



Log Scaling Meets Android
Bob Lucke

MY VITA



**Caribou
Software**

- AB Economics, UC Berkeley
- Ph.D., Economics / Econometrics George Washington University
- Congressional Budget Office – Tax Policy
- Price Waterhouse / Ernst & Young – International Tax
- 2000 – Escaped Big 8 & Moved to Hinton, Alberta
- 2004 – Started Caribou Software

CARIBOU OVERVIEW



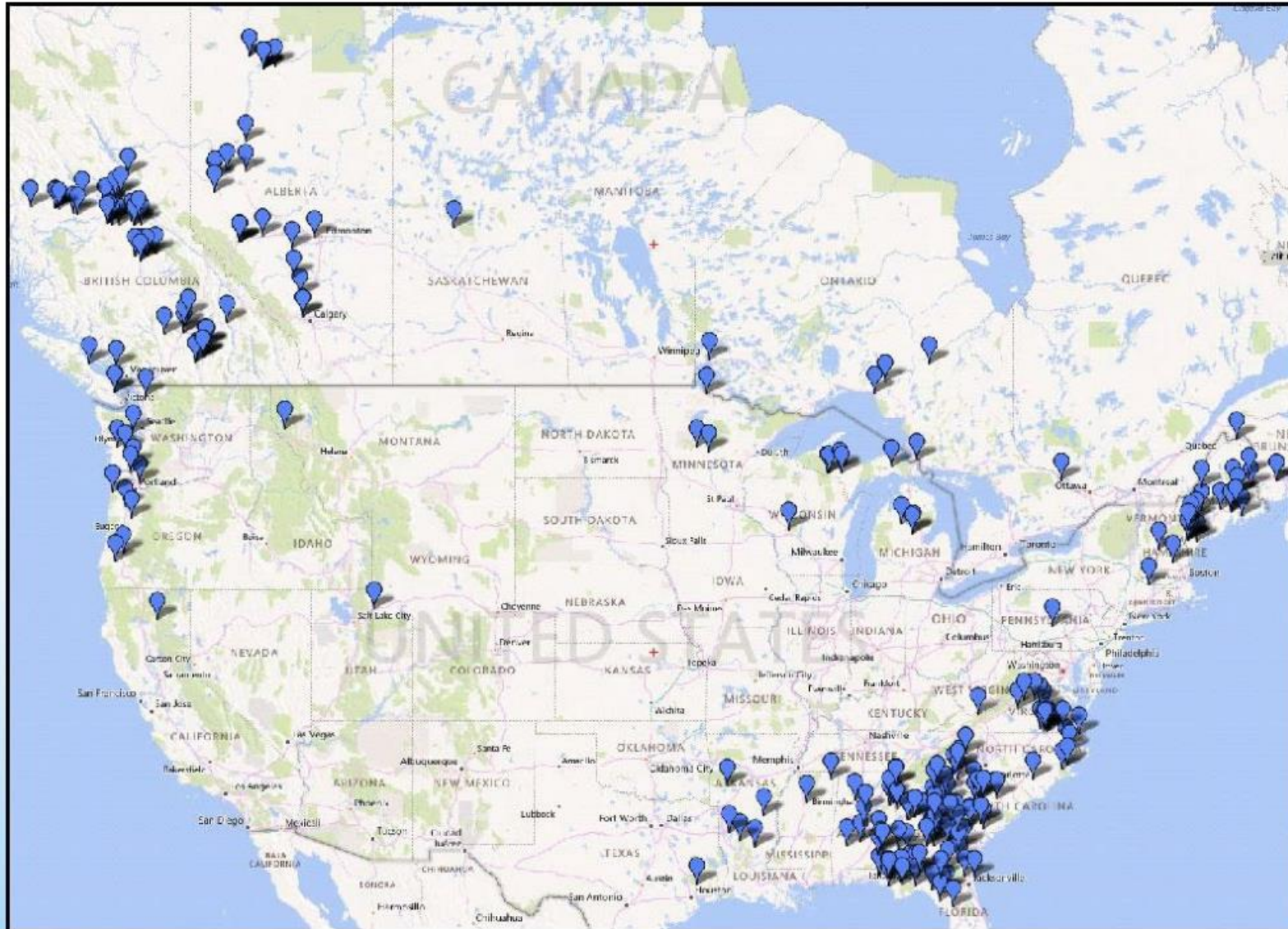
**Caribou
Software**

- We have Served the Forestry and Fibre Procurement Industries since 2004
- Logger's Edge Application:
 - Vendor / Landowner / Contractor Pay
 - Mill Revenue Reconciliation
 - Tract Management & Performance
- The installation base across North America
 - 300+ Logging Operations
 - 25+ Mills

