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INSTITUTE OF
PAPER CHEMISTRY
Appleton, Wisconsin

CONTINUOUS BASELINE STUDY

Project No. 108 R
Proctor Report 16 (Rev. 1)

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FOURDRINIER KRAFT BOARD INSTITUTE

JULY 1950

~~CONFIDENTIAL~~
CONTINUOUS BASELINE STUDY
Progress Report 36 (Revised)

THE INSTITUTE OF PAPER CHEMISTRY

APPLETON, WISCONSIN

CONTINUOUS BASELINE STUDY

Project 1108-B

Progress Report 36 (Revised)

to

FOURDRINIER KRAFT BOARD INSTITUTE

July 1, 1950

THE INSTITUTE OF PAPER CHEMISTRY

APPLETON, WISCONSIN

In conjunction with the F.K.I. Continuous Baseline Study, sixty-nine 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 June 1 through June 30. In addition to the 42-lb. kraft linerboard, nine samples of special drum stock were also submitted for evaluation by one of the participating mills. The results on the special stock are tabulated 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	8
B	5
C	4
D	13
E	0
F	7
G	8
H	12
I	6
J	6

These 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 is graphically presented in Figures 1 to 6 inclusive. In addition to a comparison of the mill averages, Table II also shows the current F.K.I. averages, the cumulative F.K.I. averages, and the F.K.I. indexes. 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 June 1 through June 30. 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 provides a ready means of comparing the current quality with previous results. For example, the current F.K.I. average basis weight is 43.2, and the cumulative F.K.I. average basis weight is also 43.2. Hence, the index for basis weight determined in per cent as indicated above is 100.0%. This signifies that the current average basis weight is the same as the cumulative average, which in this case covered the period from July 25, 1947, through May 31, 1950.

A comparison of the results in Table II and Figure 1 shows that the average basis weight result for all mills is above the 42-lb. specification set forth in Rule 41. Mill B has the highest average basis weight, it being 44.4 lb. or approximately 5.7% higher than the 42-lb. specification. On the other hand, Mill I has the lowest average basis weight, it being 42.7 lb. or approximately 1.7% higher than the 42-lb. specification.

The amount by which the mills exceed the 42-lb. specification is as follows:

Mill Code	Per Cent
A	1.9
B	5.7
C	2.4
D	2.4
E	--
F	2.6
G	3.6
H	3.3
I	1.7
J	2.6

A comparison of the average basis weight data for the previous period with the current F.K.I. average indicates that the basis weight is slightly lower.

A comparison of the average caliper values for the various mills (see Figure 2) shows that the mill averages vary from a low of 12.4 for Mill D to a high of 14.1 for Mill F, the average being 13.4 which is somewhat lower than the cumulative average of 14.5.

The average bursting strength values obtained for each mill are graphically shown in Figure 3. It may be observed that the average bursting strength values for the various mills range from a low of 100 for Mill I to a high of 112 for Mill D. The current F.K.I. average bursting strength is 106, and the cumulative average is also 106.

The data of Table II and Figure 4 show that the average G. E. puncture result for all mills is 36 units. It may be seen that Mill F has the highest G. E. puncture value and Mills I and J share the lowest value. The current F.K.I. average for G. E. puncture of 36 units is slightly lower than the cumulative F.K.I. average of 37 units.

A graphic comparison of the Elmendorf tear results for the various mills is given in Figures 5 and 6. The data of Table II show that Mill D has the highest average machine direction tear value (Mill D also has the highest average caliper and bursting strength values), while Mill I has the lowest. Mill F has the highest average across-machine direction tear value while Mill J has the lowest. Mill J also has the lowest average G. E. puncture value while Mill F has the highest. It may be noted that the current F.K.I. average machine and across-machine direction tear results are slightly lower than the cumulative averages.

A comparison of the F.K.I. indexes indicate that, for the current period, the test averages for caliper, G. E. puncture, machine direction and across-machine direction Elmendorf Tear are lower than the respective cumulative averages, while the test averages for bursting strength and basis weight are the same as the cumulative averages.

In order to compare the variation within a given mill, the test results for each particular mill have been tabulated in Tables III to XIII for Mills A and J, respectively. In addition to the current

averages, cumulative averages for each mill, together with the mill factor and mill index, are given for each mill. The cumulative mill average is the average test result obtained on the samples submitted by the particular mill up to, but not including, the current average. 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 either with the previous results for that particular mill or with the cumulative F.K.I. results. As the test data accumulate, the factors and indexes will have added significance. The reports also contain a comparison of the test data obtained at the mills with test data obtained at The Institute of Paper Chemistry.

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

It may be noted in Tables III through XI that the data have been separated on the basis of the sheet finish. The summarized results are as follows:

Mill Code	No. of Sample Lots		
	W. F.	D.F.	Misc.
A	8*		
B	5*		
C	3	1	
D	7	6	

(Continued on next page.)

Mill Code	No. of Sample Lots		
	W.F.	D.F.	Misc.
E	--	--	--
F			7**
G	8		
H	12*		
I	6		
J			6***

* One side only.

** Spray finish.

*** Semi-water finish.

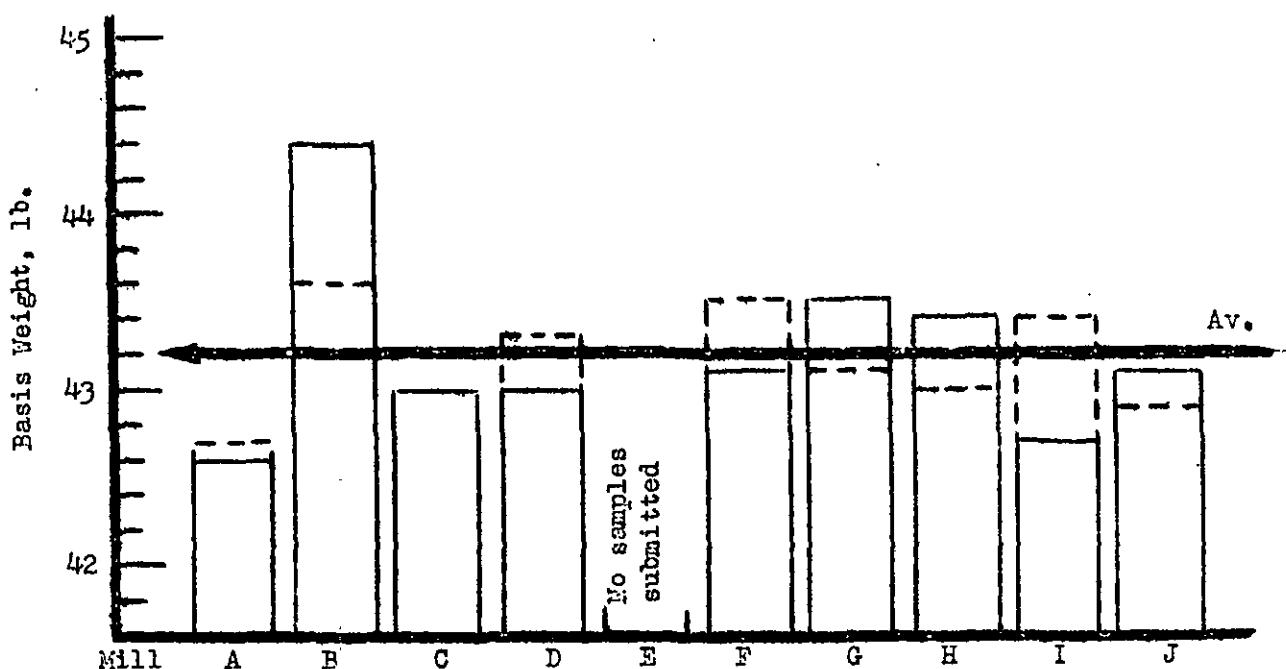
The results indicate that a majority of the mills are using a water finish on their 42-lb. linerboard.

TABLE II

SUMMARY OF COMPOSITE MILL AVERAGES--JUNE 1 THROUGH JUNE 30, 1950

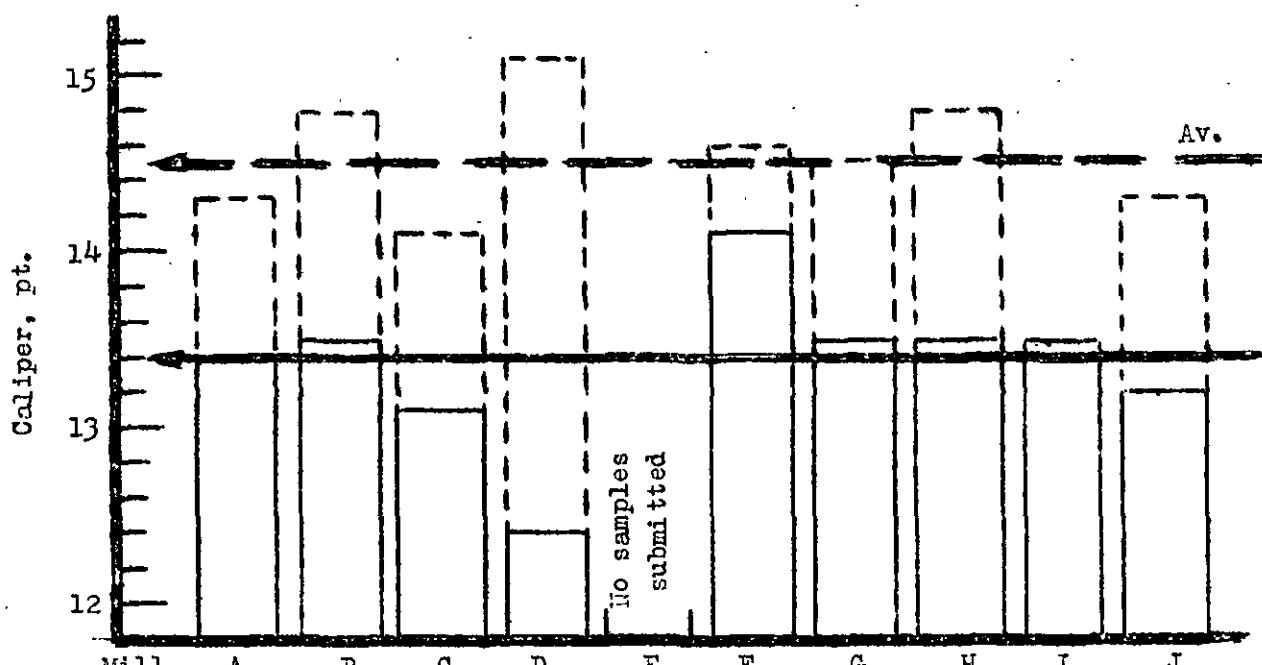
Code No.	Basis Weight, Caliper, 1b.	Bursting Strength, points	G. E. Puncture, units	In Direction	Across Direction	Elmendorf Tear, g./sheet
A	42.8	13.4	107	35	368	409
B	44.4	13.5	108	36	350	397
C	43.0	13.1	105	38	377	424
D	43.0	12.4	112	39	402	424
E	No samples submitted.					
F	43.1	14.1	104	41	400	446
G	43.5	13.5	107	37	375	406
H	43.4	13.5	106	35	378	408
I	42.7	13.5	100	33	340	400
J	43.1	13.2	110	33	356	381
Current FKI Average:	43.2	13.4	106	36	372	411
Cumulative FKI Average:	43.2	14.5	106	37	381	414
FKI Index, %:	100.0	92.4	100.0	97.3	97.6	99.3

Figure 1



COMPARISON OF BASIS WEIGHT RESULTS
(Period June 1 - June 30)

Figure 2



COMPARISON OF CALIPER RESULTS
(Period June 1 - June 30)

