn calvers were first brought into the Atcost shed on 19th October 1983, while spring calvers remained outside at Hillhouse, Liquo and Mill Lade until housing on 13th December 1983.

A long winter experiment in the Atcost shed meant that the last autumn calvers were not turned out till 2nd July 1984, by which time 50 tonnes of concentrate and 124 tonnes of hay had been consumed on experimental rations.

Supplementary feeding of cattle remaining outside began on 25th October 1983, the daily ration being 10 kg straw and 1 kg high magnesium cobs per cow. As grass became scarcer, silage was fed in addition to straw. Cows approaching calving as they were turned into the Indescon shed were fed 31 kg silage each per day. A group of 19 autumn calved cows with calves not on experiment were fed 31 kg silage and 1.5 kg barley per day. To ensure that silage would last till the end of winter, feeding rates were altered to 15 kg silage and 4½ kg barley daily for in-calf cows and 15 kg silage and 6½ kg barley daily for calved cows from the beginning of March 1984.

Four Charolais bulls and 10 store bullocks and heifers were also overwintered in the Atcost shed.

The autumn calving herd returned to the Atcost shed on 22nd November 1984 while 40 spring calvers belonging to our systems study were housed in the Indescon shed on 12th November 1984 after being held for a fortnight on Aitchesons stubble field where they had been transferred from experimental sites. Round bale silage and straw were fed.

Eighty two cattle remaining outside at Liquo on round bale silage feeding were brought into the Indescon shed on 20th November 1984.

All cows received high magnesium cobs at 'staggers' high risk periods and while indoors, mineral, trace element and vitamin mixture was added to feedstuffs. High magnesium licks were also on offer throughout the grazing season and high phosphorus mineral was provided during bulling periods.

Details of winter feed consumption for the winter of 1983-84 are given in Table 1.

TABLE 1

Winter Feed Consumption(a) Autumn Calvers in Atcost Shed (Nutrition Experiment)

Hay was fed for maintenance at a level of 7.0 kg/head/day

Concentrates were fed at 3 levels: High 7.0 kg/head/day
Medium 4.5 kg/head/day
Low 2.0 kg/head/day

50 tonnes concentrate
124 tonnes hay
4.2 tonnes High Magnesium Cobs
2 tonnes Minerals

Table 1 cont'd

An average of 70 cows remained in the shed over a very lengthy experimental period from 19th October 1982 to 2nd July 1984.

(b) Spring Calvers

Before Turn-in	30 tonnes baled silage 30 Bales straw 150 tonnes silage
In Shed	400 tonnes silage 50 tonnes barley 7.8 tonnes High Magnesium cobs 2.0 tonnes Minerals

The average number of cows in this herd over the winter period was 130.

(c) Overwintered Store Heifers and Bullocks (Ten)

5.4 tonnes hay
3.6 tonnes barley + balancer

These were fed 3 kg hay/hd/day and 2 kg barley plus balancer per hd/day. They grew at around 0.33 kg/hd day and consumed a total of 5.4 tonnes hay and 3.6 tonnes Barley + Balancer.

(b) Rebreeding. The extended winter experimental programme meant that the cows were still in individual stalls during the re-breeding period from 30th January to 6th April 1984. Fifty four cows were tested daily with an oestrus detection probe and cows were taken to run with the bull daily for about 4-6 days around the anticipated oestrus period. There was also a further group of 19 autumn calved cows not required for experiment. They were bulled in one court in the Indecon shed between 27th January to 6th March 1984. This group was the first to be turned out when they were moved to the bing area on 29th March 1984. The experimental autumn calvers left the steading in small groups as they came off trial to go to summer grazings, mainly at Liquo, Mill Lade and Springbank.

The spring calving herd was split into five experimental groups for the summer; two 'systems' groups, consisting entirely of Hereford x Friesian cows on Milligans and Pellwood, and three groups for cattle grazing studies on the Strip, Springbank Roundel and Parkheadwood. Bulling began in these five groups on 22nd May 1984, about one week after turnout.

Each 'systems' field was divided into four plots and bulls were led each day to all plots in turn. Bulling of a total of 116 cows on block B continued until 27th July 1984.

(c) Calving. Sales of cattle have reduced the size of the breeding herd at Hartwood by 20 cows from 1983 to 1984. A total of 196 calves were at grass during 1984 including, in addition to Hartwood born autumn and spring calves, fifteen Aberdeen Angus calves from House o' Muir born in late 1983.

