

HILL FARMING RESEARCH ORGANISATION

FARM REPORTS

AND

SUMMARY OF FLOCK RECORDS

1986

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I FARM REPORTS 1986

GLENSAUGH FARM

1. WEATHER

December proved to be a relatively mild month with occasional storms but generally quiet days leading to a New Year period of heavy snow and low temperatures (-14°C). January generally was a wet month with little permanent snow cover but with severe frosts at night. More snow with severe drifting arrived in late January and early February. Hard and frosty conditions meant snow cover was complete throughout February. The thaw began in early March and a spell of mild weather continued through Easter week until April 12th. Colder winds bringing sleet and snow returned in the middle of the cross-bred lambing period creating havoc with lambing. The cold winds continued through May, which was a very wet month. This led to a very late start to the growing season. June, July, August and September were extremely good months with plenty of sunshine and sufficient rain to maintain growth at pasture. October and November have proved to be amongst the mildest on record allowing growth throughout the Autumn period.

RAINFALL (mm) (taken at Fettercairn)

		(50 yr mean)	
1985	December	123	93
1986	January	106	87
	February	51	66
	March	53	60
	April	70	56
	May	127	77
	June	59	60
	July	45	83
	August	86	88
	September	10	78
	October	39	89
	November	66	100
Totals		<u>855</u> mm	<u>937</u> mm (1131 in 1985)

2. SHEEP

- (a) Tupping 1985. In spite of the fact that the first snow arrived on November 1st as the Suffolk tups went to the ewes, they came readily to the rams and were in good condition on the low ground. Supplementation of the early lambing ewes began on 25th November as herbage heights fell below 3½cm on the inbye fields.

The tups were put to the later lambing ewes on 25th November. These ewes were also in good body condition, having recovered well from the very poor wet summer.

- (b) Winter feeding. With the exception of the Cairn heft, the winter feed levels for all ewes were considerably higher this winter than last. Very poor quality hay had to be supplemented with sugarbeet pulp throughout and a very late spring entailed a much longer feeding period than normal.

2.

Unit concentrate costs were down on the previous year mainly because of the cost savings associated with the installation of a 12 ton bulk bin. Higher feeding levels with the crossbred ewes were associated with winter housing of twin bearing ewes, poor quality roughage requiring plenty of supplementary concentrates and the need to keep grassland free of livestock in spring, prior to minimum herbage heights being achieved for the experiments to commence.

The detailed data is presented in Table 1.

TABLE 1. Amounts of feed and their cost per ewe in 1985-86

Flock	Hay		Concentrates				Total Cost
	Dates Fed	Amount kg	Cost £	Dates fed	Amount kg	Cost £	
Cairn	27/11-26/3	27.2	2.31	6/1 - 5/6	60.0	7.25	9.56
Birnie	27/11-21/3	18.0	1.53	6/1 - 30/5	73.9	9.25	10.78
Finella B.F.	27/11-14/5	32.6	2.77	7/1 - 30/5	61.3	7.34	10.11
NCC	27/11-14/5	24.2	2.06	7/1 - 30/5	57.8	6.94	9.00
EFxBF	27/11-17/5	76.3	6.49	27/11- 30/5	112.7	13.93	19.85
G.F.	27/11-17/5	74.5	6.33	27/11- 30/5	117.9	13.93	20.26
EFxNCC	27/11-17/5	81.2	6.90	27/11- 30/5	112.1	13.29	20.19
NCCxShet	27/11-17/5	64.0	5.44	27/11- 30/5	98.2	11.61	17.05
HB	27/11-17/5	86.4	7.34	27/11- 30/5	133.7	15.85	23.19
Hoggs	14/1-9/4	59.1	5.02	14/1- 16/4	28.4	3.59	8.61

Hay at £85 per tonne, Sugar Beet Pulp at £112 per tonne, Concentrate at £125 per tonne.

(c) Lambing. The details on a flock basis are shown in Tables 2 and 3. In total 1336 live lambs were born to the 1072 ewes and gimmers which went to the tup. The later lambing ewes - Cairn and Birnie Blackfaces and Finella Cheviots and Blackfaces, lambed outside. Twin and single bearing ewes were separated at scanning in late February, and fed and supervised separately.

The crossbred ewes were also scanned early February and managed as twins and singles separately from then onwards. Some 280 twin bearing ewes were housed from March 5th to commence lambing on March 25th. These ewes were turned out once they had lambed weather conditions allowing. Full feeding continued through to the end of May due to the very late spring.

The indoor lambing was affected by an outbreak of Enzootic Abortion amongst the Half Breds, Greyface and some Shetland Cheviot cross ewes (these flocks were all either newly bought in for experimental purposes or required purchases of gimmers to maintain numbers). Although many of the ewes affected aborted dead lambs, several weakly premature lambs were born alive in each group and subsequently died shortly afterwards.

A vaccination policy for all bought in sheep, and home bred gimmers has now been implemented.

(d) Lamb Mortality. The overall lamb mortality was 15.6%. Of these losses 12.2% occurred between birth and marking and 3.4% between marking and weaning.

Mid-to-late April provided some of the most desperately cold and wet days and nights ever experienced at lambing. On the weekend of 12th/13th April some 40 Suffolk cross lambs perished despite prodigious efforts by shepherds. The wet cold conditions persisted throughout the remainder of April and May. Ewes, especially those with twin lambs, were difficult to keep in milk, and the weather dealt severely with any lambs which were in any way susceptible, including about 20 born prematurely as a result of the abortion infection.

Marking to weaning losses were at normal levels. Pneumonia was the major cause of death in the hill flocks.

TABLE 2. Lamb mortality 1986

Flock	Ewe Breed	Born Alive	Deaths		Total	%
			Birth to Marking	Marking to weaning		
Cairn	B.F.	324	35	21	56	17.3
Birnie	B.F.	230	17	3	20	8.7
Finella	Hill ewes & Efx	387	58	13	71	18.2
	G.F.	143	17	6	23	16.1
	N.C.C.xShet.	136	16	1	17	12.5
	HB	116	19	2	21	18.1
Totals		1336	162	46	208	15.6

(e) Weaning. Table 3 summarises weaning percentages and average weaning weights of the various hefts. Generally the hill lambs came off at slightly improved weights compared to the previous year. Cairn and Birnie lambs particularly showed improvement in both total numbers and weaning weights.

The performance of the Finella Cheviot ewes was disappointing. Ewes were seen to be served and colour marked but a high number proved to be not in lamb at scanning.

In spite of the very late start to the growing season, lambs performed well during the summer months and were weaned onto silage aftermaths in rather better shape than the previous year.

TABLE 3. Weaning percentages and lamb liveweights 1985.

Flock	Ewe Breed	Ewes to tup	Lambs weaned		Weaning weights (kg)		
			1986		1985	Singles	Twins
No.	%						
Cairn	B.F.	254	268	105.5	88.5	30.2	26.0
Birnie	B.F.	200	210	105.0	95.1	28.8	29.3
Finella	B.F.	118	109	92.4	100.0	30.8	25.5
	E.FxB.F.	50	77	154.0	157.8	30.4	30.1
	G.F.	94	120	127.7	120.2	35.4	29.1
	N.C.C.	116	79	68.1	90.2	27.4	26.0
	E.FxN.C.C.	51	51	100.0	126.7	33.3	29.3
	N.C.CxShet	104	119	114.4	130.1	30.5	24.6
	H.B.	85	95	111.8	-	31.4	29.0
Totals		1072	1128	105.2	102.4		

(f) Lamb Crop Disposal. Almost all lambs were again sold through the store lamb rings at Aberdeen, Laurencekirk and Edzell marts. Firm prices prevailed throughout the autumn and, generally, were up on the previous year. The later sold lambs again proved the value of being able to hold onto lambs into October/November. The demands placed upon autumn grassland by the ewe stocks and extra ewes for experimental purposes determine that this is a limited option in most years at Glensaugh. However, overall, 850 lambs sold averaged £28.60 net, an increase of £2.49 on the previous year. Details are set out in table 4.

TABLE 4. Lamb sales 1986

Type	No.	Average Price
Suffolk Crosses	469	£31.70
Blackface Wether	961	£24.35
East Friesland Crosses	55	£28.42
Blackface Ewe Lambs	65	£23.60

(g) Stock Ewe Lambs. Some 262 ewe lambs have been retained as flock replacements; 197 Blackfaces and 65 East Friesland crosses. They will be housed in late December.

(h) Cast Ewe Sales. Prices generally were better than in 1985. 83 cast ewes were sold in January to March to an average of £22/hd.

124 cast ewes were retained for experimental purposes, mainly in reproduction. Between September and November 94 cast ewes were sold to average just over £20 per hd.

(h) Wool sales. The weight of wool graded was up slightly on the previous year to 3024 Kilograms. This realised £2,767.44 (exclusive of VAT) giving a average price per Kilogram of 92.7 p, almost exactly the same as in 1985.

(i) Tupping 1986. This year's requirements were for gimmers for each of the Half-Bred, Greyface and Shetland X Cheviot crossbred flocks. These gimmers were acquired at prices ranging from £70 to £80. Ewes and gimmers benefitted from the excellent open autumn weather conditions. Body weight recovery from weaning was generally good and all groups of ewes took the tups readily in large numbers. The Crossbred flocks began tupping on November 1st and the hill flocks on November 25th. The mild conditions throughout November and early December allowed grass to continue to grow, albeit slowly. Supplementary feeding with Sugar Beet Pulp was started on 1st December for the Crossbred ewes and on 11th December for some of the Hill ewes.

The Mating Groups are as follows:

Early Lambers

107	Half Breds)	
100	Greyfaces)	to Suffolk Rams
103	Shetland X Cheviots)	
77	East Friesland X Blackfaces))	
58	East Friesland X N.C.Cs)	

Late Lambers

250	Cairn Blackfaces)	to Blackface Rams.
201	Birnie Blackfaces)	
119	Finella Blackfaces)	to East Friesland Rams.
104	Finella N.C.C.)	

In addition 124 ewes (normally cast in October) are being mated; these will be slaughtered in January as part of the reproductive studies programme.