— Current Mill Average
- - - Cumulative Mill Average

Figure 3

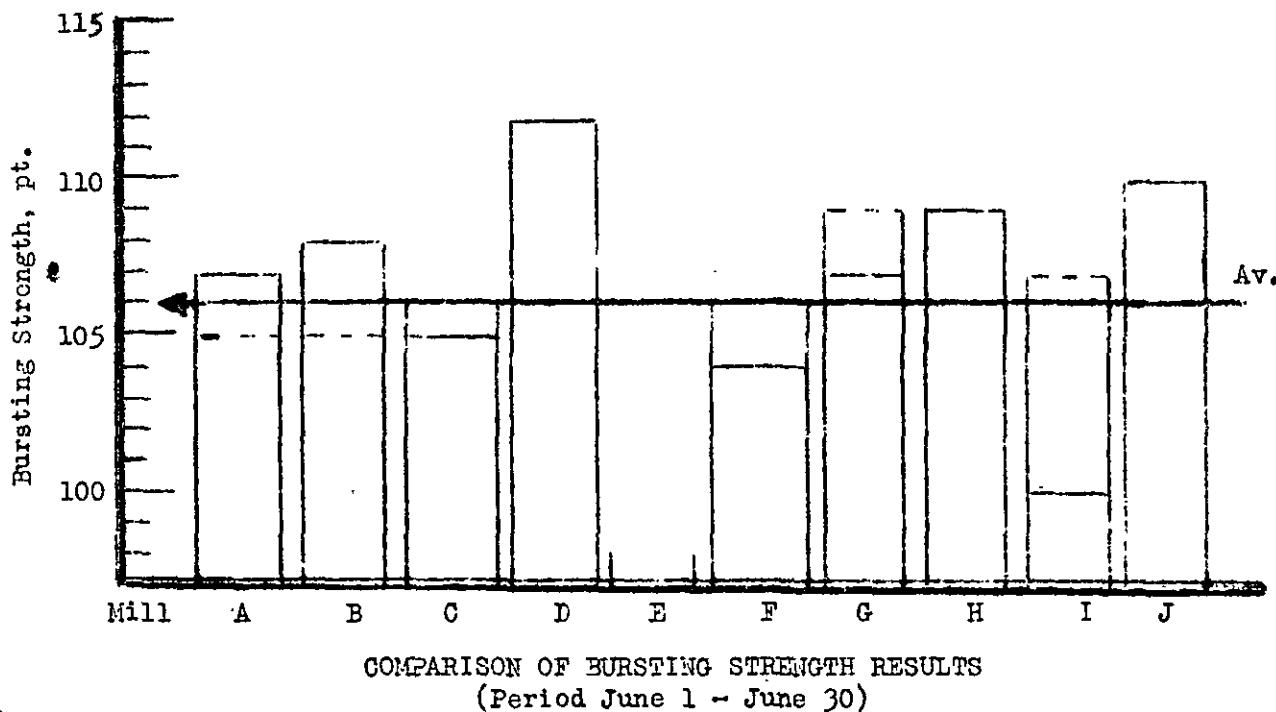


Figure 4

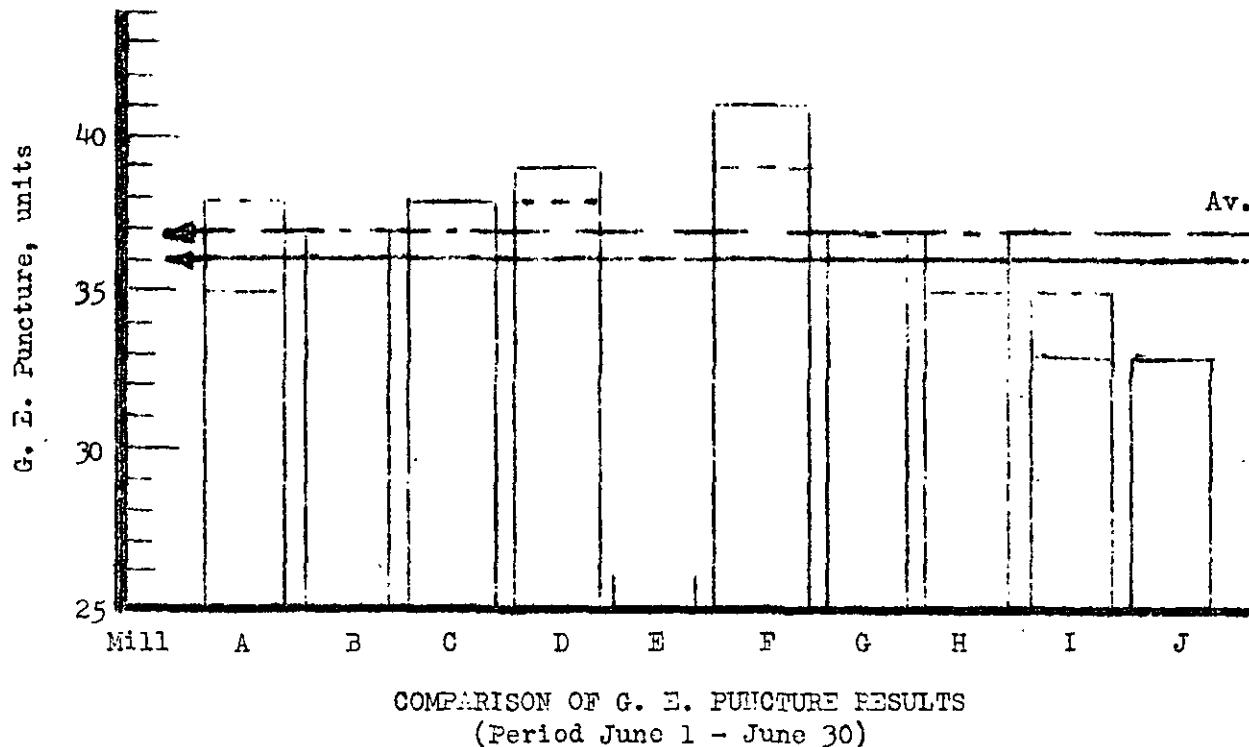


Figure 5

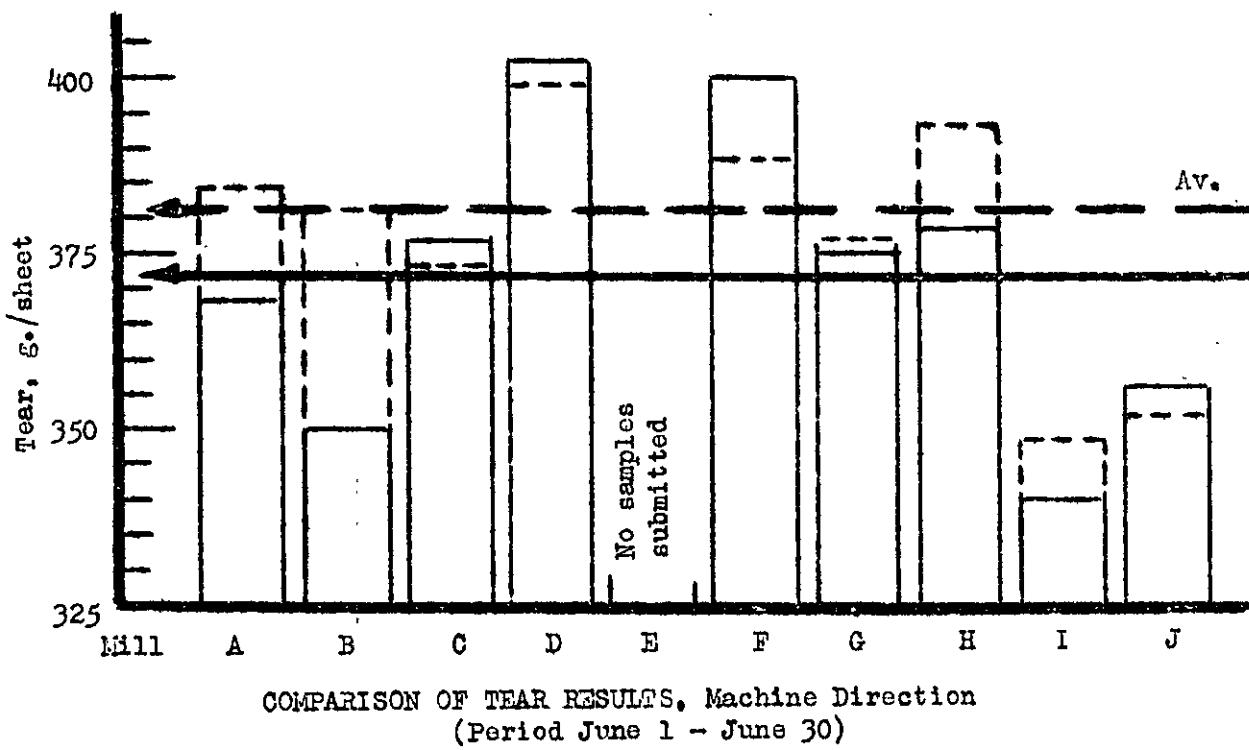


Figure 6

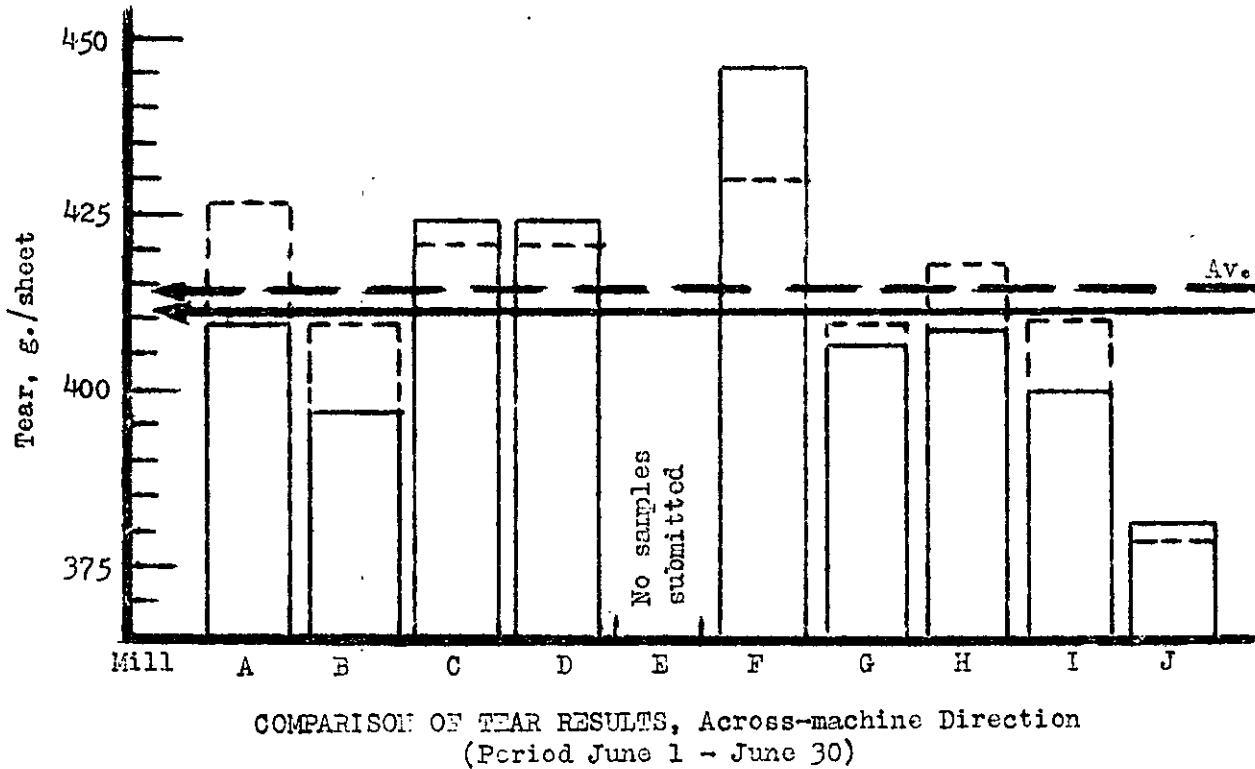


TABLE III
SUMMARY OF INDIVIDUAL TEST LOTS--JUNE 1 THROUGH JUNE 30, 1950

Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			G. E. Strength, points			Puncture, units			In Across			Elmendorf Tear, g./sheet		
		Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.
<u>M111 A-42-1b. Linerboard</u>																			
5/29/50	1	44.0	42.0	43.4	13.9	12.8	13.3	114	85	100	38	32	34	448	296	356	440	352	396
5/31/50	2	44.4	43.4	43.7	14.1	12.3	13.2	122	96	109	38	31	35	456	328	385 ^a	452	344	399 ^a
6/5/50	1	43.8	42.0	43.0	13.4	12.4	13.1	125	85	108	42	32	38	416	288	353	456	376	414 ^a
6/7/50	2	43.6	42.0	42.9	14.1	12.5	13.3	127	74	99	37	32	34	440	328	370 ^a	448	368	403 ^a
6/19/50	1	43.4	41.8	42.4	13.2	12.7	13.0	125	92	113	39	32	35	416	296	341 ^a	456	344	402 ^a
6/22/50	2	43.4	41.8	42.5	14.8	13.2	13.9	132	85	105	37	31	34	416	320	363 ^a	480	368	419 ^a
6/26/50	1	43.4	41.4	42.4	13.9	13.1	13.4	138	91	111	38	32	35	416	320	373	456	368	420 ^a
6/26/50	2	43.6	41.6	42.4	14.7	12.8	13.9	128	90	109	41	31	35	464	336	403 ^a	496	360	417 ^a
		42.8		13.4				107			35			368			409		
		42.9		14.3				105			38			384			427		
		99.8		93.7				101.9			92.1			95.8			95.8		
		99.1		92.4				100.9			94.6			96.6			98.8		

readings for one or more specimens which tore beyond the 3/8-inch limit.

