No 3

FORESTRY COMMISSION

RETAIN

WORKING PLAN

FOR

GREENWICH

RECORD OF APPROVAL AND SANCTION

The Objects of Management for this Working Plan and the Summary of Proposals for their Achievement are approved

Signed.....
Director

Date.....

The Objects of Management for this Working Plan and the Summary of Proposals for their Achievement are sanctioned

Signed.....
Director General

Date.....

This Working Plan is approved in its entirety and is to be put into operation as from.....

Signed.....
Conservator

Date.....

COMPILATION DETAILS

Written by

Part I W B Sutherland

Part II W B Sutherland

Growing Stock Data

These relate to the position as at 30th September, 19 61

CHAPTER I - INTRODUCTION

(a) Situation and Extent

Forest office Grid Reference NS 190886.
The area of the forest is 8832 acres as at 30:9:62.

(b) Civil Administration

County Council	Argyll
District Council	Cowal
Parish	Dunoon and Kilmun
Parliamentary Constituency	Argyll

(c) Nearby Towns

Dunoon, population 10,000, is/4 miles from the Forest Office. Glasgow, population 1,000,000, is approximately 75 miles by road and 30 miles using ferry.

(d) Communications and Transport

1. Railways

The nearest railway station is Gourock accessible by 20 minutes ferry passage from Blairmore Pier. By road the nearest station is Arrochar, 30 miles distant.

2. Roads

Public roads are of low standard. A.880 ends at Ardentinny Church. It has stretches of one way traffic with passing points. The Larach road begins here and is subject to a maximum load of 7½ tons, or 7½ feet width, or 30' length (see Road Traffic Act Notice 19:10:53). Both these join A.815 from Dunoon which is 16' wide being gradually improved to an 18' standard width.

3. Ports and Harbours

Dunoon 15 ft. low water O.S.T., frontage 440 ft., tonnage to 10,000 gross, passenger traffic priority.

Kilmun & Blairmore Piers Formerly owned by F.C. 5-15' low water O.S.T., with 10' rise and fall.

Strone Pier Disused but sound and owned by F.C., being reserved as possible means of shipping timber. Storage area 940 sq.yds

(e) Maps

O.S. Sheets 59 and 53, 7th series 1" to 1 mile.
6" O.S. Sheets CLXIV N.W., N.E.
CLXIII N.E.
CLII S.E.
CLIII

CHAPTER 2 - SITE

(a) Geology

The metamorphic rocks of the area are mainly mica schists giving place to schistose to the north of Drynain. Intrusive igneous dykes are mainly of basalt and dolorite.

(b) Soils

Glacial tills from the soils on slopes. Soil depth varies enormously due to erosion on steeper ground. Shallow peats occur on most of the flatter ground especially on the upper slopes but deep peat occurs only very locally and generally above the planting limit. Alluvial deposits are found in valley bottoms and there is a raised beach at Glenfinart Nursery.

(c) Topography

The terrain is broken and uneven to an unusual degree with alternating steep and gentle slopes broken by knolls, rock outcrops, deep ravines and areas subject to landslides. Some slopes are extremely steep. The Finnart & Stronchullin burns flow into Loch Long which forms the east boundary of the forest.

(d) Meteorology

The average rainfall measured at Benmore House over the last 10 years is 80 inches with a recorded maximum of 124 in 1954. The climate is oceanic with snow lying rarely for more than a few days in January/March. Damaging strong salty winds occur throughout the year with frequent winter gales. There is a tree growing season which may extend from April to November, with a dry time when fire danger may be high in March/May. Frost is seldom severe and late spring frosts are not common.

(e) Vegetation

To 5-600 ft. above sea level the natural vegetation was mainly Oak/Hazel/Birch, remnants of which are still to be seen. The vegetation here is now mainly mixed grass/bracken with areas of heather and in the wetter parts with pinus, bog myrtle. Rhododendron ponticum is a serious weed pest. On the higher slopes nardus, juncus squarrosus and molinia becomes increasingly dominant with the poorest and highest ground carrying heather/scirpus/eriophorum sphagnum mixtures.

(f) Site Classification

1. There is a small area of gentle sloping ground in the valley bottoms where soils are deep and crops are sheltered. Here the crops produced are even in growth.

2. The bulk of the forest lies on steep broken slopes with soil depth variable due to erosion. Crops are typically very uneven in growth.

3. Steeper slopes with a southerly aspect and the upper slopes of the forest suffer considerably from exposure to the prevailing wind.

4. There are large areas of extremely broken eroded ground with bare rock occupying a considerable proportion of the land surface. This type is not by any means confined to the upper slopes, e.g. Compartments 80 - 83. The resulting crops are very patchy and uneven, they have a preponderance of outside edge trees with coarse branching and they are indeed at best only partially productive.

CHAPTER 3 - HISTORY

The name is derived from the gaelic Glean fineard lit. Gathering place.

It forms part of what used to be the estates of the Earls Dunsmore. From the Earls Dunsmore it passed to the Douglas family, via Archibald Douglas, John Douglas and Charles Douglas and then to the Pice-Laschalles family, via John Pice-Laschalles to John Hendry Pice-Laschalles until sold in 1922.

Duringthe time when the ownership rested with the Douglas Family, interim tenants rented the estate for sporting purposes, notable amongst tenants being the Allan family (Allan Line) and the Seaton-Kerr family.

The total area of the estate at the time of the sale was 13,670 acres, only Lot 1 (8712 acres) beingpurchased by the Forestry Commission. This included six farms as follows:-

Barnacabber Farm (the estate home farm with some 200 acres of arable) Sligrachan Farm (2176 acres) Ardentinny Farm, Ardnahein, Stronchullin Farm and Craighoyle - originally the smallest farm with only some 20 acres of arable land and some hill ground.

Ferries At one time Ardentinny/Coulport was used as a main route to Gourock. The custom began to fade out with the advent of steamers when David Napier started plying a regular service from his pier at Blairmore (Portinstuck Pier) about 1830-1840. The original Ferry House and stone slipway, now disused, are contained in the Forest area. The old Ferry House is the oldest building in the district.

Woodlands. The various woodlands on Glenfinart Estate seem to date around 1800-1862 and consist of Douglas Fir, Norway Spruce, European Larch and Scots Pine. The bulk of these woods were formed by the Earls Dunsmore with other small plantations added by the Douglas family. Prior to the 1914-18 war J. Stalker had an office at Drynain and operated from this point, purchasing timber from various estates in Gowal and Lorne and employing imported seasonal labour. He had a fairly good trade in working scrub Birch for clog soles (mainly used in the Paisley and other Mills) and Birch Faggots for steel smelting, this material (Birch) coming from Clunie and Achaneich Woods. A profitable sideline to his conifer fellings was the supply of

Larch Bark mainly disposed of to Tanneries for the tanning of hides. His main work, of course, was the supply of logs to City Mills and the supply of quality Larch to Clynder, Sandbank and the various other yacht yards.

The Estate had a private sawmill worked by pond and waterwheel. In 1912 Drynain and Barnacabber Woods were despoiled by flood and gale damage and most of the other woods were felled during the 1929-1940 period. At the present time only small patches of large Scots Pine and Norway Spruce remain, with the odd isolated European larch tree. The Arboretum now contains but few of the various specimen trees planted there, e.g. Durmast Oak, Cedar, Walnut, Cryptomeria and an assortment of Cypress. During the war years of 1940-46, Rhododendron ponticum over-ran felled areas of Portdornaige and other woods.

Population The population has remained at about 200/250 since the 1800's. Some 20 houses have become disused or demolished and a like number have been built or reconverted.

Buildings Two or three houses were washed away during the 1912 flood at Drynain and Barnacabber. The mansionhouse at Craighoyle fell derelict in 1913 and is now in ruins. The area called "The Grotto" to the west end of Finart Bay was used to site a labour camp during the depression of the 1930's. This camp was added to and utilised by the Royal Navy as their shore base, H.M.S. Armadillo, and in 1946 was passed to the F.C. and used to domicile a Forest Worker's Training Scheme.

Weather and Climate The general topography lends itself to cloudbursts. In the Autumn of 1870 a very heavy fall ruined 10 acres arable and eight inhabited houses totally thrown down to the N.E. of Loch Eck. Some years before that time all the houses on a small farm to the N.W. of Loch Eck were demolished in a similar flood. 1912 saw a cloudburst in the Glenfinart area with resultant erosion and considerable damage to which reference has already been made.

Monuments A memorial hall was built to the memory of a previous owner of 1904 (H.P. Laschellas). The horse trough at the entrance drive with a

with a stone inscribed "Fingals Well" was erected by a previous Laird in memory of his pet horse in 1885. Place names on the Estate such as Lovers Leap and Soldiers Rock are copied from other Scottish beauty spots. The road leading from Ardentinny to Loch Eck was the subject of a poem by Robert Tannahill, the Paisley weaver, "The Lass o' Ardentinny" and later by Harry Lauder in his song "Ower the Hills to Ardentinny". It is said that around the 1745's, glen folks would travel this route to sell their goods, crossing to Coulport via the Ferry and thence by further Ferry to the Tail o' the Bank and Gourock where the merchantmen lay in at the end of their voyage. Baron Turner's Cairn on the same road is said to mark the spot where a former occupier of Nether Craighoyle was murdered about the year 1750.

Glossary

Ardentinny	Ard-an-tinne	Mooring Ring Field ? HEIGHT OF FORT ?	Ferry
Glenfinart	Gleann-a-fineard	Glen of Gathering	Meeting Place
Stronachullin	Sron-a-cuailen	Point like lock of hair	Gairletter Pt.
Craighoyle	Creag-Coille	Wooded Rock	Craighoyle
Craigcoll Barnacabber	Barran-a-caber	Fence of stakes Topping a wall	
Sligrachan	Slighe-racan	Noisy Path	Near weaning field or waterfalls
Tom Buic	Tom-buic	Roedeer Knoll	
Cuil	Corner		
Knap or Cnap	Small Hill		
Ardnahein	Ard-na-Aighe	Field on Creag Aighe	
Creag Aighe		Smiling Rock	

Forestry Commission Form WP 12

Schedule of Plantable Land

Working Plan Area Glenfinart

Areas in acres

Property, Compartment or Sub-compartment (1)	As at 30.9. (2)	As at 30.9. (3)	As at 30.9. (4)	As at 30.9. (5)	As at 30.9. (6)	Remarks (7)
C.71	24					P.62 (17 acs.) P.63
C.97	15					of a total of 32 acres
The above excludes further areas classed as scrub and detailed below, but where						
no planting is intended meantime.						
15	2					
30	2					
32	1					
35	1					
42	2					
48	1					
49	2					
51	1					
52	2					
53	2					
59	1					
66	1					
98	1					
101	22					
102	4					
111	4					
112	2					
124/6	2					
190	13					
	66 acres					

2669. W.L.P79005. 8M. 4/60. C.P.C55842. Gp.773.

Chapter 4 - Estate Management

1. Boundaries and Fencing Liability

(a) Type of Boundary

From the village of Carrick on the shores of Loch Goil the march runs behind certain feus and then follows the coast for the whole eastern boundary of the forest to the mouth of the Gairletter Burn on Loch Long just north of Blairmore, with the exception that it skirts round the inland side of Ardentinny Village.

The Gairletter Burn forms the march on the southern side until the watershed is reached just south of Meall Dubh. From this point the ridge is followed, first northward, then inclining east to the crest of Stronchullin Hill, then north again through Ben Buadh, Sligrachan Hill, Cnoc Madaidh to Beinn Bhreac. At this point the march turns sharply south-eastward still following the crest of the ridge, through Cruach a'Bhuic to Cruach Eighrach. Thereafter the march runs north-eastward to the sea at Carrick following the general course of the most easterly tributary of the Carrick Burn.

The upper stretches of the marches on unplantable ground are generally not fenced, but the lower sections where the march borders plantations and arable ground are fenced as are the few sections which border feus at Carrick and Ardentinny.

(b) Fencing Liabilities

To pay equal cost of maintenance of march fences with the proprietors of the following:-

Carrick Farm

Inverchapel Estate

2. Restrictive Covenants, Reservations, etc.

Glenfinart Main Acquisition

I. Burial ground of the Douglas Family.

II. Access right over the areas sold in favour of remainder of estate.

III. Existing water supplies to feuars and adjoining proprietors, with right to form tanks or "conduct other operations" in connection therewith.

IV. Existing drainage rights to feuars and adjoining proprietors.

/v.

V. Right to draw a supply of water for the development of Ardentinny Village.

3. Easements, Servitudes and Licences

None.

4. Public Rights of Way

None recorded. As Glenfinart is part of the Argyll National Forest Park general access is granted to the public, who are permitted to walk over forest roads unless these are specifically closed.

5. Sporting Interests

Day permits are issued for the River Finart.

6. Obligations of Outside Parties to the Forestry Commission

I. Feuar bound within two years of end of hostilities to erect and maintain buildings of an approved type.

II. Feuar bound to fence the subjects, with entrance only from the public road.

III. The site to be used only for a public convenience, drainage to be by septic tank, and any damage to Superior's property to be made good.

Forestry Commission

Acquisitions and Disposals

Form WP 10

Schedule of Information from Conveyances, Dispositions, Leases and Feus

Working Plan Area **GLENFINART FOREST**

Number (1)	Date (2)	Name of other party (3)	Property (4)	How acquired or disposed of (5)	Area (acres) Classified as plantable on acquisition (6)	Area (acres) Total acquired or disposed of (7)	Area (acres) Net Total to date (8)	Compartment Number(s) (9)	Reservations (10)
1	30/3/26	Major J. H. P. Leschallas of Glenfinart	Glenfinart, Barnacabber Sligrachan, Craighoyle, Ardnahein, and Stronchullin, together with salmon fishings on Loch Eck	Purchase	2770	8712	8712	1-85 (inclusive) 92-117 " 190-192 " 201-206 "	See Chapter 4 Sec. (d) 2 I, II, III, IV and V
2	Mart 1937	Henry Charles White	Glenfinart House, etc.	Sale	-	9	8703	Not applicable	
3	1/7/40	Argyll County Council	Plot of ground at Glenfinart	Feu	-	negligible	8703	Not applicable	See Chapter 4 Sec. (d) 6 I, II and III

DS 39873/1/2572/3 5m 2/59 DL

Forestry Commission

Statement of Land Utilisation

Form WP 11

Working Plan Area GLENFINART

Areas in acres

As at 30.9.19 (1)	Plantations				Land to be planted					Nurseries (11)	Agricultural and Grazing Land (12)	Holdings (13)	Unplantable (14)	Other (15)	Total (16)
	Acquired (2)	Planted by F.C.			For Afforestation		For Replanting		Total (10)						
		Before 30.9.1946 (3)	Since 30.9.1946		In hand (6)	Tenanted (7)	In hand (8)	Tenanted (9)							
			Afforested (4)	Replanted (5)											
30.9.61	2	~~876~~ 2012	~~2032~~ 594	~~295~~ a. 295	24	-	15	-	39	41.0	5393	44	110 b.	-	8832

a. As in previous Land Utilisation Records in absence of better information.

b. Mainly scrub areas not economically plantable. This area is approximate.

DS 39873/2/2572/3 5m 2/59 DL

CHAPTER 5 - AMENITY

(a) The forest area is notable for its rugged scenery and views onto the lochs. Finnart Bay is one of the best sandy beaches for bathing in the area and the Boot Hole and Knap are favourite mooring spots for yachts.

(b) Numerous touring buses and cars from Dunoon and District go "over the hill to Ardentinny" as part of a popular circular tour. There is a holiday house at Glenfinart and a caravan - camp site at Gairletter. The area is part of the Argyll National Park.

(c) A policy of introducing areas of Larch and other species to give variety to the scene has been most successfully carried out on Glenfinart. Also, remnants of previous crops of Pine, Larch and Spruce have been preserved. Subject to the limitations necessary for fire protection - applying especially in the Knap area - the public are not banned from using the forest roads which afford some magnificent views of the countryside. Because of the narrowness of the public road, every effort is made to limit timber loading operations on this during the tourist season.

Forestry Commission

Form WP 4

Summary Statement of Growing Stock

as at 30.9.1961.

Working Plan Area GLENFINART

Complete as necessary:
Section .....
Working Circle .....
Felling Series .....