The previous autumn/winter calving started in the Atcost shed on 8th November 1983 and finished on 15th January 1984. Thereafter, there was a gap of about one month before spring calving began in the Indecon shed from 17th February to 8th May 1984. All but the last five calves were born inside. Mean birth weights are shown in Table 2. Ninety calves were born per 100 cows mated. Until 1st December 1984, 20 autumn calves have been born since 14th November 1984.

TABLE 2

Mean birth weights (kg) of Charolais Cross Calves

Winter born calves 1983/84

<u>BREED</u>	<u>HEIFERS</u>	<u>BULLS</u>
Charolais x Hereford Friesian	39.0	41.4
Charolais x Blue Grey	35.1	38.7

Spring born calves 1984

Charolais x Hereford Friesian	38.2	42.9
Charolais x Blue Grey	36.6	39.3

(d) Cattle disposals and calf weaning weights to 1st December 1984. From the date of the last report, 1st December 1983, twenty one Blue Grey and Hereford Friesian cows have been slaughtered at Biggar for experimental purposes. As a result, three 10 day old orphaned calves were sold off the farm to be reared elsewhere in December 1983, followed by nine 2½ month old calves during February and finally six 6 month old calves in May and June. The final three 6 month old calves were not sold at that time.

Another Hereford Friesian cow went to Biggar slaughterhouse having been unable to rise after a difficult calving in April 1984, and one stirk with a joint deformity was sold to Shotts slaughterhouse.

Ten cows were sold to Grazing Ecology Department and left Hartwood during May.

In October, 112 autumn and spring born calves were sold in two sales at Lanark market and thirteen in calf cows, three of which had calves at foot, together with seven cast cows were sold at the same market.

Fifty four Charolais cross spring calves went to Glensaugh on 9th November 1982 and eight similar bullocks went to House o' Muir on the same day; leaving four calves too small to sell and two large stirks which may go direct for slaughter before turnout to grass in 1985.

Details of suckled calf sales are given in Table 3 while those of other disposals are shown in Table 4, and the performance of Hartwood born Charolais cross calves is shown in Table 5.

TABLE 3

Sales of Suckled Calves1983 Autumn Calves

<u>Sold to/at</u>	<u>Date</u>	<u>Breed</u>	<u>Sex</u>	<u>Number</u>	<u>Price/head</u>
Lanark Market	3/10/84	Ch x	M	15	£363
		Ch x	F	10	£331
		AA x	M	7	£357
		AA x	F	7	£299
		H x	F	2	£317
Lanark Market	30/10/84	Ch x	M	15	£308
		Ch x	F	18	£272
		AA x	F	2	£224
		H x	F	2	£254
		H x	M	1	£287

1984 Spring Calves

Lanark Market	30/10/84	Ch x	M	7	£315
		CH x	F	24	£229
		M Grey x	M	2	£208
Glensburgh	8/11/84	Ch x	M	27	£270
		Ch x	F	27	£223
House o' Muir	8/11/84	Ch x	M	8	£254

TABLE 4

Cow and Calf DisposalsCows

<u>Sold to/at</u>	<u>Date</u>	<u>Breed</u>	<u>Sex</u>	<u>Number</u>	<u>Price/Head</u>
Biggar Abattoir	6/12/83	HF & BG	F	3	£392
Biggar Abattoir	15/2/84	HF & BG	F	3	£423
Biggar Abattoir	21/2/84	HF	F	3	£325
Biggar Abattoir	28/2/84	BG	F	3	£331
Biggar Abattoir	19/4/84	HF	F	1	£ 74
Graz. Ecol. Dept.	13/4/84) 26/4/84) 9/5/84)	HF & BG	F	10	£275
Biggar Abattoir	29/5/84	HF & BG	F	3	£347
Biggar Abattoir	5/6/84	HF	F	3	£305
Biggar Abattoir	12/6/84	BG	F	3	£306
Lanark Market	23/10/84 23/10/84	HF & BG HF & BG	F F	10 3*	£359 £433
Lanark Market	19/11/84	HF & BG	F	7	£306

(* with calves at foot)

Calves

Lambie, Fallhills	6/12/83	Ch x	M/F	3	£110
Shanks, Greengairs	14/2/84) 21/2/84) 28/2/84)	Ch x	M/F	9	£132
Shotts Abattoir	9/5/84	Ch x	F	1	£ 69
Young, Hillouseridge	31/5/84) 6/6/84)	Ch x	M/F	6	£228