TABLE III

SUMMARY OF INDIVIDUAL TEST LOTS--JUNE 1 THROUGH JUNE 30, 1950

File No.	Mill Code	Finish Recd.	Date Made	Date	Mch. No.	Min. Max.	Av.	Caliper, points	Bursting Strength, points	G. E. Puncture, units	Elm In
<u>Mill A--42-lb. Linerboard</u>											
142912	A-143	WF1S	6/ 5/50	5/29/50	1	44.0	42.0	43.4	13.9	12.8	114 34
142913	A-144	WF1S	6/ 5/50	5/31/50	2	44.4	43.4	43.7	12.3	13.2	96 35
142919	A-145	WF1S	6/ 8/50	6/ 5/50	1	43.8	42.0	43.0	12.4	13.1	85 38
143007	A-146	WF1S	6/13/50	6/ 7/50	2	43.6	42.0	42.9	14.1	12.5	108 42
143124	A-147	WF1S	6/23/50	6/19/50	1	43.4	41.8	42.4	13.2	12.7	74 37
143145	A-148	WF1S	6/26/50	6/22/50	2	43.4	41.8	42.5	14.8	13.9	92 113
143171	A-149	WF1S	6/30/50	6/26/50	1	43.4	41.4	42.4	13.9	13.4	91 105
143172	A-150	WF1S	6/30/50	6/26/50	2	43.6	41.6	42.4	14.7	12.8	90 109
Current Mill Average:											
Cumulative Mill Average:											
Mill Factor, %:											
Mill Index, %:											

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

TABLE IV
SUMMARY OF INDIVIDUAL TEST LOTS--JUNE 1 THROUGH JUNE 30, 1950 (continued)

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TATTOO TAT

Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, points			G. E. Puncture, units			G. E. Puncture, In			Elmendorf Tear, g./sheet			Across			
		Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	
<u>Mill B-42-1b. Linerboard</u>																							
5/29/50	3	46.2	42.4	44.2	14.3	12.8	13.7	122	82	106	38	31	35	464	304	353 ^a	432	360	401 ^a	409			
5/30/50	3	45.4	42.4	43.9	14.3	12.0	13.0	126	86	107	35	34	424	312	349 ^a	432	360	396 ^a					
6/4/50	3	44.8	43.4	44.1	13.8	11.8	13.1	140	92	110	40	35	57	392	320	351 ^a	432	368	391 ^a				
6/4/50	1	46.0	44.0	45.4	15.2	14.0	14.7	129	86	108	46	35	40	416	296	352	472	368	418 ^a				
6/11/50	3	45.6	43.6	44.2	14.0	12.1	13.2	127	79	109	37	32	35	384	320	345 ^a	400	352	381 ^a				
		44.4						13.5		108		36			350				397				
		43.6						14.8		105		37			381				409				
		101.8									91.2			97.3			91.9			97.1			
		102.8										101.9			97.3			91.9			95.9		

TABLE V
Mill C-42-1b. Lipereboard

readings for one or more specimens which tore beyond the 3/8-inch limit. Institute contained an "E" series instead of a "F" series.

TABLE IV
SUMMARY OF INDIVIDUAL TEST LOTS--JUNE 1 THROUGH JUNE 30, 1950 (continued)

File No.	Mill Code	Mill Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, 1 lb.			Caliper, points			Bursting Strength, points			G. E. Puncture, units		
						Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
<u>MILL B--42-1b. Linerboard</u>																	
142997	B-229 ^b	WFIS	6/10/50	5/29/50	3	46.2	42.4	44.2	14.3	12.8	13.7	122	82	106	38	31	464
142998	B-230	WFIS	6/10/50	5/30/50	3	45.4	42.4	43.9	14.3	12.0	13.0	126	86	107	35	32	424
143014	B-231	WFIS	6/15/50	6/ 4/50	3	44.8	43.4	44.1	13.8	11.8	13.1	140	92	110	40	35	392
143015	B-232	WFIS	6/15/50	6/ 4/50	1	46.0	44.0	45.4	15.2	14.0	14.7	129	86	108	46	35	416
143070	B-233	WFIS	6/19/50	6/11/50	5	45.6	43.6	44.2	14.0	12.1	13.2	127	79	109	37	32	384
Current Mill Average:						44.4						13.5	108			36	
Cumulative Mill Average:						43.6						13.5	105			37	
Mill Factor, %:						101.8						102.9	91.2			97.3	
Mill Index, %:						102.8						101.9	93.1			97.3	

TABLE V
MILL C--42-1b. Linerboard

File No.	Mill Code	Mill Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, 1 lb.			Caliper, points			Bursting Strength, points			G. E. Puncture, units		
						Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
<u>MILL C--42-1b. Linerboard</u>																	
142926	C-213	D.F.	6/ 9/50	5/26/50	1	44.2	41.6	42.7	14.2	12.3	13.3	133	86	106	44	37	472
142927	C-214	W.F.	6/ 9/50	5/31/50	1	44.0	42.0	42.8	14.0	12.5	13.3	140	87	104	42	35	432
143008	C-215	W.F.	6/13/50	6/ 6/50	1	44.0	42.4	43.3	14.0	12.0	13.0	123	85	103	38	33	440
143009	C-216	W.F.	6/13/50	6/ 6/50	1	43.8	42.0	43.2	14.0	12.0	12.9	129	85	104	38	33	432
Current Mill Average:						43.0						13.1	105			38	
Cumulative Mill Average:						43.0						13.1	106			38	
Mill Factor, %:						100.0						92.9	99.1			100.0	
Mill Index, %:						99.5						90.3	99.1			102.7	

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

^b The sample received by the Institute contained an "E" series instead of a "F" series.

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TABLE VI
SUMMARY OF INDIVIDUAL TEST LOTS--JUNE 1 THROUGH JUNE 30, 1950 (continued)

Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, points			G. E. Puncture, units			Elmendorf Tear, g./sheet		
		Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	In	Across	
<u>Mill D--42-lb. Linerboard</u>																
5/29/50	4	45.0	42.4	43.6	13.8	12.1	13.0	143	85	112	43	38	41	440	344	394 ^a
5/30/50	4	43.8	41.8	42.9	13.4	11.8	12.8	134	94	113	43	37	40	480	384	424 ^a
5/31/50	4	43.6	41.5	42.1	13.4	11.6	12.4	139	83	112	39	33	37	456	344	398 ^a
6/1/50	4	45.0	44.0	44.5	13.4	12.0	12.6	138	98	118	40	35	38	528	384	433 ^a
6/14/50	4	44.2	42.0	42.8	13.5	11.5	12.5	128	101	112	45	39	41	480	376	413 ^a
6/15/50	4	44.0	41.4	43.0	14.3	12.0	12.6	158	90	108	46	39	42	432	352	391 ^a
6/16/50	4	43.8	41.8	42.6	13.7	12.0	12.8	132	72	112	45	40	42	464	344	407 ^a
6/17/50	4	43.8	42.0	42.8	13.1	11.0	12.0	135	87	111	45	38	41	480	336	394 ^a
6/18/50	4	44.4	42.6	43.6	12.3	11.2	12.0	153	70	105	41	35	37	416	328	379 ^a
6/19/50	4	43.8	41.8	42.9	12.9	11.3	11.7	135	88	111	40	35	37	440	360	392 ^a
6/20/50	4	44.0	42.2	43.0	13.0	11.4	12.1	145	78	114	42	35	38	472	368	404 ^a
6/21/50	4	45.4	43.0	45.8	13.5	11.7	12.5	137	81	114	39	35	38	488	352	396 ^a
		43.0			12.4			112			39			402		424
		43.3			15.1			106			38			399		421
		99.3			82.1			105.7			102.6			100.8		100.7
		99.5			85.5			105.7			105.4			105.5		102.4

readings for one or more specimens which tore beyond the 3/8-inch limit.

TABLE VI
SUMMARY OF INDIVIDUAL TEST LOTS--JUNE 1 THROUGH JUNE 30, 1950 (continued)

File No.	Mill Code	Date Finsih Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, points			G. E. Puncture, units		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
<u>Mill D-42-1b. Linerboard</u>																
142805	D-224	D.F.	6/1/50	5/29/50	4	45.0	42.4	43.6	13.8	12.1	13.0	143	85	112	43	38
142821	D-225	D.F.	6/2/50	5/30/50	4	43.8	41.8	42.9	13.4	11.8	12.8	134	94	113	43	37
142918	D-226	D.F.	6/5/50	5/31/50	4	43.6	41.6	42.1	13.4	11.6	12.4	139	85	112	39	33
143013	D-227	W.F.	6/14/50	6/9/50	4	45.0	44.0	44.5	13.4	12.0	12.6	138	98	118	40	35
143071	D-228	D.F.	6/19/50	6/14/50	4	44.2	42.0	42.8	13.5	11.5	12.5	128	101	112	45	39
143072	D-229	D.F.	6/19/50	6/15/50	4	44.0	41.4	43.0	14.3	12.0	12.6	138	90	108	46	39
143087	D-230	D.F.	6/20/50	6/16/50	4	43.8	41.8	42.6	13.7	12.0	12.8	132	72	112	45	40
143088	D-231	W.F.	6/20/50	6/16/50	4	43.8	42.0	42.8	13.1	11.0	12.0	135	87	111	45	38
143089	D-232	W.F.	6/20/50	6/17/50	4	43.4	40.6	41.8	13.1	11.2	12.0	133	70	103	41	35
143106	D-233	W.F.	6/22/50	6/18/50	4	44.4	42.6	43.6	12.3	11.0	11.7	135	88	111	40	35
143107	D-234	W.F.	6/22/50	6/19/50	4	43.8	41.8	42.9	12.9	11.3	11.9	144	92	111	40	35
143122	D-235	W.F.	6/23/50	6/20/50	4	44.0	42.2	43.0	13.0	11.4	12.1	145	78	114	39	34
143123	D-236	W.F.	6/23/50	6/21/50	4	45.4	43.0	43.8	13.5	11.7	12.5	137	81	114	39	35
Current Mill Average:						43.0			12.4			112			39	
Cumulative Mill Average:						43.3			15.1			106			38	
Mill Factor, %:						99.3			82.1			105.7			102.6	
Mill Index %:						99.5			85.5			105.7			105.4	

a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

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TABLE VII
SUMMARY OF INDIVIDUAL TEST LOTS--JUNE 1 THROUGH JUNE 30, 1950 (continued)

e e e	Moh. No.	Basis Weight, lb.	Caliper, points	Bursting Strength, points				G. E. Puncture, units				Elmendorf Tear, g./sheet					
				Min.	Max.	Av.	Min.	Max.	Av.	Min.	Max.	In Across In.	Max.	Min.	Av.	Max.	Min.
<u>Mill E--42-lb. Linerboard</u>																	

No samples submitted.