OUR CUSTOMERS



**Caribou
Software**



OUR VISION



**Caribou
Software**

- To be the Industry Standard software provider for Small to Medium sized Mills and Loggers across North America.
- We Want to Replace outdated paper based process' and Eliminate all manual data entry at the back office.
- To provide an Electronic Filing Cabinet (Database) with Single Data Entry – No Data Duplication.
- We believe in using Technology to Seamlessly Share Data across Applications w/o Flat Files or Paper.

LOG SCALE HANDHELD APP



**Caribou
Software**

- Eliminate re-keying data at the back office
- Tight Integration with Logger's Edge
- Android OS based System
- Data Sharing between Office and Handhelds via WiFi & Web
- (Optional) Sharing via CSV, Tab Delimited, DBF



LOG SCALE HANDHELD APP



**Caribou
Software**

Get Rid of This:

EVENT TYPE	PRIMARY SCALER LICENCE NUMBER	PRIMARY SCALER NUMBER	SECONDARY SCALER LICENCE NUMBER	SCALE SITE NUMBER	SCALE DATE			PAGE/OF	LOC COU
					YEAR	MO	DAY		
	PSA8111	1673		198920	06	05	1	1/1	
INCOMING LGS NUMBER		LOAD ARRIVAL NUMBER			PARCEL ID	PARCEL COUNT			
1A112380		383							
LOG #	SP	LENGTH	TOP	BUTT	GRADE	COMPANY USE	LOG #	SP	LENGTH
01	FI	11513	08	14	1		34	LA	0181
02	FI	11511	08	16	1		35	LØ	0141
03	FI	11510	09	16	1		36	LØ	1121
04	FI	1142	12	18	1		37	LØ	1111
05	FI	1152	10	20	1		38	FI	0151
06	FI	1151	12	16	1		39	FI	0161
07	LA	11418	09	13	1		40	FI	0171
08	LA	11610	15	24	4		41	SP	0181
09	LA	11312	11	20	1		42	LØ	0121
10	FI	11511	14	23	2		43	FI	0101
11	FI	11510	12	20	1		44	FI	0141
12	LA	1125	10	15	1		45		
13	LA	1125	11	17	1		46		
14	LA	1132	10	14	2		47		
15	FI	11510	08	18	1		48		

LOG SCALE HANDHELD APP



**Caribou
Software**

And This:



LOG SCALE HANDHELD APP



**Caribou
Software**

And This:



LOG SCALE HANDHELD APP



**Caribou
Software**

And Maybe
Even This:



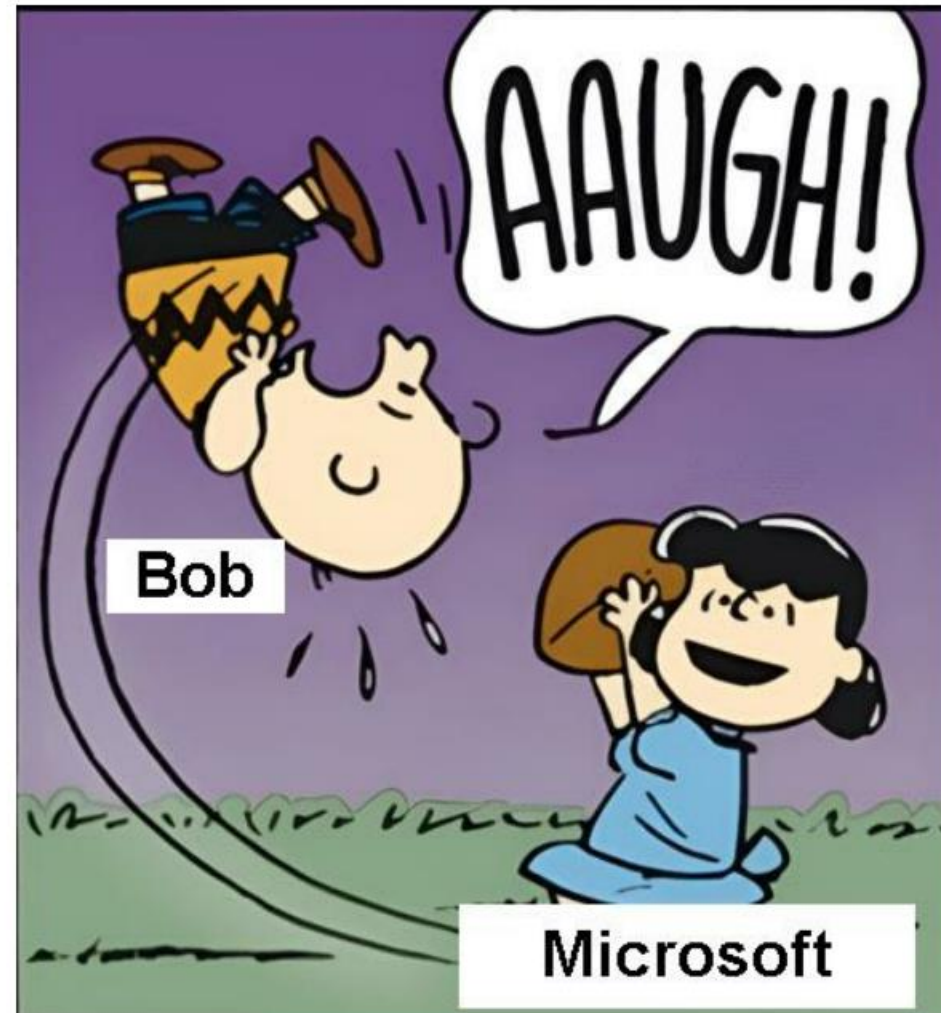
I FEEL LIKE CHARLIE BROWN



**Caribou
Software**

MS Discontinued:

- VB6
- FoxPro
- Windows Mobile
- Windows Phone
- IE
- LightSwitch



LOG SCALE HANDHELD APP



**Caribou
Software**

We're Big Fans of Android OS

- Runs on a Range of Devices
- Ease in Programming (Xamarin/C#)
- Ease in Distribution – No Reliance on an App Store
- Large Acceptance = Should Stay Around for a Long Time



DIVERSE HARDWARE



**Caribou
Software**



47



LOG SCALE HANDHELD APP



**Caribou
Software**

Focus on Data Entry

- Scalers Love a Real Keyboard – Bad Weather & Gloves
- Shortcut Keys, Tab Key, Arrows
- Autofill, Carryover and Repeat
- EG: One Scaler = 252,000 Logs / Last Year
- Daily: 238 Days = 1,000 Logs /Day



LOG SCALE HANDHELD APP



**Caribou
Software**

Touch may Have it's Day in the Sun

- Generational
- Phones / Tablets
- Can be Really FAST
- Touchscreen Gloves



LOG SCALE HANDHELD APP



**Caribou
Software**

Goal is to Handle
ALL North
American Scaling
Methods

- 1a. Doyle Log Rule
- 1b. Doyle Log Rule (Modified, Long Log)
2. International 1/4 Rule (Rounding to 1Ft, 5Ft, 10Ft)
3. West Side Scribner
4. West Side Scribner (NW Log Rules Advisory Group)
3. East Side Scribner (Forest Service)
6. East Side Scribner (NW Log Rules Advisory Group)
7. East Side Scribner Decimal C (Idaho)
8. Maine Log Rule
9. Alberta Log Rule (Smalian)
10. Ontario Log Rule (Cubic)
11. Ontario Log Rule (BF, formula)
12. New Brunswick Log Rule (Cubic)
13. New Brunswick Log Rule (FBM)
13. Nova Scotia Log Rule
14. Vermont Log Rule
15. Spaulding/Humboldt Log Rule
16. JAS Log Rule
17. JAS Revised Log Rule

LOG SCALE HANDHELD APP



**Caribou
Software**

Log #7:1 of 7

SAVE/EXIT (F1) SAVE/ADD LOG (F2) REPEAT (F4)

<input type="checkbox"/> Fix?	Species	RO	Red Oak
<input type="checkbox"/> Fix?	Grade	1	Sawlog #1
Top Dia		12	
Length		16	
Gross BF		95	Avg: 84
Ded BF	<input type="checkbox"/> Cull?	-	10
Log Tag			
Nt BF		85	Avg: 82

