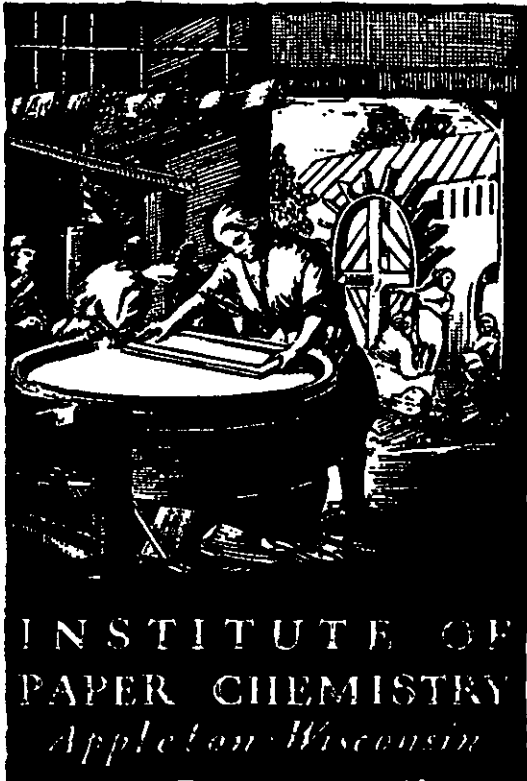


Institute of Paper Science and Technology
Central Files



CONTINUOUS BASE LINE STUDY
✓ Project 1108-B

Progress Report Four
to
FOURDRINIER KRAFT BOARD INSTITUTE

November 1, 1947

THE INSTITUTE OF PAPER CHEMISTRY
APPLETON, WISCONSIN

CONTINUOUS BASE LINE STUDY
Project 1108-B

Progress Report 4

to

FOURDRINIER KRAFT BOARD INSTITUTE

November 1, 1947

THE INSTITUTE OF PAPER CHEMISTRY

APPLETON, WISCONSIN

In conjunction with the F.K.I. Continuous Baseline Study, thirty different sample lots of 42-lb. Fourdrinier kraft linerboard were submitted by nine different F.K.I. mills to The Institute of Paper Chemistry for testing during the period October 13 through October 31. In addition to the 42-lb. kraft linerboard, two samples of special drum stock were also submitted for evaluation. The results on the special stock are reported separately in this report. A tabulation of the number of samples classified according to mill may be seen in Table I.

TABLE I
DISTRIBUTION OF 42-lb. LINERBOARD SAMPLES

Mill Code	Samples Submitted
A	6
B	6
C	3
D	2
E	1
F	3
G	3
H	3
J	<u>3</u>
	30

The above sample lots were tested for basis weight, caliper, bursting strength, G. E. puncture, and Elmendorf tear. A comparison

of the average strength results for each mill may be seen in Table II and graphically presented in Figures 1 to 6, inclusive. In addition to a comparison of the mill averages, Table II also shows the cumulative F.K.I. averages as well as the F.K.I. index. The cumulative F.K.I. averages include all the results up to but not including the current period; the current period in the case of this report is October 13 through October 31. The F.K.I. index is obtained as follows:

$$\frac{\text{current F.K.I. average}}{\text{cumulative F.K.I. average}} \times 100 = \text{F.K.I. index (\%)}$$

The F.K.I. index furnishes a ready means of comparing the current quality with previous results. For example, the current F.K.I. average basis weight is 43.4 lb. and the cumulative F.K.I. average basis weight is 42.9. Determining the index in per cent as indicated above, the resulting index for basis weight is 101.2%. This signifies that the current average basis weight is approximately 1.2% higher than the cumulative average which, in this case, covered the period July 25 up to October 13.

A comparison of the results in Table II and Figure 1 shows that the average basis weight for all mills was above the 42-lb. specification set forth in Rule 41. Mills D & F had the highest average basis weight, they being approximately 6.7% higher than the specified 42-lb. The amount by which the mills exceeded the 42-lb. specification is as follows:

Mill Code	Per cent
A	0.5
B	1.9
C	2.4
D	6.7
E	5.5
F	6.7
G	2.4
H	2.4
J	2.1

A comparison of the average basis weight data for the previous period with the current F.K.I. average indicates that, the basis weight has increased.

A comparison of the average calipers for the various mills (see Figure 2) shows that the mill averages varied from a low of 14.3 for Mill E to 17.3 for Mill D, the average being 15.2.

The average bursting strength values obtained for each mill are graphically shown in Figure 3. It may be observed that the average bursting strength for the various mills ranged from a low of 102 for Mills A & D to a high of 113 for Mill C. The current F.K.I. average bursting strength was approximately 3.9% higher than the cumulative average.

The data of Table II and Figure 4 show that the average G. E. puncture for all mills was 39 units, with Mill F having the highest

TABLE II

SUMMARY OF COMPOSITE MILL AVERAGES—OCTOBER 13 THROUGH OCTOBER 31, 1947

Code No.	Basis Weight lb.	Caliper, points	Bursting Strength, points	G. E. Puncture, units	In Direction	Elmendorf Tear, g./sheet	Across Direction
A	42.2	14.6	102	36	350	396	396
B	42.8	15.1	107	38	382	396	396
C	43.0	14.6	113	38	350	425	425
D	44.8	17.3	102	41	416	430	430
E	44.3	14.3	104	38	391	425	425
F	44.8	15.7	111	46	414	445	445
G	43.0	15.1	112	40	400	431	431
H	43.0	15.4	106	38	381	393	393
J	42.9	14.7	110	33	342	368	368
Current FKI Average:	43.4	15.2	107	39	381	412	412
Cumulative FKI Average:	42.9	15.4	103	39	385	418	418
FKI Index, %	101.2	98.7	103.9	100.0	99.0	98.6	98.6

and Mill J the lowest. In connection with Mill J, it may be observed that this mill had the lowest G. E. puncture during the last period.