TABLE VIII

Mill F--42-lb. Linerboard																		
150	--	44.4	42.2	43.5	15.2	14.0	14.7	121	78	107	46	40	45	456	368	413	520	384
150	--	44.4	42.6	43.7	14.6	13.3	14.1	128	93	110	44	38	42	472	376	427	536	400
150	--	43.8	42.4	43.0	14.8	13.2	14.1	111	87	101	43	38	41	464	352	404 ^a	528	384
150	--	43.6	42.0	42.8	14.7	13.6	14.0	122	93	104	46	40	43	432	392	409	528	408
150	--	44.0	41.8	43.0	14.5	13.0	13.8	118	83	101	47	39	42	440	376	404	504	408
150	--	44.2	42.0	43.3	14.2	12.5	13.7	124	95	107	41	36	39	416	344	378 ^a	464	368
150	--	43.6	42.0	42.5	14.7	13.5	14.1	117	78	100	42	37	39	424	328	368 ^a	488	384
														400			446	
		43.1			14.1			104			41							
														388			430	
		43.5			14.6			106			39							
														105.1			103.7	
		99.1			96.6			98.1										105.0
														110.8			107.7	
		99.8			97.2			98.1										

ngs for one or more specimens which tore beyond the 3/8-inch limit.

arrived to on the mill date sheets as 43-lb. kraft linerboard.

TABLE VII

SUMMARY OF INDIVIDUAL TEST LOTS--JUNE 1 THROUGH JUNE 30, 1950 (continued)

File No.	Mill Code	Firnish Recd.	Date Made	Date Made	Basis Weight, lb.	Caliper, points	Puncture, units	Bursting Strength, points	G. E.			
								Max.	Min.	Av.	Max.	Min.
<u>Mill E--42-lb. Linerboard</u>												

No samples submitted.

TABLE VIII

Mill F--42-lb. Linerboard												
142824	F-42	S.F.	6/2/50	5/23/50	--	44.4	42.2	43.5	15.2	14.0	14.7	121
143000	F-43	S.F.	6/12/50	5/29/50	--	44.4	42.6	43.7	14.6	13.3	14.1	128
143001	F-44	S.F.	6/12/50	6/2/50	--	43.8	42.4	43.0	14.8	13.2	14.1	111
143010	F-45	S.F.	6/14/50	6/8/50	--	43.6	42.0	42.8	14.7	13.6	14.0	122
143126	F-46	S.F.	6/23/50	6/10/50	--	44.0	41.8	43.0	14.5	13.0	13.8	118
143127	F-47	S.F.	6/23/50	6/15/50	--	44.2	42.0	43.3	14.2	12.5	13.7	124
143128	F-48	S.F.	6/23/50	6/17/50	--	43.6	42.0	42.5	14.7	13.5	14.1	117
Current Mill Average:												
								43.1	14.1	104	41	
Cumulative Mill Average:												
								43.5	14.6	106	39	
Mill Factor, %:												
								99.1	96.6	98.1	105.1	
Mill Index, %:												
								99.8	97.2	98.1	110.8	

a. This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All these samples were referred to on the mill date sheets as 43-lb. kraft linerboard.

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TABLE IX
SUMMARY OF INDIVIDUAL TEST LOTS--JUNE 1 THROUGH JUNE 30, 1950 (continued)

to Mch. No.	Basis Weight, lb.	Caliper, points			Bursting Strength, points			G. E. Puncture, units			Elmendorf Tear, g./sheet		
		Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	In	Across	
		<u>Mill G-42-lb. Linerboard</u>											
3/50	1	44.0	42.6	43.4	14.8	12.4	13.7	115	80	102	41	36	440
3/50	1	43.2	41.4	42.1	14.9	12.5	14.1	125	75	103	42	35	352
7/50	1	44.6	42.4	43.5	15.3	12.3	13.8	126	90	106	42	36	336
7/50	1	45.6	43.8	44.3	14.2	12.6	13.4	130	101	113	43	37	369 ^a
2/50	1	43.8	42.0	43.0	14.3	12.5	13.5	117	85	103	38	33	456
2/50	1	44.6	43.2	43.8	14.0	12.0	13.1	120	83	115	38	35	416
4/50	1	45.4	42.4	43.8	14.0	11.6	13.0	151	90	110	38	35	375 ^a
4/50	1	44.2	43.4	43.9	14.6	12.2	13.7	123	96	108	40	34	336
													402 ^a
													472
													376
													406
													375
													409
													377
													99.5
													98.4
													98.1

^a for one or more specimens which tore beyond the 3/8-inch limit.
F series of the Institute's sample were identified as to series; these sheets were labeled D and F, respectively. The sheets in these series were therefore arbitrarily identified as D-1 through D-8 and F-1 through F-8. The series of the Institute's sample was identified as to series and number; this sheet was labeled F-1. It was assumed that these were in the usual order and they were therefore arbitrarily identified as F-2 through F-8. Some of the Institute's sample was identified as to series and number; these sheets were labeled B-1, D-1, and F-1. The order of the sheets were in the usual order and they were arbitrarily identified as B-2 through B-8, D-2 through D-8, and F-2 through F-8.

TABLE IX

SUMMARY OF INDIVIDUAL TEST LOTS--JUNE 1 THROUGH JUNE 30, 1950 (continued)

File No.	Mill Code	Mill Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, 1b.	Caliper, points	Bursting Strength, points	G. E. Puncture, units			
									Max.	Min.	Av.	
<u>Mill G-42-1b. Linerboard</u>												
142822	G-262 ^b	WFL	6/ 2/50	5/29/50	1	44.0	42.6	43.4	14.8	12.4	13.7	115
142823	G-263 ^c	WFL	6/ 2/50	5/29/50	1	43.2	41.4	42.1	14.9	12.5	14.1	125
142928	G-264 ^d	WFL	6/ 9/50	6/ 7/50	1	44.6	42.4	43.5	15.3	12.3	13.8	126
142929	G-265	WFL	6/ 9/50	6/ 7/50	1	45.6	43.8	44.3	14.2	12.6	13.4	130
143016	G-266 ^d	WFL	6/15/50	6/12/50	1	43.8	42.0	43.0	14.3	12.5	13.5	117
143017	G-267 ^d	WFL	6/15/50	6/12/50	1	44.6	43.2	43.8	14.0	12.0	13.1	120
143148	G-268	WFL	6/28/50	6/24/50	1	45.4	42.4	43.8	14.0	11.6	13.0	151
143149	G-269	WFL	6/28/50	6/24/50	1	44.2	43.4	43.9	14.6	12.2	13.7	125
Current Mill Average:												
							43.5	-	13.5	-	107	37
Cumulative Mill Average:												
							43.1	-	14.5	-	109	37
Mill Factor, %:												
							100.9	-	93.1	-	98.2	100.0
Mill Index, %:												
							100.7	-	93.1	-	101.9	100.0

a. This average includes the reading for one or more specimens which tore beyond the 3/8-inch limit.

b. Only the top sheet in the D and F series of the Institute's sample were identified as to series; these sheets were labeled No sheet numbers were given.

c. Only the top sheet in these series were therefore arbitrarily identified as D-1 through D-8 and number; this sheet was labeled No sheet numbers were given.

d. Only the top sheet in the F series of the Institute's sample was identified as to series and number; these sheets were labeled No sheet numbers were given.

It was assumed that the remainder of the sheets were in the usual order and they were arbitrarily identified as F-2 through F-8.

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TABLE X
SUMMARY OF INDIVIDUAL TEST LONGS - JUNE 1 THROUGH JUNE 30, 1950 (continued)

8 for one or more specimens which tore beyond the 3/8-inch limit.
the mill data sheet gives the date of manufacture as May 22, 1950
the mill data sheet gives the date of manufacture as May 23, 1950
the mill data sheet gives the date of manufacture as May 29, 1950
the mill data sheet gives the date of manufacture as May 30, 1950

TABLE X

SUMMARY OF INDIVIDUAL TEST LOTS--JUNE 1 THROUGH JUNE 30, 1950 (continued)

File No.	Mill Code	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, 1lb.	Caliper, points	Bursting Strength, points	Puncture, units	G. E.			
<u>MILL H-42-1b. LINERBOARD</u>													
142914	H-171	WF1S	6/ 5/50	5/14/50	2	43.6	41.4	42.6	13.8	12.7	124	84	104
142915	H-172	WF1S	6/ 5/50	5/15/50 ^b	2	43.8	42.0	42.8	14.0	13.4	135	77	99
143003	H-173	WF1S	6/13/50	6/22/50 ^b	2	44.2	41.4	43.5	14.2	12.7	135	79	106
143004	H-174	WF1S	6/13/50	6/23/50 ^c	2	45.4	42.7	43.8	14.2	12.0	13.5	134	81
143005	H-175	WF1S	6/13/50	6/29/50 ^d	2	45.0	42.0	43.6	14.1	12.5	13.5	120	73
143006	H-176	WF1S	6/13/50	6/30/50 ^e	2	45.0	43.0	44.0	14.0	12.0	12.8	135	87
143083	H-177	WF1S	6/20/50	6/ 9/50	2	43.8	42.4	43.3	13.6	12.8	12.4	87	108
143084	H-178	WF1S	6/20/50	6/ 9/50	2	44.2	40.8	42.7	14.0	12.3	13.3	122	80
143085	H-179	WF1S	6/20/50	6/12/50	2	45.0	42.4	44.4	14.9	13.5	14.1	135	93
143086	H-180	WF1S	6/20/50	6/12/50	2	44.2	42.6	43.2	14.7	13.0	14.0	133	89
143173	H-181	WF1S	6/30/50	6/19/50	2	44.0	42.2	43.5	14.0	12.2	13.6	132	80
143174	H-182	WF1S	6/30/50	6/20/50	2	44.0	42.6	43.6	14.0	13.0	13.6	127	76
Current Mill Average:													
						43.4			13.5			106	35
Cumulative Mill Average													
						43.0			14.8			106	37
Mill Factor, %:													
						100.9			91.2			100.8	94.6
Mill Index, %:													
						100.5			93.1			100.0	94.6

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.^b This date appeared on the sample; the mill data sheet gives the date of manufacture as May 22, 1950.^c This date appeared on the sample; the mill data sheet gives the date of manufacture as May 23, 1950.^d This date appeared on the sample; the mill data sheet gives the date of manufacture as May 29, 1950.^e This date appeared on the sample; the mill data sheet gives the date of manufacture as May 30, 1950.

SUMMARY OF INDIVIDUAL TEST LOTS--JUNE 1 THROUGH JUNE 30, 1950 (continued)

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te de	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, points			Puncture, units			G. R.			Ellendorf Tear, g./sheet	
		Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	In	Across
<u>M111 T-42-1b. Linerboard</u>																		
3/50	1	43.6	41.4	42.1	13.9	12.5	13.1	115	87	101	34	30	32	472	312	370 ^a	456	384
0/50	1	43.6	41.0	42.2	13.8	12.2	13.1	114	77	97	33	29	31	376	288	335 ^a	400	360
4/50	1	44.0	42.0	43.0	14.3	13.1	13.7	117	76	98	34	31	32	368	264	321 ^a	416	336
7/50	1	44.2	42.6	43.5	14.9	13.9	14.2	115	68	93	37	33	34	424	280	342 ^a	432	352
3/50	1	43.6	41.8	42.7	13.9	13.0	13.4	122	85	104	37	32	35	368	264	321 ^a	520	338
4/50	1	43.8	41.4	42.8	14.0	13.0	13.6	124	75	104	38	33	36	400	312	349 ^a	440	368
																	340	400
																	348	410
																	97.7	97.4
																	94.3	89.2
																	94.3	96..

TABLE XII

age for one or more specimens which tore beyond the 3/8-inch limit.