DEDUCT (F7)

SAVE/EXIT (F1) SAVE/ADD (F2) QUIT (F3)

<<< (F5) Log #7:1 of 7 >>> (F6)

<input type="checkbox"/> Fix?	Species	RO	
<input type="checkbox"/> Fix?	Grade	1	
Top Dia		12	
Length		10	
Gross BF		55	
Ded BF	<input type="checkbox"/> Cull?	-	0
Log Tag			
Nt BF		55	
Price		500.00	
Value		27.50	

SAVE/EXIT SAVE/ADD QUIT (F3)

ASH	ASP	BA	BE	CE
CH	FI	HE	HI	HM
LA	MP	PI	RO	RV
SM	SP	VP	HIDE	NEXT

III O <

Landscape or Portrait
Rugged or Tablet
Keyboard or Touch

LOG SCALE HANDHELD APP



**Caribou
Software**

Configurability

- Data Entry Terminology and Field Ordering
- Optional Fields
- Business Rules
- Scale Rules
- Units of Measure

Log Detail Configuration			
SAVE CONFIGURATION			
Concept: Species	Order, Hdr: 2	Seg: 2	Prt: 3
Stub/Abbrev: Species	Spec	<input checked="" type="checkbox"/> Required?	
Default: NONE	PP Cascade #:	<input checked="" type="checkbox"/> Carryover?	
<input checked="" type="checkbox"/> Ext. Keyboard?	<input type="checkbox"/> Editable?	<input checked="" type="checkbox"/> Tab Stop?	<input type="checkbox"/> Allow New?
Max Chars: 2	Start Col#: 1	Export Order: 1	
Concept: Grade	Order, Hdr: 7	Seg: 7	Prt: 17
Stub/Abbrev: Grade	Grd	<input checked="" type="checkbox"/> Required?	
Default: NONE	PP Cascade #:	<input type="checkbox"/> Carryover?	
<input checked="" type="checkbox"/> Ext. Keyboard?	<input checked="" type="checkbox"/> Editable?	<input checked="" type="checkbox"/> Tab Stop?	<input type="checkbox"/> Allow New?
Max Chars: 2	Start Col#: 3	Export Order: 2	
Concept: Top Diameter	Order, Hdr: 10	Seg: 10	Prt: 10
Stub/Abbrev: Top Dia	Top	<input checked="" type="checkbox"/> Required?	
Default: NONE	PP Cascade #:	<input type="checkbox"/> Carryover?	

LOAD HEADER SCREEN



**Caribou
Software**

SAVE (F1)		QUIT (F3)	
<input checked="" type="radio"/> Purchase	<input type="radio"/> Sale	<input type="radio"/> Transfer	
Load #			
100105			
Woods Ticket #			
123123			
Sale			
S50040C - BENNETT			
Date Hauled			
4/4/2023			
Mill/Yard			
Back Yard			
SAVE (F1)		QUIT (F3)	

Simple

Contract
STD TWIN PINES
Logging Cntr
KG CONTRACTING
Date Hauled
4/4/2023
Sub Contractor
Sam Wilson
Crew
Crew 3
Tract
NONE
Landowner
HOLLISTER
Trucker
JOHNNY CARSON
Gate Ticket
123456
Town
Blue River
Notification Number
Notes

Complicated

Disposition Holder
West Fraser
Mill Name
BLUE RIDGE
Mill Number
M 125
Disposition
CTLS040001
Sub-Disposition
5
Source
Block Number
1071
Load Number
45
Date
4/4/2023
Population
21

Alberta

LOG LISTING



**Caribou
Software**

Log List	
New Log (F1)	Go To Log # (F2)
#12	38 : 32' / 12" / 16"; BF: 19 - 0 = 19
#11	38 : 16' / 12"; BF: 8 - 1 = 7
#10	38 : 32' / 14"; BF: -198 - 0 = -198
#9	38 : 32' / 16"; BF: -198 - 0 = -198
#8	28 : 16' / 14"; BF: 11 - 0 = 11
#7	28 : 16' / 12"; BF: 8 - 0 = 8
#6	38 : 32' / 12" / 14"; BF: 18 - 0 = 18 : S
#5	38 : 16' / 10"; BF: 6 - 0 = 6
#4	38 : 32' / 12" / 16"; BF: 19 - 0 = 19