3. CATTLE

(a) Breeding cows. Thirty six Blue Grey cows were mated to a Charolais bull. Thirty four proved to be in calf and 32 successfully reared calves. Fourteen heifers from House O' Muir mated to an Aberdeen Angus bull began calving in late February. One calf was lost at birth and a further calf died suddenly at 4 months of age on the open hill. The P.M. examination was inconclusive. Forty-six calves were weaned and housed in early October.

Fifteen Luing cows, heat synchronised and A.I.d began calving in September. One older cow (10 years) was found dead two weeks before calving with hypomagnesaemia. One cow aborted at 6 months and 3 cows failed to calve in spite of being pregnancy scanned and foetal development confirmed at 60 days. From the 10 remaining calving cows one large bull calf (54 kg) was lost at birth. The cow had acute Mastitis and was sold.

TABLE 6. Calving and calf growth summary

No. Breed of calf	Ave. Birthweights		Ave. Wean Wts		Ave.	Ave.	
	Kg		Kg		Age Days	Daily Lwt gain	
	M	F	M	F		M	F
12 AA X Blue Grey	34.6	33.0	239	220	222	0.92	0.84
32 C X Blue Grey	46.9	45.8	255	241	207	1.0	0.94
10 C X Luing	50.0	43.4	-	-	-	-	-

TABLE 7. Store Cattle Sales.

				Ave. Lwt.(kg)	Ave.Price/kg
19.3.86	5	Charolais	M	313	120p
12.4.86	3	Charolais	M	260	119p
	6	Charolais	M	335	116p
	3	Charolais	M	333	110p
	5	Luing	M	340	107p
	2	Friesian	M	355	90p
	6	Charolais	F	338	105p
	4	Charolais	F	260	104p
	5	Charolais	F	312	103p
	3	Charolais	F	318	102p
6	Charolais	F	315	100p	

(b) Summer Grazing. The overwintered calves were returned to Hartwood for experimental treatment in late May. This allowed all 65 suckler cows to be carried over the summer months without additional grazing being required. 15 cows and calves were again grazed on the Cairn. The remaining 50 cows were moved around the entire farm during the course of the summer maintaining the pastures for ewes and lambs and opening up the rougher areas of Finella Hill. Cow and calf performance was good (see Table 6).

(c) Cattle Sales and Purchases. The overwintered suckled calves were sold out of the shed in April 86. Calves were overwintered as cheaply as possible on a medium plane of nutrition to give up to 5 Kg/head/week gain. The Blue Grey herd has been increased to some 53 head with the addition of in-calf heifers from House O' Muir and in-calf cows from Hartwood. Nine Luing cows with Charolais calves at foot were transferred to House O' Muir in late Autumn.

(d) Winter Feeding 86/7. Suckled calves are on ad-lib silage and minerals in the loose courts. The good quality of this year's silage has enabled an all roughage diet to be used.

The suckler cows will be outwintered on a straw based diet until late January. From then onwards through calving in March until the end of May big bale silage will be the main basis of the diet. The high quality of this year's forages is in marked contrast to those of the previous year.

4. GOATS

Over 1986 the goat stock was held on the same 78 ha of rough grazing and 4.8 ha reseeded pasture described in the 1985 Farm Report.

In spring 1986, 152 kids were born to 166 nannies put to the buck in autumn 1985. By 28 August, 141 kids were weaned and were housed for the winter at the end of September.

In autumn 1986 there were 256 breeding nannies. Seventy-four feral/domestic crossbreds were mated to feral bucks. Twenty crossbreds (Angora x(Domestic x Feral)) were mated to bucks of their own kind. Eighty six ferals were inseminated with semen from superior cashmere producing bucks from Tasmania and Iceland. The best of these were superovulated and 72 domestic nannies were used as recipients. Four Icelandic nannies were mated to Icelandic bucks.

At 31st December there was a stock of 54 bucks including 12 vasectomised animals. Five bucks were on loan to other producers. There were 13 castrates and 6 female teasers (ovariectomised).

5. LAND USE.

A further 280 tonnes of Magnesium limestone was applied to the inbye areas and hill reseeds during 1986. All areas of the farm requiring lime have now been treated over the past two seasons.

Spring reseeding was possible on 10.8 hectares of Lodge, Laundry and Steading Fields. These were sown down to a Ryegrass, Timothy and white clover mixture with 3.3 hectares of Steading Field being undersown in Barley, which was taken as silage. Further small dry areas of Mid Finella Hill were successfully reseeded using the S.I.A.E. rotary strip seeder. This technique seems to have worked well when done during the wetter months and when indigenous (surface) vegetation can be kept firmly under control.

In spite of the very late spring, grass bulked well and 40 hectares was ensiled with some fields being cut twice. 400 big bales of grass and arable silage were secured in addition to 500 tonnes of good quality pit silage. Nitrogen usage on the intensively cut and grazed areas was in the order of 250 kg/hectare. The other sown swards received on average 100 kg/hectare of nitrogen.

Rabbit populations, when they 'explode' in early summer, continue to pose a problem. Rabbits are still to be found over most areas of the farm in spite of gassing, shooting and snaring. The problem is not a new one. Records (p.254 Journal of Ecology No. 46, July 1958) show the following numbers taken off Glensaugh in the early 50's.

1951-2	-	7733
1952-3	-	6664
1953-4	-	6158
1954-5	-	5639

Myxomatosis does decimate numbers over the autumn period. However, sufficient resistant breeding does overwinter to allow numbers to fully recover the following year.

One hundred and forty acres of straw was again baled and carted home from local farms. Quality was good with winter Barley straw costing £8/acre, and wheat straw £4/acre. Anhydrous Ammonia was used to treat some 30 tonnes of Barley straw during the 1985/6 winter. This worked well and the material was readily eaten by cows and store cattle.

An area of approx 3 hectares enclosing the rhododendrons growing alongside Loch Saugh has been fenced and some 500 trees, Birch, Sycamore, Rowan, Alder and Hazel, have been planted in plastic tubes this December.

Further areas of amenity woodland about the estate have been identified for planting in spring 1987.

- (f) General Maintenance. The experimental cattle shed steelwork has been primed with rust preventative and painted this year. New pen divisions have been fitted in the cattle standings. Gas fired central heating has been installed in the flats in the Lodge replacing the old solid fuel system. A six bay, open fronted, steel sheet roofed shed was erected in March 1986. This is now fully occupied with red deer. Hard feeding stances have been created in the wooded area alongside the steading with gravel carted from Loch Saugh. Large quantities of gravel have also been used to repair the hill access roads washed away during 1985/6 winter.

Slack Den burn has been deepened and widened to prevent further flooding and fence damage along the Big Den and to allow tractor access to the furthestmost sheep handling pens.

- (g) Equipment. New cattle and sheep feeding rings, a mobile 32 place cattle feed wagon, a flat bed hay/straw trailer and Lely windrower were the main items of equipment purchased.

Two Massey Ferguson tractors were replaced under the M.F. Hire Scheme during 1986.

SOURHOPE FARM1. WEATHER

November was cool and damp with brief clear frosty spells. December was very mild till late in the month which saw the first spells of snow and hard frosts which continued through January. February brought more snow and frost. March rainfall was low but with few completely dry days. April was very wet with snow, sleet and hail during the first week of lambing. Even May gave few hints of a real spring but June showed a great improvement. July and August were reasonable until the exceptional deluge at the end of August. September and early October were mostly sunny. Unsettled weather from mid-October brought cool blustery days and the occasional light covering of snow on the tops.

RAINFALL (mm)

1985	November	110.1	
	December	82.0	
1986	January	132.8	
	February	102.2	
	March	56.6	
	April	204.6	
	May	87.8	
	June	56.2	
	July	67.6	
	August	206.7	
	September	30.3	
	October	68.9	
		<u>1205.8</u>	<u>47.5 in</u>
	Ten year mean	<u>1040.1</u>	<u>40.9 in</u>

2. SHEEP

(a) Tupping 1984. Despite the atrocious summer, grass was plentiful and all breeding stock came to the tup in exceptionally good body condition. During the tupping period the weather was comparatively open with average rainfall and only a few light frosts recorded.

(b) Winter Feeding. Hoggs were introduced to feed at the beginning of December and fed until returned to their hefts at the start of April.

Snow falls in early January necessitated the feeding of hay and feed blocks with sugar beet cubes being introduced at the middle of the month. Also grass nuts were fed during this period to supplement the small quantities of hay made and purchased during the summer. A change to protein cobs (or rolls) was made in late March. Concentrate feeding continued throughout lambing, ewes nursing twins being fed high protein concentrate pencils until the beginning of June.

A total of 86.9 kg (hay, sugar beet nuts, grass nuts, concentrates and feed blocks combined) was fed on average to all outwintered ewes at a cost of £10.39 per head. This compares with 74.4 kg dry matter at a cost of £8.92 for the winter of 1984-85.

With the average feed cost of all 1663 outwintered ewes and gimmers at £10.39, the range for individual hefts was from £8.90 to £11.73.

The average cost for 417 outwintered hogs was £6.61 compared with £6.11 the previous year.

Ewes from the Rigg heft (except gimmer age) were allocated to an experiment investigating the effect of level of food intake at mating on the reproductive performance of ewes passively immunised against testosterone. They were housed at the beginning of October to allow precise control of feed intake. Ewes were mated indoors from November 21st. The station became responsible for the winter feeding of these ewes from the 10th January. Gimmers from the Rigg heft were housed on 19th December and Gair ewes and gimmers on 14th January. Because of the scarcity of hay on the station grass nuts were purchased and used to substitute part of the hay ration of all housed ewes.

The amount fed to 583 inwintered ewes was on average 147.9 kg at a cost of £14.58 compared with 141.3 kg and £13.77 the previous year.

All Rigg and Gairs ewes were scanned in mid-February to determine foetal numbers. The level of feeding of concentrate was increased as lambing approached, with a high protein concentrate (18% CP) being fed from mid-March to twin bearing ewes at the same daily rate as the medium protein concentrate (14% CP) being fed to the single bearing ewes.

For the inwintered hogs feed costs were £7.77 compared with £7.27 in 1984-85.

The majority of outwintered ewes and gimmers were also scanned, and on hefts where feed sites and fencing allowed, the twin bearing ewes were fed separately with an 18% protein concentrate replacing the 14% crude protein concentrate fed to single bearing ewes, from the middle of March. The twin-bearing ewes came up to lambing in very good order and the knowledge of foetal numbers proved a real aid to lambing management.