TABLE 5
Calf Growth 1984

	<u>Hereford Friesian Cow</u>		<u>Blue Grey Cow</u>	
Calves born in autumn 1983	MALE	FEMALE	MALE	FEMALE
Average weaning weight (kg)	264	253	244	217
Average L.W.G. (kg)	0.93	0.89	0.86	0.76
Average age of all autumn calves at weaning : 240 days				
Calves born in spring 1984	MALE	FEMALE	MALE	FEMALE
Average weaning weight (kg)	235	220	201	204
Average L.W.G. (kg)	0.97	0.92	0.82	0.85
Average age of all spring calves at weaning : 198 days				

(e) Replacements etc. To balance herd numbers in-calf Hereford Friesian heifers from Balfron and Blue Greys from Haltwhistle were purchased in January and February 1984. As usual, replacement Hereford Friesian and Blue Grey bulling heifers were bought from Messrs Sinclair of Perth and from Haltwhistle market during October and November 1984. All these heifers have gone to House o' Muir. A Charolais bull was bought at the February bull sales in Perth for use with calved heifers at House o' Muir.

Fifteen heifers with Aberdeen Angus cross calves at foot arrived from House o' Muir on 16th May and thirty one in calf cows were transferred from there on 19th October.

Eight foster calves have been bought from local farms and details of these and the other purchases are shown in Table 6.

TABLE 6
Cattle Purchases

<u>Purchases from</u>	<u>Date</u>	<u>Breed</u>	<u>Sex</u>	<u>Number</u>	<u>Price/Head</u>
<u>Bulling Heifers</u>					
Harrison & Hetherington Haltwhistle	25/10/84	BG	F	15	£465
Sinclair Glendevon, Perth	7/11/84	HF	F	15	£460
<u>In-calf Heifers</u>					
Donaldson Keirhill, Balfron	28/1/84	HF	F	21	£570

Table 6 cont'd

Harrison & Hetherington Haltwhistle	28/2/84	BG	F	6	£580
Bull					
McDonald Fraser, Perth	9/2/84	Ch	M	1	£2625
Calves					
Parkin, Daviesdykes	15/12/83	H x	F	1	£50
Parkin, Daviesdykes	28/2/84	H x	F	1	£40
Moffat, Tarbrax	12/3/84	M Grey x	M	2	£50
Moffat, Tarbrax	28/3/84	F	M	1	£60
Parkin, Daviesdykes	9/4/84	F	M	1	£40
Parkin, Daviesdykes	19/11/84	H x	F	1	£50
Moffat, Tarbrax	26/11/84	F	M	1	£80

(f) Cattle Health. Four cows were treated for Hypomagnesaemia this autumn, three on Pellwood and one on the Strip. All responded satisfactorily to treatment. Two cows were slightly affected by mastitis during grazing and another displayed a temporary nervous disorder with symptoms associated with Hypomagnesaemia and acetoanaemia. A young cow was found dead in the Indecon shed in January. The cow had no history of ill health, and the post-mortem examination did not point to any conclusive evidence.

There were few problems among growing cattle until October when a very severe outbreak of lungworm infected the weaned autumn born calves grazing Thorntree and Bowhousebog.

Scour again presented a problem among young calves in both sheds, and at spring calving there was also a considerable incidence of pneumonia and navel ill. During the present calving, new calves are being blood sampled in an attempt to determine levels of colostrum intake.

In-calf cows were given an anti Rotavirus/E. Coli vaccine about one month prior to the beginning of calving in January and November. After the weaning of calves, the normal dry cow therapies were carried out using antibiotic teat tubes, fly sprays and Stockholm Tar. During June and July, all cows were dosed against liver fluke and two months later, copper needles were given when blood copper levels were found to be low.

Calves were routinely dosed with 'Systamex' during grazing and 'Ivomec' was used on stirks with husk. Towards the end of the winter, ringworm was noticed on two overwintered stirks. This was quickly eliminated after spraying.

Young calves were injected with vitamin E and selenium and a further selenium booster was given at grass. This winter, all calves are again given vitamin E and selenium shortly after birth.