- Scrollable List
- Red Identifies Logs that Need Attention
- Can Enter Log w/ Zero Diameter and Come Back to it

LOG SCREEN – IDAHO



**Caribou
Software**

Log #6 of 6 (NEW) **QUIT (F3)** **NEW LOG (F1)**

IDAHO DEC C 2-SEG

Species
38 Western Larch

Length 32

Small Diameter 12

Butt Diameter **14**

Butt Log (F6)

Quality
S Small Top

Ded 1: Cull? (F5) 0 **Defct (F2)**

Ded 2: Cull? (F11) 0 **Defct (F8)**

Segs (F4)

Log #6:1 of 2 **Save/Exit (F1)** **New Log (F4)**

Sort
32P 32P - W Larch Peeler 8+

Species
38 Western Larch

Length	16	16
Small Diameter	13	12
Gr Scale Vol	10	8
Net Scale Vol	10	8

Deduct: - **0** - 0

QUIT (F6) **Defects (F2)** **Defects (F3)**

Save (F1) **Butt Segment** **QUIT** **Cancel Def (F6)**

Code R Gr Vol = 10 Ded Vol =

Length Deduct (F2) **2** Length Deduct (")

Diameter Deduct (F3) 0 Diameter Deduct (")

Pie Deduct (F4) 0% Percent Over 16 Ft.

Fraction: 1/8 1/4 1/3 1/2 2/3

Square Deduct (F5) 0 Width (") 0 Height (")
0 Length (")

Main

Segments

Defect

LOG SCREEN – DOYLE



**Caribou
Software**

Save/Exit (F1)	Save/Add (F2)	Repeat (F4)	Quit (F3)
<<< (F5)	Log #65 of 65	>>> (F6)	DOYLE
<input type="checkbox"/> Fix? Species	WO		
<input type="checkbox"/> Fix? Grade	1		
Log Tag	100055		
Small Diameter	12		
Length	16		
Gr Scale Vol	64		
Net Scale Vol	64		
Defect <input type="checkbox"/> Cull?	-	0	Deduct (F7)
Price	300.00		
Value	19.20		
Save/Exit	Save/Add	Quit (F3)	

AS	BA	BE	BU	CH
ELM	GUM	HE	HI	HM
PO	RO	SM	SP	WB
WO	WP	YB	HIDE	

Save/Exit (F1)	Save/Add (F2)	Repeat (F4)	Quit (F3)
<<< (F5)	Log #65 of 65	>>> (F6)	DOYLE
<input type="checkbox"/> Fix? Species	WB		
<input type="checkbox"/> Fix? Grade	1		
Log Tag	100055		
Small Diameter	12		
Length	16		
Gr Scale Vol	64		
Net Scale Vol	64		
Defect <input type="checkbox"/> Cull?	-	0	Deduct (F7)
Price	0.00		
Value	0.00		
Save/Exit	Save/Add	Quit (F3)	

5	6	7	8	9
10	11	12	13	14
15	16	17	18	19
20	HIDE			

Save (F1)	Defect	QUIT	Cancel Defect (F6)
Code	R	Gr Vol = 25	Ded Vol = 3
<input type="checkbox"/> Length Deduct (F2)	0	Length Deduct (")	
<input type="checkbox"/> Diameter Deduct (F3)	0	Diameter Deduct (")	
<input type="checkbox"/> Pie Deduct (F4)	0%	Percent Over	16 Ft.
Fraction: <input type="checkbox"/> 1/8 <input type="checkbox"/> 1/4 <input type="checkbox"/> 1/3 <input type="checkbox"/> 1/2 <input type="checkbox"/> 2/3			
<input checked="" type="checkbox"/> Square Deduct (F5)	2	Width (")	6 Height (")
	2	Length (")	

Defect

LOG SCREEN – ALBERTA



**Caribou
Software**

Save/Exit (F1)		Save/Add (F2)		Repeat (F4)		Quit (F3)	
<<< (F5)		Log #1 of 1		>>> (F6)			
SMALIAN-AB							
<input type="checkbox"/> Fix?	Species						
SP	Spruce/Pine						
<input type="checkbox"/> Fix?	Product						
06	Small Stem Conifer						
<input type="checkbox"/> Fix?	Condition						
GR	Green						
Butt Dia	26	22	24				
Top Dia	16	18	16				
Length		320	32				
Gross / Net Vol		105	105				
Ded BF	<input type="checkbox"/> Cull?	-	0	Deduct (F7)			
Save/Exit		Save/Add		Quit (F3)			