Type (1)		Area (acres) (2)	Volume (h. ft.) (3)	Current Annual Increment (h. ft.) (4)
High Forest	Coniferous	3197	3038.9	339.0
	Mixed			
	Broadleaved	8		
Total High Forest		3205	3038.9	339.0
Coppice with Standards				
Coppice				
Partially Felled				
Reserved Timber				
Scrub		110		
Felled				
Other Plantable		5517		
Other Land				
TOTAL		8832	3038.9	339.0

TOTAL BY ANNUAL REPORT = 8712

Signature .....

Date of Compilation .....

DS 39872/1/2572 7500 2/59 DL

Forestry Commission

Form WP 5

Area Statement of Growing Stock as at 30.9.19

Working Plan Area GLENFINART

Complete as necessary: Section / Working Circle / Felling Series

CONIFER

Delete as necessary: High Forest—Main Storey / ~~High Forest—Subsidiary Storey~~ / ~~Coppice~~

I

Areas in acres

Species (1)	Over- or Under-storey (2)	Even-aged															Uneven-aged			Total (21)
		1966 1970 (3)	1961 1965 (4)	1956 1960 (5)	1951 1955 (6)	1946 1950 (7)	1941 1945 (8)	1936 1940 (9)	1931 1935 (10)	1926 1930 (11)	1921 1925 (12)	1901 1920 (13)	1881 1900 (14)	1861 1880 (15)	1841 1860 (16)	Pre 1841 (17)	Pre 1900 (18)	Post 1900 (19)	† Pre and Post 1900 (20)	
S.P.				2	4				17	16										
S.P.*							2		3	6									1	
				2	4		2		20	22									1	51
P.C.			10	19	22		1	3	18											
P.C.*										11										
			10	19	22		1	3	18	11										84
M.P.									7	14										
M.P.*									4											
									11	14										25
E.L.				5			3	11	7	35										
E.L.*								4	5											
				5			3	15	12	35										70

† Uneven-aged crops in which pre P.1900 and post P.1900 age groups each occupy at least 20% of the canopy.

Signature .....

Date of Compilation .....

2572. Wt.P.69260. 10,000. 4/59. C.P.C49211. Gp.773.

Forestry Commission

Form WP 5

Area Statement of Growing Stock as at 30.9.19 61

Working Plan Area GLENFINART CONIFER

Complete as necessary: Section / Working Circle / Felling Series II

Delete as necessary: High Forest—Main Storey / ~~High Forest—Subsidiary Storey~~ / ~~Coppice~~

Areas in acres

Species (1)	Over- or Under-storey (2)	Even-aged 1966 1970 (3)	1961 1965 (4)	1956 1960 (5)	1951 1955 (6)	1946 1950 (7)	1941 1945 (8)	1936 1940 (9)	1931 1935 (10)	1926 1930 (11)	1921 1925 (12)	1901 1920 (13)	1881 1900 (14)	1861 1880 (15)	1841 1860 (16)	Pre 1841 (17)	Uneven-aged Pre 1900 (18)	Post 1900 (19)	† Pre and Post 1900 (20)	Total (21)
J.L.				28	56		18	32	12	16										
J.L.*								2												
				28	56		18	34	12	16										164
H.L.				7	4		1	10		12										34
D.F.										57										57
N.S.				59	84	20	36	115	83	73			1							
N.S.*								30		3										
				59	84	20	36	145	83	76			1							504
S.S.			5	132	224	161	203	299	454	336										
S.S.*							9	24	13	16										
			5	132	224	161	212	323	467	352										1876
A. grandis					1		12	4												17
A. nob.				5	4		2	2	7	3										23
Tsuga				23	6		31	15	1											76

† Uneven-aged crops in which pre P.1900 and post P.1900 age groups each occupy at least 20% of the canopy.

Signature ..... Date of Compilation .....

2572. Wt.P.69260. 10,000. 4/59. C.P.C49211. Gp.773.

Forestry Commission

Form WP 5

Area Statement of Growing Stock as at 30.9.1961

Working Plan Area .....

Complete as necessary: Section ..... / Working Circle ..... / Felling Series .....

CONIFER

III

Delete as necessary: High Forest—Main Storey / ~~High Forest—Subsidiary Storey~~ / ~~Coppice~~

Areas in acres

Species (1)	Over- or Under-storey (2)	Even-aged															Uneven-aged			Total (21)
		1966 1970 (3)	1961 1965 (4)	1956 1960 (5)	1951 1955 (6)	1946 1950 (7)	1941 1945 (8)	1936 1940 (9)	1931 1935 (10)	1926 1930 (11)	1921 1925 (12)	1901 1920 (13)	1881 1900 (14)	1861 1880 (15)	1841 1860 (16)	Pre 1841 (17)	Pre 1900 (18)	Post 1900 (19)	† Pre and Post 1900 (20)	
Th.				2																2
L.C.								1												1
Sequoia semp.				1																1
Arau. arau.					1		2													3
Picea glauca									9											9
S.P./P.C.									6											6
S.P./E.L.										10										10
S.P./N.S.										9										9
S.P./S.S.								2	13	10										25
S.P./Pi. glauca										1										1
M.P./N.S.										3										3
M.P./S.S.									1											1
P.pond./E.L.										1										1
E.L./N.S.										1										1

† Uneven-aged crops in which pre P.1900 and post P.1900 age groups each occupy at least 20% of the canopy.

Signature .....

Date of Compilation .....

(Arau. arau. = Monkey Puzzle: Picea glauca - White spruce).

2572. Wt.P.69260. 10,000. 4/59. C.P.C49211. Gp.773.

Forestry Commission

Form WP 5

Area Statement of Growing Stock as at 30.9.1961

Working Plan Area GLENFINART

CONIFER

Complete as necessary: Section ..... Working Circle ..... Felling Series IV

Delete as necessary: High Forest—Main Storey ~~High Forest—Subsidiary Storey~~ ~~Coppice~~

Areas in acres

Species (1)	Over- or Under-storey (2)	Even-aged															Uneven-aged			Total (21)
		1966 1970 (3)	1961 1965 (4)	1956 1960 (5)	1951 1955 (6)	1946 1950 (7)	1941 1945 (8)	1936 1940 (9)	1931 1935 (10)	1926 1930 (11)	1921 1925 (12)	1901 1920 (13)	1881 1900 (14)	1861 1880 (15)	1841 1860 (16)	Pre 1841 (17)	Pre 1900 (18)	Post 1900 (19)	† Pre and Post 1900 (20)	
E.L./S.S.										17										17
D.F./S.S.				1																1
N.S./S.S.							27	77												104
S.S./Ts.							1													1
S.P./P.C./S.S.							6													6
S.P./E.L./N.S.										5										5
S.P./E.L./S.S.										7										7
S.P./Ts./L.C.				2																2

† Uneven-aged crops in which pre P.1900 and post P.1900 age groups each occupy at least 20% of the canopy.

Signature ..... Date of Compilation .....

2572. Wt.P.69260. 10,000. 4/59. C.P.C49211. Gp.773.

Forestry Commission

Form WP 5

Area Statement of Growing Stock as at 30.9.1961

Working Plan Area GLENFINART

Complete as necessary: Section / Working Circle / Felling Series

BROADLEAVED

V

Delete as necessary: High Forest—Main Storey / ~~High Forest—Subsidiary Storey~~ / ~~Coppice~~

Areas in acres

Species (1)	Over- or Under-storey (2)	Even-aged															Uneven-aged			Total (21)
		1966 1970 (3)	1961 1965 (4)	1956 1960 (5)	1951 1955 (6)	1946 1950 (7)	1941 1945 (8)	1936 1940 (9)	1931 1935 (10)	1926 1930 (11)	1921 1925 (12)	1901 1920 (13)	1881 1900 (14)	1861 1880 (15)	1841 1860 (16)	Pre 1841 (17)	Pre 1900 (18)	Post 1900 (19)	† Pre and Post 1900 (20)	
Oak				1																1
Beech				1																1
Syc.					1															2
Grey Alder				1	1															3
A.gr/Q/Be.				3																

† Uneven-aged crops in which pre P.1900 and post P.1900 age groups each occupy at least 20% of the canopy.

Signature ..... Date of Compilation .....

2572. W.L.P.69260. 10,000. 4/59. C.P.C49211. Gp.773.

Forestry Commission Form WP 6

Area Analysis by Quality Class as at 30.9.1961.

Working Plan Area GLENFINART * Working Circle

*Section * Felling Series

*Complete as necessary I

Areas in acres

Species (1)	P.Yr. Class (2)	Quality Class I (3)	II (4)	III (5)	IV (6)	V (7)	below V BT (8) CH	Not Classifiable (9)	Total Area (10)	Remarks (11)
S.P.	1881-1900		1						1	N.S. P.31 understorey
S.P.	1926-1930		4	20	9.5				41	
	1931-1935			5.5	13				29.5	
	1936-1940			1					1	
	1941-1945			2	2				4	
	1951-1955							4	4	
	1956-1960							3	3	
									83.5	
P.C.	1926-1930							11	11	
	1931-1935							21	21	
	1936-1940							3	3	
	1941-1945							3	3	
	1951-1955							22	22	
	1956-1960							19	19	
	1961-1965							10	10	
									89	
M.P.	1926-1930							15.5	15.5	
	1931-1935							11.5	11.5	
									27	
P.cond.	1926-1930							.5	.5	
E.L.	1926-1930			40.5	10	2.5			53	
	1931-1935			12.					12	
	1936-1940			7	5	3			15	
	1941-1945		1	2					3	
	1956-1960							5	5	
									88	

Signature

DS 39872/2/2572 10m 2/59 DL

Date of Compilation

Forestry Commission

Form WP 6

Area Analysis by Quality Class as at 30.9.1961.

Working Plan Area GLENFINART * Working Circle

*Section * Felling Series

*Complete as necessary II

Areas in acres

Species (1)	P.Yr. Class (2)	Quality Class I (3)	II (4)	III (5)	IV (6)	V (7)	below V BT (8) CH	Not Classifiable (9)	Total Area (10)	Remarks (11)
J.L.	1926-1930		10		6				16	
	1931-1935			12					12	
	1936-1940	4	3	13	10	4			34	
	1941-1945		2	13	3				18	
	1951-1955							56	56	
	1956-1960							28	28	
									164	
H.L.	1926-1930		12						12	Quality Classes by
	1936-1940		7	3					10	J.L. Yield Tables
	1941-1945			1					1	
	1951-1955							4	4	
	1956-1960							7	7	
									34	
D.F.	1926-1930		1	42	8	6			57	
	1956-1960							.5	.5	
									57.5	
N.S.	1881-1900		1						1	
	1926-1930		41	26	6				84	
	1931-1935		27	50	6				83	
	1936-1940		8	47	32				183.5	
	1941-1945			21.5	28				49.5	
	1946-1950				11				20	
	1951-1955							84	84	
	1956-1960							59	59	
									564	

Signature

DS 39872/2/2572 10m 2/59 DL

Date of Compilation

Forestry Commission

Form WP 6

Area Analysis by Quality Class as at 30.9.1961.

Working Plan Area GLENFINART * Working Circle

*Section * Felling Series

*Complete as necessary III

Areas in acres

Species (1)	P.Yr. Class (2)	Quality Class I (3)	II (4)	III (5)	IV (6)	V (7)	below V (8)	Not Classifiable (9)	Total Area (10)	Remarks (11)
S.S.	1926-1930			39	102.5	215			368.5	
	1931-1935				144	292.5			474	
	1936-1940				101.5	122.5			362.5	
	1941-1945			8	56.5	110.5			228	
	1946-1950				31	30			161	
	1951-1955					21		130	224	
	1956-1960							132.5	132.5	
	1961-1965							5	5	
									1955.5	
A.gr.	1936-1940		1		3				4	
	1941-1945			12					12	
	1951-1955							1	1	
	1956-1960							1	1	
									18	
A.nob.	1926-1930	3							3	
	1931-1935	7							7	
	1936-1940	2							2	
	1941-1945			2					2	
	1951-1955							4	4	
	1956-1960							5	5	
									23	
Tsuga	1931-1935		1						1	
	1936-1940	1	6	5	3				15	
	1941-1945	27	4.5						31.5	
	1951-1955							6	6	
	1956-1960							23.5	23.5	
									77	

Signature

OS 39872/2/2572 10m 2/59 DL

Date of Compilation

Forestry Commission

Form WP 6

Area Analysis by Quality Class as at 30.9.1961

Working Plan Area GLENFINART * Working Circle

*Section * Felling Series

*Complete as necessary IV

Areas in acres

Species (1)	P.Yr. Class (2)	Quality Class I (3)	II (4)	III (5)	IV (6)	V (7)	below V (8)	Not Classifiable (9)	Total Area (10)	Remarks (11)
Thuya	1956-1960							2	2	
L.cyp.	1936-1940							1	1	
	1956-1960							.5	.5	
									1.5	
Seq. semp.	1956-1960							1	1	
Arua. arau	1941-1945							2	2	
	1951-1955							1	1	
									3	
Picea glauca	1926-1930							.5	.5	
	1931-1935							9	9	
									9.5	
Oak	1956-1960							2	2	
Beech	1956-1960							2	2	
Grey alder	1951-1955							1	1	
	1956-1960							2	1	
									2	
Syc.	1951-1955							1	1	

Signature

OS 39872/2/2572 10m 2/59 DL

Date of Compilation

Forestry Commission Form WP 9

Volume Statement of Growing Stock as at 30.9.1961.

Working Plan Area GLENFINART

Complete as necessary: Section ..... Working Circle ..... Felling Series I

000'

Volumes in hoppus feet

Species or Species Groups (1)	"p" Year Class (2)	Volumes by Size Classes (B.H.Q.G.) 2½-6" (3)	6½-9" (4)	9½-12" (5)	12½-15" (6)	15½-18" (7)	18"+ (8)	Total Volume (9)	Pre-cision (10)	Current Annual Increment (11)
S.P.	1881-1900		.4	1.0	.4	.2		2.0		.1
	1926-1930	21.2	8.2					29.4		3.1
	1931-1935	6.7	1.0					7.7		1.0
	1936-1940	.2						.2		-
	1941-1945	.6						.6		.1
								39.9		4.3
P.C.	1926-1930	1.4	.8					2.2		.2
	1931-1935	8.4	5.2					13.6		1.4
	1936-1940	1.0	.6					1.6		.2
	1941-1945	.6						.6		.1
								18.0		1.9
Pinus pond.	1926-1930	.3						.3		
E.L.	1926-1930	9.2	35.0	27.3				71.5		3.5
	1931-1935	6.0	6.0					12.0		1.0
	1936-1940	13.5	.7					14.2		1.1
	1941-1945	2.6						2.6		.2
								100.3		5.8
J.L.	1926-1930	16.3	14.3					30.4		1.7
	1931-1935	14.5	11.9					26.4		1.3
	1936-1940	35.0	24.2					59.4		4.3
	1941-1945	15.1	3.8					18.9		2.2
								135.1		9.5
H.L.	1926-1930	13.0	16.6	1.6				31.2		1.5
	1931-1935							-		
	1936-1940	13.5	7.0	.1				20.6		1.6
	1941-1945	.7						.7		.1
								52.5		3.2
D.F.	1926-1930	18.6	90.0	46.6				155.2		11.2

Signature ..... Date of Compilation .....

DS 39872/3/2572 10m 2/59 DL

Forestry Commission — Form WP 9

Volume Statement of Growing Stock as at 30.9.19....

Working Plan Area GLENFINART

Complete as necessary: Section ..... Working Circle ..... Felling Series II

'000 Volumes in hoppus feet

Species or Species Groups (1)	"p" Year Class (2)	Volumes by Size Classes (B.H.Q.G.) 2½–6" (3)	6½–9" (4)	9½–12" (5)	12½–15" (6)	15½–18" (7)	18"+ (8)	Total Volume (9)	Pre-cision (10)	Current Annual Increment (11)
N.S.	1881–1900		.4	1.2	1.8	1.0		4.4		.2
	1926–1930	44.7	87.0	4.2				135.9		14.0
	1931–1935	121.0	30.3					151.3		12.2
	1936–1940	63.8	4.4					68.2		12.6
	1941–1945	15.8						15.8		4.3
								375.6		43.3
S.S.	1926–1930	316.4	361.7	67.9	7.6			753.6		78.5
	1931–1935	533.8	216.6	23.2				773.6		84.2
	1936–1940	304.8	37.6					342.4		50.4
	1941–1945	112.2						112.2		24.1
	1946–1950	14.3						14.3		4.2
								1996.1		241.4
A.gr.	1936–1940	3.4	1.9	.5				5.8		.9
	1941–1945	11.1	6.4	1.7				19.2		2.9
								25.0		3.8
Ab.nob.	1926–1930	2.4	5.2					7.6		.8
	1931–1935	7.2	15.3					22.5		1.9
	1936–1940	2.1	2.1					4.2		.5
	1941–1945	.6						.6		.1
								34.9		3.3
Tsuga	1931–1935	1.2	.8					2.0		.2
	1936–1940	27.1	3.0					30.1		3.2
	1941–1945	62.5	3.3					65.8		7.0
								97.9		10.4

Signature ..... Date of Compilation .....