4. LAND USE

<u>Cropping Summary 1984</u>	<u>ha</u>	<u>ac</u>
Barley	22.9	56.3
Grass Silage	47.7	117.8
Hay	13.1	32.3
Rape	15.9	39.2
Tyfon	2.0	5.0

In addition, some big bale silage was made on Systems sheep and cattle areas.

After a slow start the barley crops tillered out and a good yield was obtained in all fields except Hartwoodhill. The top yield was 47 cwt/ac and the average almost 39 cwt/ac. A new variety "Golf" was grown for the first time and it seemed to suit the conditions. Approximately 2,400 square bales of straw were secured in good order together with 104 round bales from the out-lying fields. Approximately 1,400 tonnes of silage were made and 184 bags of round bale silage were harvested from the "Systems" areas. 84 tonnes of hay were made and secured in good order.

Total of home grown feeding produced was as shown below:

Barley	108 tonnes
Silage	1400 tonnes
Silage (bagged)	184 bales
Hay	84 tonnes
Straw (square bales)	2400 bales
Straw (round bales)	104 bales

The Rape and Tyfon crops were on the whole very good. Two of the later sown areas looked poor to begin with but thickened later when the wet weather started.

Because of the support price pattern, lambs were not put on Rape until some 3 weeks later than in 1983 and it is hoped to attract a higher price per kg when they are finished.

The usual spraying for weeds was carried out on the barley crops and the direct reseeds. It was intended to spray two fields with "Round-up" post harvest but weather conditions made this impossible.

5. BUILDINGS ETC.

(a) Building Maintenance. As usual roof repairs, rhone repairs, painting, etc. have been carried out during the year.

(b) Drainage. A fairly extensive drainage programme was carried out round the farm buildings in an effort to cut down damage and flooding during wet periods and this seems to have been successful.

(c) The existing silage pits were enlarged to increase holding capacity by approximately 30%. Effluent drainage round the pits was also improved.

(d) A Bulk Storage Hopper has been erected at the sheep shed complex and the large plastic shed is currently being converted to a slatted system.

(e) The Portakabin/office block has been moved to a new site and a new permanent office will be erected on the old site.

(f) Approximately 3,500 m of new fencing have been erected.

6. EQUIPMENT

No major items of equipment were purchased during the year, although some minor replacements have been effected. A few additional items of workshop equipment have been purchased. Two tractors were renewed under the college hire scheme.

7. OTHER ITEMS

Vermin Control. Twenty three adult foxes were killed during the winter of 1983-84.

Conservation of Woodlands. Three sections of Hartwood shelter belts were cleared of dead trees and shrub and advantage taken of an offer by the Central Scotland Woodlands Project to supply five hundred trees free of charge; a further one thousand trees were purchased and one complete section was underplanted with mixed hardwoods.

It is hoped to continue this work in 1985.

Existing Coniferous Shelter Belts. A light thinning and cleaning of five shelter belts was carried out by a firm of contractors. The work was disappointing in some respects but this was mainly due to the work being carried out some fifteen years later than would have been desirable.

RED DEER FARM1. WEATHER

The early winter months were mild and sunny, late December and January turned colder with blustery weather, wind and sleet showers. Heavy snowfalls in mid to late January blocked roads to the deer farm to such depths that the big snow plough was unable to cope. Access to the farm was on foot only for several weeks until early March when the weather turned mild. Most of March was mild and sunny and this bright and exceptionally warm weather continued through to the end of August. The dry spell broke in September with some heavy showers but October was again very mild and sunny with occasional showers. November was extremely wet with high winds and the highest rainfalls recorded in the northeast since 1860. The deer farm had between 12-15 in. of rain during the first 20 days of the month. The last 10 days of the month were less wet but very mild and this lasted until the third week in December when snow covered the land above 1,000 ft on several days and the first frosts of the winter were recorded.

2. RED DEER

(a) The 1983 rut. The weather was excellent and the deerstocks mostly gained liveweight over the period from early October to the end of November. All stags appeared to rut well except the young Wapiti bull. It was often difficult to know whether he was rutting or not.

(b) Winter feeding. Although the weather was open and mild the grass at the Lochhills and on the hill reseeds had run out by the end of November and all the deerstocks were offered hay on the 8th December. In mid-January in deep snow conditions all the deer were fed for maintenance. Fences were totally buried on the boundaries between groups and on the farm perimeter, and so all stocks mixed freely for a period of seven weeks. Spring weather brought early grass and so feed costs are lower than last year. The details are shown in Table 1 (see overleaf).