A graphic comparison of the Elmendorf tear results for the various mills is given in Figures 5 and 6. The results indicate that the current F.K.I. machine direction tear results were approximately 1.0% lower than the cumulative average. Similarly, the across machine tear index was approximately 1.4% lower.

A comparison of the F.K.I. indexes indicates that, for the current period, basis weight and bursting strength increased whereas the tearing strength decreased slightly as compared with the cumulative averages. The G. E. puncture average was the same as for the cumulative period.

In order to compare the variation within a given mill, the test results for each particular mill have been tabulated in Tables III to XI for Mills A to J, respectively. In addition to the current averages, cumulative averages for each mill, together with the mill factor and the mill index, are given for each mill. The cumulative mill average is the average test results obtained on the samples submitted by the particular mill up to but not including the current averages. The mill factor and the mill index are obtained as follows:

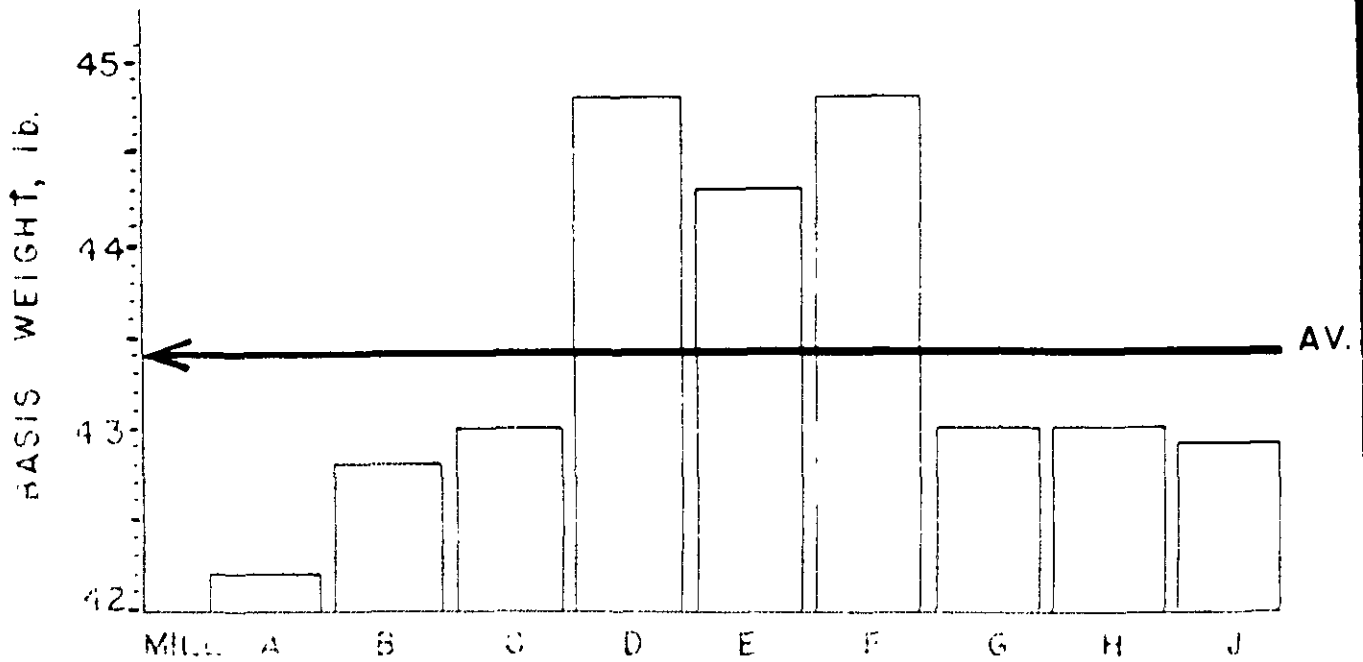
$$\frac{\text{current mill average}}{\text{cumulative mill average}} \times 100 = \text{mill factor } (\%)$$

$$\frac{\text{current mill average}}{\text{cumulative F.K.I. average}} \times 100 = \text{mill index } (\%)$$

The mill factor and the mill index serve as a ready means for comparing the current mill results with either the previous result for that particular mill or with the cumulative F.K.I. results. As more samples are included and as the test data accumulate, the factors and indexes will have added significance.