DS 39872/3/2572 10m 2/59 DL

Forestry Commission

Form WP 9

Volume Statement of Growing Stock as at 30.9.1961.

Working Plan Area GLENFINART

Complete as necessary: Section ..... Working Circle ..... Felling Series III

'000 Volumes in hoppus feet

Species or Species Groups (1)	"p" Year Class (2)	Volumes by Size Classes (B.H.Q.G.) 2½–6" (3)	6½–9" (4)	9½–12" (5)	12½–15" (6)	15½–18" (7)	18"+ (8)	Total Volume (9)	Precision (10)	Current Annual Increment (11)
L.cyp.	1936–1940	.6						.6		.1
W.Spruce	1931–1935	7.3						7.3		.8
M.P.		.2						.2		-

Signature ..... Date of Compilation .....

DS 39872/3/2572 10m 2/59 DL

CHAPTER 6 (e)

Basic Survey

This was begun on 19th December, 1960, and completed 7th April, 1961. Prior to this R. Harvey had surveyed the area west of Stronchullin Farm.

Method of Survey

Most of the survey was done by Artillery Director and metre chain. A small area was plane tabled but the lack of adequate ground detail and steep slopes limited the use of this method.

Forest Boundary

Only on the craggy ground west of Craighoyle Farm did the crop boundary become very broken and difficult to follow. The west boundary of compartment 60 follows the traverse line.

Roads and Rides

All roads and rides were surveyed with the exception of the young area north of Knap where proposed roadlines will necessitate the alteration of compartment boundaries,

Compartments

These were renumbered and altered to suit the road system of the forest.
Compartments are numbered consecutively from 1 - 85 & 92 - 132.
Cpt. 190 - a hardwood scrub strip at Stronchullin Farm.
Cpt. 191 and 192 - small isolated plantings near nursery.
Cpts. 201 - 206 - unplanted areas - compartmented by grazings.

In a few cases compartments were left large and allocated two or even three consecutive numbers so that when a proposed roadline is cut the correct number of compartments will be formed, each of which will have the new road as one of its boundaries.

Crop Assessment

This was started on 2nd October, 1961, and completed 13th November, 1961.
Minimum size of sub. compartment was 1 acre i.e. (0.5 - 1.4 acres).
Within each sub. compartment, where the age of the crop exceeded 10 years, several relascope sweeps were taken in conjunction with Top Height measurement by hypsometer, the number of sweeps and height measurements being increased where height and stocking were variable. All trees marked for thinning were excluded from relascope counts. Standing volumes were then read from Alignment Charts.

Forest Inventory

Visual estimates were checked by 94 measured 1/10th acre plots (1 plot per 20 acres) and accepted without amendment. Increment was calculated from these plots using Yield Tables. The increment was reduced by 16%, i.e. 10% to allow for understocking and small gaps within the forest plus a further 6% which was the calculated area percentage of productive forest lost through roads and rides.

General

Compartments and other land areas were measured by planimeter and checked. An increase of 120 acres on the figure shown in the Annual Report was obtained, i.e. plus 1.4%. In order to keep figures in agreement with the Annual Report it was agreed that the 120 acres be deducted from the acreage of Cpt. 206. The total acreage under plantations differs from that shown in the Annual Report by 6 acres. On W.P.6 mixtures have had their acreage split and recorded by species under the various quality classes. E.g. a three acre sub. compartment of S.P./S.S. Quality Class III and IV respectively would have 1.5 acres added to S.P. Quality Class III and 1.5 acres to S.S. Quality Class IV. The current practice is to keep the areas and volumes of mixtures separate on W.P. 6's and 9's.
An estimate of volume lost because of inaccessibility was made. Limits of access were derived from a map provided by Glenfinart Forester.

Minima Used At Enumeration

(a) No tree of less than 2½" B.H.Q.G. was considered to have volume.

(b) In the measurement of the 1/10th acre plots in the Forest Inventory, minimum size for the 10 sample trees was 2¾" B.H.Q.G. (as per F.R. 31, Chapter 22).

(c) In crop assessment stands which did not exceed 20 feet Top Height were regarded as having no volume.

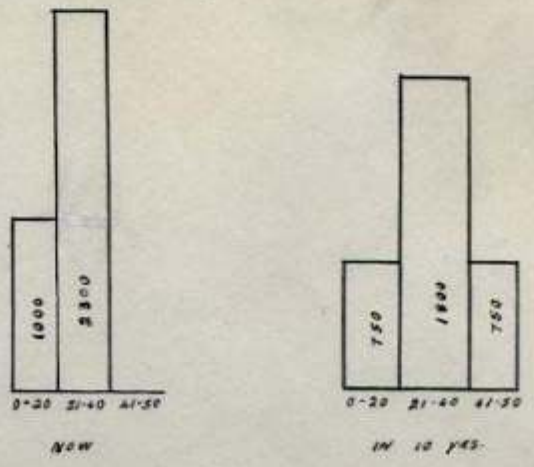
(d) In conifers, volume was taken to an overbark Top Diameter of 3", whilst hardwood volumes were taken to an overbark Top Diameter of 6" and to the point where the stem lost itself in the crown, whichever came first.

(e) Minimum sub. compartment area recognised was 1 acre but any area 0.5 to 1.4 was deemed to be one acre.

CHAPTER 6

(f) Growing Stock

70% of the plantations were formed in the 15 year period 1927 - 42 and planting ceased in 1958. Age class distribution is therefore poor and there are no acquired plantations to improve the position.



At present some 60% of the plantations are in the productive stage (pre 1941) but by the end of the plan period this will have increased to 80% of the total. The crops in production stage are almost all pure spruce but in the younger plantations there is a higher percentage of Larches and other species. The general quality class level is low (e.g. there is only 47 acres Quality III S.S.) and nothing higher than this. The main reason for this is the broken nature of the ground so that plantations are typically very uneven in growth with frequent patches of open or stunted growth or unproductive patches. Also growth and quality is restricted on southerly exposures particularly on high ground. The enumeration shows an average current increment per acre of 150 c.ft. and an average standing volume per acre of 1300 c.ft. The probable explanation of the low standing volumes in comparison to current increment lies in the irregularity of crops referred to above. Performance of individual species are as follows:-

S.P. 83 acres Quality III - IV

Crops are slow growing and the species seldom retain more than 1 year's needles over winter.

P.C. 88 acres unclassified

This species grows well on the forest but in the older plantations it occurs only in group - or intimate - mixture with Sitka Spruce, Scots Pine, etc. the best being in C. 69.

Young crops are generally unhealthy and cancered but some show promise of improving. It is recorded that the crops of European larch grown on Glenfinart Estate were very fine and a few very scattered large trees still remain. (See History).

J.L. & H.L. 198 acres Quality III With 4 acres Quality I J.L.
Both species grow fast and produce healthy crops.

D.F. 58 acres Quality III

There are some very promising stands both pure and in mixture with S.S.

N.S. 564 acres Quality III

Suffers from blast on all coastal areas and is not really vigorous even on sheltered sites.

S.S. 1956 acres Quality IV - V With only 47 acres in Quality III.
Although there are pockets of very fine fast grown Sitka spruce the broken nature of the ground leads to very uneven growth.

A. Grandis 18 acres Quality III

Grown with extreme rapidity but is liable to windblow and suffers from blast.

A. Nobilis 23 acres Quality I

Crops of this are promising and show no sign of droughtcrack.

Tsuga 77 acres Quality I

Some very promising stands of good form and very fast growth.

CHAPTER 6(g) SEED ORIGINS

There are no seed stands on the forest. One Sitka spruce has been selected as a possible elite tree.

The following is a complete list of identification numbers of S.S., D.F. and P.C. plants used on the forest:-

Sitka Spruce

P.Yr.	Ident. Nos.	Nos. Planted	Nos. Beaten Up	P.Yr.	Ident. Nos.	Nos. Planted	Nos. Beaten Up
27	22/20	65	-	44	39/27	27.0	
28	22/20	118.7	2.3		38/31	17.5	9.5
	24/15	107.6		45	41/244		2.0
29	24/15	34.8	5.8		41/3		3.0
	22/20	32		46	41/3		12.0
30	26/50	10.1	1.3	47	41/8	78.0	9.8
	24/15	66.6	6.2	48	44/1	6.2	
	25/5	29.3	13.4		44/2	21.2	1.4
31	26/50	45.8	19.6	50	46/7	103.0	10.0
	27/8	45.4	28.0		46/9	69.0	16.0
	24/15	4.2	7.2		44/1	4.0	
	25/5	11.0		51	46/7	131.0	54.0
	28/43	.8		52	48/32		58.0
32	30/29	3.5		53	51/724	16.0	
	27/8	84.8	23.6		50/257	20.0	
33	28/43	174.5	40.0		48/10	69.0	16.0
34	30/29	214.3	54.2	54	51/704		14.0
35	32/6	83.5			51/724	12.0	
	30/29	63.6			51/696	23.3	
36	32/7	93.0		55	51/721	40.0	
	32/6	29.0	6.8		51/696	14.0	6.0
37	35/14	14.0		56	52/301	45.5	6.5
	34/34	18.0		57	53/2	18.0	
	32/7	28.0	3.25		Ex. Res.	65.0	4.0
38	36/23	2.7			52/301		6.0
	35/14	38.5		58	55/797	48.3	3.7
	34/34	24.7			55/801	8.0	
39	37/36	4.4			53/2	11.2	20.8
	36/23	89.8	22.5	59	55/805		.5
	35/14		35.0		55/804		16.5
40	36/23	77.3	22.7	60	56/413		7.0
41	36/23	8.0	2.7	61	56/413B	8.2	
	37/36	167.5	8.5		56/413		17.0
42	37/36	57.0	27.0	62	57(7111)	2.0	14.0
43	38/31	73.0	16.0	63	56(7111)	18.7	11.6

Douglas Fir

P.Yr.	Ident. Nos.	Nos. Planted	Nos. Beaten Up	P.Yr.	Ident. Nos.	Nos. Planted	Nos. Beaten Up
27	22/19	39.0		29	24/1		2.5
28	24/1	24.0	6.0	30	27/5	5.8	
	24/23	.9		36	31/29	5.0	
	24/24	2.25		37	31/29		.85
	21/22	.85		51	49/80	15.0	
	22/19	1.5		52	50/2		3.0
	24/28	1.05		58	55/605	.5	2.5
	25/6	22.8	2.5				

Pinus Contorta

31	26/58	3.0	9.4	41	37/55	7.0	
32	28/37	5.8		42	40/2	3.0	2.0
	28/38	4.8		53	51/315	16.0	
	26/58	1.5		55	52/602		12.0
33	28/35	10.3			53/610	37.0	
34	-	5.4	9.0	56	53/610	8.0	
36	34/40	2.0		57	54/603	9.0	5.0
37	34/40	1.0	.25	58	53/694	11.0	.5
38	35/18	2.0		59	56/655		10.0
	34/40		1.2	61	57/7113	16.2	
39	36/29	1.5		62	59/7972	13.0	
	35/18		1.6	63	59(7972)	2.8	5.1
40	37/39	.4	.7				

CHAPTER 6

(g) Seed Origins

There are no seed stands on the forest. One Sitka spruce has been selected as a possible elite tree.

CHAPTER 7 - ORGANISATION

(a) Previous Plans

There has been no previous Working Plan. 5 year forecasts have been given in Plans of Operations since 1954 and these together with the Annual Financial Estimates have been the main guides to management.

(b) Administrative Subdivisions

There is no geographical subdivision of the forest into sections or beats. Administration falls naturally under three heads - Nursery, Production and Maintenance (including Planting). There are three Annual Working Blocks for thinning purposes, each of which is subdivided geographically into three for ease of working.

Forest Compartments are numbered 1 - 132, 190, 191a, 192.
Farm " " " 201 - 206.

Cs. 92 upwards comprise the unroaded unenumerated blocks and they include some compartments which are too large by present standards. Recompartmenting of this block will be necessary in time.

(c) Management Subdivisions

The forest consists of one Working Circle and there are no other subdivisions.

CHAPTER 8 - PLANTING RATE AND RESUMPTION OF LAND

(a) Planting

Planting began in 1927 and proceeded steadily until 1958 when the forest was planted up. The areas by P. Years as shown in existing records are:-

P27 - 120 acres	P30 - 238 acres	P40 - 100 acres
P28 - 175	P31 - 165	P41 - 183
P29 - 173	P32 - 140	P42 - 81
	P33 - 163	P43 - 54
	P34 - 150	P44 - 26
	P35 - 120	P45 - -
	P36 - 138	P46 - -
	P37 - 126	P47 - 46
	P38 - 98	P48 - -
	P39 - 120	P49 - -

P50 - 127 acres	P60 - - acres
P51 - 120	P61 - 15
P52 - 33	
P53 - 118	
P54 - 22	
P55 - 142	
P56 - 104	
P57 - 86	
P58 - 91	
P59 - 4	

These figures total 3278 acres but in fact the total area of plantations as at 30:9:62 including 8 acres of hardwood is 3205 acres.

(b) Resumption

There is no reserve of planting land. Two areas were resumed from Craighoyle and planted in 1961 & 2 when it was tacitly agreed that there would be no further resumption from this farm. There remain only small areas of plantable land on the upper edge of the forest which may be taken in from time to time, e.g. by Compts. 66, 1 & 2, 43, 11 etc. These areas have not been considered for planting in the past because the whole of this section of the forest (Compts. 1 - 68) is still unfenced.

CHAPTER 9 - SILVICULTURE

(a) Silvicultural Systems

Afforestation for the formation and maintenance of coniferous high forest.

(b) Thinning

This has usually begun when crops reached 30' top height. The cycle laid down is 3 years but exceptionally crops of S.S. and usually Pine and Norway spruce go for 6 years. The weight of thinning has varied over the years but the average results have been similar to the Research Grade C/D, larch on the average being treated more heavily than other species. As from F.Y.60 the following areas received Crown Thinning with the dual object of increasing current sawlog production and obtaining the maximum increment on some 80 - 100 selected best trees per acre, Compts. 32 - 56, Compts. 68 - 74.

(c) Felling

There has been no felling in the past except for roadline clearances. Some 11 acres of windblow, 8 acres of which have been successfully replanted.

CHAPTER 10 - CHOICE OF SPECIES, PREPARATION OF GROUND AND PLANTING METHODS

(a) Choice of Species

The main species throughout the forest is Sitka spruce with Norway spruce on the lower ground, Japanese/Hybrid larch on drier slopes and P. Contorta on the poorest heathers. There are areas of Douglas fir doing well, both pure and in mixture with Sitka spruce and some good crops of Tsuga. These species are reserved for more sheltered favourable sites and planting is on a small scale. Most of the European larch and Scots pine crops are very poor.

(b) Preparation of Ground

No ploughing was done until 1960 mainly due to rock outcrop and steepness. Considerable areas of very broken ground were flat planted with indifferent results. Planting through scrub in the past failed due to lack of maintenance work. Scrub clearance has more recently been mainly by group methods e.g. Birch at Knap, Rhododendron in Achaneich Wood.

CHAPTER 11 - ESTABLISHMENT AND MAINTENANCE

(a) Fencing

The younger, eastern half of the forest is protected by sheep fencing. The older forest is unfenced.

(b) Weeding

Ammonium sulphamate has been used to kill rhododendron regrowth.

(c) Beating Up

Roe deer damage has necessitated late beating up in parts of the Knap area.

(d) Cleaning

Not done except for removal of hardwood scrub in thicket stage plantations. It was the practice to carry out a pre-thinning or cleaning before crops reached normal thinning stage but this has not been done since 1954.

(e) Draining

This is done after thinning on a 3 year cycle. There are extensive areas with poorly laid out drainage systems which present maintenance and improvement problems.

(f) Racking

Nil.

(g) Brashing

Partial brashing has been done in the past but the practice now is to brash not less than 80% of the crop.

(h) Pruning

Nil.

CHAPTER 12 - ENRICHMENT AND REHABILITATION

(a) Enrichment

The old oak wood Achaneich has been the subject of small scale enrichment and further work is intended here.

