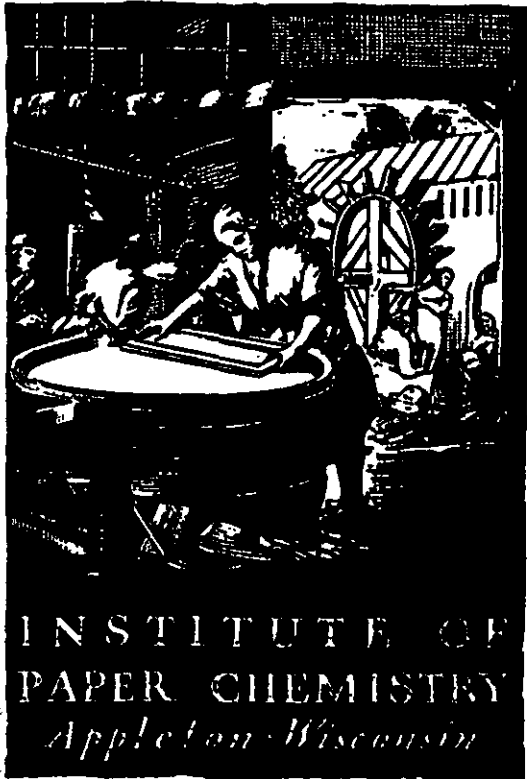


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CONTINUOUS BASELINE STUDY
✓ Project 1108-B

Progress Report 24
to
FOURDRINIER KRAFT BOARD INSTITUTE
July 1, 1949

THE INSTITUTE OF PAPER CHEMISTRY

APPLETON, WISCONSIN

CONTINUOUS BASELINE STUDY

Project 1108-B

Progress Report 24

to

FOURDRINIER KRAFT BOARD INSTITUTE

July 1, 1949

THE INSTITUTE OF PAPER CHEMISTRY

APPLETON, WISCONSIN

In conjunction with the F.K.I. Continuous Baseline Study, forty-three 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, seven 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	0
B	2
C	5
D	3
E	1
F	7
G	8
H	5
I	4
J	<u>8</u>
	43

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 43.5 lb., whereas the cumulative F.K.I. average basis weight is 43.2. Hence, the index for basis weight determined in per cent as indicated above is 100.7%. This signifies that the current average basis weight is higher than the cumulative average, which in this case covered the period from July 25, 1947, through May 31, 1949.

A comparison of the results in Table II and Figure I shows that the average basis weight for all mills submitting samples 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 42.8 lb. or approximately 1.9% 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	--
B	5.7
C	4.0
D	2.4
E	2.9
F	5.0
G	2.9
H	3.6
I	1.9
J	4.3

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 higher.

A comparison of the average calipers for the various mills (see Figure 2) shows that the mill averages vary from a low of 12.9 for Mill E to a high of 14.9 for Mill G, the average being 14.1 which is somewhat lower than the cumulative average of 14.8.

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 ranges from a low of 103 for

Mill J to a high of 119 for Mill G. (Mill G also has the highest caliper value.) The current F.K.I. average bursting strength is 110, considerably higher than the cumulative average of 104.

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 Mill J the lowest value. Mill J also has the lowest bursting strength value. The current F.K.I. average for G. E. puncture of 36 units is lower than the cumulative F.K.I. average of 38 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 E has the highest average machine direction tear value, while Mill I has the lowest. Mill F has the highest average across-machine direction tear value while Mill E has the lowest. It may be noted that the current F.K.I. average machine direction and across-machine direction tear results are slightly lower than the cumulative averages.

A comparison of the F.K.I. indexes indicates that, for the current period, the test averages for caliper, G. E. puncture and machine direction and across-machine direction tear are lower than the respective cumulative averages while the test averages for basis weight and bursting strength are higher than 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 to 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:

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

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

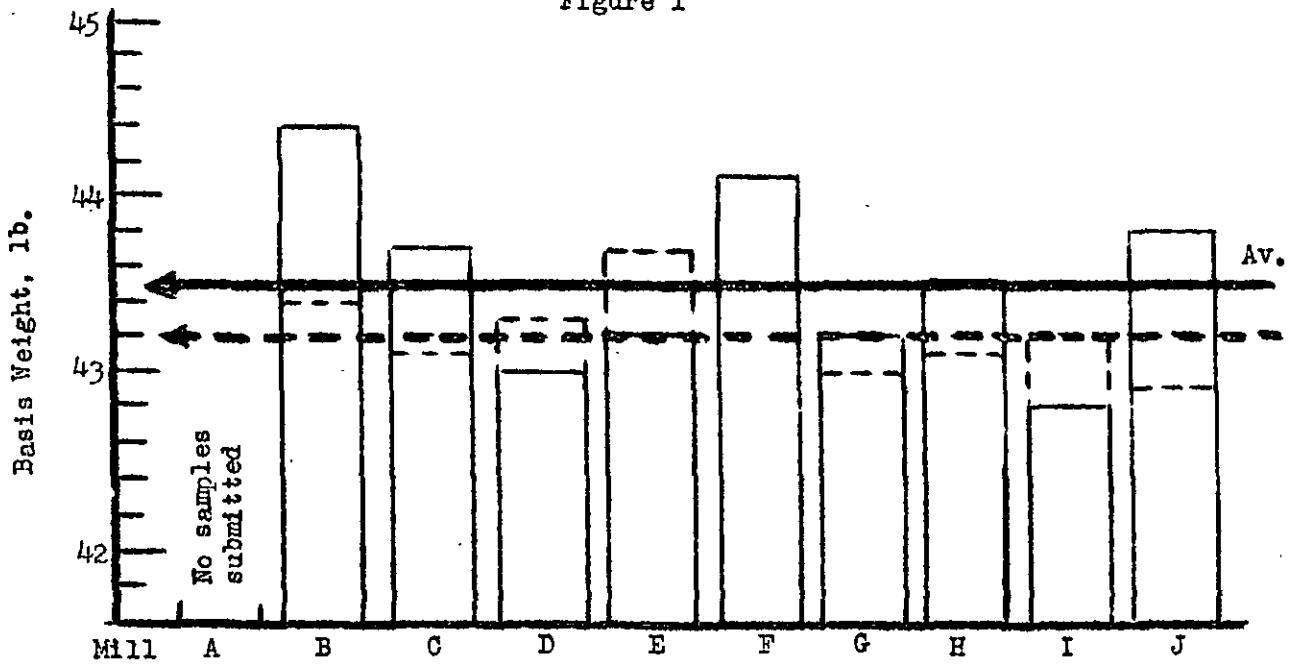
The mill factor and the mill index serve as a ready means for comparing the current mill results either with the previous result for that particular mill or with the cumulative F.K.I. results. As more samples are included and as the test data accumulate, the factors and indexes will have added significance. Since December, 1947, the reports have contained 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.

TABLE II
 SUMMARY OF COMPOSITE MILL AVERAGES--JUNE 1 THROUGH JUNE 30, 1949

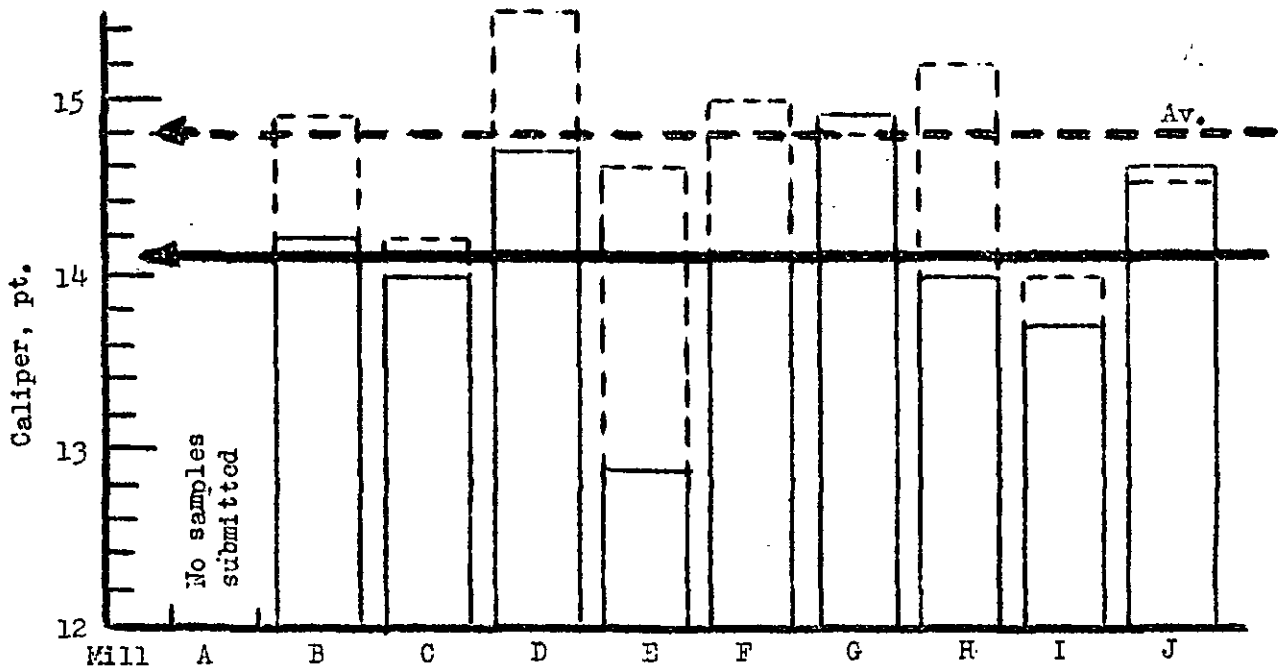
Code No.	Basis Weight, lb.	Caliper, points	G. E. Puncture, units	Bursting Strength, points	Elmendorf Tear,	
					In Direction	Across Direction
A	No samples submitted					
B	44.4	14.2	37	112	367	406
C	43.7	14.0	38	111	383	422
D	43.0	14.7	36	112	387	402
E	43.2	12.9	36	105	411	370
F	44.1	14.1	39	109	389	440
G	43.2	14.9	37	119	395	426
H	43.5	14.0	36	112	382	412
I	42.8	13.7	35	106	346	395
J	43.8	14.6	34	103	348	377
Current FKI Average:	43.5	14.1	36	110	379	403
Cumulative FKI Average	43.2	14.8	38	104	381	413
FKI Index, %:	100.7	95.3	94.7	105.8	99.5	98.1