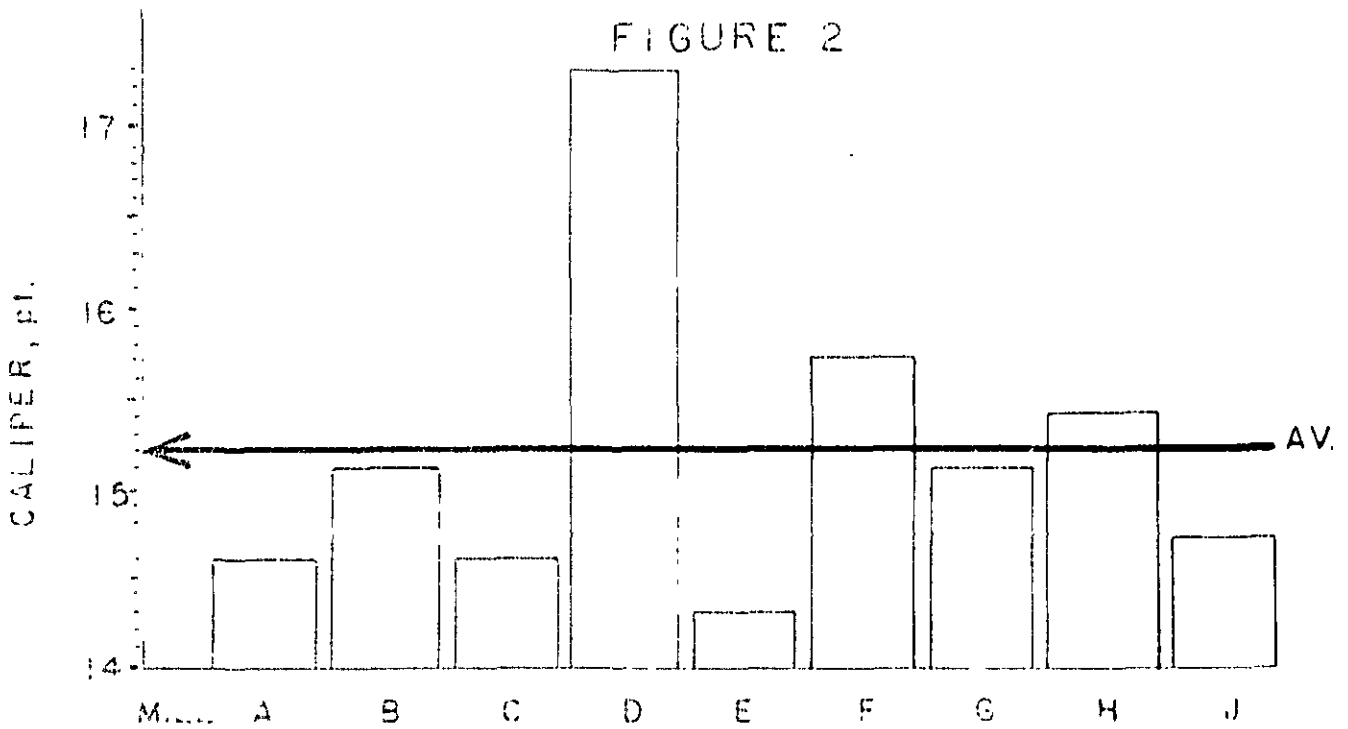
The results obtained on the special drum stock may be seen in Table XII.

FIGURE 1



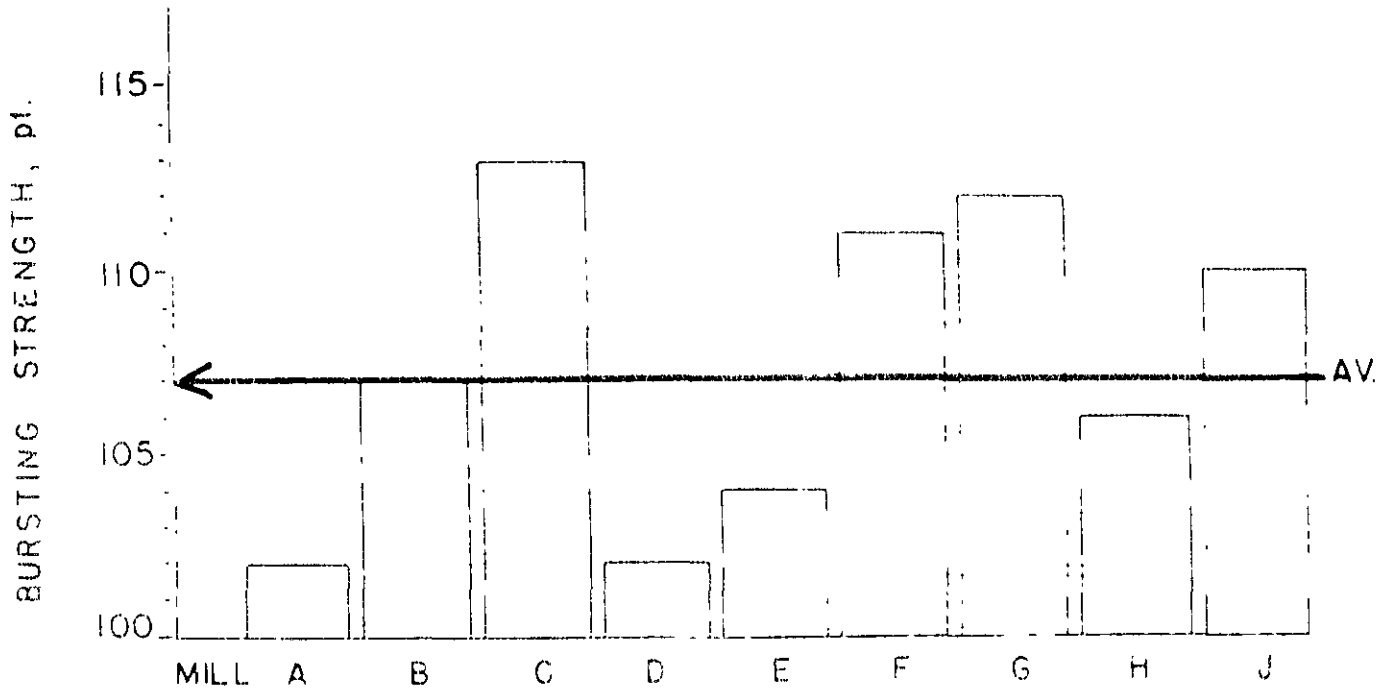
COMPARISON OF BASIS WEIGHT RESULTS
(PERIOD OCT. 13 - OCT. 31)

FIGURE 2



COMPARISON OF CALIPER RESULTS
(PERIOD OCT. 13 - OCT. 31)