(b) Rehabilitation

There are a few acres of failed plantations mainly in Craighoyle (Cs. 80-83) which it is intended to restock.

CHAPTER 13 - REGULATION OF THE YIELD

Methods of Yield Regulation

In 1955 production areas were divided into blocks to provide roughly equal yields on a three year cycle of thinning. A production squad was tailored to fit this programme. In this way although windblow, roadline felling etc. may cause temporary arrears, the annual yield remains fairly regular viz:-

Year	Total Yield
1962	75,300 c.ft.
1961	86,300 c.ft.
1960	81,900 c.ft.

Average 81,100 c.ft.

Forestry Commission

Record of Past Yields from Thinning/Felling

Form WP 13

Working Plan Area GLENFINART.

Volumes in 000's h. ft. over bark

Areas in acres

* Complete as necessary

* Section * Working Circle * Felling Series

Year (1)	B.H.Q.G. Classes (2)	Total Volume (3)	Total Area (4)	Species and Species Groups: Pines Volume (5)	Pines Area (6)	Spruces Volume (7)	Spruces Area (8)	Larches Volume (9)	Larches Area (10)	D.F. Volume (11)	D.F. Area (12)	Other Conifers Volume (13)	Other Conifers Area (14)	Oaks Volume (15)	Oaks Area (16)	Beech Volume (17)	Beech Area (18)	Other B'leaved Species Volume (19)	Other B'leaved Species Area (20)
1953	Total		316																
	2½"—6"																		
	6¼"—9"																		
	Over 9"																		
1954	Total	44,654	430																
	2½"—6"	38463																	
	6¼"—9"	6,191																	
	Over 9"																		
1955	Total	97279	536																
	2½"—6"	92402																	
	6¼"—9"	4877																	
	Over 9"																		
1956	Total	73981	327																
	2½"—6"	72153																	
	6¼"—9"	1828																	
	Over 9"																		
1957	Total	44380	179																
	2½"—6"	27561																	
	6¼"—9"	16819																	
	Over 9"																		

2572. Wt.P.69260. 15,000. 4/59. C.P.C49211. Gp.773.

Forestry Commission

Record of Past Yields from Thinning/Felling

Form WP 13

Working Plan Area GLENFINART.

Volumes in 000's h. ft. over bark .....

Areas in acres .....

* Complete as necessary

* Section ..... * Working Circle ..... * Felling Series .....

Year (1)	B.H.Q.G. Classes (2)	Total Volume (3)	Total Area (4)	Species and Species Groups: Pines Volume (5)	Pines Area (6)	Spruces Volume (7)	Spruces Area (8)	Larches Volume (9)	Larches Area (10)	D.F. Volume (11)	D.F. Area (12)	Other Conifers Volume (13)	Other Conifers Area (14)	Oaks Volume (15)	Oaks Area (16)	Beech Volume (17)	Beech Area (18)	Other B'leaved Species Volume (19)	Other B'leaved Species Area (20)
1958	Total	49643	287																
	2½"—6"	30709																	
	6¼"—9"	18933																	
	Over 9"																		
1959	Total	69349	294																
	2½"—6"	48161																	
	6¼"—9"	21188																	
	Over 9"																		
1960	Total	81930	269																
	2½"—6"	50395																	
	6¼"—9"	31535																	
	Over 9"																		
1961	Total	86333	254																
	2½"—6"	35410																	
	6¼"—9"	50923																	
	Over 9"																		
1962	Total	75340	95																
	2½"—6"	16672																	
	6¼"—9"	58668																	
	Over 9"																		

2572. Wt.P.69260. 15,000. 4/59. C.P.C49211. Gp.773.

CHAPTER 14 - FOREST ROADS AND ACCESS

(a) Construction

The position is as follows:

Constructed	Additional Planned
22	11

The terrain presents very considerable roading problems. The older roads include three very steep exits which are too important to be accepted as permanent and will require realignment. Apart from this the specification limits for most roads are 1: 10 gradient, 9' surface and 30' turning circle. New roads are being built to 1: 12 gradient, 10' metalled, 17' formation and 40' turning radius.

(b) Maintenance

Much improvement of drainage, removal of berms, reshaping, improvement of turning places and laybys remains to be done. Day to day maintenance is done by the forest squad using a towed grader.

(c) Access

There are some 379 acres inaccessible by normal standards due to difficult terrain and although some improvements may yet be effected, plans are being made on the assumption that this is a permanent state of affairs. The areas are as follows:-

Species	Compt.	P. Year Class	Area	Volumes
S.S.	11a	36 - 40	7	8.4
	12a	"	2	4.0
	18b	31 - 35	10	18.0
	19a	"	3	3.9
	19b	"	1	2.0
	24a	"	3	4.8
	24c	"	7	7.0
	37b	"	10	20.0
	42a	26 - 30	10	17.0
	43a	"	17	35.7
	44a	"	15	28.5
	45/46a	"	2	4.6
	50a	"	28	42.0
	51a	36 - 40	9	11.7
	52a	26 - 30	20	32.0
	53a	"	1	1.6
	57a	36 - 40	18	10.8
	58b	31 - 35	3	4.8
	58f	36 - 40	2	.4
	60c	"	1	.2
	60d	31 - 35	3	5.1
	61c	"	6	13.2
	62c	36 - 40	11	6.6
	62d	31 - 35	5	8.5
	63a	"	10	18.0
	64b	"	4	6.0
	65a	"	1	1.8
	66a	"	13	23.4
	67a	"	4	6.8
	68a	"	5	8.0
	74a	"	19	26.6
	76a	"	1	1.5
	81c	36 - 40	3	.6
	82a	"	14	2.8
	83h	"	19	3.8
			287	390.1
N.S.	18a	31 - 35	2	4.4
	38d	26 - 30	2	3.8
	50c	"	3	.6
	51b	36 - 40	6	3.6
	53b	26 - 30	1	1.2
	61a	31 - 35	3	5.1
	64a	"	1	1.9
	83c	36 - 40	2	.6
			20	21.2
D.F.	43b	26 - 30	2	4.2
	44b	"	1	2.1
	45/46d	"	3	7.8
	50b	"	2	3.6
	53c	"	1	1.4
			9	19.1

Species	Compt.	P. Year Class	Area	Volumes
E.L.	45/46b	26 - 30	2	2.6
	50h	"	1	.5
	58b	31 - 35	2	2.4
	83b	36 - 40	1	1.0
			6	6.5
J.L.	82b	36 - 40	7	7.7
	83d	"	3	4.5
			10	12.2
H.L.	83a	36 - 40	3	5.1
S.P.	50d	26 - 30	2	.8
P.C.	51d	36 - 40	1	.2
	76c	31 - 35	1	.5
			2	.7
Tsuga	58d	35 - 40	1	1.1
	62c	"	2	2.2
			3	3.3
L.C.	83j	36 - 40	1	.6
A. Gr.	83g	36 - 40	3	2.4
Mixtures	37d	31 - 35	1	.5
	38b	26 - 30	1	.5
	38c	"	1	.4
	38f	"	1	.3
	42b	"	6	1.8
	44c	"	3	.9
	44d	"	7	2.1
	52b	"	2	.2
	65d	31 - 35	2	.6
	74b	"	4	.4
	74d	"	3	4.2
	83f	36 - 40	2	.6
			33	12.5

Totals -	Species	Area	Volumes
	S.S.	287	390.1
	N.S.	20	21.2
	D.F.	9	19.1
	E.L.	6	6.5
	J.L.	10	12.2
	H.L.	3	5.1
	S.P.	2	.8
	P.C.	2	.7
	Tsuga	3	3.3
	L.C.	1	.6
	A. Gr.	3	2.4
	Mixtures	33	12.5
	Grand Totals	379	474.5

CHAPTER 15 - POWERED VEHICLES AND MACHINES

The following is held:-

Plant No.	Reg. No.	Type
2817	SYH 825	Ferguson Tractor
3465	XXL 323	Massey Ferguson Tractor
2306	OXO 352	Ferguson Tractor
3886	CXH 958	Utilibus
2978		Hathaway Pump

CHAPTER 16 - MARKETING & EXPLOITATION

(a) Marketing

(1) Standing Sales

The chief markets for sawlogs are at Strachur and in the Clyde Valley. The market for pitwood includes Ayrshire, the central lowlands of Scotland and the north of England. The nearest pulpmill at present is at Liverpool but the forest lies just within the supply area for the proposed pulpmill at Fort William (a distance of approximately 110 miles). There have been only occasional standing sales because of the need to supply timber to the Cowal Ari Mill. Recently this mill has been oversupplied and standing sales are now possible. However, the remoteness of the area and the difficult working conditions have proved unattractive to merchants.

(2) Departmental Working

The chief markets are as (1) above. The Cowal Ari Sawmilling Co. takes the bulk of the whitewood sawlogs. Other merchants operating in the area are:-

Messrs. Alex. Mair & Son, Auchengate, Troon.
Messrs. Gibb & Austin Ltd., Grangemouth.
Messrs. A. Wilson & Sons, Troon.
Messrs. G. Shanks & Sons, Coatbridge.
J. Kennedy & Co. Ltd., 69 Buchanan Street, Glasgow, C.1.

There are no long term contracts although efforts are being made in this direction.

Current roadside prices are as follows:-

Cowal Ari Logs

6 - 7^3	M.Q.G.O.B.	2/9 per c.ft.
8 - 11^3	M.Q.G.O.B.	3/- per c.ft.
12 -	M.Q.G.O.B.	3/7 per c.ft.

Logs Over Cowal Ari Size (22" maximum butt diameter)

3/- to 3/3 per c.ft. with prices over 4/- per c.ft. for Larch. There is never any difficulty in marketing the larger logs.

Non Ari Mill Logs

2/3 - 2/6 per c.ft. Higher prices may be obtained for good quality logs of species unsuitable for the Ari Mill especially Larch.

Pitwood

2/- per c.ft.

These prices are all appreciably lower than in F.Y.60 and earlier years.

Current costs of production are as follows. These costs are the average cost of all production work in F.Y.62 including P.V. & M. charges and hire of horse but not overheads:-

Marking and Measuring	1.8d. per c.ft.
Thinning	6.0d. per c.ft.
Extraction	8.7d. per c.ft.
	16.5d. per c.ft.

(b) Exploitation

(1) Standing Sales

There is no defined policy on size of coupes. Measurement is by tariff. All sales are subject to standard conditions.

(2) ~~Commission~~ F.C. Working

Measurement is generally by tariff and the unit of working is the tariff area. Merchants have been accepting the tariff measurements of all roadside sales of earlier thinnings. When the proportion of logs exceeds that of pitwood the merchant can hardly be expected to accept the volume of pitwood as the tariff measure minus the volume of measured sawlogs and a "one in ten" or other method of sample measure is then done for pitwood. Sawlogs are normally measured and booked by piecework fellers and in practice merchants accept the Commission measure. Sales are at roadside but very large logs and occasional other lots can be sold only F.O.T. In the case of the Ari Mill, tally sheets go with each load and are checked and any rejects may be returned to the forest.

Supervision

All production work is under the charge of one Assistant or Assisting Forester who is concerned mainly with supervision of marking, setting piecerates, checking measurements and earnings, improving efficiency and recording.

Production is entirely on piecework using Work Study rates to which a policy allowance has been added (1961 allowance = 15% on extraction and 10% on felling).

Protective Measures

All sales are subject to standard conditions.

Extraction Methods

The main method is horse dragging with chains and swingletrees by horses owned by Commission employees. On steepest slopes hand extraction is resorted to. Scandinavian authorities have expressed doubt as to whether our methods are sound and promising new methods, notably the Isaacson Winch, are being tried.

Tushing is causing increasingly serious damage to root and drainage systems and it is also responsible for erosion in parts. It cannot be viewed as a satisfactory means of extraction.

There is as yet no method of winch extraction applicable to inaccessible areas where the distance exceeds the 150 yard maximum of the Isaacson Winch.

Conversion

This is done by fellers to specified sizes and logs are numbered by marking hammer or keel.

Contractors

No contractors are engaged on the forest mainly because the level of production is still barely sufficient for one forest squad.

(c) Observations On The Merits Of Standing Sales And Departmental Working

Departmental working was adopted to ensure that the Ari Mill was adequately served. In general it is expected that standing sales will be more profitable at least for the earlier thinnings, but on difficult areas or areas requiring special equipment departmental working is likely to continue.

Early experience of standing sales has indicated that the merchants' employees are not so efficient as our own workers. This may be a temporary feature.

In order to ensure the supply of pulpwood to the Fort William Mill, departmental working is being maintained despite poor markets. A feeling of insecurity is nevertheless creeping in with the advent of standing sales in the forest and production workers are asking more and more for some form of guarantee or assurance of sufficient work in the future to justify the buying of horses and powersaws.

Production workers are among the highest paid and best of our forest workers and departmental working has therefore a direct and very considerable bearing on the prosperity and viability of our rural communities.

Birds

Blackgame do limited damage in the more remote parts.

Insects

Tripondedron has been troublesome since 1960. Control is by limited stocks of felled produce in April - July and spraying of logs. Midges affect work on certain days.

Weeds

The tremendous vigour of rhododendron in the area must have a marked effect on silvicultural prescriptions. Areas liable to be invaded cannot be left with a partial crop on the ground.

Fungi

Creosoting of stumps against Fomes is standard practice. Fires within plantations are prohibited because of Rhinzina infection which has occurred in several areas.

Climate

Heavy rainfall reduces working hours. It also causes flood and erosion damage at frequent intervals to drains and roads. Special care must be taken in changing of the existing water-courses. Storm damage is frequent but because of the broken nature of the ground, blows of more than 10m c.ft. are rare. Sea blast from summer gales causes temporary damage to all species, especially Abies grandis, Norway spruce, Larches and the minor species. Spring frosts are seldom severe.

Fire

Although the area is part of a National Park, the main fire season is over before the public begin to frequent the forest.

Extraction Damage

The practice of tushing logs produces deep ruts which tend to become drains and to erode badly. Tree rooting systems are thereby extensively damaged and/or bared of soil.

CHAPTER 18 - NURSERY

The bulk of the forest squad including production workers is brought into the nursery for the spring rush lifting and lining out season. The extent of this varies with season and programmes and in the past it has not presented any problems. With production working to a tight schedule other arrangements would be necessary.

During the hard winter weather, work such as brashing and drain repairs is carried out by the nursery squad.

Nursery Future When pulp production is under way it will be necessary to reorganise nursery work to avoid any interference with the production flow.

CHAPTER 19 - STAFF & LABOUR

(a) Staff

District Officers

1922 - 27	J. Hunter Blair
1927 - 31	J. Fraser
1931 - 38	A.H. Gosling
1938 - 46	H. Watson
1948 - 54	S.M. Petrie
1954 - 57	M. MacPherson
1957 to date	W.B. Sutherland

Foresters - in - Charge

There is a Head Forester in charge. Responsibilities of subordinate staff are organised on a functional basis, namely -

1 Assistant in charge of nursery
1 Assistant in charge of production
1 Assistant in charge of maintenance

In practice at present neither the production assistant nor the maintenance assistant have a full charge but production will be increasing in importance.

Foresters

1922 - 1925	Sale Period
26: 5:26 - 27: 9:26	Mr. J. Webster (D.O. Estate)
30: 7:26 - 26: 8:26	Mr. A. Grant (For. interim)
27: 8:26 - 24:10:35	Mr. H. McMillan
25:10:35 - 2:12:48	Mr. A. Mackay
3:12:48 - 26: 3:56	Mr. J. Ferguson
1:12:51 - 9:12:59	Mr. J. MacKay
14: 4:55 - 26: 6:61	Mr. R. Angus
27: 6:61 - 1: 1:70	Mr. R. Murray
1: 4:62 - 11-10-66	Mr. R. Oliphant
1: 4:62 - 19-9-66	Mr. D. Solway
29: 8:66 -	Mr. D.M. Campbell
11: 10: 66 -	Mr. A. MacIntosh.
6: 4:70 -	Mr. J. Mc Millan.

Foremen & Assistant Foresters, ex School Gangers

8: 9:26	-	1: 2:28	J. Watson (F)
9: 8:27	-	8:12:32	R.B. Steel (ex S.G.)
22: 2:28	-	16: 5:29	R.R. Baldwin (F)
4: 2:32	-	28: 9:33	W. Rose (G)
24:12:32	-	8:12:38	D.H. Ross (F)
11:11:38	-	17: 3:40	J. Reid (F)
3: 6:40	-	31:11:51	J.F. Mackay (F)
1:11:48	-	31: 3:55	M. MacIntyre (F)
16: 8:54	-	31: 8:59	J.M. McGavin (A.F.)
11:11:54	-	8: 5:57	A. Kesson (A.F.)
7: 8:57	-	30: 3:62	D.F. Solway (A.F.)
15: 4:58	-	30: 3:62	R. Oliphant (A.F.)
10: 8:59	-	3: 6:62	R.D. Boyd (A.F.)
4: 6:62	-	5:10:64	D.F. MacCallum (A.F.)