Main

SAVE (F1)		Defect		QUIT		CANCEL DEFECT (F6)	
Code	-	Gr Vol =	105	Ded Vol =	0		
<input type="checkbox"/> Length Deduct (F2)	0	Length Deduct (dm)					
<input type="checkbox"/> Diameter Deduct (F3)	0	0	Top / Butt Deduct (cm)				
<input type="checkbox"/> Pie Deduct (F4)	0%	Fraction: 0 / 0					
Fraction: <input type="radio"/> 1/8 <input type="radio"/> 1/5 <input type="radio"/> 1/4 <input type="radio"/> 1/3 <input type="radio"/> 1/2 <input type="radio"/> 2/3							
<input type="checkbox"/> Fraction is based on Partial Length of the Log							
<input type="checkbox"/> Block Deduct (F5)	0	Width (cm)	0	Height (cm)			
	0	Length (dm)	<input type="checkbox"/> Irregular (incl 2cm)				
<input type="checkbox"/> Internal Cylinder (F7)	0	0	Top / Butt Diameters (cm)				
<input type="checkbox"/> End Rot (F8)	0	Diam (cm)	0	Len (dm)	<input type="checkbox"/> >50% Basal		
<input type="checkbox"/> Cube Defect (F9)	0	Cube Count					

Defect

DATA FLOW



**Caribou
Software**

Data Transferred via REST
Web API

Loads / Logs Sent Up to DB



**Local Sqlite DB:
Works On- or Offline**



Lists (Tracts, Suppliers,
Species, Grades) Pulled
Down from DB



MANUAL DATA FLOW



**Caribou
Software**

- Loads / Logs Exported to Tab-Delimited, CSV, DBF Files
- Also Fixed Column Width
- Setup Lists – Tracts, Species, Grades, Contractors, etc. imported via Excel Tab-Delimited Files



Export File Format:	<input type="radio"/> Tab Delimited
	<input type="radio"/> CSV
	<input type="radio"/> Fixed Width Cols
	<input checked="" type="radio"/> DBF
Load Hdr Char: H	Log Hdr Char: D

LOG SCALE HANDHELD APP



**Caribou
Software**

- PDF Scale Reports Generated on Device
- Use Share Button to Share w/ Email, Dropbox, etc.
- Send to WebSite

Log #	Row	Spec	Top	Len	Grd	GrBF	Reason	Ded	NtBF	Price	Amount
1	1RX	RO	13	10	3	70	-	0	70	795.00	55.65
2	1RX	RO	13	10	3	70	R	10	60	795.00	47.70
3	1RX	RO	13	8	3	55	-	0	55	795.00	43.73
4	1RX	RO	12	8	3	45	-	0	45	795.00	35.78
5	6RX	RO	10	10	X	35	-	0	35	795.00	27.83
6	6RX	RO	9	10	X	30	-	0	30	795.00	23.85
7	6RX	RO	8	8	X	15	-	0	15	795.00	11.93
8	6RX	RO	9	10	X	30	-	0	30	795.00	23.85

Summary										
Count	Row	Spec	Grd	GrBF	Ded	NtBF	Pct	Price	Amount	
15	1RX	RO	3	885	65	820	16.13%	\$795.00	\$651.90	
2	1RX	RO	X	125	0	125	2.46%	\$795.04	\$99.38	
18	5R	RO	1	1,485	45	1,440	28.32%	\$795.00	\$1,144.80	
11	5R	RO	2	380	20	360	7.08%	\$795.00	\$286.20	
10	5R	RO	P	1,010	15	995	19.57%	\$795.01	\$791.03	
6	5R	RO	S	375	20	355	6.98%	\$795.01	\$282.23	
36	6RX	RO	X	910	0	910	17.90%	\$795.00	\$723.45	
1	V1	RO	V1	80	0	80	1.57%	\$2,000.00	\$240.00	
99				5,250	165	5,085	100.00%	\$829.69	\$4,218.98	