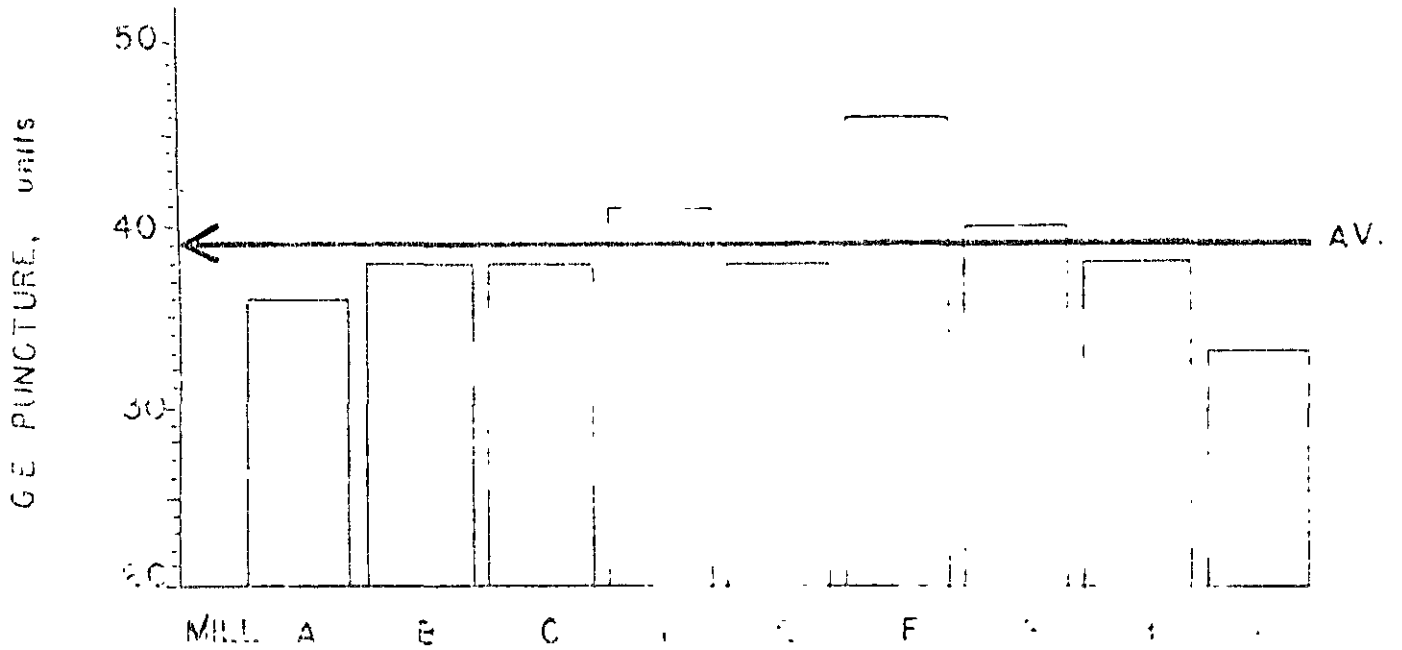
FIGURE 3



COMPARISON OF BURSTING STRENGTH RESULTS

(PERIOD OCT. 13 - OCT. 31)

FIGURE 4



COMPARISON OF GE PUNCTURE RESULTS

(PERIOD OCT. 13 - OCT. 31)