Details of the present labour force are as follows:-

	Men Labour	Grade I Workers	Gangers	Specialists	Women
Under 20 yrs.	4	-	-	-	1
21 - 40 yrs.	14	5	-	1 trapper	1&2 P.T.
41 - 60 yrs.	6	4	3	-	1
Over 60 yrs.	2	-	-	-	-
	26	9	3	1 trapper	1&2 P.T.

The squad is static and for the most part settled, with an average annual wastage of about 7%.
The reporting points for the forest are -

1. Forest Office
2. Drynain (for Larach area)

Piecework is available for most of the major operations. For production work the Work Study Booklet is the basis for fixing rates but a policy of 10% - 15% at present is added.

GLENFINART WORKING PLAN

Chapter 20

Houses & Holdings, Other Buildings and Special Installations

(a) Houses and Holdings

Foresters

There are two official foresters' houses which form permanent forester accommodation. Both of these fall somewhat short of the standards now laid down for foresters.

(i) "Drynain Cottage", a stone built detached house with slated and corrugated iron roof, containing five apartments.

(ii) "Garden Cottage", a stone built, detached house with slated roof; an old estate house and former gardener's cottage; contents - four apartments.

Of the remaining two assistant foresters one is unmarried and accommodated in lodgings and the other occupies the house of No. 9 holding.

Workers

There are thirty four houses originally intended for workers though some are now let to outside parties on non-service tenancies and one (see above) is occupied by an assistant forester.

3 Cottages at Stronvochlan, old stone built detached estate cottages, two with four apartments and one with two.

1 House at Sligrachan, old stone built detached house, containing eight rooms.

F.W.H's 3 & 4 in Glenfinart, Agricultural holdings; a pair of semi-detached prewar brick and roughcast houses of 3 rooms each.

F.W.H's 5, 7, 11, 12, in Glenfinart, Agricultural holdings; detached brick roughcast prewar cottages of three rooms each.

F.W.H. 6 near Barnacabber, Agricultural holding; detached stone built cottage of four rooms.

F.W.H. 9 at Glenfinart Nursery, occupied by forester and no longer classified as holding; brick rough cast cottage of three rooms.

Cottage at Drynain (Formerly F.W.H. 10) prewar detached brick roughcast three apartment cottage.

F.W.H's 13 & 14 at Ardentinny, agricultural holdings; a pair of semi detached brick roughcast prewar houses of three roomseach.

12 Swedish Timber Houses at Ardentinny Six blocks of semi-detached post war houses containing four rooms each.

Cottage/

Cottage at Barnacabber (formerly F.W.H. 15) old stone built former farm cottage of four rooms.

6 Bay Cottages at Glenfinart Camp (temporary houses) - 3 semi-detached blocks of converted corrugated iron navy huts, each containing 3 rooms.

In addition there are four farms under Commission management at this forest, Stronchullin, Barnacabber, Creaghoyle, and Ardnahein.

SUMMARY OF HOUSES AND HOLDINGS

Foresters Houses	2	
Forest workers houses	18	(1 occupied by foresters)
Forest workers holdings	9	29 service tenants or occupiers.
Workers houses on non-service tenancies	7	
Farms	4	
~~Holdings~~	1	12 non-service tenants.
	40	not including Farm cottages etc.

Of the workers houses listed above, one, Barnacabber Cottage is very much sub-standard, and is unlikely again to be occupied by a worker. One other house, Bog Cottage, is also very sub-standard It is, not included, in the above list as it is in the process of being sold.

The six Bay Cottages are temporary houses resulting from war time housing shortages. Present plans are for the Commission to build four houses, through Contractors, to replace them in due course.

Subject to this project the housing situation is generally satisfactory though neither of the foresters houses accords exactly with the standards now in force.

(b) Other Buildings

Wet Weather Shelters

There are three permanent wet weather shelters located at the head of the Larach, on the Blawerie Road and on the Rock Road respectively. Of these the first is a fairly solid building, but the other two are small and not very substantial. These are augmented by two mobile shelters.

Some five to six small shelters will be required in the next few years as work extends further into the Ardnahein section of the forest.

Offices

The Glenfinart Forest Office is situated at the former Glenfinart Camp. It is of adequate size but there is considerable room for minor improvements.

Garage

There is an excellent large garage near the office which will take the lorry and other forest vehicles and equipment.

Stores /

Stores

There are four good huts used as general stores in the vicinity of the office.

Hostels

There are no hostels.

Stables

Former cottages at Knap, Blawearie and Drynain have been converted to form satisfactory stables. These are adequate for present needs.

Community Buildings

The Laschalles Memorial Hall is situated on Commission ground and is run by a committee for the benefit of the local population. A similar position maintains in respect of "The Cosy Den Club" which is a children's club organized in one of the buildings in the former Glenfinart Camp.

Non-Forest Buildings

The only non-forest buildings are the houses and steadings of the four farms under Commission management which are mentioned above.

Special Installations

Glenfinart Forest has a considerable nursery area and this contains two large huts specially adapted for nursery work.

Maintenance

Responsibility for maintenance of the buildings described above, but not, generally, for portable shelters, and for the erection of new buildings rests with the District Estate Officer at Benmore District Office, subject to Conservancy authority. He is assisted by a Clerk of Works, an estate joiner and an estate painter all also situated at Benmore. This staff operates on suitable work at any of the forests in the district. Other work is carried out through contractors.

CHAPTER 21

(b) Local Investigations

Management Indicator Stands Formed

Comp. New	Comp. Old	Acres	Species	P. Year
39	39	10	S.S./D.F.	29
42	41	½	S.S.	29
77	70	6	S.S./P.C.	33
85	84	7	H.L.	33

GLENPIHART FOREST

WORKING PLAN

PART 11

GLENFINART WORKING PLAN

Chapter 24

Summary of facts on which to base proposals:-

(a) Forest Conditions and Potential

The Forest covers 8,832 acres on the eastern side of the high ridge dividing the valleys of Loch Eck and Loch Long in the County of Argyll. The ground is generally steep with eastern aspect, but is unusually broken and uneven resulting in markedly uneven growth of trees. Soils range from shallow peats on the flatter ground, especially on the upper slopes, through glacial tills of depth varying with steepness of the ground on the middle slopes to small areas of alluvial deposits in the valley bottoms. Climate is oceanic with rainfall averaging 80 inches. Winter gales are frequent and the salty winds cause some damage to the more exposed parts, but frost and snow are of only minor importance.

(b) Existing Crops, Volume and Increments

Summarised details of the enumeration as at 30.9.61 are as follows:-

	Total Area Acres	Area Enum. Acres	Weighted Aver. Yield Class	Total Volume H.ft.	% Volume Over 6" B.H.Q.G.		Total Increment H.ft.	Increment per Acre H.ft.
					6¼ - 9"	Over 9¼"		
S.P.	83.5	45	80	39.9m	22	-	4.3m	100
Other P.	116.5	58	80	18.3	33	-	1.9m	30
E.L.	88	65	60	100.3	41	27	5.8m	90
JL/HL	198	103	120	187.6	40	1	12.7m	120
D.F.	57.5	57	160	152.2	57	30	11.2m	200
N.S.	564	341	120	375.6	32	2	43.3m	130
S.S.	1955.5	1354	140	1981.8	30	5	237.2m	170
Abies	41	30	220	59.9	50	3	7.1m	240
O.C.A Mix	101	256	100	106.0	10	-	11.3m	40
Totals	3205	2310		3020 m			340 m	
Average			1300 c.ft					140 c.ft

These figures include 354 acres in the 1941-5 class. The effect of excluding this marginally enumerable class is to increase the average standing volume per acre from 1300 cu.ft. to 1400 cu.ft. The main reason for the still low volume is felt to be the irregularity of growth already discussed.

Age class distribution may be summarised as follows:-

Age Class	Acreage on 30.9.61	Acreage on 30.9.71
0-10	600	50
11-20	450	600
21-30	1,350	450
31-40	900	1,300
41-50	Nil	900
	3,300	3,300

There is thus a preponderance of the middle age class.

60% of the planted area is now productive and by the end of the plan period this will have increased to 80%. Current thinning yields are, however, derived from only 1570 acres of plantation - the enumerated area less 350 acres of inaccessible plantation and 350 acres awaiting roading. The inaccessible areas present a management problem.

The average yield per acre from thinnings over the past three years has been 400 hoppus feet but this volume includes considerable volumes of road-line fellings and windblows. The actual yield per acre from true thinnings averages approximately 300 hoppus feet.

It is estimated that 200 acres of the inaccessible areas are in need of thinning, having a standing volume of over 1500 c.ft. per acre and some of these areas are moderately fast growing Sitka Spruce where thinning has already been due for upwards of 3 years.

(c) Choice of Species

The main species is Sitka Spruce but Tsuga, Douglas Fir and Silver Fir grow fast. Hybrid larch and Pinus Contorta are required for specific sites. There is no large area of forest where a change of species is desirable.

Protection

Only the eastern half of the forest is stockfenced. Both red and roe deer are present but control is fairly satisfactory and replanting of blown patches within the unfenced forest has been successfully done with only temporary sheep net protection. Major replanting schemes would, however, involve fencing the perimeter of the forest.

Prep. Ground

Ploughing is possible only very locally due to rock. Hand turfing is normal, and hand drainage is frequently very difficult.

Planting

Spring planting is normal although flat planting may be done at the 'Backend".

Manures

G.N.P. is used when heather is present or, for Pinus Contorta, on the poorer sites.

Thinning

Both normal and crown thinning has been carried out in specific areas. The cycle is three years extending to six years, e.g. for slower growing crops. No thinning of inaccessible areas has been done since 1960.

Extraction

Over a large area of the forest extraction conditions are very difficult. Methods at present employed are horse tushing, Isachsen Winch and a small area of hand extraction. Horse tushing causes severe and increasing damage to tree roots and drainage systems.

(d) Reserves of Plantable Land

Nil.

(e) Produce and Markets

Production is mainly in the form of roadside sales. The average cost for felling, cutting off sawlogs and extraction to roadside in F.Y.62 was 16.5d per h.ft., excluding overheads and oncosts.

Timber/

Timber is occasionally sold standing but great difficulty is experienced in obtaining offers. Prices have been 6d. - 8d per h.ft. but these prices cannot fairly be compared with returns from roadside sales because only the more attractive accessible thinnings can be sold standing.

There are adequate markets for all sawlogs over 8" top diameter at F.Y.62 roadside prices ranging from 2/6d to 3/7d per h.ft. depending on size. Smaller whitewood logs down to 5½" top diameter can also be sold at F.Y.62 prices of 2/3d to 2/6d per h.ft. but the market for small logs of other species is so unreliable that this category is sold as pitwood. Because of the remoteness of the forest and the consequent high haulage costs, the return from sales of round pitwood is poor, F.Y.62 prices at roadside ranging from 1/6d to 1/10d per h.ft. For the same reasons the Commission has found it more economic to meet its limited commitments to the chipwood and pulpwood concerns from other forests but some pulpwood has been prepared by merchants from trees sold standing.

The forest comes within the supply area of the Fort William Pulp Mill and this will become the market for almost all of the forest's production of material other than sawlogs. Thus in accordance with the current plans the expected input to the pulpmill during the period 1965-70 will rise from 130,000 - 170,000 h.ft. per annum while sales of logs for the same period are expected to be 20,000 - 35,000 h.ft. per annum.

(f) Staff and Labour

Present supervisory staff is one forester-in-charge assisted by two other forester grades. The labour strength is 40 including 3 gangers. There are also two part-time women employed. The squad is fairly well settled with low turn-over.

(g) Housing

There are 29 houses occupied by service tenants, including 8 Forest Worker Holdings and 2 forester houses. 2 foresters are at present living in forest workers' houses. In addition there are 7 workers' houses and 2 farms with non-service tenants.

6 of the forest workers' houses are temporary buildings, and 1 other is so sub-standard that it is unlikely again to be occupied by a forest worker. Apart from replacement of these the position is satisfactory.

(h) Roads

22 miles of forest roads have been constructed. Improvement of these by better drainage, removal of berms, and provision of more passing and turning places is necessary. The terrain presents very considerable roading problems. There are 379 acres classed as inaccessible by any normal standards, and the steep exits on three of the older roads cannot be accepted indefinitely without re-alignment.

Roads are currently costing £6,122 per mile (1965).

(i) Other factors of Importance

The Forest forms part of Argyll Forest Park.

CHAPTER 25A

Objects of Management

General Discussion on alternatives

The forest is almost entirely planted up and in fact 60% of it is now at the thinning stage. The main considerations, bearing in mind the most profitable form of management, but also the amenity and access requirements arising from its position in a Forest Park are:-

(a) How to thin and maintain the forest up to the end of the rotation.

(b) The alternatives to be considered in the determination of rotation.

(c) The next generation.

From the description of the forest given in Chapter 24 it will be seen that growth throughout the forest is very variable due to local topography and soil conditions. At the outset it is necessary to establish a good drainage system and having done so ensure that it is well maintained.

Windblow has not been excessive, again possibly due to local topography but must be guarded against.

The plantations must be regularly and well thinned to allow full development of root and crown of the best trees. This can best be achieved by a three year thinning cycle, provided that volumes removed make the operation economic. When the volume which can be removed is small, then a six year cycle should be adopted. Up to 50% of C.A.I. should be removed at one thinning.

To enable thinnings to be removed from the forest additional roads will be required and these will be costly to construct so that they should be spaced at maximum width. In some areas it will be impossible to economically road on present standard of curves and gradients. Such areas we have classed as inaccessible.

There are two methods of dealing with the crops in the areas classed as inaccessible to roads but where the produce could be extracted by cable during clear fellings, these are:-

(a) No thinning, but grow for clear felling as pulpwood.

(b) Thin once and hope to produce a reasonable proportion of saw logs.

If when the crop has reached the thinning stage, it is uniform in growth then it should be clear felled and the timber extracted by cable. Should a number of good potential final trees have shown themselves above the rest then one thinning might be justified.

In the consideration of rotation the N.D.R. calculations for Sitka Spruce of quality class IV to V indicates the most economic rotation is from 55 to 60 years and at this age the average tree in the stand would have a breast height quarter girth of from 10" to 11" over bark or 13" - 14" diameter over bark. The most economic logs for sawing are those which have a top diameter of 8" and up and merchants are prepared to pay more for such logs and our aim should be to produce as high a proportion of such logs as is economically sound. In this case, therefore, it would be reasonable to fix the rotation as 60 years + - 5.

So far there is little indication of natural regeneration and, apart from amenity considerations, the best system to adopt will be one of clear felling and replanting. Amenity may lead to a choice of species other than spruce e.g. Larch to break up the monotony and amenity may also influence the size and layout of the coupe.

/There

CHAPTER 25 B - General Objects of Management

1. Within the limits set by other policy objectives, to manage the Working Plan area for the production of timber as a commercial enterprise and to earn the highest possible net discounted revenue.

There are no special local amendments to this objective.

2. To expand the area of productive forest but to avoid investments in unprofitable plantations except where it is necessary to provide other benefits such as the provision of employment, protection and amenity.

The scope for expansion is very limited due to the unprofitable land available and the need to retain the farm units as at present delineated. For amenity reasons choice of species may not be that which will always give the best financial returns.

3. To achieve and maintain a minimum permanent skilled labour force, not necessarily paid by the Forestry Commission, to meet the requirements of the Working Plan, bearing in mind the Forestry Commission's policy of maintaining a healthy home timber trade.

The forest community at Glenfinart is very stable and as presently constituted have become skilled timber workers and look forward to continuity of work particularly on timber production. The nursery will also continue for many years. When large scale production starts it may be necessary to extend our housing scheme at Ardentinny.

4. To pay regard to amentiy, recreation, sporting, scientific interest and the protective role of the forest and to maintain and improve the fertility of the soil.

Much of Glenfinart forest lies on the shores of Loch Long and along county roads which are very popular with tourists. The forest area also forms part of Argyll Forest Park.

It is essential that amenity from road and sea be maintained by the prevention of scars on the landscape due to large scale clear fellings; by the careful choice of species to break up large masses of pure species; by the careful layout or maintenance of existing road and compartment boundaries to avoid unnecessary straight top edges of forest and straight rides running vertically uphill.