TABLE XI
SUMMARY OF INDIVIDUAL TEST LOTS - JUNE 1 THROUGH JUNE 30, 1950 (continued)

File No.	Mill Code	Finish Recd.	Date Made	Date	Mch. No.	Basis Weight, lb.			Caliper, Strength, points			Puncture, units			G. E. Elv.		
						Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.
<u>Mill I-42-lb. Linerboard</u>																	
142999	I-108	W.F.	6/12/50	6/ 3/50	1	43.6	41.4	42.1	13.9	12.5	13.1	115	87	101	34	30	32
143038	I-109	W.F.	6/16/50	6/10/50	1	43.6	41.0	42.2	13.8	12.2	13.1	114	77	97	33	29	31
143108	I-110	W.F.	6/22/50	6/14/50	1	44.0	42.0	43.0	14.3	13.1	13.7	117	76	98	34	31	32
143109	I-111	W.F.	6/22/50	6/17/50	1	44.2	42.6	43.5	14.9	13.9	14.2	115	68	93	37	35	34
143150	I-112	W.F.	6/29/50	6/23/50	1	43.6	41.8	42.7	13.9	13.0	13.4	122	85	104	37	32	35
143151	I-113	W.F.	6/29/50	6/24/50	1	43.8	41.4	42.8	14.0	13.0	13.6	124	75	104	38	33	36
Current Mill Average:						42.7			13.5			107			33		
Cumulative Mill Average:						43.4			13.5			107			35		
Mill Factor, %:						98.4			100.0			95.5			94.3		
Mill Index, %:						98.8			93.1			94.3			89.2		

TABLE XII

File No.	Mill Code	Finish Recd.	Date Made	Date	Mch. No.	Basis Weight, lb.			Caliper, Strength, points			Puncture, units			G. E. Elv.		
						Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.
<u>Mill I-42-lb. Linerboard</u>																	
142825	J-209	B.F.	6/ 2/50	5/27/50	1	44.0	42.2	43.5	13.8	13.0	13.3	126	87	105	36	30	33
142826	J-210	B.F.	6/ 2/50	5/27/50	1	44.0	42.0	42.9	13.8	12.9	13.3	124	81	102	38	35	34
143011	J-211	B.F.	6/14/50	5/31/50	1	43.6	42.4	43.0	13.8	12.6	13.2	126	95	113	35	32	33
143012	J-212	B.F.	6/14/50	5/31/50	1	44.4	42.4	43.8	13.8	13.0	13.3	124	92	114	36	32	34
143146	J-213	B.F.	6/26/50	6/ 7/50 ^b	1	43.6	42.2	43.0	13.2	12.5	13.0	128	95	111	33	30	31
143147	J-214	B.F.	6/26/50	6/ 7/50 ^b	1	43.2	42.0	42.5	13.5	12.5	13.1	130	95	115	33	28	31
Current Mill Average:						43.1			13.2			110			33		
Cumulative Mill Average:						42.9			14.3			106			33		
Mill Factor, %:						100.5			92.3			103.8			100.0		
Mill Index, %:						99.8			91.0			103.8			89.2		

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

^b This date appeared on the sample; the mill data sheet gives the date of manufacture as June 8, 1950.

TABLE XIII
SUMMARY OF INDIVIDUAL TEST LOTS--JUNE 1 THROUGH JUNE 30, 1950 (continued)

Mch. No.	Basis Weight, lb.	Caliper, points	Bursting Strength, points			Puncture, units	G. E. In 8./sheet			Elsentzoff Tear, Across In 8./sheet		
			Max.	Min.	Av.		Max.	Min.	Av.	Max.	Min.	Av.
<u>MILL E-44/46-lb. Drum Linerboard</u>												
0 1	50.0	47.8	48.5	15.2	13.7	14.4	121	90	102	47	41	480
0 1	49.8	47.8	48.6	15.3	13.9	14.5	109	80	93	42	38	400
0 1	48.4	46.6	47.5	15.7	14.6	15.0	109	70	94	46	39	512
0 1	50.2	48.2	49.3	15.1	13.9	14.4	107	70	88	47	40	408
0 1	44.0	42.6	45.4	12.4	11.3	11.9	115	77	96	34	32	520
0 1	44.4	42.4	43.3	12.8	11.8	12.4	121	79	107	42	36	456
0 1	49.6	46.4	48.1	15.1	13.9	14.4	119	78	97	46	40	512
0 1	44.6	43.6	44.0	13.5	12.0	12.8	130	89	108	38	33	464
0 1	50.0	47.0	48.6	14.9	14.0	14.3	96	65	88	45	43	504
			46.8		13.8			97		40		480
			46.9		14.0			100		41		446
			99.8		98.6			97.0		97.6		436
										99.1		92.0
												368
												414a
												380a
												320
												366a
												392a
												360
												441a
												344
												341
												360
												368
												401
												442

or one or more specimens which tore beyond the 3/8-inch limit.

TABLE XIII

SUMMARY OF INDIVIDUAL TEST LOTS--JUNE 1 THROUGH JUNE 30, 1950 (continued)

File No.	Mill Code	Finish	Date Recd.	Date Made	Mch. No.	Baels Weight, lb.	Calliper, points	Bursting Strength, points	G. E.			
									Max.	Min.	Avg.	
<u>Mill E-44/46-1b. Drum Linerboard</u>												
142916	E-163		6/ 5/50	6/ 1/50	1	50.0	47.8	48.5	15.2	13.7	14.4	121
142917	E-164		6/ 5/50	6/ 2/50	1	49.8	47.8	48.6	15.3	13.9	14.5	109
142925	E-164		6/ 9/50	6/ 5/50	1	48.4	46.6	47.5	15.7	14.6	15.0	109
143002	E-165		6/ 12/50	6/ 8/50	1	50.2	48.2	49.3	15.1	13.9	14.4	107
143039	E-166		6/ 16/50	6/ 12/50	1	44.0	42.6	43.4	12.4	11.3	11.9	143
143073	E-167		6/ 19/50	6/ 15/50	1	44.4	42.4	43.3	12.8	11.8	12.4	121
143125	E-168		6/ 23/50	6/ 20/50	1	49.6	46.4	48.1	15.1	13.9	14.4	119
143144	E-169		6/ 26/50	6/ 25/50	1	44.6	43.6	44.0	13.5	12.0	12.8	130
143175	E-170		6/ 30/50	6/ 27/50	1	50.0	47.0	48.6	14.9	14.0	14.3	96
Current Mill Average:						46.8		13.8		97		40
Cumulative Mill Average:						46.9		14.0		100		41
Mill Factor, %:						99.8		98.6		97.0		97.6

a. This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

As a supplementary part of the Continuous Baseline Study, comparisons of the mill test results with those obtained at The Institute of Paper Chemistry on corresponding samples have been included in this report. As may be noted in Table XIV, the atmospheric conditions used prior to and during the testing period varied considerably.

TABLE XIV

Mill Code	Preconditioning			Conditioning		
	R.H., %	Temp., ° F.	Time, hr.	R.H., %	Temp., ° F.	Time, hr.
A	No preconditioning			59-68	69-72	24
B	42-82	75-87	1/2	50	70	24
C	50	73	2 -11 days	50	73	1 -16 days
D	34-35	71-75	8	50	74	16
E	No preconditioning			38-60	82-98	--
F	No preconditioning			No conditioning		
G	No preconditioning			No conditioning		
H	No preconditioning			50	73	24
I	No preconditioning			35-69	82-102	--
J	No preconditioning			50-51	72-73	1/2

A summary of the mill comparisons for the current period as compared with the previous period may be seen in Tables XV and XVI, respectively. The comparisons for the various mills are given in Tables XVII to XXVI, inclusive, for the 42-lb. liner samples. A comparison of the special drum stock is given in Table XXVII. In all the comparisons given in Tables XV to XXVII, inclusive, the Institute's test values have been used as the reference line.

A comparison of the test data in Tables XV and XVI indicates that in the majority of cases there is good agreement between the mill and Institute data. Table XV shows the average difference encountered in the comparison of Institute and mill results for the sample lots submitted by each mill for the current period, as well as the maximum difference encountered in comparing the Institute and mill test results for a given sample lot. In Table XVI, the average differences shown in Table XV have been calculated on a percentage basis for each test and each mill. In addition, for purposes of comparison, the average percentage differences for the preceding two periods are shown.

It may be noted in Table XVI that the maximum variation in the average basis weight between the results of the Institute and those of a given mill on corresponding samples is two per cent for the current period. This figure compares favorably with the maximum variation of two per cent for the preceding two periods. Further, it may be noted that the average basis weight results for Mills B, C, F, G, H, I, and J are lower than the corresponding results for the Institute, while the average results for Mill A and D are the same. The agreement in basis weight results is very good for the current period.

The maximum variation in caliper for the current period is two per cent. Compared with the values for the Institute, the average results for Mills G and H are higher, the average results for Mills A, B, D, F, and I are lower and the average results for Mills C and J are the same. None of these differences appear to be significantly large.

It may be noted in Table XVI that the bursting strength results show a maximum variation of four per cent for the current period. The results for Mills A, B, H, and I are higher than the corresponding results for the Institute whereas the results for Mills C, D, F, G, and J are lower. The agreement in bursting strength results is good for the current period.

The G. E. puncture results exhibit a maximum variation of eleven per cent for the current period. Compared with the values for the Institute, the results for Mills A, F, and G are higher and the results for Mills B, C, H, and J are lower. The difference encountered for Mill G appears to be rather large.

It may be seen in Table XV that the average machine direction tear results for Mills C, F, G, and I are higher than those for the Institute, whereas the average results for Mills A, B, D, H, and J are lower. The maximum variation for the current period is eleven per cent. The differences encountered for Mills D and G appear to be rather large.

With regard to the across-machine direction tear results, it may be noted that the average results for Mills C, F, G, and I are higher than those for the Institute, while the average results for Mills A, B, D, H and J are lower. A maximum variation of eleven per cent is noted for the current period. The difference encountered for Mill G appears to be incompatible with the variations for the other mills.

TABLE XV

SUMMARY OF TEST RESULT COMPARISONS

Average Mill and Institute Results	A	B	C	D	E	F	G	H	I	J
No. Samples Compared	8	5	4	13	0	7	8	12	6	6
Basis Weight										
Institute	42.8	44.4	43.0	43.0	--	43.1	43.5	43.4	42.7	43.1
Mill	42.8	43.7	42.6	43.0	--	42.7	43.3	43.3	42.5	43.0
Av. difference**	0.0	-0.7	-0.4	0.6	--	-0.4	-0.2	-0.1	-0.2	-0.1
Max. difference***	-0.7	-1.1	-0.7	+1.1	--	-0.9	-0.6	-0.7	-1.0	+0.5
Caliper										
Institute	13.4	13.5	13.1	12.4	--	14.1	13.5	13.5	13.5	13.2
Mill	13.2	13.4	13.1	12.2	--	13.8	13.7	13.6	13.3	13.2
Av. difference**	-0.2	-0.1	0.0	-0.2	--	-0.3	+0.2	+0.1	-0.2	0.0
Max. difference***	-0.4	-0.3	+0.2	-0.5	--	-0.6	+0.6	+1.1	-0.4	+0.2
Bursting Strength										
Institute	107	108	105	112	--	104	107	106	100	110
Mill	109	109	104	107	--	101	106	107	104	106
Av. difference**	+2	+1	-1	-5	--	-3	-1	+1	+4	-4
Max. difference***	+10	+4	+2	-11	--	-7	-10	-7	+9	-7
G. E. Puncture										
Institute	35	36	38	39	--	41	37	35	33	33
Mill	37	35	37	--	--	44	41	33	--	32
Av. difference**	+2	-1	-1	--	--	+3	+4	-2	--	-1
Max. difference***	+3	-4	-3	--	--	+5	+7	-4	--	+1
Tearing Strength, in										
Institute	368	350	377	402	--	400	375	378	340	356
Mill	361	322	407	357	--	409	411	362	361	336
Av. difference **	-7	-28	+30	-45	--	+9	+36	-16	+21	-20
Max. difference***	-29	-49	+34	-93	--	+26	+54	-36	+67	-30
Tearing Strength, across										
Institute	409	397	424	424	--	446	406	408	400	381
Mill	402	365	458	411	--	457	450	394	426	368
Av. difference**	-7	-32	+34	-13	--	+11	+44	-14	+26	-13
Max. difference***	-47	-60	+51	-44	--	+40	+60	-31	+74	-27

* Comparison based on averages involves only those samples on which mill test data were submitted.