FIGURE 5

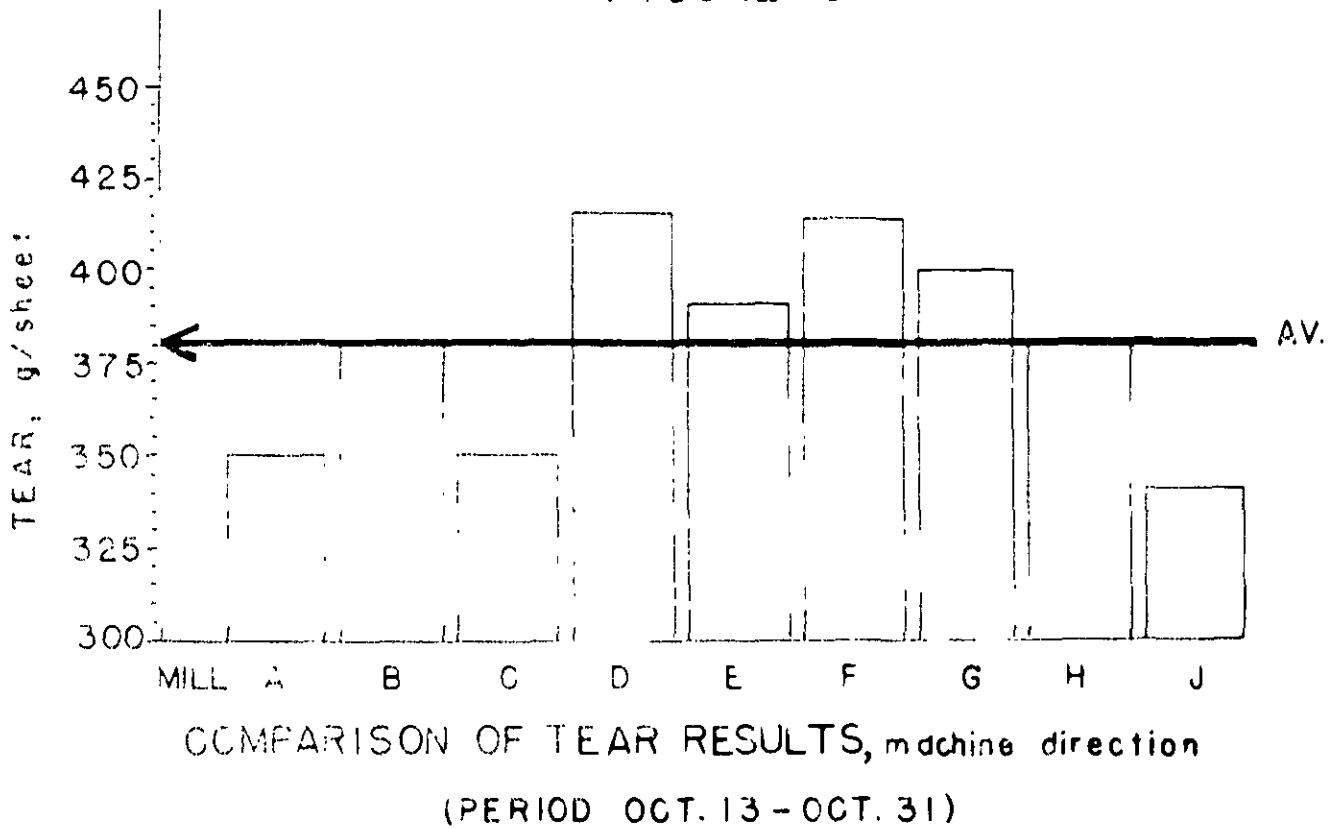


FIGURE 6

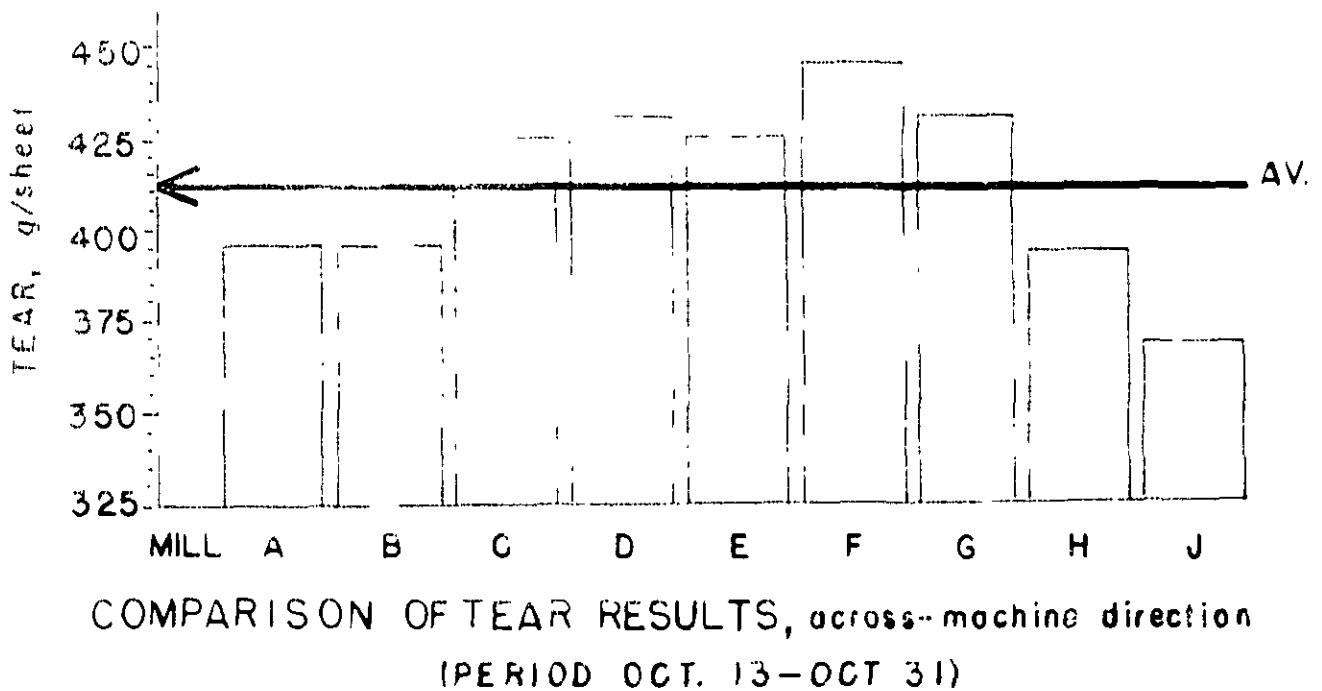


TABLE III

SUMMARY OF INDIVIDUAL TEST LOTS--OCTOBER 13 THROUGH OCTOBER 31, 1947

Basis Weight, lb.	Caliper, points		Bursting Strength, points		G. E. Puncture, units		In		Elmendorf Tear g./sheet		Across						
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.					
<u>Mill A -- 42-lb. Liner Board</u>																	
3.8	41.4	42.6	16.2	14.5	15.1	117	79	100	42	36	38	440	356	383	464	360	429
3.6	40.6	42.4	16.9	13.5	14.8	121	91	106	41	34	39	384	288	338	488	344	400
2.2	40.2	41.5	15.2	13.7	14.5	118	75	101	40	36	38	352	280	325	456	328	380
3.8	41.8	42.6	16.2	14.1	14.8	124	86	102	36	30	32	368	288	329	460	368	410
3.0	40.4	41.5	15.2	13.9	14.2	120	91	105	36	30	33	400	312	357	432	336	385
5.0	41.0	42.6	15.1	13.2	14.4	124	82	101	40	34	37	424	304	365	440	344	373
	42.2		14.6		102		36		350		396						
	42.7		15.0		104		40		390		438						
	98.8		97.3		98.1		90.0		89.7		90.4						
	98.4		94.8		99.0		92.3		90.9		94.7						

TABLE III

SUMMARY OF INDIVIDUAL TEST LOTS--OCTOBER 13 THROUGH OCTOBER 31, 1947

File No.	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		Bursting Strength, points		G. E. Puncture, units		In		Elmendorf, g./sheet					
				Max.	Av.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		Av.	Mc			
<u>Mill A -- 42-lb. Liner Board</u>																			
29078	10/13/47	10/6/47	2	43.8	41.4	42.6	16.2	14.5	15.1	117	79	100	42	36	38	440	356	383	46
29096	10/16/47	10/13/47	1	43.6	40.6	42.4	16.9	13.5	14.8	121	91	106	41	34	39	384	288	338	48
29097	10/16/47	10/13/47	2	42.2	40.2	41.5	15.2	13.7	14.5	118	75	101	40	36	38	352	280	325	45
29139	10/23/47	10/20/47	1	43.8	41.8	42.6	16.2	14.1	14.8	124	86	102	36	30	32	368	288	329	46
29140	10/23/47	10/20/47	2	43.0	40.4	41.5	15.2	13.9	14.2	120	91	105	36	30	33	400	312	357	43
29160	10/29/47	19/27/47	2	45.0	41.0	42.6	15.1	13.2	14.4	124	82	101	40	34	37	424	304	365	44
urrent Mill Average:				42.2		14.6		102		36		350							
umulative Mill Average:				42.7		15.0		104		40		390							
ill Factor, %				98.8		97.3		98.1		90.0		89.7							
ill Index, %				98.4		94.8		99.0		92.3		90.9							