Feed data for both inwintered and outwintered sheep are shown in the following tables, the feed items being costed as follows:

	1986 <u>Per tonne</u> £	1985 <u>Per tonne</u> £
Hay	64.00	66.00
Green Keil*	141.00	153.95
Ewebol cobs**	143.48	146.46
Ewebol pencils	140.20	143.83
Super Ewebol cobs	156.50	-
Super Ewebol pencils	155.58	152.13
Sugar beet pulp cubes	115.43	130.21
Ewe and lamb food	180.00	198.00
Lamb supplement pencils	156.00	161.00
Barley	130.00	138.00
Colborn feed blocks	222.95	208.60
Rumevite H.E. blocks	193.78	184.00
Special tup feed	167.00	174.00
Dried grass cubes	102.38	-

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

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

The expenditure on feed for all outwintered sheep, i.e. ewes, gimmers, ewe hogs and tups, expressed per outwintered ewe to the tup was £12.63. When outwintered wethers are included this figure becomes £13.29 per ewe mated.

TABLE 1. HOGG FEED DATA

	Hay (kg)	Green Keil (kg)	Ewe cobs or pencils (kg)	Ewe and Lamb food (kg)	Lamb Supplement Pencils(kg)	Average cost per Hogg(£)
Outwintered	21.4	28.7	3.4	0.7	4.1	6.61 (6.11)*
Inwintered	36.8	37.6	-	0.6	-	(7.77) (7.28)*

* 1984-85 costs.

Total weight fed: Outwintered 58.3 kg
Inwintered 75.0 kg.

TABLE 2. EW E FEED DATA

	Hay (kg)	Feed Blocks (kg)	Beet Pulp (kg)	Concs (kg)	Dried Grass Cubes (kg)	Average cost per Ewe (£)
Storm Feed to 28/2	10.3	2.6	19.2	-	2.9	3.80 (3.17)*
Outwintered Ewes and Pre-Lambing Gimmers. Feed 1/3-16/4 incl.	7.2	2.6	8.0	13.8	-	3.94 (3.77)*
Post Lambing Feed from 17/4 incl. that fed to twins	5.1	1.0	0.1	14.1	-	2.65 (1.98)*
Total	22.6	6.2	27.3	27.9	2.9	10.39 (8.92)*
Pre-lambing Feed to 16/4	47.6	-	23.0	13.5	32.8	11.05 (10.84)*
Inwintered Ewes Post-lambing and Feed from Gimmers 17/4 incl that fed to twins	10.7	-	3.3	14.1	2.9	3.53 (2.93)*
Total	58.3	-	26.3	27.6	35.7	14.58 (13.77)*

* 1984-85 costs

Total weight dry matter fed: Outwintered 86.9
Inwintered 147.9.

(c) Lambing. Normal bodyweight loss occurred between pre-tupping and the start of winter feeding. Ewes responded well to pre-lambing feed and entered the lambing fields in good condition. The first week of lambing saw atrocious weather with heavy snow falls followed by rain and high winds. Once again the Macam lamb warming box proved to be a most valuable acquisition helping to keep lamb losses to a minimum. This weather certainly took the "back" off the outwintered ewes and they had to be fed accordingly throughout the lambing period. Conditions improved slowly as lambing continued, the eventual outcome being a most successful lambing with 967 pairs of twin lambs being present at "marking-time".

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 slightly heavier than those of 1985 with the total weight of graded wool from the station being 5,959 Kg at an average price of £1.00 per kg. This compares with 5,382 kg and 106 p/kg in 1985. Total wool receipts showed a rise of £225 or 3.9% from the previous year.

(e) Weaning

(i) Performance. Despite the cool spring and slow start to summer the marking and weaning weights were on average similar to those of 1985 with 300 more lambs weaned. Weaning percentages for South Country Cheviot, North Country Cheviot (including N.C.C. x S.C.C.) and Blackface ewes were 119.8, 134.0 and 137.4 respectively, to give an overall weaning percentage of 134.6, which sets a new record for the highest overall weaning percentage (by 12% over the previous best) ever recorded at Sourhope.

A detailed breakdown, by heft, of weaning percentages and weaning weights is given in Table 3.

(ii) Disposal of lambs. 1,671 lambs were sold store (599 Blackface, 878 N.C.C. x S.C.C., 71 B.F. x Cheviot and 123 South Country Cheviot).

Average price realised in the sale ring for these were:

Blackface	£27.35 per head at an average of 90.3 pence per kg liveweight (£27.69 and 87.1 p/kg in 1985).
Cheviot	£31.70 per head at an average of 105.8 pence per kg
N.C.C.x S.C.C.	(£32.38 and 114.3 p/kg in 1985).
B.F. x Cheviot	£27.08 per head at an average of 94.6 pence per kg liveweight (£28.83 and 98.5 p/kg in 1985).
South Country	£31.43 per head at an average of 103.5 pence per kg liveweight (£31.83 and 107.3 p/kg in 1985).

Twenty-four Blackface lambs were sold to H.F.R.O. Animal Production Department at an average of £27.35 per head. Also eleven very unthrifty (shott) lambs were sold locally for £5.10 per head. The overall average for the above 1706 lambs sold was £29.73 per head which compares with an average of £30.04 per head for comparable sales in 1985.

In addition 100 twin Blackface lambs were sold (with dams) at approx two weeks of age to H.F.R.O. Animal Production Department. Four hundred and ninety-two lambs (438 Blackface, 28 Cheviot and 26 Cheviot x) were finished off grass and average £28.84 per head.

TABLE 3. Weaning percentages and lamb liveweights

Flock	Ewes to tup	Total number	Lambs weaned		Weaning weights	
			Percentage 1985	Percentage 1986	Singles kg	Twins kg
S.C.C. Fasset	202	242	100.5	119.8	30.0	25.7
NCC x SCC *N.E.H.L./ Auchope	671	892	120.8	132.9	28.2	25.0
N.C.C. Park Law	155	215	124.8	138.7	30.3	26.1
Total N.C.C.+ (N.C.C.xS.C.C)	826	1107	121.6	134.0	28.6	25.2
B.F. Alderhope	297	392	126.3	132.0	29.5	26.7
B.F. Banks*	338	419	117.6	123.9	-	-
B.F. Rigg*	275	410	132.3	149.0	31.3	28.4
B.F. Gairs*	308	453	133.7	147.1	32.0	27.8
Total Blackface	1218	1674	127.0	137.4	30.9	27.7
Station Total	2246	3023	122.6	134.6	-	-

* These totals include lambs sold to HQ in April/May with their dams.
(Banks 26 twin lambs. Rigg 44 T.L. Gairs 30 T.L.)

One hundred and thirty-nine lambs (128 Blackface, 11 Cheviot) were retained for finishing indoors on Green Keil and hay ad lib. 63 have so far been sold at an average of £31.68 per head.

A summary of the disposal of the 1986 lamb crop is as follows:

Ewe lambs retained as stock replacement	559*
Tup lambs for breeding	8
Lambs sold "finished"	555
Lambs sold to H.F.R.O.	124
Lambs sold store	1682
Lambs as yet unsold	76

* excludes purchased stock ewe lambs.

It was necessary to purchase 10 South Country Cheviot ewe lambs from Skelfhill this year. This was because an age group of Fasset ewes were tupped in November 1985 by a Blackface tup as the result of a scrapic problem.

(f) Draft and cull ewes. In the spring and summer of 1986 twenty-four Blackface ewes have been sold to H.F.R.O. Animal Production and Grazing Ecology Departments at an average of £28.37. In addition 50 ewes with young twin lambs were sold to Animal Production Department for £80.00 a set.

Details of the autumn sales of draft and cull ewes are as follows:
[This sale data includes ten young sheep kept as stock ewe hoggs in 1985].

	£/head
43 Cheviot draft ewes 6½ years old (F.W.)	45.00
36 Cheviot draft ewes 6½ years old (warranted below)	27.00
25 Blackface feeding ewes	18.50
25 Cheviot feeding ewes	25.50
60 Blackface ewes to H.F.R.O. (Animal Nutrition Dept.)	27.50
154 draft or cast Blackface and Cheviot ewes sold fat	23.82
8 unthrifty (shott) ewes sold locally	8.00

There are 77 ewes remaining to be sold.

(g) Death rates, veterinary treatment. The overall death rate of the sheep stock in 1985/86 has been 2.5%, with the death rate of ewes, gimmers and hoggs being 3.2%, 1.7% and 1.3% respectively.

The overall death rate in 1985 was 2.2%.

The entire sheep stock was worm drenched in the autumn, inwintered stock being re-dosed at housing. Outwintered stock were dosed again 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.

Because of the wet, cool weather in late March/early April it was only possible to dip the Banks and Alderhope hefts against ticks pre-lambing. The entire sheep stock was dipped with a scab approved dip in late July/early August and again in October. The horns of all Blackface lambs were treated twice during the summer with Cypor to prevent headfly attack. Also Rigg and Gairs hoggs were sprayed with the appropriate amount of Cypor at turn-out, because the previous year these hoggs had a moderate infestation of ticks at marking time. All Cypor treatments proved most effective.

During October all ewe hoggs received their first, and three year old ewes, their second cobalt bullet. All sheep stock received a booster vaccination of 4 ml heptavac-P before lambing.

In the autumn all retained stock lambs received an initial 4 ml vaccination of heptavac-P at weaning and a 4 ml booster six weeks later. All sale lambs received 2 ml ovivac-P vaccine at weaning and a 22 ml booster six weeks later. This practice of giving lambs clostridial and pasteurellosis cover has proved very popular with buyers at store markets and is, we believe, reflected in the prices paid.

A copper trial on Alderhope sheep was carried out in 1986. The objectives of the work was to compare the efficiency of copper oxide needles and the Cosecure bolus.

All twin lambs born on Alderhope in spring 1986 were grazed on Alderhope reseeds and regular weighings and blood samples taken from ewes and lambs.

During early November the 1982 age group of N.E.H.L. ewes (121 ewes) were housed and sponges inserted in order to synchronise oestrus. After sponge removal these ewes were inseminated with semen from four Thoka 'X' rams using the endoscopy method.

A few cases of eye trouble still sporadically affect the ewe stock, but fortunately on nothing like the scale experienced a few years ago. Reported cases quickly respond to treatment with antibiotics.