** Average difference is the difference between the Institute mill average and the mill average based on mill test data.

*** Maximum difference encountered in comparing the Institute average and the mill average for any sample submitted by that particular mill.

TABLE XVI
SUMMARY OF TEST RESULTS--COMPARISON BY PERIODS

			Average Differences, per cent			
	Basis Weight	Caliper	Bursting Strength	G. E. Puncture	Tearing Strength, in	Tearing Strength, across
Mill A						
Current period	0	-1	+2	+6	-2	-2
35th period	+0.5	0	+1	+3	+0.8	-1
34th period	-0.2	0	+5	+8	+0.3	-2
Mill B						
Current period	-2	-0.7	-0.9	-3	-8	-8
35th period	-0.9	+1	+2	0	-4	-4
34th period	-1	-0.7	-2	-11	-14	-10
Mill C						
Current period	-0.9	0	-1	-3	+8	+8
35th period	0	0	+1	-5	-0.2	+6
34th period	-2	-1	-0.9	-3	-4	-2
Mill D						
Current period	0	-2	-4	--	-11	-3
35th period	-1	-2	-3	--	-16	-12
34th period	-0.7	-2	-3	--	-14	-8
Mill E						
Current period	--	--	--	--	--	--
35th period	--	--	--	--	--	--
34th period	--	--	--	--	--	--
Mill F						
Current period	-0.9	-2	-3	+7	+2	+2
35th period	-1	-3	-5	+5	-2	+0.2
34th period	-2	-7	-6	-7	-17	-13
Mill G						
Current period	-0.5	+1	-0.9	+11	+10	+11
35th period	+0.2	+1	-4	+3	+6	+7
34th period	-0.5	+2	0	0	-4	-1
Mill H						
Current period	-0.2	+0.7	+0.9	-6	-4	-3
35th period	-0.2	+2	-4	-3	-6	-2
34th period	-0.2	0	-4	0	-13	-5
Mill I						
Current period	-0.5	-1	+4	--	+6	+6
35th period	-0.9	-0.8	0	--	+6	-0.5
34th period	-0.5	-2	0	--	-2	-4
Mill J						
Current period	-0.2	0	-4	-3	-6	-3
35th period	+0.5	+0.8	-0.9	-3	-2	-1
34th period	-0.2	0	-4	-12	-5	+0.5

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TABLE XVII
SUMMARY OF INDIVIDUAL TEST LOTS--JUNE 1 THROUGH JUNE 30, 1950
Institute Data versus Mill Data

Basis Weight, lb.	Caliper, points	Breaking Strength, points			G. E. Puncture, units			Elemental Tear, g./sheet		
		IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
<u>MILL A--42-lb. Linerboard</u>										
.4	42.7	-0.7	13.3	13.1	-0.2	100	108	+8	34	+1
5.7	43.2	-0.5	13.2	13.0	-0.2	109	107	-2	35	+1
5.0	42.9	-0.1	13.1	13.1	0.0	108	108	0	38	0
1.9	42.7	-0.2	13.3	13.1	-0.2	99	109	+10	34	+2
1.4	42.7	+0.3	13.0	13.1	+0.1	125	112	-1	35	+1
1.5	43.0	+0.5	13.9	13.5	-0.4	105	107	+2	34	+2
1.4	42.6	+0.2	13.4	13.3	-0.1	111	111	0	35	+2
1.4	42.6	+0.2	13.9	13.5	-0.4	109	109	0	35	+3
1.8	42.8	0.0	13.4	13.2	-0.2	107	109	+2	35	+2

TABLE XVIII

<u>MILL B--42-lb. Linerboard</u>										
.2	44.1	-0.1	13.7	13.4	-0.3	106	104	-2	35	+1
.9	42.8	-1.1	13.0	13.1	+0.1	107	109	+2	34	0
1.1	43.3	-0.8	13.1	12.9	-0.2	110	111	+1	37	-1
.4	44.3	-1.1	14.7	14.4	-0.3	108	112	+4	36	-4
.2	43.9	-0.3	13.2	13.1	-0.1	109	111	+2	35	0
.4	43.7	-0.7	13.5	13.4	-0.1	108	109	+1	36	-1

TABLE XIX

<u>MILL C--42-lb. Linerboard</u>										
.7	42.8	+0.1	13.3	13.1	-0.2	106	105	-1	40	-1
.8	42.4	-0.4	13.3	13.5	+0.2	104	103	-1	39	-3
.3	42.6	-0.7	13.0	13.0	0.0	103	101	-2	36	+1
.2	42.5	-0.7	12.9	12.8	-0.1	104	106	+2	37	+1
.0	42.6	-0.4	13.1	13.1	0.0	105	104	-1	38	-1

for one or more specimens which tore beyond the 3/8-inch limit.
e contained an "E" series instead of a "F" series.

a are calculated from the totals of the individual readings.

TABLE XVII
SUMMARY OF INDIVIDUAL TEST LONG-JUNE 1 THROUGH JUNE 30, 1950
Institute Data versus Mill Data

File No.	Mill Code	Mill Finish	Date Made	Mch. No.	Basis Weight, 1b.			Caliper, points			Strength, points			G. E. units			Elong.		
					IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	In	Mill	Dif.
Mill A--42-1b. Linerboard																			
142912	A-143	WF1S	5/29/50	1	43.4	42.7	-0.7	13.3	13.1	-0.2	100	108	+8	34	35	+1	356	372	+16
142913	A-144	WF1S	5/31/50	2	43.7	43.2	-0.5	13.2	13.0	-0.2	108	107	-2	35	36	+1	385 ^a	356	-25
142919	A-145	WF1S	6/5/50	1	43.0	42.9	-0.1	13.1	13.1	0.0	108	108	0	38	38	0	353	361	+4
143007	A-146	WF1S	6/7/50	2	42.9	42.7	-0.2	13.3	13.1	-0.2	99	109	+10	34	36	+2	370 ^a	365	-5
143124	A-147	WF1S	6/19/50	1	42.4	42.7	+0.3	13.0	13.1	+0.1	125	112	-1	35	36	+1	341 ^a	343	+6
143145	A-148	WF1S	6/22/50	2	42.5	43.0	+0.5	13.9	13.5	-0.4	105	107	+2	34	36	+2	363 ^a	344	-15
143171	A-149	WF1S	6/26/50	1	42.4	42.6	+0.2	13.4	13.3	-0.1	111	111	0	35	37	+2	373	368	-5
143172	A-150	WF1S	6/26/50	2	42.4	42.6	+0.2	13.9	13.5	-0.4	109	109	0	35	38	+3	403 ^a	377	-26
Current Mill Average:					42.8	42.8	0.0	13.4	13.2	-0.2	107	109	+2	35	37	+2	368	361	-7

TABLE XVIII

File No.	Mill Code	Mill Finish	Date Made	Mch. No.	Basis Weight, 1b.			Caliper, points			Strength, points			G. E. units			Elong.		
					IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	In	Mill	Dif.
Mill B--42-1b. Linerboard																			
142997	B-229 ^b	WF1S	5/29/50	3	44.2	44.1	-0.1	13.7	13.4	-0.3	106	104	-2	35	36	+1	353 ^a	350	-2
142998	B-230	WF1S	5/30/50	3	43.9	42.8	-1.1	13.0	13.1	+0.1	107	109	+2	34	34	0	349 ^a	335	-14
143014	B-231	WF1S	6/4/50	3	44.1	43.3	-0.8	13.1	12.9	-0.2	11b	111	+1	37	36	-1	351 ^a	314	-31
143015	B-232	WF1S	6/4/50	1	45.4	44.3	-1.1	14.7	14.4	-0.3	108	112	+4	40	36	-4	352	303	-45
143070	B-233	WF1S	6/11/50	3	44.2	43.9	-0.3	13.2	13.1	-0.1	109	111	+2	35	35	0	345 ^a	309	-36
Current Mill Average:					44.4	43.7	-0.7	13.5	13.4	-0.1	108	109	+1	36	35	-1	350	322	-26

TABLE XIX

File No.	Mill Code	Mill Finish	Date Made	Mch. No.	Basis Weight, 1b.			Caliper, points			Strength, points			G. E. units			Elong.		
					IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	In	Mill	Dif.
Mill C--42-1b. Linerboard																			
142926	C-213	D.F.	5/26/50	1	42.7	42.8	+0.1	13.3	13.1	-0.2	106	105	-1	40	39	-1	383	410	+27
142927	C-214	W.F.	5/31/50	1	42.8	42.4	-0.4	13.3	13.5	+0.2	104	103	-1	39	36	-3	383	417	+34
143008	C-215	W.F.	6/6/50	1	43.3	42.6	-0.7	13.0	13.0	0.0	103	101	-2	36	37	+1	371 ^a	403	+32
143009	C-216	W.F.	6/6/50	1	43.2	42.5	-0.7	12.9	12.8	-0.1	104	106	+2	36	37	+1	371 ^a	400	+42
Current Mill Average:					43.0	42.6	-0.4	13.1	13.1	0.0	105	104	-1	38	37	-1	377	407	+30

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.
^b The sample received by the Institute contained an "F" series instead of a "E" series.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE II
SUMMARY OF INDIVIDUAL TEST LOTS - JUNE 1 THROUGH JUNE 30, 1950 (continued)
Instalment Data versus Mill Data

Basis Weight, lb.	Caliper, points	Bursting Strength, points						Puncture, units						G. E. Elmendorf Tear, g./sheet					
		IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
43.6	43.1	-0.5	13.0	12.8	-0.2	112	114	+2	41		394 ^a	421 ^a	-42	437 ^a	405	-32			
42.9	41.9	-1.0	12.8	12.5	-0.3	113	112	-1	40		331	-93	439 ^a	397	-42				
42.1	41.7	-0.4	12.4	12.5	+0.1	112	105	-7	37		339	-59	431 ^a	387	-44				
44.5	44.8	+0.3	12.6	12.3	-0.3	128	107	-11	38		376	-57	433 ^a	424	-9				
42.8	42.1	-0.7	12.5	12.3	-0.2	112	110	-2	41		352	-61	432 ^a	400	-32				
43.0	42.1	-0.9	12.6	12.5	-0.1	108	106	-2	42		391 ^a	360	-31	431 ^a	419	-12			
42.6	41.8	-0.8	12.8	12.7	-0.1	112	105	-2	42		407 ^a	352	-55	424 ^a	413	-11			
42.8	43.6	+0.8	12.0	11.9	-0.1	131	106	-7	41		394 ^a	390	-4	411 ^a	440	+29			
41.8	42.3	+0.5	12.0	11.9	-0.1	103	100	-3	37		379 ^a	363	-16	402 ^a	400	-2			
43.6	44.0	+0.4	11.7	11.7	0.0	104	101	-7	37		392 ^a	360	-32	414 ^a	405	-9			
42.9	44.0	+1.1	11.9	11.7	-0.2	111	111	0	38		404 ^a	360	-44	411 ^a	421	+10			
43.0	43.0	0.0	12.1	11.9	-0.2	114	108	-6	37		396 ^a	357	-39	422 ^a	419	-3			
43.8	44.0	+0.2	12.5	12.0	-0.5	114	107	-7	38		397 ^a	355	-42	423 ^a	416	-7			
43.0	43.0	0.0	12.4	12.2	-0.2	112	107	-7	39		402	357	-45	424	411	-13			

TABLE XXI
MILL E-42-1b. Linerboard

No samples submitted.

TABLE XXII

ing for one or more specimens which tore beyond the 3/8-inch limit. Samples were referred to on the mill data sheets as 43-1b. Kraft linerboard "mill average" date are calculated from the totals of the individual results.