TABLE IV

RY OF INDIVIDUAL TEST LOTS—OCTOBER 13 THROUGH OCTOBER 31, 1947

Weight, lb.	Caliper, points		Bursting Strength, points		G. E. Puncture, units		In		Elmendorf Tear G./sheet		Across					
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.				
42.2	43.4	15.3	13.5	14.3	132	86	108	40	36	38	512	320	383	424	336	371
40.4	41.9	14.9	13.5	14.2	138	87	112	40	36	38	424	364	385	448	396	423
42.2	43.6	17.2	15.5	16.2	136	92	109	42	38	40	464	336	391	464	360	403
41.8	42.8	17.1	15.0	16.0	125	80	105	41	34	37	408	320	367	456	352	395
42.0	43.5	16.2	14.1	15.2	117	82	103	41	34	37	448	360	395	456	344	309
40.6	41.6	15.5	14.3	14.7	117	83	105	38	33	36	408	344	369	416	344	375
42.8				15.1		107		38		38			382			396
43.0				15.9		102		37		37			376			396
99.5				95.0		104.9		102.7		101.6			101.6			100.0
99.8				98.1		103.9		97.4		99.2			99.2			94.7

Mill B -- 42-lb. Liner Board

TABLE IV

SUMMARY OF INDIVIDUAL TEST LOTS—OCTOBER 13 THROUGH OCTOBER 31, 1947

File No.	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		Bursting Strength, points		G. E. Puncture, units		In Min.	Elmendorf g./shee Av.						
				Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.								
<u>Mill B -- 42-lb. Liner Board</u>																			
129079	10/13/47	10/2/47	3	44.4	42.2	43.4	15.3	13.5	14.3	132	86	108	40	36	38	512	320	383	4
129094	10/15/47	10/10/47	3	43.4	40.4	41.9	14.9	13.5	14.2	138	87	112	40	36	38	424	364	385	4
129125	10/20/47	10/10/47	1	45.0	42.2	43.6	17.2	15.5	16.2	136	92	109	42	38	40	464	336	391	4
129137	10/22/47	10/18/47	1	45.6	41.8	42.8	17.1	15.0	16.0	125	80	105	41	34	37	408	320	367	4
129138	10/22/47	10/13/47	3	45.0	42.0	43.5	16.2	14.1	15.2	117	82	103	41	34	37	448	360	395	4
129159	10/29/47	10/20/47	3	42.2	40.6	41.6	15.5	14.3	14.7	117	83	105	38	33	36	408	344	369	4
Current Mill Average:				42.8		15.1		107		38		382							
Cumulative Mill Average:				43.0		15.9		102		37		376							
Mill Factor, %				99.5		95.0		104.9		102.7		101.6							
Mill Index, %				99.8		98.1		103.9		97.4		99.2							

TABLE V

OF INDIVIDUAL TEST LOTS--OCTOBER 13 THROUGH OCTOBER 31, 1947

Weight, lb.	Caliper, points		Bursting Strength, points		G. E. Puncture, units		In		Elmendorf Tear G./sheet		Across					
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.				
100.2	43.4	15.8	14.1	15.0	138	93	118	44	39	42	408	328	355	472	400	426
100.0	42.4	15.5	13.7	14.8	129	75	108	38	33	35	376	288	339	456	368	407
100.2	43.2	14.6	12.7	13.9	135	86	114	39	34	37	416	320	354	472	416	442
100.0	43.0	14.6	14.6	14.6	113	113	113	38	38	38	350	350	350	425	425	425
100.6	42.6	14.3	14.3	14.3	104	104	104	39	39	39	354	354	354	415	415	415
100.9	100.9	102.1	102.1	102.1	108.7	108.7	108.7	97.4	97.4	97.4	98.9	98.9	98.9	102.4	102.4	102.4
100.2	100.2	94.8	94.8	94.8	109.7	109.7	109.7	97.4	97.4	97.4	90.9	90.9	90.9	101.7	101.7	101.7

Mill C -- 42-lb. Liner Board

TABLE V

SUMMARY OF INDIVIDUAL TEST LOTS--OCTOBER 13 THROUGH OCTOBER 31, 1947

Lot No.	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		Bursting Strength, points		G. E. Puncture, units		In Elmendorf Tea g./sheet							
				Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.					
<u>Mill C -- 42-lb. Liner Board</u>																			
087	10/13/47			45.2	42.2	43.4	15.8	14.1	15.0	138	93	118	44	39	42	408	328	355	472
131	10/21/47			44.0	41.0	42.4	15.5	13.7	14.8	129	75	108	38	33	35	376	288	339	456
151	10/27/47			44.0	42.2	43.2	14.6	12.7	13.9	135	86	114	39	34	37	416	320	354	472
Percent Mill Average:					43.0		14.6		113		38		350						
Relative Mill Average:					42.6		14.3		104		39		354						
Factor, %					100.9		102.1		108.7		97.4		98.9						
Index, %					100.2		94.8		109.7		97.4		90.9						