(c) Calving. Calving began on the 21st May and was almost completed by the middle of June. The Wapiti hybrid calves came later, calving starting on the 14th June and finishing on the 11th July. The reproductive performance was good in those groups not subject to experimental treatment. Six calves were stillborn out of a total of 244 born, and there were very few losses to weaning. The yearling age group were poorly grown when put to the stag and consequently their performance was poor.

TABLE 1

Winter feeding levels and costs for hinds and stags

Group	Period fed	Hay		Concentrates		Total cost of feed per head
		kg/hd	cost	kg/hd	cost	
Hill hinds (115)	8th Dec - 10th April	52	£4.42	27	£3.91	£8.33 †
Upper Farm hinds (135)	8th Dec - 2nd April	52	£4.42	12	£1.74	£6.16 †
Yearlings (51)	8th Dec - 10th April	59	£5.01	48	£6.96	£11.97
Stags (24)	8th Dec - 1st May	135	£11.47	22	£3.19	£14.66

42.

Note - † The hill and upper farm hinds were fed a total of 17 round 4 ft bales of silage fed in rings. This cost of £0.68 per head is not included in the figures shown above.

The older hinds did well with the exception of those hinds bred to the Wapiti bull. Only 14 out of 28 produced wapiti cross calves. One calf was stillborn. Six of the hinds had to be assisted at birth but all 13 calves born alive have lived to date. Growth rates of some of the calves were as high as 700 g/hd/day before being weaned in October. Another experiment examining variations in mid pregnancy nutrition resulted in a number of hinds being barren in the spring.

The reproductive performance of each cohort is shown in Table 2.

TABLE 2

Reproductive performance of the cohorts

Cohort	Hinds to stag	Hinds died	Hinds yeld	Calves born	Calves born dead	Died birth to wean.	No. Wean.	% * Wean.	Still* on hill
A	2	-	-	2	-	-	2	100	-
B	41	-	2	39	2	-	35	85	2
C	21	-	2	19	1	-	16	76	2
H	47	1	9	37	1	3	33	72	0
J	31	1	6	24	0	1	23	77	0
K	15	1	0	14	0	0	12	86	2
M	1	0	0	1	0	0	1	100	0
P	25	0	0	25	0	0	24	96	1
R	68	0	3	65	1	1	58	85	5
T	50	0	32	18	1	0	17	34	0
Totals	301	3	54	244	6	5	221	74	12

*NB.

1. If all 12 calves come in off the hill grazings the overall weaning percentage will be 78%.
2. The performance of the mature hinds only if those still on the hill come in at the next gathering, the weaning percentage will be 82%.

(d) Weaning. The weaning gatherings were frustrated by the collapse of some of the old fencing in the Panhandle and handling areas - now 15 years old. The fences have been renewed or repaired and were ready for the post-rut gathers but these gathers were in turn made difficult by the torrential rain and low cloud and mist which lasted into December. Some 12 calves have still to be gathered and weaned.

Calf weaning weights were good in spite of the acute shortage of grass both on the hill and the inbye during the latter half of the summer. The weaning weights are shown in Table 3.

TABLE 3

Weaning weights of calves (Nos. in brackets)

Sex	Liveweight (kg) Sept. 83	Liveweight (kg) Sept. 84
Stag calves	42.8 (81)	41 (116)
Hind calves	37.8 (85)	38.2 (92)

(e) Disposal of the calf crop. A total of 84 calves have been sold to date : the eight later-born calves and those still to be weaned will be sold in the spring.

Some 80 stag calves have been retained for a finishing experiment and 30 hind calves have been retained for stock replacements. All 13 Wapiti hybrid calves have been retained for experimental work. The record of disposal is shown in Table 4.

TABLE 4

Disposal of weaned calves

Nos.	Sex	Disposition
4	Stags	to Moredun Institute
20	Hinds	to Auction at Beaulieu
9	Hinds	to Cheshire farmer
15	Stags	to Cheshire farmer
28	Hinds	to Fletcher of Yorkshire
8	Stags	to Fletcher of Yorkshire
1	Stag	Died on grass after weaning
136	Calves	Housed at the stading
221	Both	Weaned calves

(f) Calf sale prices. After the selection of the best 80 stag calves for experimental work, the remaining 27 were small calves and were sold to average £78 per head. The 57 hind calves sold averaged £132 per head. These prices to some extent reflect the growing demand for female breeding stock. Hind calves were sold at the Auction at Beaulieu and were up by £27.50 per head on last year. The prices obtained for store calves are detailed in Table 5.

