Province of British Columbia
OFFICE OF THE MINISTER

Ministry of Forests

MEMORANDUM

File: 280-30
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December 22, 1999

To: Interior Regional Managers

From: The Honourable David Zirnhelt
Minister of Forests

Re: Amendment No.2 to the *Interior Appraisal Manual*

I hereby approve Amendment No. 2 to the *Interior Appraisal Manual*, and attach a copy for your use. The following sections are amended as follows:

Table 3-1 LRF Update Add-ons and Combined Product Recovery Factors has been updated.

Table 4-11 Untrended Manufacturing Cost Estimates has been updated.

Section 4.4.2(9) Tree to Truck Variables, the definition for an accessible camp has been clarified.

This amendment will come into force January 1, 2000. Further amendments or revisions to this manual require my approval.

for David Zirnhelt
Minister

pc: Bill Howard, Director, Revenue Branch
All Subscribers, *Interior Appraisal Manual*

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BRITISH COLUMBIA Ministry of Forests

MANUAL REVISION TRANSMITTAL

FOR FURTHER INFORMATION CONTACT:

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MANUAL TITLE
Interior Appraisal Manual

REVISION No.	ISSUE DATE
Amendment No. 2	January 1, 2000

MANUAL CO-ORDINATOR
Judy Laton
Revenue Branch

AUTHORIZATION (Name, Title)
W. Howard
Director, Revenue Branch

Please make the following changes to your copy of the above Ministry manual. Please insert the following specified pages and **file this notice** immediately after the Amendments Tab.

ACTION (Remove/Insert)	(VOL.) CHAPTER-SECTION-SUBJECT TABLE OF CONTENTS	PAGE(S)	COMMENTS
REMOVE	Chapter 3	5 - 8	
INSERT	Chapter 3	5 - 8	
REMOVE	Chapter 4	31 - 32 55 - 56	
INSERT	Chapter 4	31 - 32 55 - 56	
INSERT	Minister's Letter and Manual Revision Transmittal		After Amendments Tab
INSERT	Parameters		After Parameters Tab

3.2 Chip Average Market Values

Monthly market value information is obtained and compiled by Revenue Branch.

3.3 Calculation of Species End Product Selling Price

The total end product selling price in $/m^3$ is determined for each species using lumber recovery factors from the cruise compilation summary, LRF update add-ons, current applicable average market values for the species and zone and species chip yield factors. Lumber and chip prices are each calculated to the nearest cent before being totalled.

Burned Timber

In the case of burned timber, the burn percent is used to reduce the selling price of the stand by assigning a zero value to the estimated chip recovery of the burned wood. This is to compensate for an increased manufacturing cost, lower lumber and chip recovery and lower lumber and chip average market values associated with processing burned timber.

$$\text{Burn Percent} = \frac{\text{BT } m^3}{\text{Total } m^3} * 100$$

where

BT m^3 = volume of light, moderate and heavily fire-damaged timber
Total m^3 = total volume *inclusive* of burned wood

The only other adjustment to the appraisal is for heavily fire-damaged timber and is covered under Section 4.4.4 (Tree to Truck Additive for Damaged Timber).

The LRFs are determined from the following formulas and tables:

1. Zonal LRF Update Add-ons and Combined Product Recovery Factors

Table 3-1 LRF Update Add-ons and Combined Recovery Factors

Zone	Species	LRF Update Add-ons	Combined Product Recovery Factors
Northern Interior (Zone 5)	Lodgepole Pine	73	432
	Spruce	88	432
	Balsam	81	432
	Douglas Fir	36	432
	Larch	34	432
	Cedar	29	432
	Hemlock	32	432
	White Pine	33	432
Skeena (Zone 6)	Lodgepole Pine	46	389
	Spruce	58	389
	Balsam	58	389
	Cedar	6	389
	Hemlock	7	389
Southern Interior (Zone 7)	Lodgepole Pine	73	412
	Spruce	92	412
	Balsam	82	412
	Douglas Fir	35	412
	Larch	35	412
	Cedar	30	412
	Hemlock	32	412
	White Pine	34	412
	Yellow Pine	36	412

Zone	Species	LRF Update Add-ons	Combined Product Recovery Factors
Southern Cariboo (Zone 8)	Lodgepole Pine	58	427
	Spruce	72	427
	Balsam	67	427
	Douglas Fir	23	427
	Larch	22	427
	Cedar	16	427
	Hemlock	19	427
	White Pine	21	427
	Yellow Pine	23	427

Fort Nelson-Peace (Zone 9)	Lodgepole Pine	60	432
	Spruce	71	432
	Balsam	65	432

Example: (Zone 5) Lodgepole Pine	Cruise LRF		LRF Update Add-on		Appraisal LRF
All Logs	181	+	70	=	251

2. Chip Yield Derivation

   Chip Yield (BDU/m^3) = (Combined Product Recovery Factor - Appraisal LRF) * Species Chip Yield Factor

3. Chip Yield Factors

Table 3-2 Chip Yield Factors

Species	Factor (BDU/fbm)
Balsam	.00072
Cedar	.00067
Fir	.00098
Hemlock	.00089
Larch	.00119
Lodgepole Pine	.00087
Spruce	.00076
White Pine	.00078
Yellow Pine	.00095

4. Determination of Stud Log Percent

   The stud log percent is determined as follows:

   The stud log percent for each stud species (spruce, balsam, lodgepole pine, Douglas fir and larch) is determined from the cruise compilation summary. The stud log percent is defined as the net volume of 5 m logs with top diameters under 20 cm expressed as a percentage of the total net cruise volume. The stud log percent is calculated and rounded to the nearest whole percentage point.