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

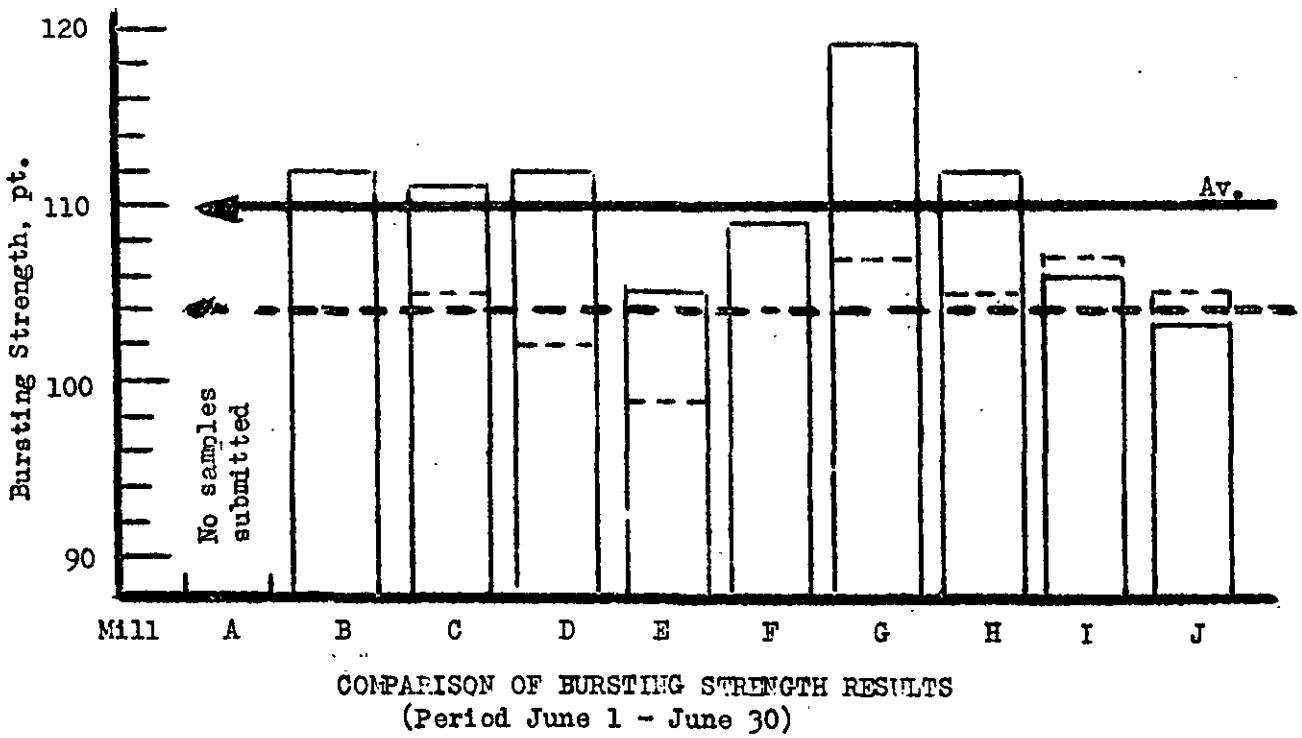
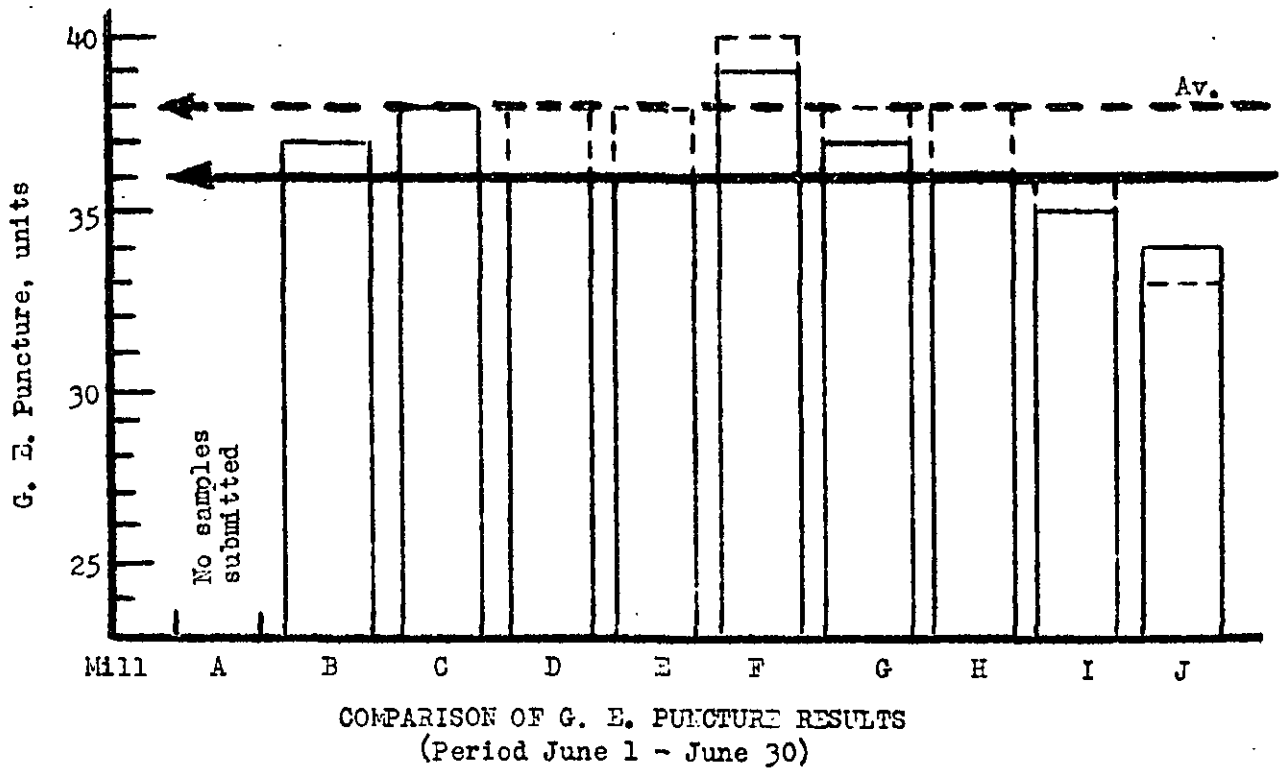
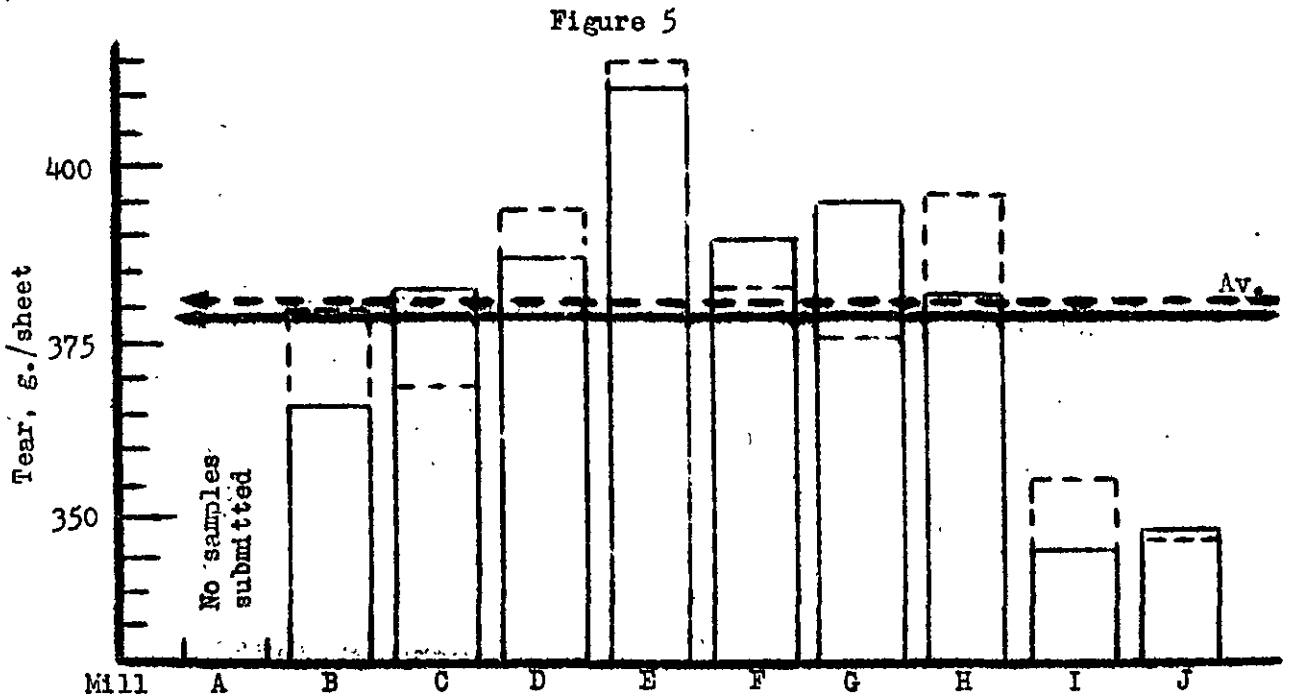
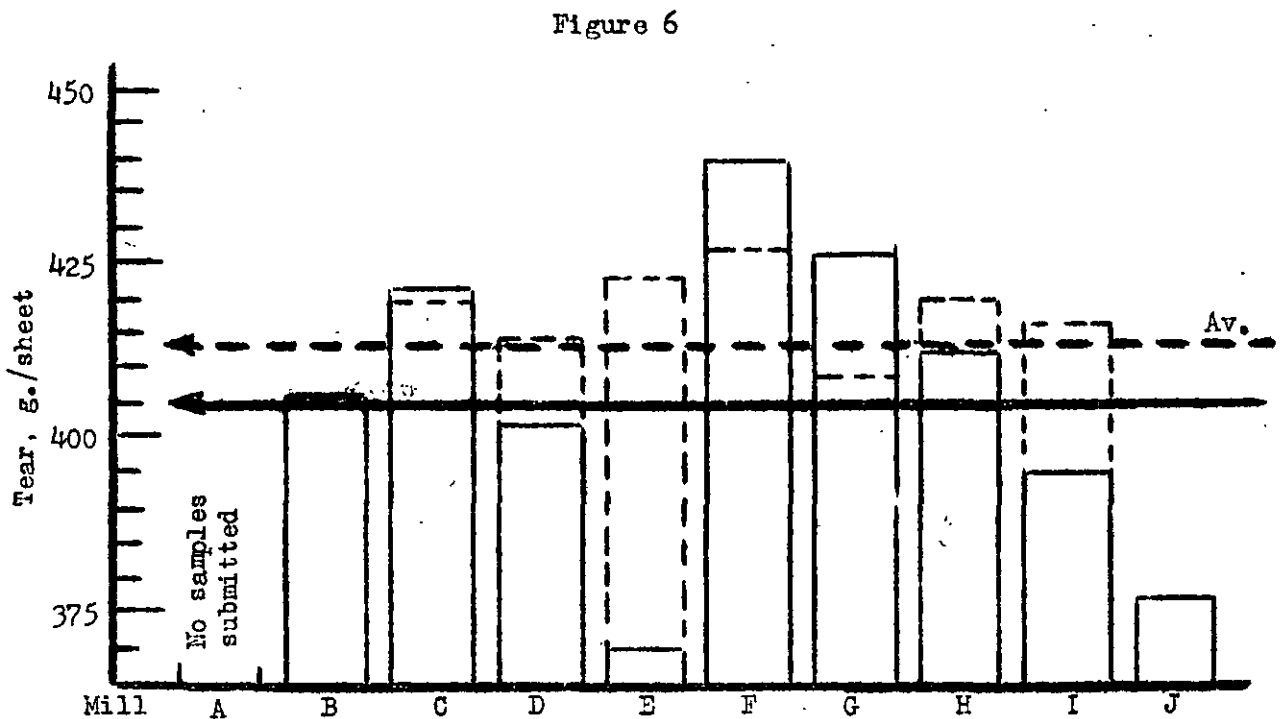