TABLE VI

SUMMARY OF INDIVIDUAL TEST LOTS—OCTOBER 13 THROUGH OCTOBER 31, 1947

x.	asis Weight, lb.		Calliper, points		Bursting Strength, points		G. E. Puncture, units		Elmendorf Tear, g./sheet								
	Min.	Av.	Min.	Av.	Min.	Av.	Min.	Av.	In	Across							
	Max.	Av.	Max.	Av.	Max.	Av.	Max.	Av.	Min.	Max.	Min.	Av.					
.0	43.6	44.3	18.5	15.6	17.3	127	71	98	47	40	43	472	384	434	480	376	423
.2	43.8	45.2	18.7	15.5	17.4	135	76	106	42	36	39	456	352	399	488	408	437
	44.8			17.3				102			41			416			430
	43.6			16.4				101		40				384			418
	102.8			105.5				101.0		102.5				108.3			102.9
	104.4			112.3				99.0		105.1				108.1			102.9

Mill D — 42-lb. Liner Board

TABLE VI

SUMMARY OF INDIVIDUAL TEST LOTS—OCTOBER 13 THROUGH OCTOBER 31, 1947

File No.	Date -Recd.	Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		Bursting Strength, points		G. E. Puncture, units		In Min.	Max. Av.	Elmendorf T. g./sheet					
				Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.								
29082	10/13/47	10/4/47	4	46.0	43.6	44.3	18.5	15.6	17.3	127	71	98	47	40	43	472	384	434	48
29136	10/22/47	10/18/47	4	46.2	43.8	45.2	18.7	15.5	17.4	135	76	106	42	36	39	456	352	399	48
<u>Mill D -- 42-lb. Liner Board</u>																			
Current Mill Average:				44.8		17.3		102		41		416							
Cumulative Mill Average:				43.6		16.4		101		40		384							
Mill Factor, %				102.8		105.5		101.0		102.5		108.3							
Mill Index, %				104.4		112.3		99.0		105.1		108.1							

TABLE VII

OF INDIVIDUAL TEST LOTS--OCTOBER 13 THROUGH OCTOBER 31, 1947

Light	Caliper, points		Bursting Strength, points		G. E. Puncture, units		In Elmendorf Tear, g./sheet		Across						
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.					
2 44.3	15.2	13.1	14-3	121	87	104	41	35	38	480	336	391	464	384	425
44.3			14.3			104		38				391			425
41.8			15.2			98		39				408			409
106.0			94.1			106.1		97.4				95.8			103.9
103.3			92.9			101.0		97.4				101.6			101.7

Model E -- 42.1lb. Liner Board

TABLE VIII

RY OF INDIVIDUAL TEST LOTS—OCTOBER 13 THROUGH OCTOBER 31, 1947

Weight, b. in.	Caliper, points		Bursting Strength, points		G. E. Puncture units		Elmendorf Tear, g./sheet									
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Av.					
6.0	46.7	16.9	15.0	16.0	129	91	116	55	47	51	528	424	464	512	424	472
2.2	43.8	15.4	14.2	14.8	153	96	115	48	39	43	432	312	379	488	368	433
2.6	43.8	17.0	15.5	16.2	115	85	104	46	40	43	464	336	399	544	360	429
44.8			15.7				111		46				414			445
44.0			15.2				104		44				403			440
101.8			103.3				106.7		104.5				102.7			101.1
104.4			101.9				107.8		117.9				107.5			106.5

Mill F -- 42-lb. Liner Board

TABLE VIII

SUMMARY OF INDIVIDUAL TEST LOTS—OCTOBER 13 THROUGH OCTOBER 31, 1947

Lot No.	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		Bursting Strength, points		G. E. Puncture units		In Elmendorf Tea, g./sheet							
				Max.	Avg.	Max.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.					
<u>Mill F — 42-lb. Liner Board</u>																			
183	10/13/47			47.6	46.0	46.7	16.9	15.0	16.0	129	91	116	55	47	51	528	424	464	512
198	10/16/47			44.6	42.2	43.8	15.4	14.2	14.8	153	96	115	48	39	43	432	312	379	488
43	10/24/47			45.8	42.6	43.8	17.0	15.5	16.2	115	85	104	46	40	43	464	336	399	544
ent Mill Average:						44.8		15.7			111			46				414	
lative Mill Average:						44.0		15.2			104			44				403	
Factor, %						101.8		103.3			106.7			104.5				102.7	
Index, %						104.4		101.9			107.8			117.9				107.5	

TABLE IX

VARIETY OF INDIVIDUAL TEST LOTS—OCTOBER 13 THROUGH OCTOBER 31, 1947

Weight, lb.	Caliper, points		Bursting Strength, points		G. E. Puncture, units		Elmendorf Tear, g./sheet		Across							
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.						
2.2	42.8	16.0	14.0	15.1	125	90	110	46	40	42	452	356	401	448	344	417
2.2	43.3	14.8	13.2	13.9	129	79	111	43	38	41	488	368	417	488	376	425
1.4	42.8	17.4	15.7	16.4	135	92	114	40	35	37	432	336	381	504	376	449
<u>Mill G — 42-lb. Liner Board</u>																
43.0			15.1				112			40			400			431
42.7			16.0				102			40			385			411
100.7			94.4				109.8			100.0			103.9			104.9
100.2			98.1				108.7			102.6			103.9			103.1

TABLE IX

SUMMARY OF INDIVIDUAL TEST LOTS—OCTOBER 13 THROUGH OCTOBER 31, 1947

File No.	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		Bursting Strength, points		G. E. Puncture, units		In		Elmendorf Tea g./sheet					
				Max.	Average	Max.	Average	Max.	Min.	Max.	Min.	Max.	Min.		Max.	Average			
<u>Mill G — 42-lb. Liner Board</u>																			
1081	10/13/47	10/6/47		43.8	42.2	42.8	16.0	14.0	15.1	125	90	110	46	40	42	452	356	401	448
1124	10/18/47	10/16/47		44.2	42.2	43.3	14.8	13.2	13.9	129	79	111	43	38	41	488	368	417	488
1144	10/24/47	10/22/47		43.8	41.4	42.8	17.4	15.7	16.4	135	92	114	40	35	37	432	336	381	504
Average:				43.0			15.1			112		40			40			400	
Relative Mill Average:				42.7			16.0			102		40			40			385	
Factor, %				100.7			94.4			109.8		100.0			100.0			103.9	
Index, %				100.2			98.1			108.7		102.6			102.6			103.9	