5. To be a good landlord and neighbour.

The village community of Ardentinny is dependent on the presence of Glenfinart forest and these aspects of management must be maintained.

Local Objects of Management

(a) Sitka Spruce will be the main tree species, but small areas of other species will be grown on suitable sites mainly for amenity reasons.

(b) The main object will be the production of saw timber with small dimensioned timber being sold for pulp.

(c) The objective will be to produce trees of average 10" - 11" B.H.Q.G. on more favourable sites and 8" - 10" B.H.Q.G. on the shallower soils. To produce such trees will require a rotation of 55/65 years.

(d) The maintenance of facilities to enjoy the amenity and social features of the locality.

There are 286 acres of Larch which will be heavily thinned and underplanted with Sitka Spruce at the first opportunity when thinning is in progress in adjacent stands. This will allow a few Larch trees per acre to grow on and maintain local amenity as desired.

NOTE ON WEST SCOTLAND WORKING PLANS

Chapter 25 Part 11 Under Old Code for Existing Plans
Chapter 20 Under New Code for Future Plans

Local Objects of Management and Discussion of Policy for West Scotland Forests Falling within the Fort William Supply Area

With the coming of a relatively large pulp mill to north-west Scotland, to which it was considered essential that the Forestry Commission guarantee supplies for a considerable period, certain general considerations override any local plans and have over the years 1962/65 been imposed by planning on a Directorate basis. The most important of these restraints on forest management are:-

1. Meeting the volume commitment to the Mill

The state of development of the forests is such that all available 'pulpwood' material within the supply area must be channelled to the Mill, this involves:-

(a) definition of sawlog material on the basis of the required volume of pulpwood rather than on the relative return,

(b) premature felling of certain crops.

2. Ensuring that the volume available is in fact worked

It was considered essential that the Forestry Commission work about half the pulpwood directly and the rest via the timber trade acting as agents for the pulpwood element of standing sales. The split as between standing sales, contract or direct work in any forest depends on:

(a) availability of a timber merchant/contractor in the area,

(b) availability and experience of the Forester and forest squad in production work.

A training scheme for foresters and workers 1963-65 has increased the capacity for direct working and underwrites to some extent the merchants. The latter were not able to prepare themselves in advance in a comparable manner owing to the poor markets and the need to conserve timber before supply to the pulp mill commenced.

3. Production Roading

The need to ensure that lorries of 12 ton capacity could reach all production areas to comply with the definition of "at roadside" as the point of sale, has meant a crash reconstruction programme F.Y. 63-66. At the same time all productive areas had to be roaded. This together with a change in extraction methods from horse to double drum winch has necessitated a complete reorganisation of the road programme. In essence it is now based on 300 yard spacing (5-6 miles/square mile) with the lowest road well above rather than in the valley bottom.

With an average road cost of £5,000/mile for the standard required, the construction of the minimum length possible and the acceptance of unroaded areas destined for clear fell became inevitable. A road plan for 1966-70 is only now emerging.

4. Pulpwood Production Plans

The total quantity of pulpwood available till 1970, the method of marketing and production, together with the requirements of labour, roads and equipment were worked out for each forest in 1963/64 and provide the basis for current working rather than a formal working plan.

5. Relative Merits of F.C. Working and Standing Sales

All previous comparisons of stumpage are outdated by a number of

/considerations

considerations. In the last two years most F.C. working has been of quite unremunerative long pitwood undertaken as a training operation, often at a loss due to the low price on tonnage and the high haulage cost. Meanwhile standing sales have been slow and at a low price. It is expected that the stumpage on pulpwood working will be about 7d - 9d for thinnings averaging 3 H.ft. with no logs, and that the F.C. working will be little if any less profitable than standing sales. The general policy will be for F.C. working to be in early thinnings of low log content with sales standing where the log content is appreciable. These expectations are supported by costings made on pitwood and pulpwood trials.

Production versus Planting Programmes

While the planting programme in West Scotland is being increased by half for F.Y.66 as compared to F.Y.61, production must take priority. The number of producing forests is, however, only 20 out of over 50 and in these few forests where there is a clash, planting must be adjusted to match available labour after production and restocking.

J.W.L. ZEHETMAYR,
August, 1965.

CHAPTER 26 - SUMMARY OF PRESCRIPTIONS FOR ACHIEVING THE OBJECTS OF MANAGEMENT

(a) Amenity

Two of the most popular tourist attractions of the locality are: (A) A coach tour over the Larach hill and along the shores of Loch Long, and (B) a sail up Loch Long to Loch Goil and Arrochar. In addition Glenfinart lies within the Argyll Forest Park. For these reasons it is vital that no cause for criticism on the grounds of destroyed amenities be allowed to arise. This must be given high priority in the selection of clear felling areas, choice of species and top limit of plantations. The new road layout will prevent straight uphill rides.

(b) Organisation

(1) Administrative. The Working Plan area will be treated as one Section, although it may later be divided into beats.

(2) Management. The area will form one Working Circle with one felling series, but of several cutting sections.

(c) Planting Rate

As all the land suitable for afforestation has been used, planting can only mean replanting of clear felled areas. Apart from any clear fellings which may be done in connection with supplies to the Fort William pulp mill, the rate of clear felling on maturity should not be greater than 50 acres per year, and thus accordingly fix the planting rate.

(d) Silvicultural Operations

The choice of species for replanting is economically restricted to Sitka Spruce, Silver Firs and Douglas Fir. There should, however, be small proportions of Larches, Norway Spruce, Hemlock Fire, Scots, Corsican and Lodgepole Pine to introduce variety and allow for small areas of special soil types. Soils, fire protection and amenity considerations will locally determine the sites and proportions of these species.

There is little scope for mechanical preparation of ground due to the great diversity of slope, rock outcrop and shallow soils. The drainage system which must be laid down with great care will largely be manually constructed. The drainage must be effective within the existing crops and more especially prior to replanting.

Red Deer are few on the area and on adjoining lands but could be troublesome and roe deer will always be present. The main part of the forest is unfenced against sheep and deer, therefore, on replanting this area must be fenced against sheep and the deer population controlled. In the eastern section of the forest, the fence must be maintained.

Weeding may not be very troublesome if we plant through the brushwood left after clear fellings. Rhododendron regrowth may require special attention during establishment. Beating up and brashing will be restricted where possible in the interests of economy but, where carried out, will be according to the present custom. It is not envisaged that much cleaning will be required, but where essential it must be carried out timeously. Although of only minor significance in this forest 100/150 trees per acre will be pruned in crops of Q.C. I to III pine, larch and Douglas fir where they are to be retained for saw log production and where they have not already passed the stage at which they will benefit.

/Thinnings.

Thinnings will be on a three or six year cycle for the faster growing species and sites depending on the age and condition of the crop. The cycle for the slower growing areas and species will be extended to the six year cycle. Good growing dominant trees, up to 50 per acre, will be paint spotted and thinnings will be marked to assist the development of these trees. This does not preclude the development of good dominant trees within the matrix. Not less than 300 hoppus feet per acre should be removed, and rarely should the volume removed exceed 700 hoppus feet at any one thinning. Larch crops will be replaced by more productive species if and when this is justified by more profitable use of the ground.

Unless natural regeneration develops successfully the most economic system of regeneration must be to clear fell and replant.

(e) Regulation of Yield

Thinning yields are at present regulated to some extent by the blocking of the forest into areas producing more or less equal volumes.

As a control against removal of too much increment (approximately 50% removal is allowed) regular checks will be made of the volumes being removed to ensure that they accord with the management tables. Such checks will be made as the marking of thinning progresses.

The main objective is to produce trees on the lower slopes of average 10" - 12" B.H.Q.G. and 8" - 10" B.H.Q.G. on poorer sites. Apart from the inaccessible areas which may be clear felled for pulp, none of the other plantations will have reached economic maturity prior to 1980 and apart from any exceptional windblow there should be no clear fellings. The estimated permitted volumes to be removed by thinning and clear fellings as obtained from the short and long term forecasts are:-

F.Y.64 - 80,000 h.ft. thinnings only

F.Y.65 - 89,000 h.ft. " "

F.Y.66 - 162,000 h.ft. includes clear felling for pulp

F.Y.67 - 189,000 h.ft. " " " " "

F.Y.68 - 194,000 h.ft. " " " " "

F.Y.70 - 176,000 h.ft. thinning only

F.Y.75 - 198,000 h.ft. " "

F.Y.80 - 228,000 h.ft. " "

F.Y.85 - 260,000 h.ft. " "

(f) Roads

The older westerly block is largely roaded apart from those areas classed as inaccessible. Roading density on the eastern block will be based on the Conservancy instruction of 1965. (See note on W(S) working plans). The remaining 11 miles of roads must be constructed by 1970.

Loading bays on the county road will be constructed prior to 1966.

(g)/

(g) Marketing

The output from the forest will be worked by the existing direct labour housed in the forest and there should be no need to employ contractors (See note .....) Until supplies to the pulp mill are safe we must work the timber. As output steps up the increase could be sold standing. Good sized and quality logs may still be sold to the Cowal Ari Sawmill as long as prices paid justify this. Logs of species other than spruce produced from Forestry Commission working will be sold on the open market.

The quota of pulpwood to be supplied from Glenfinart forest in the early stages of the Fort William Mill is 100,000 to 130,000 h.ft. per annum. For short term planning a five year Pulp Working Plan has been prepared.

(h) Protection

Protection against damage by sheep and deer is essential and boundary fences must be replaced and maintained.

Creosoting or application of other chemicals against Fomes must continue. No fires to be allowed in the plantations during thinnings to avoid outbreaks of Rhizina inflata. No stocks of logs must be permitted to accumulate to prevent damage by Ambrosia beetles.

(i) Staff and Labour

The proposed complement of staff should be a head forester and two foresters used on a functional rather than territorial basis. One engaged on production supervision and the other on nursery, establishment and management operations. A good training forest for a young recruit.

It is not proposed to increase the direct labour force, any increased production being sold standing. There should be no need to employ local contractors.

(j) Housing

Apart from building a house for a supervisor during F.Y.64 there is a need for 4 additional houses to enable us to dispose of sub-standard properties.

(k) Miscellaneous

Nil.

FORESTRY COMMISSION

INACCESSIBLE AREAS.?

Form 5100.

PROFITABILITY ASSESSMENT FOR AN INDIVIDUAL CROP.

I	Yield Table Data	M.a.i. at chosen rotation	Price level
(a) Conservancy W.	(c) Species SS	(g) Rotation 45	(m) Thinnings /
	(d) Yield Table FC	(h) Y.T. m.a.i. 163	
(b) Location Glenfinart	(e) Q.C. IV	(j) Reduction factor ·7	(n) Main crop 1/3 pl 8"
	(f) Max. m.a.i. 160 at 50 yrs.	(k) Net. m.a.i. 114	

II Period, years from planting	1-5	6-15	16-25	26-35	36-45	46-55	56-65	66-75	76-85		
III Expenditure per acre by periods										Total	
(a) Land	4										
(b) Establishment	60										
(c) Brashing, cleaning				~~4~~	5						
(d) Roads			20								
(e) Protection, forest & road maintenance	4	6	6	6	6						
(f) Other											
(g) Sum (a) to (f) = total expenditure	68	6	26	6	11						£/acre
IV Expected volume yields by periods of standing values											
(a) Thinnings, H.ft.										Net Yield	
(b) Main crop fellings, H.ft.				~~7340~~	7340						
(c) Net volume of thinnings ((a) x reduction factor) H.ft.											
(d) Net volume main crop ((b) x reduction factor) H.ft.				~~5140~~	5140					5140	H.ft./acre
(e) Price standing per H.ft. thinnings £											
(f) " " " " main crop £				~~·0[illegible]~~	·062						= m.a.i. at yrs.
V Income per acre by periods										Total	
(a) Value of thinnings: IV(c) x IV(e)											
(b) " " main crop: IV(d) x IV(f)				~~321~~	321						
(c) Other income											
(d) End rotation value of land, roads etc.				~~24~~	24						
(e) Sum: (a) + (b) + (c) + (d) = total income				~~345~~	345						£/acre
VI Balance of income and expenditure										Total	
(a) Net income (+)											
(b) Net expenditure (−)	-68	-7	-26	6	334						
(c) Net result for rotation (a) − (b) = Grand total of V − grand total of III											
(d) Net annual income = (c) ÷ rotation ( )											£ per acre
VII Discounted income (+) and expenditure (−)											
(a) Years from planting	2	10	20	30	40	50	60	70	80	Total	
(b) Discount net income or expenditure (from III(a) and VI(b))	1.186	0.900	·638	·453	·270						
(c) Using discounting factor for 3½% multiply entries in VI(a) to give discounted net income					90.2					90	
(d) Multiply entries in VI(b) to give discounted net expenditure	80.6	6.3	16.6	2.7						106	

VIII Net discounted revenue per £100 of initial establishment expenditure Reduction of establishment cost to £45 improves (NDR) to £+2

	£	
(a) NDR on rotation of years	− 16	per acre
(b) Initial establishment expenditure = III(b) + (d) + (e) + (f) in years 1-5 =		per acre
(c) = 100 (a) ÷ (b) = NDR per £100 of initial establishment expenditure =		per £100

IX Bases for assumptions

(a) Rotation: Slackened stability because no thinning.

(b) Expenditure: Roading cost to land/block, no brashing, no thinnings.

(c) Price-size evidence: Kel curve

(d) Other:

Signature [signature] Date of Compilation 10/1/64

PROFITABILITY ASSESSMENT FOR AN INDIVIDUAL CROP.

I

(a) Conservancy: WEST

(b) Location: GLENFINNAN

Yield Table Data

(c) Species: S.S

(d) Yield Table: F.C

(e) QG: IV

(f) Max. m.a.i. 168 at 55 yrs.

M.a.i. at chosen rotation

(g) Rotation: 60

(h) Y.T. m.a.i.: 166

(j) Reduction factor: .7

(k) Net. m.a.i.: 116

Price level

(m) Thinnings: 9' - 1/3

(n) Main crop: 1/8 at 12½

II Period, years from planting	1-5	6-15	16-25	26-35	36-45	46-55	56-65	66-75	76-85	Total	
III Expenditure per acre by periods											
(a) Land	4										
(b) Establishment	60										
(c) Brashing, cleaning			13								
(d) Roads			50								
(e) Protection, forest & road maintenance	4	7	7	7	7	7	7				
(f) Other											
(g) Sum (a) to (f) = total expenditure	68	7	70	7	7	7	7				£/acre
IV Expected volume yields by periods of standing values											
(a) Thinnings, H.ft.			380	1380	1120	470					
(b) Main crop fellings, H.ft.							6600			Net Yield	
(c) Net volume of thinnings (a) x reduction factor) H.ft. .7			270	970	780	330				2350	
(d) Net volume main crop (b) x reduction factor) H.ft.							4620			4620	
(e) Price standing per H.ft. thinnings £			.038	.042	.050	.062				6970	H.ft/acre
(f) " " " " main crop £							.083			116	= m.a.i. at yrs
V Income per acre by periods										Total	
(a) Value of thinnings: V(c) x V(e)			10	40	39	21				110	
(b) " " main crop: V(d) x V(f)							383			383	
(c) Other income											
(d) End rotation value of land, roads etc.							54			54	
(e) Sum: (a) + (b) + (c) + (d) = total income			10	40	39	21	437			547	£/acre
VI Balance of income and expenditure										Total	
(a) Net income (+)				33	32	14	430			509	
(b) Net expenditure (−)	-61	-7	-60							134	
(c) Net result for rotation (a) - (b) = Grand total of V - grand total of III										375	
(d) Net annual income = (c) ÷ rotation (60)										62	£ per acre
VII Discounted income(+) and expenditure(−)	2	10	20	30	40	50	60	70	80	Total	
(a) Years from planting											
(b) Discount net income or expenditure (from VI(a) and VI(b))	1·137	0·844	0·612	0·434	0·308	0·218	0·165				
(c) Using discounting factor for 3½% multiply entries in VI(a) to give discounted net income				+14·3	+9·9	+3·1	62·4			89·7	
(d) Multiply entries in VI(b) to give discounted net expenditure	-77	-4	-36·7							119·7	

VIII Net discounted revenue per £100 of initial establishment expenditure

	£	
(a) NDR on rotation of years	30	per acre
(b) Initial establishment expenditure = III(b) + (d) + (e) + (f) in years 1-5 =	64	per acre
(c) = 100 (a) ÷ (b) = NDR per £100 of initial establishment expenditure =		per £100

IX Bases for assumptions F.C. yield tables extended to 60 yrs by Gamms. Increasing the final crop price to £/- improves the position for 18.