Figure 4





COMPARISON OF TEAR RESULTS, Machine Direction
(Period June 1 - June 30)



COMPARISON OF TEAR RESULTS, Across-machine Direction
(Period June 1 - June 30)

TABLE III

SUMMARY OF INDIVIDUAL TEST LOTS--JUNE 1 THROUGH JUNE 30, 1949

Mch. No.	Basis Weight, lb.		Caliper, points		Bursting Strength, points		Puncture, units		Elmendorf Tear, g./sheet	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.

Mill A--42-lb. Linerboard

No samples submitted.

TABLE IV

Mill B--42-lb. Linerboard

7/49	3	45.8	43.8	44.3	14.9	13.0	14.2	130	96	114	39	34	36	400	336	359	440	368	403 ^a
8/49	3	45.6	43.6	44.5	14.9	13.0	14.1	123	96	110	40	35	37	416	356	375 ^a	440	368	409 ^a
				44.4			14.2		112				37		367				406
				43.4			14.9		104				37		380				405
		102.3					95.3		107.7				100.0		96.6				100.2
		102.8					95.9		107.7				97.4		96.3				98.3

TABLE V

Mill C--42-lb. Linerboard

6/49	1	44.2	42.2	43.5	14.9	13.0	14.0	142	81	112	42	35	38	464	352	392 ^a	456	352	419 ^a
4/49	1	44.4	43.0	43.8	15.5	13.7	14.7	133	86	104	41	34	38	464	368	397	480	376	413 ^a
6/49	1	45.6	43.2	44.1	14.8	13.2	14.1	136	71	108	43	35	38	424	344	395 ^a	456	376	425 ^a
0/49	1	44.6	43.0	43.9	14.0	12.2	13.3	140	86	119	39	36	38	408	336	375 ^a	488	360	424
3/49	1	44.0	42.4	43.3	14.3	13.3	13.8	136	89	113	39	35	37	400	328	358	464	392	428
				43.7			14.0		111				38		383				422
				43.1			14.2		105				38		369				420
		101.4					98.6		105.7				100.0		103.8				100.5
		101.2					94.6		106.7				100.0		100.5				102.2

TABLE III

SUMMARY OF INDIVIDUAL TEST LOTS--JUNE 1 THROUGH JUNE 30, 1949

File No.	Mill Code	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.		Caliper, points	Bursting Strength, points		Punctur units					
					Max.	Min.		Max.	Min.		Av.	Max.	Min.		
136573	B-180	6/4/49	5/27/49	3	45.8	43.8	44.3	14.9	13.0	14.2	130	96	114	39	34
136551	B-181	6/3/49	5/28/49	3	45.6	43.6	44.5	14.9	13.0	14.1	123	96	110	40	35

G. E.

MILL A--42-lb. Linerboard

No samples submitted.