TABLE X

SUMMARY OF INDIVIDUAL TEST LOTS--OCTOBER 13 THROUGH OCTOBER 31, 1947

Dry Weight lb.	Caliper, points		Bursting Strength, points		G. E. Puncture, units		In		Elmendorf Tear, g./sheet		Across					
	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.				
42.0	43.2	17.1	15.0	15.7	115	89	105	43	38	40	400	344	367	432	336	389
41.0	42.3	16.2	14.2	15.1	115	83	101	41	36	39	432	352	383	432	352	389
41.8	43.5	16.0	13.8	15.5	136	95	112	39	32	36	456	352	392	420	384	399
<u>Mill H -- 42-lb. Liner Board</u>																
	43.0		15.4			106				38			381			393
	43.5		15.6			107				41			429			442
	98.9		98.7			99.1				92.7			88.8			88.9
	100.2		100.0			102.9				97.4			99.0			94.0

TABLE X

SUMMARY OF INDIVIDUAL TEST LOTS--OCTOBER 13 THROUGH OCTOBER 31, 1947

File No.	Date Recd.	Date Made	Mch. No.	Basis Weight lb.		Caliper, points		Bursting Strength, points		G. E. Puncture, units		Elmende G./In								
				Max.	Avg.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Avg.	Max.	Min.	Avg.			
<u>Mill H -- 42-lb. Liner Board</u>																				
129085	10/13/47	10/6/47	2	44.0	42.0	43.2	17.1	15.0	15.7	115	89	105	43	38	40	400	344	367		
129102	10/17/47	10/12/47	2	44.0	41.0	42.3	16.2	14.2	15.1	115	83	101	41	36	39	432	352	383		
129145	10/27/47	10/19/47	2	45.0	41.8	43.5	16.0	13.8	15.5	136	95	112	39	32	36	456	352	392		
Current Mill Average:						43.0	15.4				106			38				381		
Cumulative Mill Average:						43.5	15.6				107			41				429		
Mill Factor, %						98.9	98.7				99.1			92.7				88.8		
Mill Index, %						100.2	100.0				102.9			97.4				99.0		

TABLE XI

ARY OF INDIVIDUAL TEST LOTS--OCTOBER 13 THROUGH OCTOBER 31, 1947

eight, n.	Calliper, points		Bursting Strength, points		G. E. Puncture, units		In		Elmendorf Tear, g./sheet		Across					
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Av.	Max.	Min.	Av.				
.0	43.2	15.1	13.0	14.4	124	82	110	39	35	37	400	304	347	408	336	381
.0	42.6	15.5	13.5	14.5	126	87	109	35	30	32	376	304	340	384	320	353
.8	42.8	16.2	14.7	15.1	130	93	110	34	30	31	368	296	338	400	316	370
42.9			14.7			110				33			342			368
42.2			14.9			107				35			350			391
101.7			98.7			102.8				94.3			97.7			94.1
100.0			95.5			106.8				84.6			88.8			88.0

Mill J -- 42 lb. Liner Board

TABLE XI

SUMMARY OF INDIVIDUAL TEST LOTS--OCTOBER 13 THROUGH OCTOBER 31, 1947

File No.	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		Bursting Strength, points		G. E. Puncture, units		In Min.	Elmendorf G./shee Av. M						
				Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.								
<u>Mill J -- 42 lb. Liner Board</u>																			
129084	10/13/47	10/10/47		44.0	42.0	43.2	15.1	13.0	14.4	124	82	110	39	35	37	400	304	347	4
129126	10/20/47	10/17/47		43.8	42.0	42.6	15.5	13.5	14.5	126	87	109	35	30	32	376	304	340	31
129158	10/28/47	10/24/47		44.0	41.8	42.8	16.2	14.7	15.1	130	93	110	34	30	31	368	296	338	40
Current Mill Average:					42.9			14.7			110		33					342	
Cumulative Mill Average:					42.2			14.9			107		35					350	
Mill Factor, %					101.7			98.7			102.8		94.3					97.7	
Mill Index, %					100.0			95.5			106.8		84.6					88.8	

TABLE XII

SUMMARY OF INDIVIDUAL TEST LOTS—OCTOBER 13 THROUGH OCTOBER 31, 1947

Weight, lb.	Caliper, points		Bursting Strength, points		G. E. Puncture, units		In		Elmendorf Tear, g./sheet		Across					
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.				
5.0	46.6	15.2	14.2	14.7	123	85	106	45	40	42	424	344	504	344	425	425
5.8	45.3	14.5	13.4	13.9	115	87	104	45	38	42	496	368	472	408	434	434
45.9							105			42			407			430
45.1							96			40			410			436
101.8							109			105.0			99.3			98.6

Mill E --- 44/46-lb. Drum Liner Board

TABLE XII

SUMMARY OF INDIVIDUAL TEST LOTS---OCTOBER 13 THROUGH OCTOBER 31, 1947

File No.	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		Bursting Strength, points		G. E. Puncture, units		In		Elmendorf g./shee.							
				Max.	Av.	Min.	Av.	Min.	Av.	Min.	Av.	Max.	Min.		Av.	Max.					
<u>Mill E -- 44/46-lb. Drum Liner Board</u>																					
129080	10/13/47	10/3/47		48.0	45.0	46.6	15.2	14.2	14.7	123	85	106	42	40	45	42	424	344	389	50	
129086	10/13/47	10/10/47		46.2	43.8	45.3	14.5	13.4	13.9	115	87	104	42	38	45	42	496	368	425	47	
Current Mill Average:					45.9			14.3		105		42		407							
Cumulative Mill Average:					45.1			14.0		96		40		410							
Mill Factor, %					101.8			102.1		109		105.0		99.3							