(h) Tupping 1986. The mild autumn and early winter weather benefitted the ewe stock which came to the tup in good body condition, with weights and condition scores, for most hefts, only slightly lower than those of autumn 1985.

3. CATTLE

The suckler herd comprised 39 cows and 14 in-calf heifers in December 1985. 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/head/day until the end of May. The herd was fed straw initially (supplemented with Granstock) before a change to silage feeding was made in December.

(b) Calving performance and calf growth. One cow calved in autumn '85, one cow was sold with chronic pneumonia in the spring and one cow was barren. A total of 46 calves were born in the spring, and 4 cows calved in autumn '86 (one calf dead at birth and one set of twins). This gives a total of 51 live calves born in 1985/86.

Over the five weeks prior to weaning and sale, all calves were offered creep feed. Some calf performance data (excluding the autumn born calves) are given in Table 4.

(c) Calf disposal. Sixteen Hereford x suckler calves (including the autumn born '85 Hereford x calf) and 31 Charolais x calves averaged £344.54 and the Herefords (excluding the autumn born calf) £273.86. The majority of Hereford x calves were out of heifers.

(d) Replacement. During the summer and autumn 7 cast cows were sold. In April 6 Aberdeen Angus x Friesian bulling heifers were purchased and put straight to the bull.

Thus the herd at the close of the year comprises 45 cows and 6 in-calf heifers. The cows have been run with a Charolais bull, kindly made available by Redesdale Experimental Husbandry Farm, and the heifers are in-calf to a Hereford bull.

TABLE 4. Calf performance

Breed	Numbers	Average birth weight kg	Average weaning weights kg	Average LWG birth-weaning kg	Average daily LWG kg
Hereford x					
Bullocks*	12	34.2	278.0	243.6	1.04
Heifers	3	32.6	260.0	227.0	1.04
All Hereford X	15	33.9	274.0	240.4	1.04
Charolais X					
Bullocks	14	43.9	320.0	276.1	1.17
Heifers	17	41.2	292.1	250.9	1.05
All Charolais x	31	42.9	304.7	262.3	1.1

* 1 12 month old calf not included in these figures.

TABLE 5. Calf Sales

	No. sold			Weights*(kg)			Price per head (£)			Price per kg (£)		
	C		H	C		H	C		H	C		H
	'86	'86	'85	'86	'86	'85	'86	'86	'85	'86	'86	'86
Bullocks	14	12	24	344.0	281.8	306.0	386.00	281.83	340.33	1.12	1.00	1.11
Heifers	17	3	6	293.0	257.0	291.0	310.41	242.00	300.00	1.06	0.94	1.03
All calves	31	15	30	316.3	276.9	303.0	344.54	273.86	332.67	1.09	0.99	1.10

*weights given are those at sale ring entrance
The 12 month old calf was 410 kg and made £388 (94.6 p/kg)

4. LAND USE

(a) Conservation. A total of 19.2 ha of grass has been ensiled of which 7.0 ha was conserved as "big bale" wrapped silage. Also 5.0 ha of grass was cut for hay.

(b) Reseeding. The lower Bull field (1.2 ha) was sprayed with Paraquat, ploughed and rotovated in early August. After removal of approx. 20 tonnes of stone the ground was directly re-seeded. A good take of grass and clover has been achieved.

(c) Fertiliser, lime, etc. Apart from routine fertiliser usage lime has been applied to 8.0 ha of inbye land at 3.75 tonnes/ha. Also 8.0 ha of inbye land was top-dressed with Scotphos G in the spring at 375 kg/ha.

(d) Drainage. Routine maintenance work on both existing field and hill drains has been carried out, and in addition approx. 1,000 metres of open drains on Gairs E1 and Schill Green were cut with a contractor's J.C.B. After assessing their effectiveness this winter estimates will be sought for piping and filling these drains.

(e) Fencing. No new fences have been erected, but general fencing repairs have continued throughout the year, with the electric fences particularly needing considerable repair in the spring after snow damage.

A new bridge, linking the hill track from the Fasset and Gairs hills, has been constructed by farm staff.

5. BUILDINGS.

The alteration of an existing shed to provide accommodation for two bulls, a loose 'court' and a small feed store has been completed. A new hay storage shed has been erected on Alderhope. Also a hard core feeding site has been established on Alderhope using approx. 50 tonnes of scalplings (quarry waste) laid over LOTRAC. Stone has also been purchased for making a similar feed site at the Banks left.

A very muddy area around the north door of the cattle shed has been causing problems for several years. To alleviate this a new drain to take rain water off the roof was laid and a concrete sill constructed between the doors. The surrounding area was built up using quarry waste laid over Lotrac.

6. EQUIPMENT

Purchases have been made as follows.

- (a) A second-hand 6 tonne Marshall trailer with sides, to replace the obsolete Markham 3 tonne trailer.
- (b) A new 5 tonne Krone Optimat manure spreader.
- (c) A new 20 ft Marshall hay trailer (with sides), which will also be used for the transport of visitors around the station.

HOUSE O'MUIR FARM1. WEATHER

The weather in November 1985 was reasonably dry and mild which continued well into December providing good early conditions for tupping.

In late December there was snow and a hard frost which continued intermittently throughout January making it necessary to offer hay to sheep during this period.

February was drier but became cold and during March the weather progressively deteriorated becoming wet and windy. April began with continued sleet and rain and at the start of the hill lambing there was a blizzard which continued for three days burying ewes and new born lambs. There was continued precipitation throughout lambing as the monthly rainfall data indicates (see below). May continued wet and relatively cold. Conditions improved in June and early Autumn temperatures and rainfall were favourable for continued grass growth well into October and early November.

RAINFALL (mm)

1985	November	64.0
	December	125.9
1986	January	121.2
	February	44.4
	March	72.3
	April	130.9
	May	113.5
	June	76.9
	July	60.2
	August	70.3
	September	37.6
	October	80.4
	November	88.9

2. SHEEP

(a) Tupping 1985. A total of 518 ewes were put to the ram in November 1985 which brings total ewe numbers back to that of November 1983. A total of 182 ewes of varying ages were tupped inbye to a Border Leicester ram to produce Greyface progeny for future experimental purposes.

(b) Winter Feeding. Only hay feeding was required until eight weeks before lambing when concentrate feeding was introduced. Ewe liveweight and condition was maintained using lower levels of feed inputs than previous years. The total hay fed per ewe was 27.0 kg and the concentrate intake over the eight week period was just over 600 g/ewe/day. With hay at £95 per tonne and concentrate at £175/t the cost per ewe was £6.00.

(c) Lambing. Atrocious weather prevailed throughout the lambing period but performance in terms of lambs marked was better than the previous year and higher than the average performance of the flock over a period of years. A total of 671 lambs were marked.

TABLE 1. Weaning percentage

	Ewes to Ram	Lambs		Lambs	
	November 1985	Weaned 1986		Weaned 1985	
	Nos.	Nos.	%	Nos.	%
Hill	336	438	130	542	124
Inbye	182	226	124	82	164
Total	518	664	128	624	128

(d) Lamb disposal. Lamb performance was good despite poor grass growth in the spring and prices for top draw lambs were well above those received in 1985 (+£2.60).

Blackface lambs

Wedder lambs sold store	141
Wedder lambs sold fat	55
Wedder lambs sold for research	15
Ewe lambs sold at mart.	100
Unsold	11
Replacements	116
Deaths	2
	<u>440</u>

Greyface lambs

Wedder lambs sold fat	116
Ewe lambs sold store	35
Stock ewe lambs retained	74
Unsold	1
Deaths	5
	<u>231</u>

Blackface wedder lambs sold store: 60 top draw £32.40
50 seconds £29.80

Blackface ewe lambs 100 £29.50
Blackface fat lambs averaged £29.00

(e) Ewes. Ewes were disposed of as follows:-

Regular drafts sold to Research	70
Cast	8
	<u>78</u>

Average price for cast and drafts was £29.00

(f) Ewe Hoggs. The ewe hoggs were away-wintered as usual on aftermath and undersown stubble. They were returned to House o' Muir at the beginning of March and received four weeks training for box feeding. They were hefted onto the hill before lambing started.

The cost of hay and concentrate was £3.00 per head.

(g) Wool. Though the weight of the fleece per animal was similar to previous years the value of the clip was slightly less than 1985.

1985	£1995
1986	£1959

3. CATTLE

There were 48 cows wintered in 1985/86, 26 spring calvers and 22 autumn calvers. During the year 11 Hereford x Friesian spring calving cows with calves at foot were transferred to Hartwood along with 14 Blue-Grey spring calved cows, with their calves. There were ten autumn calved Hereford x Friesian cows transferred to Hartwood the calves being retained at House o' Muir. Nine Blue-Grey autumn calved cows were sold to Glensaugh Research Station the calves being retained at House o' Muir.

Twenty-five Hereford x Friesian heifers were purchased in October 1986 nine of which have been subsequently transferred to Hartwood. The remaining 16 Hereford x Friesians were mated with a Charolais bull from November 15th 1986.

Nine Luing autumn calving cows with calves at foot were bought from Glensaugh Research Station on October 28th. These were bulled with a Charolais as from 1 December 1986.

The 10 bullocks and 2 heifers on hand in December 1985 were fattened or sold as stores as follows:-

	Price/head
1 bullock @	£400.90
1 bullock @	£285.98
5 bullocks @	£421.70
3 bullocks @	£456.64
2 heifers @	£390.00

There are currently 21, year old bullocks and heifers in hand to be wintered and subsequently sold for slaughter or for stores.

The cattle on the unit were predominantly fed on silage and some straw, which was supplemented with concentrate as appropriate to the needs of the various calving groups on hand.

4. LAND USE

Once again a total of 400 tonnes of good quality silage was achieved from the field resources of House o' Muir and the fields of the HQ complex.

General maintenance of fences and drains was progressed throughout the year but no major works were carried out.

HARTWOOD FARM REPORT 19861. WEATHER

If 1985 was one of the worst years on record, 1986 must run it a very close second. The annual rainfall shown below was almost exactly the same as the previous year. The problem of wet ground was with us almost all year and at the date of this report all work on the land with tractors has been forced to a halt. Again tracking with stock and tractors has proved a considerable problem, but not so extreme as in 1985. Grass continued to grow well into the autumn, and despite the weather ewes were in good condition at mating time.