TABLE IV

MILL B--42-lb. Linerboard

Current Mill Average:	44.4	14.2	112
Cumulative Mill Average:	43.4	14.9	104
Mill Factor, %:	102.3	95.3	107.7
Mill Index, %:	102.8	95.9	107.7

TABLE V

MILL C--42-lb. Linerboard

136649	C-127	6/13/49	6/6/49	1	44.2	42.2	43.5	14.9	13.0	14.0	142	81	112	42	35
136755	C-128	6/20/49	6/14/49	1	44.4	43.0	43.8	15.5	13.7	14.7	133	86	104	41	34
136829	C-129	6/24/49	6/16/49	1	45.6	43.2	44.1	14.8	13.2	14.1	136	71	108	43	35
136861	C-130	6/27/49	6/20/49	1	44.6	43.0	43.9	14.0	12.2	13.3	140	86	119	39	36
136896	C-131	6/28/49	6/23/49	1	44.0	42.4	43.3	14.3	13.3	13.8	136	89	113	39	35
Current Mill Average:					43.7					14.0			111		
Cumulative Mill Average:					43.1					14.2			105		
Mill Factor, %:					101.4					98.6			105.7		
Mill Index, %:					101.2					94.6			106.7		

^a This average includes the 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, 1949--continued

Mch. No.	Basis Weight, lb.		Caliper, points		Bursting Strength, points		G. E. Puncture, units		Elmendorf Tear, g./sheet									
	Min.	Av.	Max.	Min.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.					
	<u>Mill D--42-lb. Linerboard</u>																	
4	44.6	42.0	43.4	16.0	14.1	15.3	124	89	106	39	32	36	448	344	380 ^a	464	368	415 ^a
4	43.4	42.0	42.6	14.7	13.0	14.1	135	80	111	39	32	35	456	352	390 ^a	496	336	387 ^a
4	44.2	40.6	42.9	15.6	14.2	14.8	141	99	120	39	33	36	472	328	390 ^a	448	352	403 ^a
	43.0			14.7					112			36			387			402
	43.3			15.5					102			38			394			414
	99.3			94.8					109.8			94.7			98.2			97.1
	99.5			99.3					107.7			94.7			101.6			97.3

TABLE VII

Mill E--42-lb. Linerboard

1	44.0	42.2	43.2	13.9	12.0	12.9	124	84	105	39	33	36	464	360	411 ^a	448	336	370 ^a
			43.2			12.9			105			36			411			370
			43.7			14.6			99			38			415			423
			98.9			88.4			106.1			94.7			99.0			87.5
			100.0			87.2			101.0			94.7			107.9			89.6

ags 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, 1949--contin

File No.	Mill Code	Date 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.			
136666	D-128	6/14/49	6/11/49	4	44.6	42.0	43.4	16.0	14.1	15.3	124	89	106	39	32	36
136667	D-129	6/14/49	6/12/49	4	43.4	42.0	42.6	14.7	13.0	14.1	135	80	111	39	32	35
136835	D-130	6/25/49	6/22/49	4	44.2	40.6	42.9	15.6	14.2	14.8	141	99	120	39	33	36
Current Mill Average:							43.0			14.7		112				36
Cumulative Mill Average:							43.3			15.5		102				38
Mill Factor, %:							99.3			94.8		109.8				94
Mill Index, %:							99.5			99.3		107.7				94

Mill D--42-lb. Linerboard

TABLE VII

Mill E--42-lb. Linerboard

136706	E-83	6/16/49	6/13/49	1	44.0	42.2	43.2	13.9	12.0	12.9	124	84	105	39	33	36
Current Mill Average:							43.2			12.9		105				36
Cumulative Mill Average:							43.7			14.6		99				38
Mill Factor, %:							98.9			88.4		106.1				94
Mill Index, %:							100.0			87.2		101.0				94

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

TABLE VIII
SUMMARY OF INDIVIDUAL TEST LOTS--JUNE 1 THROUGH JUNE 30, 1949--continued

Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		Bursting Strength, points		G. E. Puncture, units		Elmendorf Tear, g./sheet									
		Min.	Av.	Min.	Av.	Min.	Av.	Min.	Av.	Min.	Av.								
<u>Mill F--42-lb. Linerboard</u>																			
5/20/49	--	45.6	42.2	44.0	14.8	13.7	14.1	126	96	111	43	35	41	440	352	389	528	392	440 ^a
5/6/49	--	45.6	44.0	44.4	15.0	13.4	14.4	122	95	109	41	34	38	448	352	383	512	392	431 ^a
5/7/49	--	45.0	44.0	44.2	14.8	13.8	14.3	134	82	110	41	37	39	456	336	409	496	432	455 ^a
5/13/49	--	45.6	44.0	44.5	14.5	13.0	13.7	117	85	110	44	37	40	424	352	374	496	392	435 ^a
5/20/49	--	45.0	44.0	44.3	16.0	13.8	14.5	122	62	107	44	37	39	464	336	414	480	400	437 ^a
5/23/49	--	45.4	43.0	44.0	14.7	13.2	14.1	121	82	102	42	35	39	416	312	369	472	384	425 ^a
5/24/49	--	43.8	42.6	43.2	13.9	12.8	13.4	139	98	114	41	36	39	408	352	387	496	400	455 ^a
				44.1			14.1		109		39					389			440
				43.5			15.0		104		40					383			427
				101.4			94.0		104.8		97.5					101.6			103.0
				102.1			95.3		104.8		102.6					102.1			106.5

TABLE IX

Mill G--42-lb. Linerboard

5/1/49	1	44.4	42.0	43.4	15.0	14.0	14.6	153	90	116	42	34	37	472	360	412 ^a	456	368	416 ^a
5/1/49	1	44.0	42.4	43.7	15.3	13.8	14.6	140	97	110	41	34	38	440	336	389	472	384	427 ^a
5/9/49	1	44.0	42.0	42.8	15.3	14.3	14.9	140	114 ^a	125	41	33	38	464	368	417 ^a	496	416	452 ^a
5/9/49	1	44.0	42.0	43.0	15.2	14.3	14.9	144	100	123	41	35	38	456	376	405 ^a	488	408	440 ^a
5/16/49	1	43.6	41.8	42.6	15.7	14.2	14.9	134	100	117	41	34	37	400	320	366	448	352	403 ^a
5/16/49	1	44.0	42.2	43.5	15.6	14.2	14.9	139	103 ^a	121	41	35	37	424	336	380 ^a	448	360	414 ^a
5/23/49	1	44.4	42.0	43.5	15.6	14.1	15.1	136	102	120	40	34	37	416	368	391	456	392	428 ^a
5/23/49	1	44.2	42.2	43.3	15.7	14.7	15.1	130	105	118	41	35	38	448	360	399 ^a	464	368	429 ^a
				43.2			14.9		119		37					395			426
				43.0			14.8		107		38					376			408
				100.5			100.7		111.2		97.4					105.1			104.4
				100.0			100.7		114.4		97.4					103.7			103.1

TABLE VIII

SUMMARY OF INDIVIDUAL TEST LOTS--JUNE 1 THROUGH JUNE 30, 1949--continued

File No.	Mill Code	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		Bursting Strength, points		G. E. Puncture, units		In Max. M				
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.		Av.			
136547	F-18	6/ 1/49	5/20/49	--	45.6	42.2	44.0	14.8	13.7	14.1	126	96	111	43	35	41	440
136627	F-19	6/10/49	6/ 6/49	--	45.6	44.0	44.4	15.0	13.4	14.4	122	95	109	41	34	38	448
136648	F-20	6/13/49	6/ 7/49	--	45.0	44.0	44.2	14.8	13.8	14.3	134	82	110	41	37	39	456
136756	F-21	6/20/49	6/13/49	--	45.6	44.0	44.5	14.5	13.0	13.7	117	85	110	44	37	40	424
136913	F-22	6/29/49	6/20/49	--	45.0	44.0	44.3	16.0	13.8	14.5	122	62	107	44	37	39	464
136914	F-23	6/29/49	6/23/49	--	45.4	43.0	44.0	14.7	13.2	14.1	121	82	102	42	35	39	416
136915	F-24	6/29/49	6/24/49	--	43.8	42.6	43.2	13.9	12.8	13.4	139	98	114	41	36	39	408
Current Mill Average							44.1	14.1			109					39	
Cumulative Mill average:							43.5	15.0			104					40	
Mill Factor, %:							101.4	94.0			104.8					97.5	
Mill Index, %:							102.1	95.3			104.8					102.6	

TABLE IX

File No.	Mill Code	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		Bursting Strength, points		G. E. Puncture, units		In Max. M				
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.		Av.			
<u>Mill F--42-lb. Linerboard</u>																	
136579	G-158	6/ 6/49	6/ 1/49	1	44.4	42.0	43.4	15.0	14.0	14.6	153	90	116	42	34	37	472
136580	G-159	6/ 6/49	6/ 1/49	1	44.0	42.4	43.7	15.3	13.8	14.6	140	97	110	41	34	38	440
136650	G-160	6/13/49	6/ 9/49	1	44.0	42.0	42.8	15.3	14.3	14.9	140	114 ^{1/2}	125	41	33	38	464
136651	G-161	6/13/49	6/ 9/49	1	44.0	42.0	43.0	15.2	14.3	14.9	144	100	123	41	35	38	456
136757	G-162	6/20/49	6/16/49	1	43.6	41.8	42.6	15.7	14.2	14.9	134	100	117	41	34	37	400
136758	G-163	6/20/49	6/16/49	1	44.0	42.2	43.5	15.6	14.2	14.9	139	103 ^{1/2}	121	41	35	37	424
136857	G-164	6/27/49	6/23/49	1	44.4	42.0	43.5	15.6	14.1	15.1	136	102	120	40	34	37	416
136858	G-165	6/27/49	6/23/49	1	44.2	42.2	43.3	15.7	14.7	15.1	130	105	118	41	35	38	448
Current Mill Average:							43.2	14.9			119					37	
Cumulative Mill Average:							43.0	14.8			107					38	
Mill Factor, %:							100.5	100.7			111.2					97.4	
Mill Index, %:							100.0	100.7			114.4					97.4	