SUMMARY OF INDIVIDUAL TEST LOTS--JUNE 1 THROUGH JUNE 30, 1950 (continued)

Institute Date versus Mill Date

File No.	Mill Core	Mill Finish	Date Made	Mch. No.	Basis Weight, 1lb.						Caliper, points						Breaking Strength, points						Puncture, units						G: E. In					
					IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC			
142805	D-224	D.F.	5/29/50	4	43.6	-0.5	13.0	-0.2	12.8	-0.2	112	114	+2	41																394 ^a	352	-4		
142821	D-225	D.F.	5/30/50	4	42.9	-1.0	12.8	-0.5	113	112	-1	40																	424 ^a	331	-9			
142918	D-226	D.F.	5/31/50	4	42.1	-0.4	12.4	-0.1	112	105	-7	37																	398 ^a	339	-5			
143013	D-227	W.F.	6/9/50	4	44.5	+0.3	12.6	-0.3	128	107	-11	38																	433 ^a	376	-5			
143071	D-228	D.F.	6/14/50	4	42.8	-0.7	12.5	-0.2	112	110	-2	41																	413 ^a	352	-6			
143072	D-229	D.F.	6/15/50	4	43.0	-0.9	12.6	-0.1	108	106	-2	42																	391 ^a	360	-3			
143087	D-230	D.F.	6/16/50	4	42.6	-0.8	12.8	-0.1	112	105	-2	42																	407 ^a	352	-5			
143088	D-231	W.F.	6/16/50	4	42.8	+0.8	12.0	-0.1	121	106	-7	41																	394 ^a	390	-1			
143089	D-232	W.F.	6/17/50	4	41.8	-0.3	12.0	-0.1	103	100	-3	37																	379 ^a	363	-11			
143106	D-233	W.F.	6/18/50	4	43.6	+0.4	11.7	0.0	111	104	-7	37																	392 ^a	360	-35			
143107	D-234	W.F.	6/19/50	4	42.9	+1.1	11.9	-0.2	111	111	0	38																	404 ^a	360	-41			
143122	D-235	W.F.	6/20/50	4	43.0	0.0	12.1	11.9	-0.2	114	108	-6	37															396 ^a	357	-35				
143123	D-236	W.F.	6/21/50	4	43.8	+0.2	12.5	12.0	-0.5	114	107	-7	38															397 ^a	355	-46				
Current Mill Average:					43.0	0.0	12.4	12.2	-0.2	112	107	-7	39															402	357	-45				

No samples submitted.

TABLE XXI
Mill E-42-lb. Linerboard

File No.	Mill Core	Mill Finish	Date Made	Mch. No.	Basis Weight, 1lb.						Caliper, points						Breaking Strength, points						Puncture, units						G: E. In						
					IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC				
142824	F-42	S.F.	5/23/50	--	43.5	+0.2	14.7	-0.3	107	102	-5	43	47	44	47	44	46	44	46	44	46	44	46	44	46	44	46	44	46	44	46	44	46	44	46
143000	F-43	S.F.	5/29/50	--	43.7	-0.2	14.1	-0.4	110	103	-7	42																	427	422	-5				
143001	F-44	S.F.	6/2/50	--	43.0	-0.8	14.1	-0.8	-0.3	102	94	-7	41	46	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45
143010	F-45	S.F.	6/8/50	--	42.8	-0.5	14.0	-0.1	104	98	-6	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43
143126	F-46	S.F.	6/10/50	--	43.0	-0.2	13.8	-0.3	101	107	-6	46	42	44	42	44	42	44	42	44	42	44	42	44	42	44	42	44	42	44	42	44	42	44	42
143127	F-47	S.F.	6/15/50	--	43.3	-0.4	13.7	-0.2	107	102	-5	39	42	43	43	43	43	43	42	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43
143128	F-48	S.F.	6/17/50	--	42.5	-0.7	14.1	-0.6	100	101	+1	39	40	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41
Current Mill Average:					43.1	-0.4	14.1	-0.3	104	101	-3	41	44	43	41	44	43	41	44	43	41	44	43	41	44	43	41	44	43	41	44	43	41	44	43

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: Re Mill E.

All "current mill average" date referred to on the mill data sheets as 43-1b. kraft linerboard.

All "current mill average" date are calculated from the totals of the individual readings.

TABLE XIII
SUMMARY OF INDIVIDUAL TEST LOGS - JUNE 1 THROUGH JUNE 30, 1950 (continued)
Institute Data versus Mill Data

Mch. Yo.	Barrel Weight, lb.	IPC	Mill Diff.	Caliper, points	IPC	Mill Diff.	Bursting Strength, points	IPC	Mill Diff.	G. E. Puncture, units	IPC	Mill Diff.	IPC	Mill Diff.	G. E. Elmendorf Tear, g./sheet	In Across IPC	Mill Diff.	IPC	Mill Diff.	Elmendorf Tear, g./sheet
1	43.4	43.2	-0.2	13.7	13.4	-0.3	102	107	+5	38	40	#2	393	405	+12	401 ^a	428	427		
1	42.1	42.4	+0.3	14.1	13.9	-0.2	103	106	+3	38	39	+1	371 ^a	388	+17	399 ^a	433	434		
1	43.5	43.2	-0.3	13.8	13.9	+0.1	106	107	+1	38	42	+4	369 ^a	414	+45	411 ^a	450	439		
1	44.3	44.2	-0.1	13.4	13.6	+0.2	113	106	-7	40	45	+5	375	429	+54	425 ^a	475	452		
1	43.0	43.3	+0.3	13.5	14.1	+0.6	103	105	+2	36	41	+5	350 ^a	404	+54	405 ^a	455	448		
1	43.8	43.2	-0.6	13.1	13.7	+0.6	115	105	-10	35	39	+4	367 ^a	419	+52	385 ^a	444	459		
1	43.8	43.5	-0.3	13.0	13.2	+0.2	110	108	-2	37	41	+4	373 ^a	411	+38	394 ^a	454	460		
1	43.9	43.4	-0.5	13.7	13.9	+0.2	108	108	0	37	44	+7	402 ^a	422	+20	429 ^a	460	451		
1	43.5	43.3	-0.2	13.5	13.7	+0.2	107	106	-1	37	41	+4	375	411	+36	406	450	444		

dings for one or more specimens which tore beyond the 3/8-inch limit. and F series of the Institute's sample were identified as to series; these sheets likely. No sheet numbers were given. The sheets in these series were therefore 1 through D-8 and F-1 through F-8. series of the Institute's sample was identified as to series and number; this assumed that the remainder of the sheets were in the usual order and they identified as F-2 through F-8. carrier of the Institute's sample was identified as to series and number; these and F-1. It was assumed that the remainder of the sheets were in the usualily identified as B-2 through B-8, D-2 through D-8, and F-2 through F-8. " data are calculated from the totals of the individual readings.

TABLE XIII
SUMMARY OF INDIVIDUAL TEST LOTS--JUNE 1 THROUGH JUNE 30, 1950 (continued)
Institute Data versus Mill Data

File No.	Mill Code	Flour Made	Date	Mch. No.	Basic Weight, 1 lb.						Caliper, points						Bursting Strength, points						G. E. Puncture, units					
					IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
<u>Mill G-42-1b. Linerboard</u>																												
142822	G-262 ^b	WFL	5/29/50	1	43.4	43.2	-0.2	13.7	13.4	-0.3	102	107	+5	38	40	+2	393	40 ^c										
142823	G-263 ^c	WFL	5/29/50	1	42.1	42.4	+0.3	14.1	13.9	-0.2	103	106	+3	38	39	+1	371 ^a	38 ^c										
142928	G-264	WFL	6/7/50	1	43.5	43.2	-0.3	15.8	13.9	+0.1	106	107	+1	38	42	+4	369 ^a	41 ^c										
142929	G-265	WFL	6/7/50	1	44.3	44.2	-0.1	13.4	13.6	+0.2	113	106	-7	40	45	+5	375	42 ^c										
143016	G-266 ^d	WFL	6/12/50	1	43.0	43.3	+0.3	13.5	14.1	+0.6	103	105	+2	36	41	+5	350 ^a	40 ^c										
143017	G-267 ^d	WFL	6/12/50	1	43.8	43.2	-0.6	13.1	13.7	+0.6	115	105	-10	35	39	+4	367 ^a	41 ^c										
143148	G-268	WFL	6/24/50	1	43.8	43.5	-0.3	13.0	13.2	+0.2	110	108	-2	37	41	+4	373 ^a	41 ^c										
143149	G-269	WFL	6/24/50	1	43.9	43.4	-0.5	13.7	13.9	+0.2	108	108	0	37	44	+7	402 ^a	42 ^c										
Current Mill Average:					43.5	43.3	-0.2	13.5	13.7	+0.2	107	106	-1	37	41	+4	375	41 ^c										

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

^b Only the top sheets in the D and F series of the Institute's sample were identified as to series; these sheets were labeled D and F respectively. No sheet numbers were given. The sheets in these series were therefore arbitrarily identified as D-1 through D-8 and F-1 through F-8.

^c Only the top sheet in the F series of the Institute's sample was identified as to series and number; this sheet was labeled F-1. It was assumed that the remainder of the sheets were in the usual order and they were therefore arbitrarily identified as F-2 through F-8.

^d Only the top sheet in each series of the Institute's sample was identified as to series and number; these sheets were labeled B-1, D-1 and F-1. It was assumed that the remainder of the sheets were in the usual order and they were arbitrarily identified as B-2 through B-8, D-2 through D-8, and F-2 through F-8.

Note: All "current mill average" data are calculated from the totals of the individual readings.

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TABLE XIV
SUMMARY OF INDIVIDUAL TEST LOTS - JUNE 1 THROUGH JUNE 30, 1950 (continued)
Institute Data versus Mill Data

Mch. No.	Basis Weight, lb.	Calliper, points	Bursting Strength, points			G. E. Puncture, units			Elmendorf Tear, g./sheet		
			IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC
<u>Mill H-42-1b. Linerboard</u>											
2	42.6	43.0	+0.4	13.3	13.5	+0.2	104	106	+2	35	-3
2	42.8	43.1	+0.3	13.4	13.5	+0.1	99	103	+4	35	-2
2	43.5	43.1	-0.4	13.6	13.9	+0.3	106	104	-2	36	-4
2	43.8	43.7	-0.1	13.5	13.7	+0.2	104	103	-1	37	-3
2	43.6	43.4	-0.2	13.5	13.7	+0.2	101	103	+2	36	-3
2	44.0	43.4	-0.6	12.8	13.9	+1.1	110	103	-7	34	0
2	43.3	43.0	-0.3	13.2	13.3	+0.1	108	110	+2	35	-1
2	42.7	43.1	+0.4	13.3	13.4	+0.1	104	108	+4	35	-1
2	44.4	43.7	-0.7	14.1	13.9	-0.2	112	113	+1	35	-1
2	43.2	43.0	-0.2	14.0	13.6	-0.4	108	109	+1	35	-1
2	43.3	43.6	+0.3	13.6	13.6	0.0	104	109	+5	33	+1
2	43.6	43.9	+0.3	13.6	13.2	-0.4	106	112	+6	36	-2
2	43.4	43.3	-0.1	13.5	13.6	+0.1	106	107	+1	35	-2
										378	362
										-16	408
										394	-14

adding" for one or more specimens which tore beyond the 3/8-inch limit.
Institute's sample; the mill data sheet gives the date of manufacture as May 22, 1950.
Institute's sample; the mill data sheet gives the date of manufacture as May 23, 1950.
Institute's sample; the mill data sheet gives the date of manufacture as May 29, 1950.
Institute's sample; the mill data sheet gives the date of manufacture as May 30, 1950.
ge" data are calculated from the totals of the individual readings.