RAINFALL

1985	November	81.9 mm
	December	156.5
1986	January	154.1
	February	36.0
	March	118.3
	April	87.7
	May	133.0
	June	68.6
	July	84.2
	August	124.0
	September	64.1
	October	139.6
		<hr/>
		1248.0 mm (49.1 ins)

2. SHEEP

(a) Mating 1985. Wet weather was experienced in the autumn of 1985 and fields were already in a poor condition after the very wet summer. Rams went out on 25th October to 647 Greyface ewes while the remaining 216 Greyfaces were mated from 1st November. The Blackface flock was mated from the 20th November.

(b) Winter feeding. The Greyface systems flock was housed in the wooden sheep shed along with half of the reproductive study group. The remainder of this flock shared accommodation in the plastic shed with a nutritional studygroup and part of the commercial flock.

A total of 637 Greyfaces were housed. The remaining 226 Greyface ewes were wintered outdoors on R H, Blaeberry Hill, Buttercup North and the eastern end of West Blaeberry.

The Blackface ewes and gimmers were housed in the slatted shed at Rosehall while the Blackface hogs were accommodated in the small plastic tunnel at Hartwood steading.

Prior to housing, feed levels were according to experimental schedules. Up to 300g/head/day concentrate (14% CP) and 1 kg/head/day hay replacer cobs were fed.

Since hay was very expensive and in short supply hay replacer cobs based on soda treated straw were purchased. These were fed up to 1kg/head/day for the remainder of the winter.

Housing took place around 16th December.

Details of the various sub-flocks are given below.

(i) Systems Studies G F (240). Before housing ewes were fed up to 300g/head/day depending on experimental treatment while in addition, some ewes were fed up to 1 kg/head/day hay replacer. Housing took place on 16th December and ewes were then given ad-lib silage and 150 g/head/day concentrate. Silage consumption was measured at 5 kg/head/day.

From six weeks prior to lambing feed levels were increased weekly and levels were determined by predicted foetal load and expected lambing date. From four weeks pre lambing silage was withdrawn and 1 kg/head/day hay replacer introduced.

(ii) Reproductive Performance Study GF (159). These ewes were treated in the same way as the systems ewes above.

(iii) Nutritional Study GF (216). Half of these ewes were housed at the farm and were treated in the same way as the systems study group above. The remaining ewes in this group were outwintered with the balance of the ewe stock.

(iv) Balance of Ewe Stock (248). Some of these animals were outwintered on R H field until mid January when they were moved to Blaeberry Hill, West Blaeberry and Buttercup North. Silage was fed ad-lib and 450 g/head/day whole barley was fed as a supplement. 145 ewes from this group were housed in the plastic sheds on 24th December and fed 1.25 kg/head/day hay replacer and 150 g/head/day concentrate. Feed levels for outwintered ewes were increased as lambing approached until 1 kg/head/day concentrate (14% CP) was being fed at lambing.

(v) Reproductive Potential BF (152). The ewes and gimmers were housed in the slatted shed at Rosehall on 20th December and were fed 1.2 kg/head/day hay replacer. 300 g/head/day concentrate was introduced on 3rd February since it was felt that body condition was falling more rapidly than expected. Throughout the housing period severe problems were encountered with frozen water pipes and the ewes had to be turned out on several occasions. As lambing approached concentrate feed levels were increased to 1 kg/head/day.

(vi) Reproductive Potential Ewe Hoggs BF (88). Housing took place on 20th December in the small plastic tunnel at Hartwood. 570 g/head/day hay replacer and 280 g/head/day concentrate were fed. The flock was turned out on 26th February to allow lambing pens to be constructed for the Greyface flock.

(vii) Blackface Wethers (60). This flock was wintered on the Moor and in adjacent woods along with the tups. Silage was fed ad-lib and 100 g/head/day barley fed until turn out in April when they were required for experimental purposes by the Grazing Ecology Department.

- (c) Lambing and Weaning. The lambing performance of the Greyface flock, at 130% was lower than usual, with individual sub-flocks ranging from 100% to 160%. This reduced performance in part reflected the consequences of the poor summer of 1985 and in part the specific experimental work undertaken. A Blackface flock of 152 ewes, half of them gimmers, sited at Hartwood for experimental reasons, lambed down at 122%.

The weather experienced at lambing was appalling. Although snow falls were never particularly heavy and there was never complete snow cover it was often very cold and wet, with strong winds from the north and east. Lambing fields poached very badly and lambs once turned out were frequently at risk from exposure. As soon as space became available in the lambing sheds ewes due to lamb outside were brought indoors in an attempt to reduce losses and damage to swards. The turnout of ewes and lambs was often delayed due to weather.

An already difficult situation was further complicated by the need to rearrange the groups in which the crossbreeds had been wintered, to create flocks for specific experiments. The systems flock had to be enlarged and had to be put together with single- and twin-rearing ewes balanced to give a ewe/lamb ratio of 1 - 1.5. Another requirement was for a nutritional studies of flock of over 100 ewes in which each ewe, as well as meeting other criteria, had to be twin-rearing.

The combination of conditions underfoot and overhead, and what in the circumstances could only be described as an overambitious programme led to a weaning percentage of just short of 110% in the crossbreeds and 105% in the Blackfaces. Despite the bad start lambs nevertheless grew well and lamb growth rates were on a par with previous years.

(d) Lamb disposal

Sold Store

			<u>Av Price/head</u>
April 1986	Motherless lambs	6 Down x	£14.00
17/ 6/86	HFRO Animal Nutrition Dpt	10 Down x	£38.00
4/ 7/86	HFRO Animal Nutrition Dpt	16 Down x	£38.00
15/ 8/86	L S Smellie, Strathaven Mart	120 Down x	£34.25
19/ 8/86	HFRO Animal Nutrition Dpt	8 Down x	£38.00
2/11/86	L S Smellie, Strathaven Mart	50 Down x	£38.55
2/ 9/86	HFRO Wether Pool	31 Blackface	£27.00
20/11/86	L S Smellie, Strathaven Mart	25 BF Ewe	£28.75
20/11/86	L S Smellie, Strathaven Mart	67 BF Wether	£22.35
20/11/86	L S Smellie, Strathaven Mart	21 BF small	£17.00
	TOTAL SOLD STORE	<u>354</u>	

Sold Fat

8/ 9/86	Biggar Beef	71 Down x	£31.00
22/ 9/86	Biggar Beef	70 Down x	£31.00
20/11/86	Biggar Beef	121 Down x	£36.56
2/12/86	Biggar Beef	77 Down x	no return to date
	TOTAL SOLD FAT	<u>416</u>	

A further cut of 108 lambs were sold store on 18/12/86 and it is hoped the balance will be finished on rape.

24.

(e) Wool Crop

Average Wool Wt (kg)

Greyface ewes and gimmers

2.70

(f) Draft and Cast Ewes

Apart from a few feeders all cast ewes, 139 in number were transferred to the Animal Production Department for experimental work.

(g) Ewe death and Problems

The overall ewe death rate was 8.4%. By far the greatest health problem remains Jaagsiekte which now appears to be affecting younger ewes. Every effort is made to remove suspect cases from the flock but infection is still taking place. The situation may have been exacerbated by the effects of two summers of poor weather.

Enzootic abortion was diagnosed in the flock this year and a vaccination programme has been started.

(h) Mating 1986

Ewes came to mating in better condition and with very much more grass this autumn. Indeed the late summer and autumn grass growth has gone a long way to mitigate the effects of the last two seasons.

<u>Ewe Breed</u>	<u>Sub Flock</u>	<u>No.</u>	<u>Ram</u>	<u>Mating Date</u>
Greyface	Systems	304	Suffolk	27/10/86
Greyface	Reproductive Performance	124	Suffolk	27/10/86
Greyface	Balance of Ewe Stock	321	Suffolk	3/11/86
Blackface	Reproductive Potential	232	Blackface	12/11/86

3. CATTLE

- (a) Winter and Supplementary Feeding. Cows due to calve during the winter were brought inside on 28th November 1985. After an exceptionally wet grazing season, the first group of spring calvers from the systems experiment were housed as early as 11th September 1985. However, the main housing of spring calvers was on 6th November that year, while a group of mainly Blue-Grey spring calving cows were outwintered on Milligansfield and the Bing.

Weather was again poor during spring 1986 and it was 19th May before the first cattle went to grass. Turnout was slow due to a lack of suitably firm grassland and the sheds were not fully cleared until mid June. As a result, bulling, which usually begins about turnout had to be started while cows were still indoors.

From late November 1985 till time of sale, outwintered cows were given 40 kg silage each per day. Systems experimental cows (spring calving) were firstly given baled silage and then pit silage over the winter. Silage was fed at two levels to these cows before and after calving. The average levels for the high and low groups was approximately 31 and 27 kg/day.

The newly established September - October calving herd was fed 40 kg silage and $2\frac{1}{4}$ kg barley per head until February 1986 when hay replacer nuts were introduced to the ration to conserve silage stocks. At this stage, the barley part of the ration was removed from half the cows till turnout. Calves from this group had hay on offer and by the end of the winter were receiving over $\frac{1}{2}$ kg barley each per day.

Hay was scarce after the poor summer of 1985 and consequently winter experimental rations were based on chopped straw. Forty six cows were originally fed either 7 kg straw and 7 kg concentrates per day (high), or 3.5 kg straw and 3.5 kg concentrates (low) per day. Few cows on the high level took all the straw and the high diet was modified to 5 kg straw with 7.5 kg concentrates. Winter calvers not on experiment were fed approximately 7 kg straw and 4 kg concentrates daily. All winter calves had access to hay and creep feed.

During the latter part of the winter, quantities of hay replacer nuts were fed to all cows in the Indescon shed due to the shortage of silage.

Minerals were offered to all grazing cattle and added to winter feeds. High magnesium cow cobs were fed to cows for periods during spring and late autumn when the risk of hypomagnesaemia was at its highest.

Thirty five winter calvers were brought inside in late August and given a low diet to reduce their condition for experimental purposes and forty cows came in from the systems experimental study on 7th October. Good autumn weather allowed the remaining stock to be left outside until the usual housing time in late October and early November.