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

TABLE X
SUMMARY OF INDIVIDUAL TEST LOTS--JUNE 1 THROUGH JUNE 30, 1949--continued

Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		Bursting Strength, points		G. E. Puncture, units		Elmendorf Tear, g./sheet									
		Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.								
<u>Mill H--42-lb. Linerboard</u>																			
5/30/49	2	44.0	42.2	43.4	14.3	12.8	13.7	124	78	108	42	37	39	416	264	352	496	400	437 ^a
6/6/49	2	44.6	43.0	43.9	16.0	13.4	14.4	138	76	121	38	32	36	464	320	391 ^a	448	368	415 ^a
6/7/49	2	44.0	43.0	43.5	15.0	13.0	13.9	131	89	112	38	33	36	480	336	382 ^a	456	368	405 ^a
6/16/49	2	44.2	42.0	42.9	15.0	13.4	14.0	127	90	106	39	33	36	472	336	399 ^a	456	352	400 ^a
6/17/49	2	44.6	42.4	43.6	14.4	12.9	13.8	137	87	113	40	34	36	464	328	385	464	368	403 ^a
				43.5			14.0			112			36			382			412
				43.1			15.2			105			38			396			420
				100.9			92.1			106.7			94.7			96.5			98.1
				100.7			94.6			107.7			94.7			100.3			99.8

TABLE XI

<u>Mill I--42-lb. Linerboard</u>																			
6/12/49	1	44.2	42.0	43.1	14.1	12.8	13.6	129	86	106	38	33	35	424	320	365 ^a	472	344	395 ^a
6/10/49	1	44.0	41.8	42.5	14.2	12.8	13.6	120	85	105	38	31	33	368	272	324 ^a	424	336	391 ^a
6/14/49	1	44.2	41.8	42.8	14.2	13.0	13.7	128	92	107	38	34	36	384	304	346 ^a	440	352	395 ^a
6/17/49	1	44.0	40.6	43.0	14.8	13.0	13.8	118	88	106	39	32	37	432	296	349	448	360	398 ^a
				42.8			13.7			106			35			346			395
				43.2			14.0			107			36			356			416
				99.1			97.9			99.1			97.2			97.2			95.0
				99.1			92.6			101.9			92.1			90.8			95.6

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

TABLE X

SUMMARY OF INDIVIDUAL TEST LOTS--JUNE 1 THROUGH JUNE 30, 1949--continued

File No.	Mill Code	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		Bursting Strength, points		G. E. Puncture, units		E				
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.		Av.	Max.		
136593	H-139	6/7/49	5/30/49	2	44.0	42.2	43.4	14.3	12.8	13.7	124	78	108	42	37	39	416
136668	H-140	6/14/49	6/6/49	2	44.6	43.0	43.9	16.0	13.4	14.4	138	76	121	38	32	36	464
136669	H-141	6/14/49	6/7/49	2	44.0	43.0	43.5	15.0	13.0	13.9	131	89	112	38	33	36	480
136862	H-142	6/27/49	6/16/49	2	44.2	42.0	42.9	15.0	13.4	14.0	127	90	106	39	33	36	472
136863	H-143	6/27/49	6/17/49	2	44.6	42.4	43.6	14.4	12.9	13.8	137	87	113	40	34	36	464
Current Mill Average:							43.5			14.0			112			36	
Cumulative Mill Average:							43.1			15.2			105			38	
Mill Factor, %:							100.9			92.1			106.7			94.7	
Mill Index, %:							100.7			94.6			107.7			94.7	

TABLE XI

Mill I--42-lb. Linerboard																	
File No.	Mill Code	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		Bursting Strength, points		G. E. Puncture, units		E				
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.		Av.	Max.		
136747	I-46	6/18/49	6/12/49	1	44.2	42.0	43.1	14.1	12.8	13.6	129	86	106	38	33	35	424
136764	I-47	6/21/49	6/10/49	1	44.0	41.8	42.5	14.2	12.8	13.6	120	85	105	38	31	33	368
136765	I-48	6/21/49	6/14/49	1	44.2	41.8	42.8	14.2	13.0	13.7	128	92	107	38	34	36	384
136788	I-49	6/22/49	6/17/49	1	44.0	40.6	43.0	14.8	13.0	13.8	118	88	106	39	32	37	432
Current Mill Average:							42.8			13.7			106			35	
Cumulative Mill Average:							43.2			14.0			107			36	
Mill Factor, %:							99.1			97.9			99.1			97.2	
Mill Index, %:							99.1			92.6			101.9			92.1	

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

TABLE XII
SUMMARY OF INDIVIDUAL TEST LOTS--JUNE 1 THROUGH JUNE 30, 1949--continued

Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		Bursting Strength, points		G. E. Puncture, units		Elmendorf Tear, g./sheet									
		Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.			
<u>Mill J--42-lb. Linerboard</u>																			
6/1/49	1	44.0	42.0	43.0	15.0	13.2	14.3	129	80	108	35	31	34	416	320	361 ^a	480	368	417 ^a
6/1/49	1	45.6	44.0	44.6	15.0	14.0	14.5	128	86	104	37	31	35	464	320	369 ^a	448	360	394 ^a
6/10/49	1	44.2	42.4	43.4	14.6	13.5	14.1	138	81	110	34	30	32	376	288	346 ^a	416	312	364 ^a
6/10/49	1	44.6	42.4	43.8	15.0	13.8	14.4	129	81	105	35	31	33	384	304	335 ^a	400	312	365 ^a
6/18/49	1	43.6	41.8	42.7	15.6	14.2	14.6	112	76	99	35	31	33	400	272	321	400	296	365 ^a
6/18/49	1	45.6	42.4	43.9	15.9	14.5	15.1	124	85	99	38	33	36	392	320	355	464	320	367 ^a
6/23/49	1	45.4	43.6	44.4	14.9	13.9	14.4	124	80	109	36	31	34	384	296	352 ^a	440	336	381 ^a
6/23/49	1	45.6	43.8	44.5	16.2	14.8	15.6	122	74	92	36	30	33	384	304	345 ^a	408	320	365 ^a
		43.8					14.6		103			34				348			377
		42.9					14.5		105			33				347			377
		102.1					100.7		98.1			103.0				100.3			100.0
		101.4					98.6		99.0			89.5				91.3			91.3

the readings for one or more specimens which tore beyond the 3/8-inch limit. It is assumed the number should have been "143," as it appears on the mill data sheet. It is assumed the number should have been "144," as it appears on the mill data sheet.

TABLE XII

SUMMARY OF INDIVIDUAL TEST LOTS--JUNE 1 THROUGH JUNE 30, 1949--contin

File No.	Mill Code	Dat Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points		Bursting Strength, points		G. E. Puncture, units				
					Max.	Min.	Av.	Max.	Min.	Max.	Min.		Av.			
<u>Mill J--42-lb. Linerboard</u>																
136577	J-141	6/ 6/49	6/ 1/49	1	44.0	42.0	43.0	15.0	13.2	14.3	129	80	108	35	31	34
136578	J-142	6/ 6/49	6/ 1/49	1	45.6	44.0	44.6	15.0	14.0	14.5	128	86	104	37	31	35
136679	J-133 ^b	6/15/49	6/10/49	1	44.2	42.4	43.4	14.6	13.5	14.1	138	81	110	34	30	32
136680	J-134 ^c	6/15/49	6/10/49	1	44.6	42.4	43.8	15.0	13.8	14.4	129	81	105	35	31	33
136786	J-145	6/22/49	6/18/49	1	43.6	41.8	42.3	15.6	14.2	14.6	112	76	99	35	31	33
136787	J-146	6/22/49	6/18/49	1	45.6	42.4	43.9	15.9	14.5	15.1	124	85	99	38	33	36
136859	J-147	6/27/49	6/23/49	1	45.4	43.6	44.4	14.9	13.9	14.4	124	80	109	36	31	34
136860	J-148	6/27/49	6/23/49	1	45.6	43.8	44.5	16.2	14.8	15.6	122	74	92	36	30	33
Current Mill Average:					43.8			14.6		103		34				
Cumulative Mill Average:					42.9			14.5		105		33				
Mill Factor, %:					102.1			100.7		98.1		103.0				
Mill Index, %:					101.4			98.6		99.0		89.5				

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

b This code identification appeared on the sample. It is assumed the number should have been "143," as it app

c This code identification appeared on the sample. It is assumed the number should have been "144," as it app