TABLE 5

Store calf sales and prices

Date			Average Liveweight (kg)	Price per kg	Price per head
5.10.84	4	Stag calves to Moredun	34.5	£2.17	£75.00
10.10.84	9	Hind calves (Cheshire)	30.33	£3.00	£91.00
10.10.84	15	Stag calves (Cheshire)	35.9	£2.00	£71.86
12.11.84	5	Hind calves (Auction)	38.0	£3.42	£130.00
12.11.84	5	Hind calves (Auction)	41.8	£3.59	£150.00
12.11.84	5	Hind calves (Auction)	43.0	£3.49	£150.00
12.11.84	5	Hind calves (Auction)	47.6	£3.78	£180.00
18.12.84	5	Hind calves (Yorkshire)	33.3	£3.15	£104.98
18.12.84	13	Hind calves (Yorkshire)	38.0	£3.35	£127.30
18.12.84	10	Hind calves (Yorkshire)	42.8	£3.45	£147.66
18.12.84	8	Stag calves (Yorkshire)	39.6	£2.28	£90.52

(g) Sales of surplus breeding hinds. Three yearling hinds were sold in September and a further 10 were sold at the deer auction. These were the smaller of the yearlings which remained after selecting herd replacements. These animals averaged £247.69 per head. The details of the sales are shown in Table 5(a).

TABLE 5(a)

Sales of yearling hinds

19.9.84	3	16 month hinds	65.0	£2.92	£190.00
12.11.84	5	16 month hinds	66.4	£3.46	£230.00
12.11.84	5	16 month hinds	68.8	£4.36	£300.00

(h) Venison sales. Buchan Meat Producers purchased 43 16 month old stags and seven 16 month old hinds off the grazing experiments at the Lochhills.

The venison was all sold to the Waitrose Supermarkets and presented fresh in their London area supermarkets. This year the deer were placed in lairage pens on the day prior to slaughter. The pens were bedded with straw and held in twilight conditions throughout. The animals did not appear to be stressed at the time of slaughter and this was confirmed later by the low pH of the carcass meat.

The price paid was up again on the previous year to 297.6 pence per kilo dead carcass weight. The stags were less well grown than last year due to the shortage of grass in the latter half of the summer.

The 43 stags sold had an average carcass weight of 41.4 kg and sold for an average of £123.20 per head.

The seven small yearlings sold were much too small to sell as breeders, and averaged 29.35 kg dead carcass weight and sold for £87.35 per head.

(i) Breeding replacements. Thirty hind calves and 6 stag calves have been retained for stock. A stag calf for breeding was purchased at the auction at Beauly from Culligran in Inverness-shire.

(j) Hind deaths. Hind C24 was found drowned in the flooded Slack burn. Three hinds died post partum and one hind died indoors while on experiment - post-mortem examination could show no definite cause of death. Two pining hinds were sent to the Moredun Institute for tests and post-mortem examination. One hind was found to have a large mass of twine in its rumen, and no cause could be established for the condition of the other hind. A hind died from jaundice in June and another died from acute haemorrhagic gastro-enteritis in August.

(k) The 1984 Rut. Two stags were treated with Melatonin and came into full rut on the 1st September. They were placed with the hinds on the Upper Farm reseeds on the 30th August, when the melatonin treatment ceased. These stags rutted right through to November.

The main rut went well in excellent weather in October. All groups had stags introduced a few days earlier than last year. The hinds came to the stag slightly heavier than last year and, with the late flush of grass, held up well during the period. The Wapiti bull rutted better this year and appeared to come into full rut earlier than last year. The stags were placed with the hinds on the following dates.

1. Hill System hinds = 25th September 1984
2. Upper Farm Reseeds = 30th August 1984
3. Lochhills Experiments = 21st September 1984
4. Wapiti bull group = 21st September 1984

3. FENCING

(a) The 'OF' paddock was fenced for deer with the new Sentinel deer netting.

(b) The guide fence in the Panhandle paddock was extended to the top of the hill so that hinds on the main farm hill area and those on the upper farm hill could be kept separate and be fed at the Main farm steading.