- (b) Rebreeding. Rebulling of the new autumn calving herd took place in the Indescon shed from 13th November 1985 to 10th January 1986.

Bulling for winter calving took place from 29th January till 1st April 1986.

Stall tied winter calving cows were re-bred according to the procedure outlined in the 1984 report, while those not required for experiment were put to the bull in groups in both cattle sheds. A number of cows not in calf after this bulling period were later run with the spring calving herd and subsequently sold as in-calf cows.

Spring calvers not required for experiment were turned out onto Springbank Roundel with a bull on 19th May. Bulling of spring calves on the systems experiment began next day. Bulls were run with some spring calvers still inside on 24th May. These cows were turned out to Springbank on 2nd June. Bulling continued until 28th July. Numbers were made up when a replacement for an aged bull was purchased in June and another came on loan for the summer from the North of Scotland College of Agriculture. In order to cover all systems cows on the systems experiment it was again necessary to rotate bulls daily through the paddocks on the systems areas.

- (c) Calving. Winter calving began on 4th November 1985 and ran till 13th January 1986. The sale of some spring calvers meant that calving did not start until 13th March and finished on 7th May, well before out. Autumn calving took place entirely at grass from 12th August till 20th October with fine weather predominant for the whole period.

Numbers of calves born per hundred cows mated were; 88 in winter 1985-86, 89 in spring 1986, and 87 in autumn 1986. Birth weights of autumn born calves were notably higher than for similar crosses of calves in the winter and spring calving herds, assisted and difficult calvings also being more frequent. Mean birth weights are shown in Table 2.

From 28th October till the time of this report, a total of thirty nine calves have been born in the winter calving group.

TABLE 2 Mean Birth Weights (kg) of Charolais Cross Calves

<u>Winter born calves 1985-86</u>		
<u>BREED</u>	<u>HEIFERS</u>	<u>BULLS</u>
Charolais x Hereford Friesian	40.1	42.6
Charolais x Blue Grey	35.4	38.0
<u>Spring born calves 1986</u>		
Charolais x Hereford Friesian	38.5	42.2
<u>Autumn born calves 1986</u>		
Charolais x Hereford Friesian	41.0	44.7

(d) Cattle Disposals and Calf Weaning Weights.

(i) Calves. The weaned calf stock was sold in three lots at Hamilton market while a fourth lot, of thirty two bullocks went to Glensaugh. Only the last born spring calf, not suitable for sale through the ring is still on the farm. Details of calf disposals are given in Table 3. Calf growth rates are shown in Table 4.

(ii) Cows. Two cows left the farm as casualties, one with chronic lameness and the other unable to rise after lengthy treatment for 'staggers' symptoms.

Nineteen cast cows went to either Lanark or Hamilton, and nine others left the herd purchased by the Department of Animal Production for work at Cleish and House O' Muir.

Due to restructuring of the overall herd, a total of fifty five in-calf spring calvers were sold either at Strathaven market or to Glensaugh, and two unsuitable autumn calvers with calves at foot were sold at Strathaven. The herd is now predominantly made up of Hereford Friesian cows, Blue Greys accounting for about half of the winter calving section only.

The ageing bull, Ravensworth Lord, also went to Biggar Slaughterhouse at the beginning of the grazing season.

Grazing was in very short supply after the start of the grazing season due to wet weather and weaning of winter calves was carried out earlier than usual to release pressure on grazing areas by selling some cows not in-calf after winter re-bulling. Silage areas on the systems experiment on Springbank were too wet to cut and winter calving cows were used after weaning to graze these areas, without risk of interference to heifer calves by bulls running with the systems cows.

TABLE 3. Sales of Suckled calves

<u>1985-86 Autumn and Winter Calves</u>					
<u>Sold to/at</u>	<u>Date</u>	<u>Breed</u>	<u>Sex</u>	<u>Number</u>	<u>Price/head</u>
Hamilton Market	25/9/86	Ch x	M	34	£311
		Ch x	F	28	£267
Hamilton Market	9/10/86	Ch x	M	20	£248
		Ch x	F	15	£209
		Fr	M	3	£146
Hamilton Market	13/11/86	AA x	M	8	£266
		AA x	F	3	£166
<u>1986 Spring Calves</u>					
Glensaugh	16/10/86	Ch x	M	32	£250
Hamilton Market	13/11/86	Ch x	F	26	£258

TABLE 4 CALF GROWTH 1986

	<u>Hereford x Friesian Cow</u>		<u>Blue Grey Cow</u>	
	Male	Female	Male	Female
<u>Calves born in winter 1985/86</u>				
Average weaning weight (kg)	179	171	148	147
Average L.W.G. (kg/day)	0.69	0.68	0.57	0.57
Average age of all winter calves at weaning: 201 days				
<u>Calves born in spring 1986</u>				
Average weaning weight (kg)	228	209		
Average L.W.G. (kg/day)	1.01	0.89		
Average age of all spring calves at weaning: 189 days				

- (e) Replacements and Transfers from House O' Muir. Eight Blue Grey cows with Charolais cross calves from Glensaugh were brought to Hartwood for experimental purposes at the end of January.

Eleven Hereford Friesian heifers with Aberdeen Angus cross calves at foot were transferred from House O' Muir for bulling as spring calvers in late May followed by nineteen Hereford Friesian and Blue Grey cows at the end of July for the winter calving group.

In autumn, ten cows were purchased from the East of Scotland College of Agriculture at the point of calving. These were all Hereford Friesians to augment the autumn calving herd.

Nine Blue Grey heifers, in calf to a Limousin bull were bought from Messrs Harrison and Hetherington of Carlisle, for the winter calving group.

TABLE 5 Disposal of cows, calves at foot and a bull

<u>Sold to/at</u>	<u>Date</u>	<u>Breed</u>	<u>Number</u>	<u>Price/head</u>
<u>COWS</u>				
Biggar Abattoir	14/1/86	HF	1	£182
Strathaven Market	22/1/86	BG & HF	30	£450
Glensaugh	24/1/86	BG	8	£540
A/P Cleish	29/5/86	BG & HF	3	£350
A/P House O' Muir	11/6/86	HF & BG	3	£300
Hamilton Market	18/6/86	HF	12	£223
Shotts Abattoir	12/8/86	HF	1	Nil return
A/P House O' Muir	18/9/86	HF & BG	3	£314
Strathaven Market	25/9/86	HF & BG	12	£301
Strathaven Market	25/9/86	HF & BG	2	£406 with calf at foot
Lanark Market	6/10/86	HF	7	£265
Glensaugh	14/10/86	BG	5	£350
<u>BULLS</u>				
Biggar Abattoir	27/5/86	CH	1	Nil return

TABLE 6 Cattle Purchases

<u>Purchased from/at</u>	<u>Date</u>	<u>Breed</u>	<u>Sex</u>	<u>No</u>	<u>Price/head</u>
<u>In-calf heifers</u>					
Harrison & Hetherington, Carlisle Market	13/9/86	BG		9	£620
McDonald Fraser, Perth Market	24/9/86	HF		13	£654
<u>In-calf cows</u>					
East of Scotland College of Agriculture	Autumn 1986	HF		10	£580
<u>Bulls</u>					
Messrs Adams, Newhouse of Glamis	June '86	CH		1	£2500
McDonald Fraser, Perth Market	23/10/86	CH		1	£2310
<u>Calves</u>					
Messrs Parkin, Daviesdykes	18/8/86	Hx	F	1	£40
Messrs Parkin, Daviesdykes	20/9/86	Hx	F	1	£40

(f) Cattle Health. During winter and spring calvings, both indoors, there were some cases of scour though these were not serious and any calves showing signs were promptly treated, often with a kaolin preparation only. Autumn calves born at Greengate were free from scour.

Occasional cases of pneumonia occurred through the winter and spring calving groups both inside and outdoors although this was not a problem. Only amongst calves born in autumn 1985 was there a serious incidence of pneumonia. These calves, bought in when less than one month old during the very wet weather at that time required considerable treatment indoors during the first part of the winter.

One calf born inside was treated for joint ill.

Two spring calving cows were treated for mastitis during the summer, though neither was badly affected.

A proportion of winter calvers retained their placentas after calving. This was diagnosed as probably due to a shortage of vitamin A in the predominantly straw based diet prior to calving.

One autumn calver had to be disposed of after lengthy and unsuccessful treatment of a severe foot infection as was another cow which did not respond to treatment after showing symptoms of hypomagnesaemia. One other cow took hypomagnesaemia a week after calving in September, although, in this case recovery was complete. The post mortem report on a cow which died suddenly at grass in August showed death due to peritonitis.

The young bull, Kersknowe Under, showing signs of unthriftiness in early summer, was much improved after worming and multivitamin dosing.

All cows were treated with E.Coli/Rotavirus anti-scour vaccine about one month before calving.

As a precaution against lungworm, Dictol was given to autumn and winter calves before they went out to grass.

Over the summer, young stock was regularly dosed with Systemex and copper needles were given to calves where blood tests showed low levels.

On two occasions during the winter, some calves were treated against ringworm.

High magnesium cow cobs were fed to cows at turnout and also as housing time approached, in addition to high magnesium mineral supplements. Trace element supplements were on offer to all grazing cattle and fed with forages to cows indoors. High phosphorus supplements were offered at bulling.

4. LAND USECropping Summary 1986

	<u>ha</u>	<u>ac</u>	<u>Approx Amount Harvested</u>
Barley	20.0	49.4	48 Tonnes
Grass Silage	67.8	167.4	1500 Tonnes + 200 Bags Baled Silage
Hay	3.0	7.4	24 Tonnes
Rape	18.1	44.7	-----
Direct Reseed	30.3	74.8	-----

The barley crop was sown in the first two weeks of April. This was followed by a very wet cold spell for about seven weeks which resulted in a very uneven and poor germination. On two areas amounting to about eleven acres the result was virtual crop failure. A good part of this was at the Shotts end of the farm where land is unfenced and where no alternative crop can be sown. All barley crops were pre-harvest sprayed with Round-up to control weed grasses and also to reduce uneven ripening of crop.

After a very slow start to growth in the silage fields, grass came away very quickly and within a very short period was into seed head. Despite the good weather at silage harvesting time this resulted in silage with a rather lower "D" value than is desirable.

Only one small field of hay was made using the round baler.