TABLE XIII
SUMMARY OF INDIVIDUAL TEST LOTS--JUNE 1 THROUGH JUNE 30, 1949--continued

Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		Bursting Strength, points		G. E. Puncture, units		Elmendorf Tear, g./sheet									
		Min.	Av.	Min.	Av.	Min.	Av.	Min.	Av.	Min.	Av.								
<u>Mill E--44/46-lb. Drum Linerboard</u>																			
5/31/49	1	47.8	46.0	46.4	15.3	14.3	14.8	114	88	102	42	36	39	560	408	447 ^a	464	376	417 ^a
6/3/49	1	46.0	44.2	45.3	14.5	13.8	14.1	121	80	103	43	37	39	504	432	462	480	368	422 ^a
6/6/49	1	47.2	45.6	46.1	15.3	13.7	14.4	118	80	98	41	35	38	472	416	441 ^a	528	376	423 ^a
6/9/49	1	49.6	47.2	48.2	16.0	14.2	14.9	121	81	100	44	37	41	544	432	489 ^a	464	384	444 ^a
6/16/49	1	48.0	46.2	47.2	14.2	12.2	13.5	138	86	102	45	39	41	528	416	477 ^a	496	424	451 ^a
6/21/49	1	48.2	46.2	47.5	15.4	13.5	14.6	107	78	94	46	38	42	464	360	435 ^a	464	368	408 ^a
6/24/49	1	46.8	45.0	46.2	14.6	13.2	13.8	114	85	102	43	36	40	488	416	455 ^a	512	368	407 ^a
				46.7			14.3		100			40	40			458			425
				46.8			14.1		98			42	42			445			446
				99.8			101.4		102.0			95.2	95.2			102.9			95.3

the readings for one or more specimens which tore beyond the 3/8-inch limit.
in the "F" series marked "F-3" but none marked "F-4."

TABLE XIII

SUMMARY OF INDIVIDUAL TEST LOTS--JUNE 1 THROUGH JUNE 30, 1949--contin

File No.	Mill Code	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		Bursting Strength, points		G. E. Puncture, units					
					Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		
<u>Mill E--44/46-lb. Drum Linerboard</u>																
136575	E-79	6/ 6/49	5/31/49	1	47.8	46.0	46.4	15.3	14.3	14.8	114	88	102	42	36	39
136576	E-80	6/ 6/49	6/ 3/49	1	46.0	44.2	45.3	14.5	13.8	14.1	121	80	103	43	37	39
136619	E-81	6/ 9/49	6/ 6/49	1	47.2	45.6	46.1	15.3	13.7	14.4	118	80	98	41	35	38
136681	E-82 ^b	6/15/49	6/9/49	1	49.6	47.2	48.2	16.0	14.2	14.9	121	81	100	44	37	41
136746	E-84	6/18/49	6/16/49	1	48.0	46.2	47.2	14.2	12.2	13.5	138	86	102	45	39	41
136804	E-85	6/23/49	6/21/49	1	48.2	46.2	47.5	15.4	13.5	14.6	107	78	94	46	38	42
136912	E-86	6/29/49	6/24/49	1	46.8	45.0	46.2	14.6	13.2	13.8	114	85	102	43	36	40
Current Mill Average:							46.7		14.3		100		98		40	
Cumulative Mill Average:							46.8		14.1		98		98		42	
Mill Factor, %:							99.8		101.4		102.0		102.0		95.2	

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

^b There were two sheets in the "F" series marked "F-3" but none marked "F-4."

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., OF.	Time, hr.	R.H., %	Temp., OF.	Time, hr.
A	No samples submitted					
B	33-35	88-90	5/12-1/2	50	70	24
C	55-65	72-73	48-72	55-65	72-73	24-48
D	35	74	24	51-52	74	24
E	No preconditioning			53	89	--
F	No preconditioning			No conditioning		
G	No preconditioning			No conditioning		
H	No preconditioning			50	73	24
I	No preconditioning			50-65	87-90	--
J	No preconditioning			46-50	73-74	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 of 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 one per cent for the current period. This figure compares favorably with the maximum variation of 2 per cent for the preceding two periods. Further, it may be noted that the average results for Mills B, E, and I are higher than those for the Institute, whereas the average results for Mills C, D, F, G, H, and J are lower. The maximum variation in caliper for the current period is 4 per cent. Compared with the values for the Institute, the results for Mills B, C, D, F, G, and H are lower, those for Mills E and J are higher, and the average result for Mill I is the same. None of the differences appear to be significantly large. It may be noted in Table XVI that the bursting strength results show a maximum variation of 5 per cent for the current period. The results for Mills B, C, D, E, G and H are lower than those for the Institute, while the results for Mills F, I, and J are the same. The agreement in bursting strength results is, in general,

excellent. The G. E. puncture results exhibit a maximum variation of 10 per cent for the current period. Compared with the values for the Institute, the results for Mills C, F, G, H, and J are higher and those for Mills B and E are lower. The differences encountered for Mills E, F, H, and J appear to be rather large. It may be seen in Table XVI that the average differences encountered on connection with the machine direction tear results are negative for Mills B, D, G, and H and positive for Mills C, E, F, I, and J. The differences encountered for Mills F, H, and I appear to be rather large. With regard to the across-machine direction tear results, it may be noted that positive differences are shown for Mills C, D, E, F, G, I, and J and negative differences for Mills B and H, the maximum difference being a positive 21 per cent. Rather large differences are evident for Mills E, I, and J. These differences appear to be incompatible with the differences for these same mills for the two preceding periods.

TABLE XV
SUMMARY OF TEST RESULT COMPARISONS

Average Mill and Institute Results	Mills*									
	A	B	C	D	E	F	G	H	I	J
No. Samples Compared	0	2	5	3	1	7	8	5	4	8
Basis Weight										
Institute	--	44.4	43.7	43.0	43.2	44.1	43.2	43.5	42.8	43.8
Mill	--	44.9	43.1	42.5	43.8	44.0	43.0	42.9	43.0	43.7
Av. difference**	--	+0.5	-0.6	-0.5	+0.6	-0.1	-0.2	-0.6	+0.2	-0.1
Max. difference***	--	+0.6	-0.7	-0.8	+0.6	-0.3	-0.8	-1.0	+0.3	-0.7
Caliper										
Institute	--	14.2	14.0	14.7	12.9	14.1	14.9	14.0	13.7	14.6
Mill	--	14.1	13.9	14.3	13.1	13.6	14.6	13.7	13.7	14.7
Av. difference**	--	-0.1	-0.1	-0.4	+0.2	-0.5	-0.3	-0.3	0.0	+0.1
Max. difference***	--	-0.1	-0.3	-0.9	+0.2	-0.9	-0.6	-0.4	+0.1	+0.3
Bursting Strength										
Institute	--	112	111	112	105	109	119	112	106	103
Mill	--	111	110	111	100	109	115	111	106	103
Av. difference**	--	-1	-1	-1	-5	0	-4	-1	0	0
Max. difference***	--	-3	-5	-5	-5	-12	-8	+4	+4	-7
G. E. Puncture										
Institute	--	37	38	36	36	39	37	36	35	34
Mill	--	35	40	--	34	43	39	38	--	36
Av. difference**	--	-2	+2	--	-2	+4	+2	+2	--	+2
Max. difference***	--	-2	+5	--	-2	+5	+4	+4	--	+5
Tearing Strength, in										
Institute	--	367	383	387	411	389	395	382	346	348
Mill	--	340	411	356	442	426	390	349	431	369
Av. difference**	--	-27	+28	-31	+31	+37	-5	-33	+85	+21
Max. difference***	--	-38	+48	-37	+31	+63	-42	-53	+111	+63
Tearing Strength, across										
Institute	--	406	422	402	370	440	426	412	395	377
Mill	--	373	458	415	449	469	428	392	464	421
Av. difference**	--	-33	+36	+13	+79	+29	+2	-20	+69	+44
Max. difference***	--	-44	+44	+25	+79	+51	-37	-32	+84	+71

* 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 Difference, per cent					
	Basis Weight	Caliper	Bursting Strength	G. E. Puncture	Tearing Strength, in	Tearing Strength, across
Mill A						
Current period	--	--	--	--	--	--
23rd period	-0.9	-3	-2	+3	+2	+3
22nd period	+0.2	-3	-9	+6	-2	-2
Mill B						
Current period	+1	-0.7	-0.9	-5	-7	-8
23rd period	-0.7	-2	+1	-5	-12	-10
22nd period	+0.7	+0.7	-2	-10	-13	-11
Mill C						
Current period	-1	-0.7	-0.9	+5	+7	+9
23rd period	-2	-2	+4	-5	-1	+2
22nd period	-2	-1	+4	-8	-5	+2
Mill D						
Current period	-1	-3	-0.9	--	-8	+3
23rd period	-0.9	-3	-0.9	--	-10	-4
22nd period	+0.5	-1	-3	--	-9	-2
Mill E						
Current period	+1	+2	-5	-6	+8	+21
23rd period	0	-2	0	-6	-6	-5
22nd period	--	--	--	--	--	--
Mill F						
Current period	-0.2	-4	0	+10	+10	+7
23rd period	-0.5	-4	-5	+2	+1	+2
22nd period	+0.2	-4	-7	+6	-0.5	+2
Mill G						
Current period	-0.5	-2	-3	+5	-1	+0.5
23rd period	-2	-3	-3	-8	-0.5	-2
22nd period	-2	-2	-3	-2	-2	-0.5
Mill H						
Current period	-1	-2	-0.9	+6	-9	-5
23rd period	0	-1	0	0	-4	-5
22nd period	+1	0	-3	+6	-5	-2
Mill I						
Current period	+0.5	0	0	--	+25	+17
23rd period	-0.2	0	-5	--	-4	-5
22nd period	-0.5	0	-5	--	-5	-2
Mill J						
Current period	-0.2	+0.7	0	+6	+6	+12
23rd period	-0.2	+0.7	-2	+6	+2	+8
22nd period	-0.7	+1	-3	0	-3	+0.3