(c) A new hay feeding arrangement was build at the deer farm steading to facilitate the winter feeding of the two hill stocks.

II SUMMARY OF FLOCK RECORDS 1983/84Glensaugh

TABLE 1

Reconciliation of ewe numbers 1983/84

Flock	Breed	Ewes & Gimmers		Cast and Cull	Deaths		Gimmers brought in		Ewes & Gimmers Nov 84	Hoggs kept Nov 84
		Nov 83	Since Nov 83		No.	%	Bred	Others		
Cairn	Blackface	262	+6	60	16	6.1	61	-	253	62
Birnie	Blackface	203	-6	37	13	6.4	58	-	205	56
Finella	Blackface	258*	-	86	15	5.8	-	55	212	50
	NCC	147	-	18	11	7.5	20	25	163	49
	EF x BF	46	-	-	1	2.2	-	-	45	10
	EF x NCC	67	-	19	5	7.5	17	-	60	17
	GF	61	-	9	2	3.3	9	25	84	4
	NCC x Shet	88	-	13	3	3.4	-	25	97	-
Cast	GF	2	-	2	-	-	-	-	0	
	EF x NCC	6	-	5	1	16.6	-	-	0	
Totals		1140		249	67	5.9	165	130	1119	248

*Includes 28 draft ewes not shown on last year's report.

Glensaugh

TABLE 2

Pretupping weights of ewes, gimmers and hogs, November 1983 and
November 1984

Flock	Breed	Ewes		Gimmers		Hogs	
		1983	1984	1983	1984	1983	1984
Cairn	Blackface	52.8	55.8	42.5	42.0	24.8	31.7
Birnie	Blackface	56.0	58.5	45.7	44.3	26.1	30.7
Finella	Blackface	49.5	50.3	41.3	45.0	25.7	30.8
	NCC	59.5	62.5	45.6	57.1	29.5	38.2
	EF x BF	-	55.9	55.4	-	-	36.0
	EF x NCC	61.0	61.1	45.2	48.1	30.2	37.8
	GF	57.5	61.4	45.8	53.3	28.9	40.8
	NCC x Shet	56.8	50.8	45.8	40.6	-	-

TABLE 3

Reconciliation of cattle stocks

	No. at 1.12.83	Births	Age Trans.	Purchases	Deaths	Sales	Age Trans.	No. at 1.12.84
Breeding Cows	43	-	11	0	3	0	0	51
Breeding Heifers	11	-	-	0	0	0	11	0
Bulls	1	-	-	0	0	0	0	1
Store Cattle	99	-	50	54	0	79	0	124
Calves	0	52	-	3	5	0	50	0
Totals	154	52	61	57	8	79	61	176

Sourhope

TABLE 1

Reconciliation of ewe numbers 1983/84

		Ewes & gimmers Nov 83	Draft and culled ewes	Ewe Deaths	Gimmers brought in	Ewes & gimmers Nov 84	Hoggs Nov 84
Fasset	SCC	200	36	7	45	202	50
NEHL/ Auchope	NCC x SCC	662	135	18	158	667	171
Park Law	NCC	151	33	4	35	149	41
Rigg	Blackface	268	51	13	65	269	66
Gairs	Blackface	286	55	10	79	300	76
Alderhope	Blackface	283	55	5	70	293	70
Banks	Blackface	341	66	11	77	341	83
Total Blackface		1178	227	39	291	1203	295
Station Total		2191	431	68	529	2221	557*

*The stock ewe hogg count in 1982/83 report was incorrect - 559 stock ewe hoggs were actually kept not 550 as reported. The error was on the Banks heft with 85 not 76 stock ewe lambs retained.

Sourhope

TABLE 2

Pre-tupping weights of ewes, gimmers and hoggs - November 1983 & November 1984

Flock		Ewes		Gimmers		Hoggs	
		1983	1984	1983	1984	1983	1984
Rigg	Blackface	56.8	54.5	49.7	49.0	33.1	33.9
Gairs	Blackface	59.0	56.8	52.1	52.3	36.8	34.6
Alderhope	Blackface	60.1	59.4	50.6	52.8	34.4	35.5
*NEHL/ Auchope	NCC x SCC	59.8	60.5	47.4	51.8	36.8	36.8
Park Law	NCC	63.0	61.5	53.9	49.4	33.5	35.7