   The percent stud AMV is determined as follows:

   - If the stud log percent is 45 or greater and less than or equal to 65:

     the percent stud AMV = (5 * stud log %) - 225,

   - If the stud log percent is less than 45, the percent stud AMV = 0, and
   - If the stud log percent is more than 65, the percent stud AMV = 100.

For isolated cutting authorities (see Section 4.8.2), the distance to support centre is the one-way road distance from the geographic centre of the cutting authority to the isolated camp or where there is no isolated camp, to a community from the list above. Where more than one alternative is possible, the least cost alternative is used. The distance is measured to the nearest kilometre.

The following distance dummy variables are included:

- DISTC125 = (DS-125) if CAMP = 1 *and* DS>125 otherwise DISTC125 = 0,
- DISTNC125 = (DS-125) if CAMP = 0 *and* DS>125 otherwise DISTNC125 = 0.
- DISTC150 = (DS-150) if CAMP = 1 and DS>150 otherwise DISTC150 = 0.

7. Volume per Tree (VOLTREE)

   The average net cruise volume per tree (m^3), rounded to two decimals. For partial cutting, it is based on the trees to be harvested.

8. Gross Volume per Tree (GVOL)

   Gross volume per tree (m^3) is computed as: VOLTREE/(1 - defect %/100).

   Where:

   Defect is the estimate of decay, waste and breakage (DWB) percent of the coniferous gross volume from the cruise summary for the trees to be harvested. Where utilization of deciduous volume is mandatory under the license, defect% is taken from the stand volume of the cruise summary. Defect% is recorded to the nearest whole percentage point for appraisal calculation purposes.

9. Accessible Camp (CAMP)

   Accessible Camp - An accessible camp is defined as a permanent structure(s) where the camp is a capital asset of the company to which the appraisal applies. There must be a cookhouse and bunkhouse and the camp must be used in the daily tree-to-truck activity associated with the cutting authority for which the appraisal applies.

   - CAMP = 1 if cutting authority uses an accessible camp, otherwise CAMP = 0,

10. FNP = Fort Nelson, Peace River area consiting of the Fort Nelson, Fort St. John and Dawson Creek Forest Districts.

4.4.3 Tree-to-truck Cost Estimate

Tree-to-truck costs estimates are determined for each harvesting method as follows:

1. Helicopter Logging

   Only partial cut and clear-cut logging variables are recognized. The cost estimates are applied to the volume of timber which is required to be logged by helicopter.

   Two variations are recognized:

   a. Clear Cut (defined as volume removal of 90% or greater of the total net cruise volume)

Region	Kamloops	Nelson	Prince Rupert	Other
$/m^3	63.33	66.35	74.00	69.37

   b. Partial Cut (see Section 4.4.2 (5))

Region	Kamloops	Nelson	Prince Rupert	Other
$/m^3	68.20	71.22	78.87	74.24

2. Horse Logging

   No variables are recognized for this method. The cost estimates are applied to the volume of timber to be clear cut or partial cut.

$$\$/m^3 = 30.00$$

3. Ground Skidding

   The ground skidding equipment options include, but are not limited to, rubber tired skidder, crawler tractor, soft track skidder, small cat skidding, hoe chucking, long line skidding, clambunk forwarders, low ground pressure skidders, harvester forwarders and cut-to-length processors. A system does not have to skid wood all the way from the stump to the landing to be included. Some wood may be moved part way by longlining or hoechucking before being skidded by some other system to the landing. Two variations are recognized:

   a. Clear Cut,

   b. Partial Cut

Table 4-11 Untrended Manufacturing Cost Estimates

Untrended Manufacturing Cost Estimates ($/m^3) 1997 Cost Survey Base		
	Species	**Manufacturing cost ($/m^3) 0% Decay**
Northern Interior (Zone 5)	LO	35.91
	SP	36.21
	BA	38.81
	FI, LA, WH, YE	50.10
	CE	48.27
	HE	45.54
Skeena (Zone 6)	LO	30.43
	SP	31.67
	BA	34.83
	CE	42.53
	HE	39.32
Southern Interior (Zone 7)	LO	38.63
	SP	38.05
	BA	41.23
	FI, LA, WH, YE	52.90
	CE	51.30
	HE	49.45

Untrended Manufacturing Cost Estimates ($/m^3) 1997 Cost Survey Base		
	Species	**Manufacturing cost ($/m^3) 0% Decay**
Southern Cariboo (Zone 8)	LO	34.03
	SP	33.90
	BA	36.52
	FI, LA, WH, YE	46.58
	CE	41.88
	HE	41.24
Fort Nelson/Peace (Zone 9)	LO	33.71
	SP	33.79
	BA	35.91

To derive the manufacturing cost estimate for decay % from 1 to 50, use the above table values in the following equation:

The cost estimate is calculated to four decimal places, then rounded to the nearest cent. Where decay exceeds 50 percent, the manufacturing cost estimate for 50 percent decay is used.

Manufacturing cost ($/m^3) = decay% * 0.1810 + base value from table.

For a list of points of appraisal by zone, refer to Section 2.5.