The rape crop was quite good although waterlogging and consequent patchiness was experienced in some areas.

Direct reseeding was carried out over approximately 75 acres but considerable difficulties were experienced due to the extremely wet spell and the problems of getting a satisfactory tilth. Spraying for weeds or cutting by silage harvester was carried out on all reseeds.

5. BUILDINGS AND GENERAL ITEMS

(a) Building Maintenance. As usual roof repairs, rhone repairs, painting etc have been carried out during the year. The brick covered drains in the silage pits were proved rather unsatisfactory. These have now been replaced by perforated metal frames. An additional safety fence was fitted to the slurry store.

(b) Drainage. Ditch cleaning, tile drain repairs etc have been carried out by the farm staff.

(c) New Office. An area of approximately 400 square yards has been concreted outside the new office to provide a parking area free from mud.

(d) Fencing. Some new fencing, a considerable amount of fencing repairs and the hanging of 15 metal gates has been carried out by farm staff.

(e) Phosphate. Following last year's soil analysis a further programme of Phosphate application has been carried out and in some fields where Potash was shown to be low have been treated with a high "K" compound.

(f) Liming. Some 140 Tonnes of ground Magnesium Limestone have been applied.

(g) Other Building Work. The old byre has now been converted into a cattle metabolism unit with separate slurry tank. The wooden sheep shed has had the floor area below the slats concreted together with access apron.

(h) Fire Precautions. Emergency lighting has been installed in the hostel flat and entrances. A general fire alarm bell is to be installed in the main yard and it is intended to fit smoke detectors and fire alarm in the hostel in the near future.

6. EQUIPMENT

A second hand tractor was purchased for sheep work. A new silage wagon was also purchased.

7. OTHER ITEMS

(a) Vermin Control. 38 foxes were killed on Hartwood during the year. Moles were poisoned in spring and autumn 1986.

(b) Shelter Belts. Some clearing work was carried out in the plantations by young persons employed by the Central Scotland Countryside Trust.

RED DEER FARM1. WEATHER

The late summer and autumn weather, the wettest on record, was followed by substantial snowfalls on the high ground in early November.

The winter weather alternated between mild spells with heavy rain and gales, and cold hard weather with snow. The spring was generally cold with a severe snowstorm in late April. The cool wet spring weather continued through May and into June but thereafter the summer was warm with a lot of sunshine. Grass production suffered from the moisture deficit in the late summer, early autumn period but recovered later.

2. RED DEER

(a) The 1985 rut. Weather conditions, although wet, were good throughout October but deteriorated rapidly in November to the end of the rut. Grass growth slowed down markedly during the rut and most of the hinds on the grass fields and the reseeds lost weight over the period. Rutting groups were moved on to the hill grazings for wintering two or three weeks earlier than normal practice.

(b) Winter feeding. Supplementary feeding of all stocks commenced with the snowstorm on 8th of November and continued until the 12th of May. Good quality hay was extremely difficult to find and buy and some lots had to be soaked with molasses before being fed to the stocks. The new hay replacer nuts manufactured by B O C M were used to feed the adult hinds and stags, the best hay was fed to the calves and yearlings. The stocks wintered well, very low levels of bodyweight loss were recorded in all cohorts (see table 2 in the summary of herd records).

The amounts of supplement fed and the costs are shown in Table 1. The feeding costs of all groups are higher than in previous years because of the higher cost of feedstuffs and the extended period over which stock were supplemented.

(c) Calving. Calving started on the 24th of May on the Upper Farm reseeds. The mean calving date for the red deer was 6th of June but 37 calves were born in late July - their dams were on an experiment throughout October last year and they could not be mated until November. The reproductive performance of the herd is shown in Table 2. The overall performance is affected by the need for barren hinds for research and the poor performance of the hinds bred to the Pere David and the Wapiti bulls.

(d) Weaning. The mean liveweights of the 222 calves weaned were slightly down on last year, although the summer weather was sunny and warm, the moisture deficit reduced the late summer grass production and calf growth rates were reduced accordingly. The weaning weights of the calves are shown in Table 3.

TABLE 1. Winter feeding levels and costs for all adult stock

Group	Period fed	Hay		Hay replacer nuts		Concentrates		Total feed cost/hd £
		kg/hd	cost/hd £	kg/hd	cost/hd £	kg/hd	cost/hd £	
Hill hinds (98)	8th Nov 85 - 12th May 86	75	6.75	69.5	8.68	—	—	15.43
Upper Farm (104)	"	70	6.30	52.0	6.50	—	—	12.80
Loch Hills (76)	"	82	7.38	71.0	8.87	13.6	1.88	18.13
West Greens (38 yearlings)	"	92	8.28	—	—	65.0	8.97	17.25
East Greens (21 stags)	"	186	16.74	70.0	8.75	—	—	25.49
Père David (10 cows)	"	242	21.78	—	—	129	17.80	39.58
Père David (4 bulls)	"	356	32.04	—	—	106	14.62	46.66
Wapiti bulls (3)	"	707	63.63	—	—	212	29.25	92.88

NB Hay costed at £90 per tonne
 Hay replacer nuts costed at £125 per tonne
 Concentrates (BOCM) costed at £138 per tonne

TABLE 2. Reproductive performance of Cohorts

Cohort	Hinds to Stag	Hinds Died	Hinds Yeld	Sold to Rowett Research Institute (RRI)	Calves Born	Calves Born Dead	Died Birth to Wean	No Weaned	Weaning %
A	2	-	-	-	2	-	-	2	100
B	38	-	8	-	30	-	3	27	71
C	20	2	2	-	16	-	2	14	70
H	43	4	8	-	31	4	1	26	60
J	27	3	7	-	17	-	2	15	56
K	14	-	1	1	13+	1	1	11+	85
P	24	1	1	2	20	-	5	15	68
R	69	1	14	9(4)	45	-	2	43	62
T	48	2	3	2(1)	41	-	4	37	77
V	31	2	3	-	26	1	3	22	71
X	34	7	14	-	13	1	2	10	29
Totals	350	22	61	14	254	7	25	222	65

NB Sold RRI column = figures in brackets = hinds sold 'in calf' other yeld. These hinds have not been included in the weaning/calving figures.

+ Includes one pair of twins.

TABLE 3. Weaning weights of calves (nos in brackets).

Breed	Sex	Liveweight (kg) September 85	Liveweight (kg) September 86	Average Birth Date
Red deer	M	40.0 (91)	38.2 (96)	6th June
Red deer	F	38.0 (86)	35.2 (75)	6th June
F1 Wap x red	M	39.0 (7)	38.9 (11)	22nd June
F1 Wap x red	F	41.3 (4)	39.4 (5)	27th June
F2 Wap x red x red	M	-	32.0 (6)+	11th July
F2 Wap x red x red	F	-	41.0 (6)	13th June

+ Includes one pair of twins weaned 15.10.86

(e) Disposal of the calf crop. Apart from the sale of four stag calves to the Moredun Institute, all 218 calves remaining were retained for experimental use at the farm. There were no calf losses from weaning in September to 1st December as shown in Table 4.

TABLE 4. Disposal of weaned calves

Nos	Disposition
4	Sold to Moredun Institute
218	Retained for research - housed at farm
<u>222</u>	Calves weaned.

(f) Calf sale prices. The four stag calves sold to Moredun realised £75 each.

(g) Sales to the farmed venison market. As in previous years, the 16 months old stags and hinds on experiment in the Hogg Park at the Loch Hills were sold to the Waitrose Supermarkets through Buchan Meat Producers at Turriff. The price offered ex farm was increased again this year to 331 pence per kilo dead carcass weight. The dates of sale, carcass weights and price realised are shown in Table 5.

TABLE 5. Prime venison sales

Prime 16 month old stags sold to the Waitrose Supermarket through Buchan Meat Producers at Turriff at a price of 331 pence per kilo dead carcass weight = £1.50 per pound dead carcass weight.

Date of sale	No	Average Carcass Weight (kg)	Price per Head £
7/10/86	20	44.15	146.14
13/10/86	15	41.73	138.12
27/10/86	15	39.50	130.74
4/11/86	24	33.96	112.40
Totals	74	39.88	132.02

(h) Venison sales to the game market (herd culls). Due to the accident at Chernobyl, venison sales to West Germany dropped dramatically with a consequent reduction of 66 pence per kilo in the price offered to 132 pence per kilo for the in-skin carcass. The details of the animals sold are given in Table 6.

TABLE 6. Venison sales to game market (stock culls).

Date	No	Stock	Average Carcass	Price/p per kg	Price per Head
3/ 4/86	3	Stags	33.63	132	44.39
23/ 8/86	3	Stags	28.18	132	37.20
12/ 9/86	1	Stag	89.09	132	117.60
29/ 9/86	6	Hinds	46.06	132	60.80
7/10/86	1	Stag	75.90	132	100.20
29/10/86	1	Stag	40.90	132	54.00
31/10/86	1	Stag	58.63	132	77.40
8/11/86	3	Stags	29.39	132	38.80

(i) Breeding replacements. Another 15 red deer calves (four males and eleven females) were artificially reared from birth to add to the numbers of tame deer for intensive studies. The five F₁ Wapiti x red hybrid female calves have been retained for breeding back to the Wapiti.

(j) Hind deaths. The deerstocks were screened for blood titres for mycobacterial infections and a total of 36 adult stock were found positive and were culled from the herd. Three hinds which had been treated with melatonin during the summer, died during the winter from what appeared to be exposure, due to a poorly developed winter coat.

(k) Calf deaths. Cryptosporidiosis was again responsible for 14 calf deaths in the group which were being artificially reared and had their faeces monitored for infections by the staff of the Moredun Institute.

Another seven calves were found to be stillborn and four calves were lost shortly after birth during bad weather. Three calves were known to have been born but were never found and two calves died between birth and weaning from unknown causes.

(1) The 1986 rut. The weather during October and November was probably the best ever and was ideal, being dry, sunny and mild.

The Wapiti bull was given melatonin treated hinds and was rutting well in early September.

A Pere David bull was also given melatonin treated hinds in September and appeared to be interested. The dates of release of stags to all groups is given in Table 7.