TABLE 3

Wether Stock November 1984

Year of birth	1979	1980	1981	1982
SCC	24	29	35	26

House o' Muir

TABLE 1

Reconciliation of ewe numbers

Ewes and Gimmers Nov 83	Cast	Sold to Research	Deaths	Gimmers	Ewes and Gimmers Nov 84
517	69	72	13	125	488

TABLE 2

Reconciliation of cattle numbers

(i) Autumn calvers

	<u>Transferred in</u>		From Spring herd	<u>Transferred out</u>	
	Nov 83	Pur- chases		To Hartwood	Nov 84
Hereford/ Friesian	16	15	1	11	21
Blue-Grey	18	15		9	24
Total	34	30	1	20	45

(ii) Spring calvers

	<u>Transferred in</u>		<u>Transferred out</u>		Nov 84
	Nov 83	Pur- chases	To Hartwood	To Autumn herd	
Hereford/ Friesian	2	21	21	1	1
Blue-Grey	2	10	10		2
AA/Friesian	0	10			10
Total	4	41	31	1	13

Hartwood

TABLE 1

Reconciliation of ewe numbers, December 1983 - December 1984

<u>Breed</u>	<u>Ewes & Gimmers Dec 83</u>	<u>Purchases & Transfers</u>	<u>Deaths</u>	<u>Sales & Transfers to Research Account</u>	<u>Ewes & Gimmers Dec 84</u>
Blackface	-	81	5	-	76
Greyface	853	223	56	163	857
Total	853	304	61	163	933

TABLE 2

Wethers

<u>Breed</u>	<u>Adult Wethers Dec. 83</u>	<u>Purchases & Transfers</u>	<u>Deaths</u>	<u>Sales & Transfers</u>	<u>Adult Wethers Dec. 84</u>
Blackface	87	68	3	82	70

TABLE 3

Pre-mating weights of Greyface ewes and gimmers (kg)

	October 1983		October 1984	
	<u>Ewes</u>	<u>Gimmers</u>	<u>Ewes</u>	<u>Gimmers</u>
Non-experimental	69.0*	59.4*	75.1 ^x	64.0 ^x
Systems	74.9	63.1	72.7	65.4
Systems Demo	77.6	66.0	72.6	61.6
Reproductive Performance)		-	69.6 ^o	-
Nutrients Supply (Autumn))	71.3	-	76.1	-

*Early October weights

+Sample weights only

oHigh condition ewes excluded

Hartwood

TABLE 4

Reconciliation of cattle numbers - 1st December 1983 to
1st December 1984

	At 1st Jan	Births	Purchases	From HOM	To HOM	To Glensaugh	Deaths	Sales	At 1st Dec
Adult cattle	208	-	-	46	-	-	1	52	201
Bulls	4	-	-	-	-	-	-	-	4
Calves	54	172	8	15	8	54	26	134	27
Total	266	172	8	61	8	54	27	186	232

Red Deer

TABLE 1

Reconciliation of stock numbers 1983-84

	At 1.12. 83	Age trans- fer	Calves born	Purch- ases	Deaths	Sales	Age trans- fer	At 1.12. 83 ₄
Aged stags	22	2	0	0	0	1	0	23
Prickets	2	0	0	0	0	0	2	0
Young stags	0	47	-	-	-	46	0	1
Stag calves	49	0	132	1	8	27	47	95+5*
Mature hinds	195	55	-	-	11	2	0	237
Jinnocks	55	50	-	-	0	-	55	50
Young hinds	51	63	-	-	1	27	50	36
Hind calves	61+2	0	112	-	6	57	63	42+7*
Total	435	217	244	1	26	160	217	484+12

* ungathered

Red Deer

TABLE 2

Liveweights of Breeding Hinds (No. in brackets)

Hinds	Born	Liveweight (kg) March 84	Liveweight (kg) Sept 84
A	1970	84 (2)	87 (2)
B	1971	80.5 (39)	83.7 (31)
C	1972	80.9 (21)	86.1 (18)
H1	1974	76.4 (19)	85.7 (19)
H2	1974	79.7 (22)	89.6 (22)
J1	1975	81 (14)	90 (13)
J2	1975	78.1 (16)	88 (14)
K	1978	79.2 (14)	82.9 (14)
P	1980	77.4 (25)	80.9 (21)
R	1981	73.4 (67)	80.2 (51)
T	1982	64.3 (47)	77 (40)
V	1983	51.9 (30)	70.8 (30)