(a) Rotation:

(b) Expenditure:

(c) Price-size evidence:

(d) Other:

Signature _____ Date of Compilation _____

FORESTRY COMMISSION Form S100.

PROFITABILITY ASSESSMENT FOR AN INDIVIDUAL CROP.

I	Yield Table Data	M.a.i. at chosen rotation	Price level
(a) Conservancy N	(c) Species SS	(g) Rotation 50	(m) Thinnings 9–1/3
(b) Location Glen[illegible]	(d) Yield Table FC	(h) Y.T. m.a.i.	(n) Main crop 1/7 at 12"
	(e) Q.C. IV	(j) Reduction factor ·7	
	(f) Max. m.a.i. 166 at 50 yrs.	(k) Net. m.a.i. 116	

	1–5	6–15	16–25	26–35	36–45	46–55	56–65	66–75	76–85		
II Period, years from planting	1–5	6–15	16–25	26–35	36–45	46–55	56–65	66–75	76–85		
III Expenditure per acre by periods										Total	
(a) Land	4										
(b) Establishment	60										
(c) Brashing, cleaning			13								
(d) Roads			50								
(e) Protection, forest & road maintenance	4	7	7	7	7	7					
(f) Other											
(g) Sum (a) to (f) = total expenditure	68	7	70	7	7	7				166	£/acre
IV Expected volume yields by periods of standing values											
(a) Thinnings, H.ft.			360	1380	1120	470				Net Yield	
(b) Main crop fellings, H.ft.						4900					
(c) Net volume of thinnings ((a) x reduction factor) H.ft.			240	970	780	330				2350	
(d) Net volume main crop ((b) x reduction factor) H.ft.			(9")	(10")	(11")	3430 (12")				3430	
										5770	H.ft./acre
(e) Price standing per H.ft. thinnings £			·038	·042	·050	·063					
(f) " " " " main crop £						(12") ·079				116	= m.a.i. at yrs.
V Income per acre by periods										Total	
(a) Value of thinnings: IV(c) x IV(e)			10·	40	39	21				110	
(b) " " main crop: IV(d) x IV(f)						271				271	
(c) Other income											
(d) End rotation value of land, roads etc.						54				54	
(e) Sum: (a) + (b) + (c) + (d) = total income			10	40	39	346				435	£/acre
VI Balance of income and expenditure										Total	
(a) Net income (+)				33	32	339				404	
(b) Net expenditure (−)	−68	−7	−60							135	
(c) Net result for rotation (a) − (b) = Grand total of V − grand total of III										269	
(d) Net annual income = (c) ÷ rotation (.........)										5.4	£ per acre
VII Discounted income (+) and expenditure (−)										Total	
(a) Years from planting	2	10	20	30	40	50	60	70	80		
(b) Discount net income or expenditure (from VI(a) and VI(b))	1.137	0.864	0.612	0.434	0.308	0.218					
(c) Using discounting factor for 3½% multiply entries in VI(a) to give discounted net income				14.3	9.9	73.9				98	
(d) Multiply entries in VI(b) to give discounted net expenditure	−77.3	−6.	−36.7							120	

VIII Net discounted revenue per £100 of initial establishment expenditure £

(a) NDR on rotation of years .... 22 per acre

(b) Initial establishment expenditure = III(b) + (d) + (e) + (f) in years 1–5 = ... 64 per acre

(c) = 100 (a) ÷ (b) = NDR per £100 of initial establishment expenditure = ... 34. per £100

IX Bases for assumptions

(a) Rotation: 50 yr [illegible] will reach 12" B.H.[illegible]

(b) Expenditure: [illegible]

(c) Price-size evidence: [illegible] 1961.

(d) Other: [illegible]

Signature [illegible] Date of Compilation 10/7/64

FORESTRY COMMISSION

Form S 100.

PROFITABILITY ASSESSMENT FOR AN INDIVIDUAL CROP.

	Yield Table Data	M.a.i. at chosen rotation	Price level
(a) Conservancy South W	(c) Species SS	(g) Rotation 50	(m) Thinnings 9d–1/3
(b) Location Glen[illegible]	(d) Yield Table FC	(h) Y.T. m.a.i.	(n) Main crop 1/7 at 12" BHQG
	(e) Q.C. V	(j) Reduction factor ·7	
	(f) Max. m.a.i. 134 at 50 yrs.	(k) Net. m.a.i. 94	

	1-5	6-15	16-25	26-35	36-45	46-55	56-65	66-75	76-85	Total	
II Period, years from planting											
III Expenditure per acre by periods											
(a) Land	4										
(b) Establishment	60										
(c) Brashing, cleaning			13								
(d) Roads			50								
(e) Protection, forest & road maintenance	4	7	7	7	7	7					
(f) Other											
(g) Sum (a) to (f) = total expenditure	68	7	70	7	7	7				166	£/acre
IV Expected volume yields by periods of standing values											
(a) Thinnings, H.ft.			140	1020	990	450				Net Yield	
(b) Main crop fellings, H.ft.						4100					
(c) Net volume of thinnings ((a) x reduction factor) H.ft.			120	710	690	310				1830	
(d) Net volume main crop ((b) x reduction factor) H.ft.			(7")	(10")	(11")	2870 (11½")				2870 / 470	H.ft/acre
(e) Price standing per H.ft. thinnings £			·038	·042	·050	·062					
(f) " " " " main crop £						(14") ·079				940	= m.a.i. at yrs.
V Income per acre by periods										Total	
(a) Value of thinnings: IV(c) x IV(e)			4·5	29·6	34·5	19					
(b) " " main crop: IV(d) x IV(f)						227					
(c) Other income											
(d) End rotation value of land, roads etc.						54					
(e) Sum: (a) + (b) + (c) + (d) = total income			5	30	35	300				370	£/acre
VI Balance of income and expenditure										Total	
(a) Net income (+)				23	28	293				344	
(b) Net expenditure (−)	-68	-7	-63							140	
(c) Net result for rotation (a) − (b) = Grand total of V − grand total of III										204	
(d) Net annual income = (c) ÷ rotation (.......)										4·1	£ per acre

VII Discounted income (+) and expenditure (−)										Total
(a) Years from planting	2	10	20	30	40	50	60	70	80	
(b) Discount net income or expenditure (from VI(a) and VI(b))	1·137	0·864	0·612	0·434	0·308	0·218				
(c) Using discounting factor for 3½% multiply entries in VI(a) to give discounted net income				10·0	8·6	63·9				83
(d) Multiply entries in VI(b) to give discounted net expenditure	-77·3	-6·0	-38·8							123

VIII Net discounted revenue per £100 of initial establishment expenditure

Increasing final crop price to 2/- improved (?) to −£13
Reducing establishment cost to £43 improves (?) to −£5

	-40	per acre
(a) NDR on rotation of years		
(b) Initial establishment expenditure = III(b) + (d) + (e) + (f) in years 1-5 =	64	per acre
(c) = 100 (a) ÷ (b) = NDR per £100 of initial establishment expenditure =	-62	per £100

IX Bases for assumptions

(a) Rotation: 50 yr assuming crop will reach 12" BHQG in this time.

(b) Expenditure: Probably quoted on low side

(c) Price-size evidence: Each price figure prepared [illegible] on then current prices

(d) Other: Assumed higher BHQG than YTs indicate and a heavy reduction factor (·7) which seems necessary from the Enumeration figures

Signature [illegible] Date of Compilation 15/1/64.

FORESTRY COMMISSION

SHORT ROTATION.

PROFITABILITY ASSESSMENT FOR AN INDIVIDUAL CROP.

I	Yield Table Data	M.a.i. at chosen rotation	Price level
(a) Conservancy: N	(c) Species: SS	(g) Rotation: 35 yrs.	(m) Thinnings: 9"–10"
(b) Location: Glenfuir	(d) Yield Table: YC	(h) Y.T. m.a.i.: 145	(n) Main crop: 4/2"–1"
	(e) a.g.: 14	(j) Reduction factor: .7	
	(f) Max. m.a.i. 146 at 50 yrs.	(k) Net. m.a.i.: 102	

II Period, years from planting	1-5	6-15	16-25	26-35	36-45	46-55	56-65	66-75	76-85		
III Expenditure per acre by periods										Total	
(a) Land	4										
(b) Establishment	60										
(c) Brashing, cleaning			13								
(d) Roads			50								
(e) Protection, forest & road maintenance	4	7	7	7							
(f) Other	4	7	7	7							
(g) Sum (a) to (f) = total expenditure	68	7	70	7							£/acre
IV Expected volume yields by periods of standing values											
(a) Thinnings, H.ft.			380	1320						Net Yield	
(b) Main crop fellings, H.ft.				3300							
(c) Net volume of thinnings ((a) x reduction factor) H.ft.			270	960						1230	
(d) Net volume main crop ((b) x reduction factor) H.ft.				2310						2310	
(e) Price standing per H.ft. thinnings £			.038	.062						3540	H.ft./acre
(f) " " " " main crop £				(f) .054						102	= m.a.i. at yrs.
V Income per acre by periods										Total	
(a) Value of thinnings: IV(c) x IV(e)			10.1	40.							
(b) " " main crop: IV(d) x IV(f)				125.							
(c) Other income											
(d) End rotation value of land, roads etc.				54.							
(e) Sum: (a) + (b) + (c) + (d) = total income			10.	219							£/acre
VI Balance of income and expenditure										Total	
(a) Net income (+)				212						212	
(b) Net expenditure (−)	-63	-7	-60							135	
(c) Net result for rotation (a) − (b) = Grand total of V − grand total of III										77	
(d) Net annual income = (c) ÷ rotation (.....)										2.2	£ per acre
VII Discounted income(+) and expenditure(−)	2	10	20	30	40	50	60	70	80	Total	
(a) Years from planting											
(b) Discount net income or expenditure (from VI(a) and VI(b))	1.334	1.013	0.713	0.503							
(c) Using discounting factor for 3½% multiply entries in VI(a) to give discounted net income				107.1						107	
(d) Multiply entries in VI(b) to give discounted net expenditure	-40.7	-7.1	-43.1							121	

VIII Net discounted revenue per £100 of initial establishment expenditure	£	
(a) NDR on rotation of 35 years	33	per acre
(b) Initial establishment expenditure = III(b)+(d)+(e)+(f) in years 1-5 =	64	per acre
(c) = 100 (a) ÷ (b) = NDR per £100 of initial establishment expenditure =	51.	per £100

IX Bases for assumptions Rotation of establishment cost £/45 improved (min a) £/-13

(a) Rotation: For successful crop a shorter rotation might be more profitable.

(b) Expenditure: Reg. to Low.

(c) Price-size evidence: Mkt. Procedure.

(d) Other: Heavy Establishment factor.

Signature: [signature] Date of Compilation 10/1/44

FORESTRY COMMISSION

INACCESSIBLE AREAS I

Form S 100.

PROFITABILITY ASSESSMENT FOR AN INDIVIDUAL CROP.

I	Yield Table Data	M.a.i. at chosen rotation	Price level
(a) Conservancy W	(c) Species SS	(g) Rotation 45	(m) Thinnings /
(b) Location Glenfinart	(d) Yield Table YC	(h) Y.T. m.a.i. 163	(n) Main crop 4/3 at 8"
	(e) qu. IV	(j) Reduction factor .7	
	(f) Max. m.a.i. 166 at 40 yrs.	(k) Net. m.a.i. 114	

II Period, years from planting	1-5	6-15	16-25	26-35	36-45	46-55	56-65	66-75	76-85	Total	
III Expenditure per acre by periods											
(a) Land	4										
(b) Establishment	60										
(c) Brashing, cleaning				1	5						
(d) Roads			20								
(e) Protection, forest & road maintenance	4	6	6	6	6						
(f) Other											
(A) Sum (a) to (f) = total expenditure	68	6	26	6	11						£/acre
IV Expected volume yields by periods of standing values											
(a) Thinnings, H.ft.											
(b) Main crop fellings, H.ft.				~~7340~~	7340					Net Yield	
(c) Net volume of thinnings ((a) x reduction factor) H.ft.											
(d) Net volume main crop ((b) x reduction factor) H.ft.				~~5140~~	5140					5140	H.ft./acre
(e) Price standing per H.ft. thinnings £											
(f) " " " " main crop £				~~Oil~~	.062						= m.a.i. at yrs.
V Income per acre by periods										Total	
(a) Value of thinnings: IV(c) x IV(e)											
(b) " " main crop: IV(d) x IV(f)				~~317~~	321						
(c) Other income											
(d) End rotation value of land, roads etc.				~~24~~	24						
(e) Sum: (a) + (b) + (c) + (d) = total income				~~341~~	345						£/acre
VI Balance of income and expenditure										Total	
(a) Net income (+)											
(b) Net expenditure (-)	-68	-7	-26	6	334						
(c) Net result for rotation (a) - (b) = Grand total of V - grand total of III											
(d) Net annual income = (c) ÷ rotation (.....)											£ per acre
VII Discounted income(+) and expenditure(-)											
(a) Years from planting	2	10	20	30	40	50	60	70	80	Total	
(b) Discount net income or expenditure (from VI(a) and VI(b))	1·186	0·900	·638	·453	·270						
(c) Using discounting factor for 3½% multiply entries in VI(a) to give discounted net income					90.2					90	
(d) Multiply entries in VI(b) to give discounted net expenditure	80.6	6.3	16.6	2.7						106	
VIII Net discounted revenue per £100 of initial establishment expenditure	Reduction of establishment cost to forest improvement to £+2									£	
(a) NDR on rotation of years										— 16	per acre
(b) Initial establishment expenditure = III(b) + (d) + (e) + (f) in years 1-5 =											per acre
(c) = 100 (a) ÷ (b) = NDR per £100 of initial establishment expenditure =											per £100

IX Bases for assumptions

(a) Rotation: Statutory statute because no thinning

(b) Expenditure: Roading cost to Inst/Above, no brashing, no thinning.

(c) Price-size evidence: Not Given

(d) Other:

MR SUTHERLAND 10/1/64

Chapter 22 - Organisation

The Working Plan area will be treated as one section and one felling circle with one felling series which will be made up of several cutting sections.

The proposed complement is one Head Forester and two functional Forester one in charge of production and the other in charge of nursery and other forest operations. There is scope for training of a young recrui

Chapter 23 Planting Rate and Resumption of Land.

(a) Planting

No replanting of the failed areas listed in WP12 or enrichment of poorly stocked areas ~~(see W.P.12)~~ will be undertaken, because of the high costs attending such small areas and the special protection problems they present. Future replanting will be done only subsequent to felling. When such an operation is planned the opportunity will be taken to include any suitable adjacent area whether it be for enrichment, replanting or resumption from hill grazing.

Sites which are considered unsuitable for enrichment, planting or replanting are (a) shallow peats or soils over rock (b) wet sites which cannot be effectively drained because of rock and (c) scrub growing areas unless these are on highly productive sites where the higher establishment costs can be justified.

Areas where resumption of hill grazing may be considered are indicated in broad terms on the estate map.

(b) Resumption

The D.F.O. will initiate proceedings for the resumption of any area of hill land which it appears might be included in a replanting proposal. If resumption is agreed on, the D.E.O. will carry this into effect.

Chapter 24 - Choice of Species

Sitka spruce and Coastal Lodgepole pine will be planted pure on normal sites except as follows:-

1. Western hemlock may be used in mixture in the presence or vicinity of rhododendron. Where Fomes annosus is probable, Abies grandis may be used in the absence of a proven strain of Abies alba.

2. Lodgepole pine (coastal origin) will be used in 2/3 mixture on poor heather types where there is doubt as to the performance of Sitka spruce. As future work will be mainly replanting, this mixture will be exceptiona being confined to afforestation areas.

3. On drier mineral soils Abies species may be used, Nobilis in preference to Grandis on exposed sites.

4. Hybrid larch and other species may be used for scenic purposes.

Chapter 25 - Crop Establishment and Maintenance

(a) Establishment

Afforestation

Areas of hill grazing resumed will be ploughed up and down hill and cross drained as required. (Normally only ploughable ground will be resumed).

Replanting after Felling

Preparation of Ground

Normally no burning or swathing of slash will be done and replanting will be within 12 months of felling.

Ground mineral phosphate will be applied except where the felled crop showed fully satisfactory rate of growth for the site.