SUMMARY OF INDIVIDUAL TEST LOTS - JUNE 1 THROUGH JUNE 30, 1950 (continued)
Institute Data versus Mill Data

File No.	Mill Code	Mill Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, points			G. E. units		
					IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC	In Mill I
<u>Mill H-42-1b. Linerboard</u>																
142914	H-171	WF1S	5/14/50	2	42.6	43.0	+0.4	13.3	13.5	+0.2	104	106	+2	35	32	-3
142915	H-172	WF1S	5/15/50 ^b	2	42.8	43.1	+0.3	13.4	13.5	+0.1	99	103	+4	35	33	-2
143003	H-173	WF1S	6/22/50 ^c	2	43.5	43.1	-0.4	13.6	13.9	+0.3	106	104	-2	36	34	-2
143004	H-174	WF1S	6/23/50 ^c	2	43.8	43.7	-0.1	13.5	13.7	+0.2	104	105	-1	37	33	-4
143005	H-175	WF1S	6/29/50 ^d	2	43.6	43.4	-0.2	13.5	13.7	+0.2	101	103	+2	36	33	-3
143006	H-176	WF1S	6/30/50 ^e	2	44.0	43.4	-0.6	12.8	13.9	+1.1	110	103	-7	34	34	0
143083	H-177	WF1S	6/9/50	2	43.3	43.0	-0.3	13.2	13.3	+0.1	108	110	+2	35	34	-1
143084	H-178	WF1S	6/9/50	2	42.7	43.1	+0.4	13.3	13.4	+0.1	104	108	+4	35	34	-1
143085	H-179	WF1S	6/12/50	2	44.4	43.7	-0.7	14.1	13.9	-0.2	112	113	+1	35	34	-1
143086	H-180	WF1S	6/12/50	2	43.2	43.0	-0.2	14.0	13.6	-0.4	108	109	+1	35	33	0
143173	H-181	WF1S	6/19/50	2	43.3	43.6	+0.3	13.6	13.6	0.0	104	109	+5	33	34	+1
143174	H-182	WF1S	6/20/50	2	43.6	43.9	+0.3	13.6	13.2	-0.4	106	112	+6	36	34	-2
Current Mill Average:					43.4	43.3	-0.1	13.5	13.6	+0.1	106	107	+1	35	33	-2
E1																

a This average includes the reading for one or more specimens which tore beyond the 3/8-inch limit.

b This date appeared on the Institute's sample; the mill data sheet gives the date of manufacture as May 22, 1950.

c This date appeared on the Institute's sample; the mill data sheet gives the date of manufacture as May 23, 1950.

d This date appeared on the Institute's sample; the mill data sheet gives the date of manufacture as May 29, 1950.

e This date appeared on the Institute's sample; the mill data sheet gives the date of manufacture as May 30, 1950.

Note: All "current mill average" data are calculated from the totals of the individual readings.

SUMMARY OF INDIVIDUAL TEST LOTS--JUNE 1 THROUGH JUNE 30, 1960 (continued)

Institute Data versus Null Data

G. R.	Bursting Strength, points						Puncture, units						Elong. Tear, g./sheet					
	Basis Weight, lb.	Caliper, points	IPC Mill Diff.	IPC Mill Diff.	IPC Mill Diff.	IPC Mill Diff.	In Across	IPC Mill Diff.	In Across	IPC Mill Diff.	In Across	IPC Mill Diff.						
<u>M111 T-42-lb. Linerboard</u>																		
42.1	42.3	+0.2	13.1	13.0	-0.1	101	106	5	32	370 ^a	391	+21	419 ^a	451	+32			
42.2	42.6	+0.4	13.1	13.1	0.0	97	103	6	31	335 ^a	398	+63	385 ^b	455	+70			
43.0	42.4	-0.6	13.7	13.5	-0.2	98	103	5	32	321 ^a	388	+67	381 ^c	455	+74			
43.5	42.5	-1.0	14.2	13.9	-0.3	95	102	9	34	342 ^a	322	-20	399 ^a	385	-14			
42.7	42.6	-0.1	13.4	13.2	-0.2	104 ^b	107	5	35	321 ^a	343	+22	415 ^a	405	-10			
42.8	42.5	-0.3	13.6	13.2	-0.4	104	106	42	36	349 ^a	327	-22	401 ^a	404	+5			
42.7	42.5	-0.2	13.5	13.3	-0.2	100	104	44	33	340	361	+21	400	426	+26			

TABLE XXVI

M111 J--42-1b. Linerboard	-8	-6	-8	-6
43.5 43.0 -0.5	13.3 13.5 +0.2	105 98 -7	361 ^a 340 -21	377 ^a 369 -8
42.9 43.4 +0.5	13.3 13.4 +0.1	102 101 -1	370 ^a 359 -11	370 ^a 364 -6
43.0 42.8 -0.2	13.2 13.2 0.0	117 112 -1	351 ^a 342 -9	381 ^a 373 -8
43.8 43.8 0.0	13.3 13.4 +0.1	114 108 -6	360 ^a 340 -20	402 ^a 375 -27
43.0 42.8 -0.2	13.0 13.0 0.0	111 108 -3	342 ^a 313 -29	373 ^a 369 -4
42.5 42.1 -0.4	13.1 13.0 -0.1	115 108 -7	351 ^a 321 -30	381 ^a 361 -20
43.1 43.0 -0.1	13.2 13.2 0.0	110 106 -4	356 336 -20	381 368 -13

Fig. 3 for one or more specimens which tore beyond the 3/8-inch limit.

data were calculated from the totals of the individual readings.

SUMMARY OF INDIVIDUAL TEST LOTS—JUNE 1 THROUGH JUNE 30, 1950 (continued)

FOR INSTITUTE TESTS *versus* **MILL DATA**

File No.	Mill Code	Finish	Date Made	Mch. No.	Basis Weight, lb.	Caliper, points			Bursting Strength, points			G. E. Puncture, units		
						IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
MILL I-42-1b. Linerboard														
142999	I-108	W.F.	6/ 3/50	1	42.1	42.3	+0.2		13.1	13.0	-0.1	101	106	+5
143038	I-109	W.F.	6/10/50	1	42.2	42.6	+0.4		13.1	13.1	0.0	97	103	+6
143108	I-110	W.F.	6/14/50	1	43.7	42.4	-0.6		13.7	13.5	-0.2	98	103	+5
143109	I-111	W.F.	6/17/50	1	43.5	42.5	-1.0		14.2	13.9	-0.3	93	102	+9
143150	I-112	W.F.	6/23/50	1	42.7	42.6	-0.1		13.4	13.2	-0.2	104 ^a	107	+3
143151	I-113	W.F.	6/24/50	1	42.8	42.5	-0.3		13.6	13.2	-0.4	104	106	+2
Current Mill Average:					42.7	42.5	-0.2		13.5	13.3	-0.2	100	104	+4
												33	35	
MILL J-42-1b. Linerboard														
142825	J-209	B.F.	5/27/50	1	43.5	43.0	-0.5		13.3	13.5	+0.2	105	98	-7
142826	J-210	B.F.	5/27/50	1	42.9	43.4	+0.5		13.3	13.4	+0.1	102	101	-1
143011	J-211	B.F.	5/31/50	1	43.0	42.8	-0.2		13.2	13.2	0.0	118	112	-6
143012	J-212	B.F.	5/31/50	1	43.8	43.8	0.0		13.3	13.4	+0.1	114	108	-6
143146	J-213	B.F.	6/ 7/50 ^b	1	43.0	42.8	-0.2		13.0	13.0	0.0	111	108	-3
143147	J-214	B.F.	6/ 7/50 ^b	1	42.5	42.1	-0.4		13.1	13.0	-0.1	115	108	-7
Current Mill Average:					43.1	43.0	-0.1		13.2	13.2	0.0	110	106	-4
												35	32	-1

TABLE XXVI

File No.	Mill Code	Finish	Date Made	Mch. No.	Basis Weight, lb.	Caliper, points			Bursting Strength, points			G. E. Puncture, units		
						IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
MILL J-42-1b. Linerboard														
142825	J-209	B.F.	5/27/50	1	43.5	43.0	-0.5		13.3	13.5	+0.2	105	98	-7
142826	J-210	B.F.	5/27/50	1	42.9	43.4	+0.5		13.3	13.4	+0.1	102	101	-1
143011	J-211	B.F.	5/31/50	1	43.0	42.8	-0.2		13.2	13.2	0.0	118	112	-6
143012	J-212	B.F.	5/31/50	1	43.8	43.8	0.0		13.3	13.4	+0.1	114	108	-6
143146	J-213	B.F.	6/ 7/50 ^b	1	43.0	42.8	-0.2		13.0	13.0	0.0	111	108	-3
143147	J-214	B.F.	6/ 7/50 ^b	1	42.5	42.1	-0.4		13.1	13.0	-0.1	115	108	-7
Current Mill Average:					43.1	43.0	-0.1		13.2	13.2	0.0	110	106	-4
												35	32	-1

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

^b This date appeared on the Institute's sample; the mill date sheet gives the date of manufacture as June 8, 1950.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XVIII
SUMMARY OF INDIVIDUAL TEST LOTS - JUNE 1 THROUGH JUNE 30, 1950 (continued)

Basic Weight, lb.	Mill Diff.	Institute Data versus Mill Data						C. E. Puncturing units	Elongation of Tear, g./sheet	In Across Mill Diff.	
		Boresetting Strength, points	IPC Mill Diff.								
<u>MILL E--44/46-1b. Drum Linerboard</u>											
5	47.7	-0.8	14.4	13.4	-1.0	102	104	+2	44	-3	444a
6	47.2	-1.4	14.5	13.5	-1.2	93	95	+2	40	39	419
5	47.0	-0.5	15.0	13.6	-1.4	94	96	+2	42	37	456a
3	48.1	-1.2	14.4	14.0	-0.4	88	88	0	44	41	449
4	42.3	-1.1	11.9	11.6	-0.3	96	102	+6	32	31	399a
5	42.6	-0.7	12.4	12.2	-0.2	107	107	0	39	35	406
1	47.8	-0.3	14.4	14	-0.4	97	92	-5	42	40	464a
0	44.2	+0.2	12.8	12.3	-0.5	108	105	-3	36	34	415a
6	48.1	-0.5	14.3	13.6	-0.7	88	93	+5	43	40	459
8	46.1	-0.7	13.8	13.1	-0.7	97	98	+1	40	37	-3
									442	417	-25
									401	400	-1

for one or more specimens which tore beyond the 3/8-inch limit.

Data are calculated from the totals of the individual readings.

TABLE XVII

SUMMARY OF INDIVIDUAL TEST LOTS - JUNE 1 THROUGH JUNE 30, 1950 (continued)

Institute Data versus Mill Data

File No.	Mill Code	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points Mill Diff.			IPC Mill Diff.			IPC Mill Diff.			IPC Mill Diff.			
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	
<u>MILL E--44/46-1b. DRUM LINERBOARD</u>																			
142916	E-163	6/ 1/50	1	48.5	47.7	-0.8	14.4	13.4	-1.0	102	104	+2	44	41	-3	444a	446	+2	
142917	E-164	6/ 2/50	1	48.6	47.2	-1.4	14.5	13.3	-1.2	93	95	+2	40	39	-1	454a	419	-35	
142925	E-164	6/ 5/50	1	47.5	47.0	-0.5	15.0	13.6	-1.4	94	96	+2	42	37	-5	456a	402	-54	
143002	E-165	6/ 8/50	1	49.3	48.1	-1.2	14.4	14.0	-0.4	88	88	0	44	41	-3	449	426	-23	
143039	E-166	6/12/50	1	43.4	42.3	-1.1	11.9	11.6	-0.3	96	102	+6	32	31	-1	399a	334	-65	
143073	E-167	6/15/50	1	43.3	42.6	-0.7	12.4	12.2	-0.2	107	107	0	39	33	-6	406	395	-13	
143125	E-168	6/20/50	1	48.1	47.8	-0.3	14.4	14	-0.4	97	92	-5	42	40	-2	464a	479	+15	
143144	E-169	6/23/50	1	44.0	44.2	+0.2	12.8	12.3	-0.5	108	105	-3	36	34	-2	415a	396	-19	
143175	E-170	6/27/50	1	48.6	48.1	-0.5	14.3	13.6	-0.7	88	93	+5	43	40	-3	491	459	-32	
Current Mill Average:				46.8	46.1	-0.7	13.8	13.1	-0.7	97	98	+1	40	37	-3	442	417	-25	

a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

Elmerd:
g./bt

G. E.
Puncture,
units

In

Mill Diff.