TABLE XVII

SUMMARY OF INDIVIDUAL TEST LOTS--JUNE 1 THROUGH JUNE 30, 1949
Institute Data versus Mill Data

File No.	Mill Code	Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		Bursting Strength, points		IPC Mill Diff.	IPC Mill Diff.	IPC Mill Diff.	IPC Mill Diff.	Elmenc g./ε			
				IPC	Mill	IPC	Mill	IPC	Mill						IPC	Mill	
136573	B-180	5/27/49	3	44.3	44.9	+0.6	14.2	14.1	-0.1	114	111	-3	36	35	-1	359	344
136551	B-181	5/28/49	3	44.5	44.9	+0.4	14.1	14.1	0.0	110	110	0	37	35	-2	375 ^a	337
Current Mill Average:				44.4	44.9	+0.5	14.2	14.1	-0.1	112	111	-1	37	35	-2	367	340

No samples submitted.

TABLE XVIII

Mill B--42-lb. Linerboard

136649	C-127	6/6/49	1	43.5	42.8	-0.7	14.0	13.8	-0.2	112	110	-2	38	38	0	392 ^a	411
136755	C-128	6/14/49	1	43.8	43.5	-0.3	14.7	14.5	-0.2	104	103	-1	38	40	+2	397	407
136829	C-129	6/16/49	1	44.1	43.4	-0.7	14.1	14.0	-0.1	108	108	0	38	39	+1	395 ^a	416
136861	C-130	6/20/49	1	43.9	43.3	-0.6	13.3	13.4	+0.1	119	114	-5	38	41	+3	375 ^a	423
136896	C-131	6/23/49	1	43.3	42.6	-0.7	13.8	13.5	-0.3	113	115	+2	37	42	+5	358	397
Current Mill Average:				43.7	43.1	-0.6	14.0	13.9	-0.1	111	110	-1	38	40	+2	383	411

TABLE XIX

Mill C--42-lb. Linerboard

136666	D-128	6/11/49	4	43.4	42.6	-0.8	15.3	14.9	-0.4	106	109	+3	36	36	-1	380 ^a	355
136667	D-129	6/12/49	4	42.6	42.4	-0.2	14.1	14.1	0.0	111	108	-3	35	35	-2	390 ^a	359
136835	D-130	6/22/49	4	42.9	42.5	-0.4	14.8	13.9	-0.9	120	115	-5	36	36	-2	390 ^a	353
Current Mill Average:				43.0	42.5	-0.5	14.7	14.3	-0.4	112	111	-1	36	36	-2	387	356

TABLE XX

Mill D--42-lb. Linerboard

136706	E-83	6/13/49	1	43.2	43.8	+0.6	12.9	13.1	+0.2	105	100	-5	36	34	-2	411 ^a	442
Current Mill Average:				43.2	43.8	+0.6	12.9	13.1	+0.2	105	100	-5	36	34	-2	411	442

TABLE XXI

Mill E--42-lb. Linerboard

136706	E-83	6/13/49	1	43.2	43.8	+0.6	12.9	13.1	+0.2	105	100	-5	36	34	-2	411 ^a	442
Current Mill Average:				43.2	43.8	+0.6	12.9	13.1	+0.2	105	100	-5	36	34	-2	411	442

^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.

TABLE XXII
SUMMARY OF INDIVIDUAL TEST LOTS--JUNE 1 THROUGH JUNE 30, 1949--continued
Institute Data versus Mill Data

Sh.	Basis Weight, lb.		Caliper, 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	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC								
--	44.0	43.7	-0.3	14.1	13.5	-0.6	111	106	-5	41	41	0	389	375	-14	440 ^a	433	-7
--	44.4	44.6	+0.2	14.4	14.1	-0.3	109	111	+2	38	43	+5	383	444	+61	431 ^a	472	+41
--	44.2	43.9	-0.3	14.3	14.0	-0.3	110	116	+6	39	44	+5	409	433	+24	455 ^a	474	+19
--	44.5	44.3	-0.2	13.7	13.1	-0.6	110	115	+5	40	42	+2	374	428	+54	435 ^a	481	+46
--	44.3	44.3	0.0	14.5	13.6	-0.9	107	109	+2	39	44	+5	414	436	+22	437 ^a	461	+24
--	44.0	43.9	-0.1	14.1	13.5	-0.6	102	105	+3	39	42	+3	369	419	+50	425 ^a	476	+51
--	43.2	43.4	+0.2	13.4	13.2	-0.2	114	102	-12	39	44	+5	387	450	+63	455 ^a	486	+31
--	44.1	44.0	-0.1	14.1	13.6	-0.5	109	109	0	39	43	+4	389	426	+37	440	469	+29

TABLE XXIII

1	Mill G--42-lb. Linerboard		IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	
	IPC	Mill																
1	43.4	42.6	-0.8	14.6	14.5	-0.1	116	113	-3	37	37	0	412 ^a	370	-42	416 ^a	407	-9
1	43.7	43.3	-0.4	14.6	14.0	-0.6	110	111	+1	38	37	-1	389	368	-21	427 ^a	402	-25
1	42.8	42.5	-0.3	14.9	14.4	-0.5	125	119	-6	38	38	0	417 ^a	378	-39	452 ^a	415	-37
1	43.0	42.5	-0.5	14.9	14.6	-0.3	123	116	-7	38	39	+1	405 ^a	396	-9	440 ^a	439	-1
1	42.6	43.1	+0.5	14.9	14.7	-0.2	117	118	+1	37	39	+2	366	387	+21	405	439	+36
1	43.5	43.8	+0.3	14.9	14.6	-0.3	121	118	-3	37	39	+2	380 ^a	402	+22	414 ^a	439	+25
1	43.5	43.0	-0.5	15.1	14.9	-0.2	120	118	-2	37	40	+3	391	406	+15	428 ^a	433	+5
1	43.3	43.1	-0.2	15.1	15.0	-0.1	118	110	-8	38	42	+4	399 ^a	416	+17	429 ^a	445	+20
1	43.2	43.0	-0.2	14.9	14.6	-0.3	119	115	-4	37	39	+2	395	390	-5	426	428	+2

TABLE XXIV

2	Mill H--42-lb. Linerboard		IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	
	IPC	Mill																
2	43.4	43.5	+0.1	13.7	13.4	-0.3	108	112	+4	39	37	-2	352	366	+14	437 ^a	405	-32
2	43.9	42.9	-1.0	14.4	14.1	-0.3	121	117	-4	36	40	+4	391 ^a	366	-25	415 ^a	403	-12
2	43.5	42.8	-0.7	13.9	13.5	-0.4	112	108	-4	36	37	+1	382 ^a	331	-51	405 ^a	390	-15
2	42.9	42.0	-0.9	14.0	13.9	-0.1	106	104	-2	36	37	+1	399 ^a	351	-48	400 ^a	388	-12
2	43.6	43.2	-0.4	13.8	13.7	-0.1	113	112	-1	36	38	+2	385	332	-53	403 ^a	373	-30
2	43.5	42.9	-0.6	14.0	13.7	-0.3	112	111	-1	36	38	+2	382	349	-33	412	392	-20

the readings for one or more specimens which tore beyond the 3/8-inch limit.
Average data are calculated from the totals of the individual readings.