Clearing of hardwood scrub from replanting areas will be exceptional bearing in mind costs and scenic values and it will be confined to rich sites and will be minimised further by shade planting.

In rhododendron areas selected for replanting all scrub will be cut and all stumps treated with Ammonium sulphamate.

On rehabilitation areas, ploughing will be done wherever economically and physically possible and heather will be removed or killed chemically or mechanically. Where ploughing is not possible, hand turfing may be required and in this case turf will be produced from lines cut up and down hill and these will not be treated as drains.

Drainage

Site drainage will be in the form of deep "contour" drains, at intensities of up to 10 chains per acre on flat ground, up to 6 chains/acre on moderate slopes and 3 chains/acre on steep slopes. The depth will be 2' or more. Where possible drainage will be mechanical.

Fencing

Areas to be replanted will be determined to some extent by considerations of fencing costs.

Fences will be sheep proof only and where areas of less than 100 acres are being enclosed, which will be at risk for only 5-8 years, cheaper specifications will be applied but special care in alignment and height must be taken to ensure that they are fully effective in these respects where necessary by adding an extra barb wire ~~may be added.~~

Special Prescriptions applying to Establishment of Crops in Inaccessible Areas

Two prescriptions apply to these sites.

(1) The spacing will be the maximum permitted under current instructions, having, however, in mind the exposure and vulnerability of the crop to browsing damage. The aim will be to avoid all or nearly all thinning.

(2) Where the felling involves the removal of unsatisfactory crops, no unmarketable trees will be felled or cleared from the site except where there will otherwise be insufficient clearance for the introduction of a final crop of Sitka spruce.

It is envisaged that in most cases the unsatisfactory crops may have valuable nursing effects.

(b) Maintenance

Experience has shown that with the difficult working conditions prevailing at Glenfinart not less than 80% of the live trees must be brashed. The height of brashing will be 6'. Although brashing will not normally be done until the bulk of the crop in a compartment shows completely dead branches to a height of at least 6', exceptionally it may be necessary to undertake patch brashing when weather conditions stop nursery work and other suitable work is not available.

Control of rhododendron must be continued until the planted tree crop is 6' high and the operation will be shown separately on W.P.16 where appropriate.

Chapter 26 - Protection

A map will be maintained by the forester showing the following:-

Roe deer territories, population and kills.

Red deer kills, main tracks, wallows etc.

Vulnerable areas of plantation, being those under 5' in height.

Known fence/watergate weaknesses.

Fox dens.

The map will be submitted annually with the Annual Report.

The trapper will have a fixed schedule for regular inspection of all vulnerable areas during the months of January to April so that damage can be quickly spotted and remedial measures taken.

Control of red and roe deer will be on a district basis and will be selective. The trapper will take part in team working on other forests as well as the home forest on the request of the area trapper in consultation with the Head Forester.

Rabbits and Hares

Control of rabbits will not be confined to vulnerable plantations but will be exercised throughout the forest area. Gas will be used in preference to ferrets where there is a choice.

Foxes and Hoodie Crows

Control will be in accordance with Conservancy Instructions issued from time to time.

Blackgame and Badgers

Although protected these are increasing and permission to control may have to be sought in the future.

Insects

Didimac to be used for dipping all plants for replanting. Superseded by Hammarsol Dibbing

Timber stocks will be kept at a minimum during spring and early summer and spraying against Tripondendron will be adopted as an emergency measure only.

Fungi

Creosote will be used instead of sodium nitrite in the vicinity of Ardentinny water supplies.

Chapter 27 - Local Experiment

(a) Treatment of Existing Experiments

Records of management indicate compartments detailed in Chapter 21 (old numbering) will be maintained as and when the areas are thinned.

Chapter 27 - Local Experiments

(b)(i) Restocking of Windblows

The past practice with windblows has been to clear the blows trees during the next normal thinning. There is growing evidence th the replacement of the crop can be most economically effected by immediate replanting and that it may have been possible to dispense with fencing such areas.

It is proposed to experiment with clearing and restocking suitabl small windblown areas using the following treatments:-

(a) Planting through brush with and without fencing.

(b) Use of large plants (2+3 or larger) compared with normal plants mainly because these are less liable to browsing damage.

(c) Comparing results with replanting after lapse of 2-3 years.

(d) Forming a perimeter "barrier" using tree tops.

(e) All plants will be treated with ~~Didimac.~~ Gammexel.

(ii) Drainage

Systems on windblown areas must be thoroughly examined and redesigned to minimise the risk of future blow. A higher drainage intensity will be normal for these areas as compared with felled areas

Chapter 28 - Regulation of the Yield

Thinning Type

The following compartments will receive eclectic thinning, Cs.32-56, Cs.68-74, selecting at least 50 crop trees per acre.

The remaining areas will receive normal thinning.

Thinning Cycle

The cycle will be 3 years for faster growing crops or where thinning has been delayed (e.g. due to inaccessibility) or shown for crops which for any other reason are liable to be less stable (e.g. roadline or extraction rack fellings, faulty drainage).

Otherwise crops will be thinned on a 6 year cycle so that this cycle will apply to most 4th and subsequent thinnings and to 3rd thinnings in the case of slower and/or more stable crops.

Thinning Intensity

This will be that assumed in the Management Tables. An additional one year's yield may be added in delayed thinning areas and where extraction racks are being felled, within a maximum yield of 700 c.ft./acre. Normal thinning will cease 10-15 years before the expected rotation age for thinnings or when it is not silviculturally possible to obtain a yield of 300 c.ft.

Thinning Control

This is Mostly ~~is~~ by industrial staff. The production Forester will demonstrate the prescribed weight of thinning in accordance with form W.P.18 and the Head Forester will ensure that this is effected and will not authorise departure from the prescriptions in excess of 20% including sporadic windblows but excluding windblows in excess of 1/20th acre.

The Head Forester will ~~make~~ ensure that annual checks are carried out after thinning of not less than 3 compartments to compare the standing basal area after thinning as a safeguard against overthinning.

C.28(b) Fellings

Pulp Felling Plans

Clear fellings scheduled under existing pulp plans are as follows:-

	Area acres	Volume 000's h.ft.
C.42	5	12
C.43	19	55
C.44	33	69
C.50	25	50
C.66	14	35
C.74	24	42

These fellings are of normally inaccessible areas which present extraction problems. To prescribe smaller coupes would aggravate these problems and it is therefore prescribed that the felling coupe will be the whole area of the compartment which is scheduled for felling. However, the edges of boundaries of fellings will be carefully adjusted so as to retain the best possible windfirm fringes as a protection for adjacent vulnerable crops.

Rotation Felling

No other plantations will have reached normal economic maturity before 1980 so that no normal rotational fellings are prescribed.

Pre-rotation Felling

The desirability of further pre-rotation fellings of inaccessible areas depends largely on the developments achieved in extraction techniques. It is not therefore possible to prescribe such fellings but the position should be reviewed say in 1970.

Windblow

Windblown areas exceeding 1/20th acre may be cleared immediately regardless of cutting sections, provided this can be effected economically. It will not be the policy to extend or titivate such windblows by fellings which might endanger adjoining standing timber (see Ch.27).

Chapter 29 - Marketing and Exploitation

The main marketing categories are:-

Ari Mill Logs	(5¾"+ top diameter)
Non-whitewood Logs	(8"+ top diameter)
Scottish Pulp	(2"+ top diameter)

Other categories which may occur in very small quantities include -

Pulp and Ari Mill rejects for local sale

Rustic wood for local sale

Telegraph poles from Douglas fir crops

It has been found generally uneconomical to send material for F.C. conversion and creosoting at Benmore.

Chapter 30(a) Forest Roads Master Plan

The 1965/66/67 roading of Cs.92-106 is at a density of 7.0 miles/square mile comparing with the WPM9 density of 8 miles for 6(b) category ground and 4 miles for 6(a) category ground. The bulk of this area is 6(b) type so that the layout conforms.

The presently proposed extension of this system into Cs.107-117 (all category 6(b)) is at a density of 4.3 miles/square mile compared with the prescribed 8 miles, but there will be an opportunity to review this in the light of developments in extraction techniques.

(b) Road Construction

When extraction techniques have developed further it may be possible to road some of the currently inaccessible areas but the following estimated requirements exclude such unpredictable quantities.

Year	Cat I Construction	Cat I Reconstruction
67	1 mile (St. Kilda)	6 miles (various)
68	-	-
69	1 " (Portdornaig & Crocan)	-
70	-	-
71	-	-
72	3 miles (Knap)	2 miles (Knap)

CHAPTER 30(c) - PUBLIC ROADS

The public road through the forest is being re-constructed and on completion in 1967 it is expected that this will be up to the full standard necessary for timber haulage of loads of 20 tons except for the Larach hill where the steepness and bends may make it necessary to use the High Larach forest road for lorry loads and in winter conditions. It is anticipated that it will be necessary from time to time to increase the size and/or number of the existing loading bays on public roads, numbered on the road map.

There are no immediate proposals for making up roads for County to take over.

Chapter 31 - Staff

(a) Non Industrial

No change.

(b) Industrial (Forestry Commission)

General

The main labour requirement is for nursery work and production. The former is expected to remain static while the increase in the latter will be very gradual. Slight increases can also be looked for in restocking of fellings. The W.P.15 therefore reflects a gradual slight increase which it is expected can be accommodated in the community without additional housing.

Reporting Points

1. Grading Shed, Shore Nursery
2. Bus Terminus, Drynain
3. Concrete Bridge, junction Lairds Grave Road and Link Road
4. Junction Lower Knap Spur (agreed 1966)

By local agreement (1966) travelling of pieceworkers between reporting points and the job will normally be done in overtime and will be paid for accordingly except where the Forester decides that overtime travelling is not necessary.

It would be reasonable to extend reporting points (2) and (3) to Sligrachan and Blawearie respectively for new employees, so the local agreement in 1966 applied to present employees only.

Safety

The combination of difficult working terrain and wet climate makes the forest one where high accident incidence may be expected. The provision and use of safe protective clothing should be given rather more attention in the future.

(c) Industrial (non Forestry Commission)

Local contractors may be used from time to time to avoid fluctuation in labour force. Housing will not be provided for such contractors.

Chapter 32 - Houses, Holdings and Other Buildings

At the time of writing there is a complement of three foresters at Glenfinart. A new "Dorman" house, '[redacted]' is in the process of being built to house the forester ~~in charge~~ Head in place of Drynain Cottage which is no longer up to forester standard. The other two foresters are housed in Garden Cottage and Clyde View. The former is a stone built detached cottage with slated roof which contains two public rooms, three bedrooms, bathroom, kitchen etc. While not conforming exactly with the official forester standard it provides very comparable accommodation - better in some respects. This is the result of improvement work carried out since Chapter 20 was drafted, hence the change in accommodation. Clyde View is a new 'Dorman' house recently constructed. It is in all respects in accordance with official forester standards.

Unless the complement of foresters at this forest is increased, which is not foreseen, the state of forester housing on the completion of this [redacted]" will be satisfactory. No new building or improvement in this field is anticipated. Maintenance will be carried out by the use of local contractors as at present.

There are now nineteen workers' houses, nine holdings and four houses built by the County Council on behalf of the Commission, giving a total of thirty-two. In addition there are the six Shore Cottages, converted from war time naval huts. These are no longer considered suitable for workers and those not already let on non-service tenancies are to be utilised for timber merchants. No improvements are intended to these. Once maintenance becomes uneconomic they will be either demolished or sold. Of the regular workers' houses, included in the total of thirty-two above, most are satisfactory. One stone built former estate house, Ambleside, is due for improvement in the next forest year. This consists mainly of increasing the sizes of rooms by the alterations of internal partitions, the provision of additional windows, re-positioning of sinks etc. This is the only major improvement foreseen in the case of workers' houses.

Of the nine holdings, Nos. 3, 4 & 11, and Nos. 5 & 7 are to be amalgamated to form two worthwhile units; No.6, a holding in no more than name, is to revert to the status of a worker's house at the first change of tenancy and Nos. 12, 13 & 14 holdings, situated close to Ardentinny village, are to be reduced to house status and their land offered for building development at the next suitable opportunity. In all cases, however, the houses will remain available for the forest labour force. The only improvement to these houses presently envisaged is the replacement of three obsolete kitchen ranges by modern fireplaces. This has a considerable degree of priority. As with the foresters' houses maintenance is carried out on contract by local tradesmen.

So/

So far as is at present foreseeable there is sufficient housing accommodation available for forest labour since the building by the Count Council of four houses on behalf of the Commission and no further housing is required.

Administrative and silvicultural buildings at this forest are generally satisfactory and no requirement for additional building is foreseen.

Chapter [illegible] - Estate Management

The position of this forest is unusual in that there is no possibility of expansion, only of contraction. The reason for this is that with some minor exceptions it is surrounded on all sides either by the sea or by other Commission forests with boundaries which have now been stabilized. No additions from these other forests are proposed but it is suggested that Ardnahein Farm, an agricultural unit lying in the north east corner of the forest, should be transferred to Loch Goil Forest. The reason for this is that there is no road or other access to Ardnahein from Glenfinart from which it is separated by some very rough terrain. The normal road access to Ardnahein is from the Lochgoilhead side which means that it is far more accessible and supervisable to Loch Goil Forest. The suggested transfer would terminate the present ludicrous position when Loch Goil staff have to be sent to do work on Ardnahein because the Glenfinart staff cannot get there without a detour of 29-30 miles. No other boundary alterations are proposed.

The stabilised position of this forest referred to above makes it possible to say that there will be no further acquisitions and that, with one exception noted below, the legal rights already held are adequate for the working of the forest and such restrictive covenants as exist are not too onerous. The one exception referred to is a right as access across Inverchapel estate from the Loch Eck Forest area to the outlying compartment No.66 known as St. Kilda. Negotiations with Inverchapel estate have been opened but have broken down. This is now becoming a matter of urgency. The only other area where any difficulty is experienced is experienced is just behind Ardentinny village. Extraction in this area presents problems but there is no prospect whatever of obtaining any sort of right or accommodation from Dr. (Mr.) Richardson, (deceased) the adjoining proprietor, at this point. The problems will therefore have to be solved on the material basis of handling techniques within our own ground rather than by the acquisition of legal rights or other estate management devices.

As the whole of Glenfinart Forest falls within the Argyll National Forest Park none of the shootings are let. The only fishings are for seatrout, brown trout and the occasional salmon in the River Finart. These fishings are operated by day ticket. (and occasional shore fishings let) As the main interest is seatrout the question of stocking does not arise and the character of the river provides good spawning grounds without the necessity for constructing artificial redds. There are no difficult falls to be by-passed or cleared. Management consists laregly of preventing poaching and over fishing and cutting back scrub and bushes if pools are getting overgrown.

There is a right of way from 6-32 (Ardentinny Village [illegible] Road) by [illegible] of [illegible] to main Road. Arranged and mapped 1932.

CHAPTER 14 - AMENITY

(a) Recreation

The public will continue to have access to the foreshore from Shepherd's Point southwards, for bathing, picnicking, rod fishing etc. and no charges will be made for this.

These facilities will be maintained and improved as follows:-

Every effort will be made to prevent water pollution and the dumping of refuse or other materials along this stretch of shore.

Vegetation will be kept in check by judicious cutting of grass and scrub growth.

There will be an annual tidying up of the bathing beach in June.

The River Finnart will not be let to the Duncon Angling Association but will be retained for day lettings. It will be maintained and improved by systematic clearing of scrub and repairing of artificial pools.

Caravan parking will not be permitted as there are adequate facilities on neighbouring caravan parks, farms etc.

Only limited camping will be permitted at the forester's discretion, and this will exclude the immediate vicinity of the village and the bathing beach.

When the plantations at Knap and Boothole have passed the fire danger stage consideration will be given to permitting camping at these potentially attractive spots.

The walks defined in the revised Forest Park Guide will be finger-posted on the ground to facilitate their use by hikers.

CHAPTER 34 (b) - LANDSCAPE CONSIDERATIONS

Due to the nature of the ground, normal forest practice on Glenf~~yields~~ results in irregular plantations which are scenically attractive without t need for taking special steps to ensure this, except where areas are being clear felled which are either within sight of the public road or readily seen from the water.

In these cases the following prescriptions will apply:-

(1) Natural scrub will be retained in dense bands or clumps where it will be most effective as a break in the felling areas or as a natural edge to this.

(2) Girdling of scrub will not be done.

(3) Where areas to be felled have straight edges, the actual area fell will be adjusted to break these by felling additional trees or by leaving parts unfelled.