TABLE 7. Stag release dates - 1986

1. Pere David bulls to pure hinds	-	Running all summer.
2. Pere David bulls to red hinds	-	15th September.
3. Wapiti bull to melatonin hinds	-	3rd September.
4. Wapiti bull to hybrid hinds	-	10th September.
5. Wapiti F ₁ hybrid bulls to red hinds	-	30th Sept. and 1st October.
6. Red stags to hill group	-	24th Sept. and 1st October
7. Red stags to Upper Farm reseeds	-	30th Sept. and 1st October.
8. Red stag to Loch Hills area	-	30th September.
9. Experimental hinds from HQ-red stag	-	6th November.

3. FENCING

The New Banks Field was fenced at the Loch Hills for use by the red deer project. The March deer fence with the Forestry Commission in the Woodside paddock was renewed. A length of 600 metres of the Birnie Hill fence was dismantled and a new type of fence was erected using a high tensile rylock up to "32" and with five live wires above to a height of 5'6".

4. BUILDINGS

A new shed was built at the north east corner of the steading providing six hind or calf pens or alternatively stag pens and a large court area for inwintering the deerstocks. The shed measures 90 feet x 24 feet wide.

5. WATER SUPPLY

The supply which feeds the whole of the Upper Farm was extended to include the Cairn Henny hill and the deer ground at the Loch Hills, both hill and arable. The supply from the stagnant pond at the Loch Hills was cut off permanently.

II SUMMARY OF FLOCK RECORDS 1985-86

GLENSAUGH

Table 1. Reconciliation of ewe numbers 1985-86

Flock	Breed	Ewes and Gimmers November '85	Cast and Cull	Deaths		Gimmers Brought in		Ewes and Gimmers November '86	Hoggs kept Nov. '86
				No	%	Home Bred	Others		
Cairn	B.F.	254	68	12	4.7	63+13	-	250	81
Birnie	B.F.	200	52	3	1.5	56	-	201	75
Finella	B.F.	118	25	9	7.6	48-13	-	119	41
	E.FxB.F.	50	3	4	8.0	34	-	77	35
	G.F.	94	19	5	5.3	-	30	100	-
	N.C.C.	116	37	7	6.0	32	-	104	-
	E.FxN.C.C.	51	8	4	7.8	19	-	58	30
	N.C.CxShet	104	17	14	13.5	-	30	103	-
	H.B.	85	5	3	3.5	-	30	107	-
Totals For Sale		1072	234	61	5.7	252	90	1119 124	262

GLENSAUGH

TABLE 2. Liveweight of sheep
November 1985 to November 1986

Flock	Breed	Ewes		Gimmers		Hoggs	
		1985	1986	1985	1986	1985	1986
Cairn	B.F.	57.2	55.1	49.7	47.2	34.5	33.7
Birnie	B.F.	57.8	57.5	44.0	50.0	36.8	35.7
Finella	B.F.	53.1	54.4	46.4	52.3	34.5	31.6
	E.FxB.F	60.1	64.6	45.6	52.9	35.1	35.8
	G.F.	60.6	67.7	66.1	77.7	-	-
	N.C.C.	64.2	58.9	52.8	51.2	37.4	-
	E.FxN.C.C.	60.0	60.1	49.4	57.0	34.7	32.6
	NCCxShet	50.5	50.5	45.2	51.9	-	-
	H.B.	73.0	70.3	70.6	76.5	-	-

SOURHOPE

TABLE 1. Reconciliation of ewe numbers 1985-1986

Flock	Ewes and Gimmers Nov.1985	Draft and culled ewes	Ewe Deaths	Gimmers brought in	Ewes and Gimmers Nov.1986	Hoggs Nov.1986
S.C.C. Fasset	202	42	11	50	199	54
NCCx SCC Neml/ Auchope	671	143	22	154	660	156
N.C.C Parklaw	155	30	6	44	163	50
B.F. Rigg	275	66	6	75	278	68
B.F. Gairs	308	70	4	76	310	74
B.F. Alderhope	297	64	8	69	294	77
B.F. Banks	338	77	7	86	340	90
Total Blackface	1218	277	25	306	1222	309
Station Total	2246	492	64	554	2244	569

SOURHOPE

TABLE 2. Pretupping weights of ewes, gimmers and hogs
November 1985 and November 1986.

Flock	Ewes		Gimmers		Hogs	
	1985	1986	1985	1986	1985	1986
B.F. Rigg	56.7	60.1	54.0	53.6	36.0	34.2
B.F. Gairs	59.6	50.4	50.9	53.4	35.3	36.1
B.F. Alderhope	60.0	58.8	54.1	52.7	35.4	34.1
NCC x SCC Neml/ Auchope	62.6	59.8	52.4	50.0	39.2	38.5
N.C.C Park Law	65.3	63.2	56.2	54.7	36.1	35.6

HOUSE O' MUIR

TABLE 1. Reconciliation of ewe numbers

Ewes & Gimmers Nov. 1985	Cast	Sold to Research	Deaths	Gimmers	Ewes & Gimmers Nov. 1986
518	8	70	21	125	518

TABLE 2. Reconciliation of cattle numbers

Spring Calvers November 1985	Transfers in	Sold	Transfers out To Hartwood	November 1986
H/Friesian 12	0	1	11	-
B/Grey 14	0	0	14	-
Total 26	0	1	25	-

Autumn Calvers Nov. 1985	Purchases In	Deaths	Transfers Out To Anim Prod. Dept	To Hartwood	To Glensaugh	Nov 1986
H/Friesian 12	25	1	1	19	-	16
B/Grey 10	-		1		9	
Total 22	25	1	2	19	9	16

HARTWOOD

TABLE 1. Reconciliation of ewe numbers, December 1985 - December 1986

Breed	Ewes & Gimmers Dec. 85	Purchases & Transfers	Deaths	Sales & Transfers to Research A/C	Ewes & Gimmers Dec. 86
Blackface	152	88	8	-----	232
Greyface	863	160	76	171	749*
Total	1015	248	84	171	981

* Includes 7 cast ewes currently being fattened on rape

TABLE 2. WETHERS

Breed	Adult Wethers Dec 85	Purchases & Transfers	Deaths	Sales & Transfers	Adult Wethers Dec 86
Blackface	60	31	6	30	55

TABLE 3. Pre-mating weights of Greyface Ewes and Gimmers (kg)

	October 1985		October 1986	
	Ewes	Gimmers	Ewes	Gimmers
Systems	67.9	56.9	76.2	67.7
Reproductive Performance	67.6	----	74.3	-----

HARTWOOD

TABLE 4. Reconciliation of cattle numbers run on Hartwood
1st December 1985 - 1st December 1986

	At 1st Dec	Births	Purchases	From HOM	From G/S	To A/P	To HOM	To G/S	Deaths	Sales	At 1st Dec
Adult Cattle	215	----	19	30	8	9	---	13	1	65	184
Bulls	5	----	2	---	---	---	1	---	---	1	5
Calves Stirks	75	164	2	11	56	---	---	32	11	187	78
Total	295	164	23	41	64	9	1	45	12	253	267

RED DEER

TABLE 1. Reconciliation of stock numbers 1985-86

STOCK	NOS AT 1.12.85	AGE TRANSFER	CALVES BORN	PURCHASES	DEATHS	SALES	AGE TRANSFER	NOS AT 1.12.86
AGED STAGS	21	1	-	1	5	1	-	17
PRICKETS	1	3	-	-	1	-	1	2
YOUNG STAGS	5	75 ⁺	-	-	7	70	3	0
STAG CALVES	79+3 ⁺	-	117	10	20	4	75 ⁺	110 ⁺⁺
MATURE HINDS	282	30	-	-	16	18	-	278
JINNOCKS	30	27	-	-	4	-	30	23
YOUNG HINDS	31	39	-	-	5	10	27	28
HIND CALVES	51	-	101	-	24	1	39	88 ⁺⁺⁺
TOTALS	500+3 ⁺	175	218	11	82	104	175	546

+ Includes 3 calves which were late weaned and not included in the figure of 79 at 1.12.85.

++ Includes 1 calf not gathered at 1.12.86.

+++ Included 2 calves not gathered at 1.12.86.

RED DEER

TABLE 1(a). Reconciliation of stock numbers 1985-86

STOCK	NOS AT 1.12.86		AGE TRANSFER		CALVES BORN		PURCHASES		DEATHS		SALES		AGE TRANSFER		NOS AT 1.12.86	
AGED BULLS	3		-		-		-		-		-		-		3	
PRICKETS	-		3		-		-		-		-		-		3	
YOUNG BULLS	4		6		-		-		2		-		3		5	
BULL CALVES	7		-		23(7)		-		5(1)		1		6		18(6)	
MATURE COWS	-		-		-		-		-		-		-		-	
JINNOKS	-		3		-		-		-		-		-		3	
YOUNG COWS	4		4		-		-		1		-		3		4	
COW CALVES	4		-		13(6)		-		2		-		4		11(6)	
TOTALS	22		16		36		0		10		1		16		47(12)	

NB All 3 aged bulls are 100% pure Wapiti.
 For all other figures, those in brackets indicate the numbers of 25% ie F2 generation Wapiti crosses, the remainder of the total relating to 50% ie F1 generation Wapiti crosses.

RED DEER

TABLE 2. Liveweights of breeding hinds (Nos in brackets).

COHORT	LIVEWEIGHT (KG)		LIVEWEIGHT (KG)		LIVEWEIGHT (KG)	
	SEPTEMBER	1985	MARCH	1986	SEPTEMBER	1986
A	95.5	(2)	88.5	(2)	90.0	(2)
B	88.1	(38)	85.1	(38)	86.5	(33)
C	87.8	(20)	86.0	(18)	85.6	(18)
H	83.4	(44)	81.8	(31)	85.4	(30)
J	85.7	(27)	84.3	(23)	82.5	(17)
K	82.6	(14)	83.5	(13)	85.5	(11)
P	87.2	(24)	85.4	(21)	86.0	(16)
R	84.8	(69)	82.5	(58)	87.6	(47)
T	86.6	(48)	83.9	(43)	87.6	(38)
V	80.9	(31)	82.3	(29)	90.4	(28)
X	65.2	(34)	69.4	(28)	77.6	(22)
Z	-		52.6 ⁺	(33)	75.9 ⁺⁺	(28)

+ Including 10 artificially reared hinds mean weight 59.6 kg.

++ Including 9 artificially reared hinds mean weight 95.0 kg.