TABLE XXII
SUMMARY OF INDIVIDUAL TEST LOTS--JUNE 1 THROUGH JUNE 30, 1949---continued
Institute Data versus Mill Data

File No.	Mill Code	Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		Bursting Strength, points		G. 3. Puncture, units		E. I. MI	
				IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.		
136547	F-18	5/20/49	--	44.0	43.7	-0.3	14.1	13.5	-0.6	111	106	-5	3
136627	F-19	6/6/49	--	44.4	44.6	+0.2	14.4	14.1	-0.3	109	111	+2	4
136648	F-20	6/7/49	--	44.2	43.9	-0.3	14.3	14.0	-0.3	110	116	+6	4
136756	F-21	6/13/49	--	44.5	44.3	-0.2	13.7	13.1	-0.6	110	115	+5	4
136913	F-22	6/20/49	--	44.3	44.3	0.0	14.5	13.6	-0.9	107	109	+2	4
136914	F-23	6/23/49	--	44.0	43.9	-0.1	14.1	13.5	-0.6	102	105	+3	4
136915	F-24	6/24/49	--	43.2	43.4	+0.2	13.4	13.2	-0.2	114	102	-12	4
Current Mill Average:				44.1	44.0	-0.1	14.1	13.6	-0.5	109	109	0	4

TABLE XXIII
Mill G--42-lb. Linerboard

File No.	Mill Code	Date Made	Mch. No.	IPC	Mill Diff.	Caliper, points	Basis Weight, lb.	IPC	Mill Diff.	Bursting Strength, points	G. 3. Puncture, units	E. I. MI	
136579	G-158	6/1/49	1	43.4	42.6	-0.8	14.6	14.5	-0.1	116	113	-3	3
136580	G-159	6/1/49	1	43.7	43.3	-0.4	14.6	14.0	-0.6	110	111	+1	3
136650	G-160	6/9/49	1	42.8	42.5	-0.3	14.9	14.4	-0.5	125	119	-6	3
136651	G-161	6/9/49	1	43.0	42.5	-0.5	14.9	14.6	-0.3	123	116	-7	3
136757	G-162	6/16/49	1	42.6	43.1	+0.5	14.9	14.7	-0.2	117	118	+1	4
136758	G-163	6/16/49	1	43.5	43.8	+0.3	14.9	14.6	-0.3	121	118	-3	4
136857	G-164	6/23/49	1	43.5	43.0	-0.5	15.1	14.9	-0.2	120	118	-2	4
136858	G-165	6/23/49	1	43.3	43.1	-0.2	15.1	15.0	-0.1	118	110	-8	4
Current Mill Average:				43.2	43.0	-0.2	14.9	14.6	-0.3	119	115	-4	3

TABLE XXIV
Mill H--42-lb. Linerboard

File No.	Mill Code	Date Made	Mch. No.	IPC	Mill Diff.	Caliper, points	Basis Weight, lb.	IPC	Mill Diff.	Bursting Strength, points	G. 3. Puncture, units	E. I. MI	
136593	H-139	5/30/49	2	43.4	43.5	+0.1	13.7	13.4	-0.3	108	112	+4	3
136668	H-140	6/6/49	2	43.9	42.9	-1.0	14.4	14.1	-0.3	121	117	-4	3
136669	H-141	6/7/49	2	43.5	42.8	-0.7	13.9	13.5	-0.4	112	108	-4	3
136862	H-142	6/16/49	2	42.9	42.0	-0.9	14.0	13.9	-0.1	106	104	-2	3
136863	H-143	6/17/49	2	43.6	43.2	-0.4	13.8	13.7	-0.1	113	112	-1	3
Current Mill Average:				43.5	42.9	-0.6	14.0	13.7	-0.3	112	111	-1	3

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.

TABLE XXV

SUMMARY OF INDIVIDUAL TEST LOTS--JUNE 1 THROUGH JUNE 30, 1949--continued

Institute Data versus Mill Data

Mch. No.	Basis Weight, lb.		Caliper, points		IPC Mill Diff.	IPC Mill Diff.		IPC Mill Diff.	IPC Mill Diff.		IPC Mill Diff.		IPC Mill Diff.			
	Mill	Diff.	Mill	Diff.		IPC	Mill		Diff.	IPC	Mill	Diff.		IPC	Mill	Diff.
1	43.1	43.1	0.0	13.6	13.6	0.0	106	110	+4	35	365 ^a	434	+69	395 ^a	450	+55
1	42.5	42.8	+0.3	13.7	13.6	+0.1	105	102	-3	33	324 ^a	435	+111	391 ^a	455	+64
1	42.8	43.0	+0.2	13.7	13.8	+0.1	107	105	-2	36	346 ^a	423	+77	395 ^a	467	+72
1	43.0	43.0	0.0	13.8	13.8	0.0	106	106	0	37	349	430	+81	398 ^a	482	+84
1	42.8	43.0	+0.2	13.7	13.7	0.0	106	106	0	35	346	431	+85	395	464	+69

Mill I--42-lb. Linerboard

TABLE XXVI

Mill J--42-lb. Linerboard

1	43.0	43.2	+0.2	14.3	14.5	+0.2	108	112	+4	34	36	+2	361 ^a	359	-2	417 ^a	437	+20
1	44.6	44.8	+0.2	14.5	14.6	+0.1	104	106	+2	35	36	+1	369 ^a	357	-12	394 ^a	432	+38
1	43.4	43.4	0.0	14.1	14.1	0.0	110	107	-3	32	35	+3	346 ^a	409	+63	364 ^a	435	+71
1	43.8	43.1	-0.7	14.4	14.5	+0.1	105	104	-1	33	36	+3	335 ^a	369	+34	365 ^a	405	+40
1	42.3	42.5	+0.2	14.6	14.6	0.0	99	102	+3	33	34	+1	321	327	+6	365 ^a	377	+12
1	43.9	43.5	-0.4	15.1	15.0	-0.1	99	99	0	36	37	+1	355	324	-31	367 ^a	412	+45
1	44.4	44.4	0.0	14.4	14.6	+0.2	109	102	-7	34	38	+4	352 ^a	406	+54	381 ^a	441	+60
1	44.5	44.5	0.0	15.6	15.9	+0.3	92	93	+1	33	38	+5	345 ^a	397	+52	365 ^a	429	+64
1	43.8	43.7	-0.1	14.6	14.7	+0.1	103	103	0	34	36	+2	348	369	+21	377	421	+44

the readings for one or more specimens which tore beyond the 3/8-inch limit. ion appeared on the sample. It is assumed the number should have been "143," as it appears on the mill data sheet. ion appeared on the sample. It is assumed the number should have been "144," as it appears on the mill data sheet.

l average" data are calculated from the totals of the individual readings.

TABLE XXV

SUMMARY OF INDIVIDUAL TEST LOTS--JUNE 1 THROUGH JUNE 30, 1949--continued

Institute Data versus Mill Data

File No.	Mill Code	Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		IPC Mill Diff.		Bursting Strength, points		G. E. Puncture, units		Elmendon g./sh		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC		Mill	Diff.
136747	I-46	6/12/49	1	43.1	43.1	0.0	13.6	13.6	0.0	106	110	+4	35	365 ^a	434	+6
136764	I-47	6/10/49	1	42.5	42.8	+0.3	13.6	13.7	+0.1	105	102	-3	33	324 ^a	435	+11
136765	I-48	6/14/49	1	42.8	43.0	+0.2	13.7	13.8	+0.1	107	105	-2	36	346 ^a	423	+7
136788	I-49	6/17/49	1	43.0	43.0	0.0	13.8	13.8	0.0	106	106	0	37	349	430	+8
Current Mill Average:				42.8	43.0	+0.2	13.7	13.7	0.0	106	106	0	35	346	431	+8

Mill I--42-lb. Linerboard

TABLE XXVI

Mill J--42-lb. Linerboard

136577	J-141	6/1/49	1	43.0	43.2	+0.2	14.3	14.5	+0.2	108	112	+4	34	361 ^a	359	-2
136578	J-142	6/1/49	1	44.6	44.8	+0.2	14.5	14.6	+0.1	104	106	+2	35	369 ^a	357	-12
136679	J-133 ^b	6/10/49	1	43.4	43.4	0.0	14.1	14.1	0.0	110	107	-3	32	346 ^a	409	+6
136680	J-134 ^c	6/10/49	1	43.8	43.1	-0.7	14.4	14.5	+0.1	105	104	-1	33	335 ^a	369	+3
136786	J-145	6/18/49	1	42.3	42.5	+0.2	14.6	14.6	0.0	99	102	+3	33	321	327	+6
136787	J-146	6/18/49	1	43.9	43.5	-0.4	15.1	15.0	-0.1	99	99	0	36	355	324	-3
136859	J-147	6/23/49	1	44.4	44.4	0.0	14.4	14.6	+0.2	109	102	-7	34	352 ^a	406	+5
136860	J-148	6/23/49	1	44.5	44.5	0.0	15.6	15.9	+0.3	92	93	+1	33	345 ^a	397	+5
Current Mill Average:				43.8	43.7	-0.1	14.6	14.7	+0.1	103	103	0	34	348	369	+2

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

^b This code identification appeared on the sample. It is assumed the number should have been "143," as it appears on

^c This code identification appeared on the sample. It is assumed the number should have been "144," as it appears on

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

TABLE XXVII
 SUMMARY OF INDIVIDUAL TEST LOTS--JUNE 1 THROUGH JUNE 30, 1949--continued

Institute Data versus Mill Data																	
IPC Mill Diff.	Basis Weight, lb.	IPC Mill Diff.	Caliper, points	IPC Mill Diff.	Bursting Strength, points	IPC Mill Diff.	G. E. Puncture, units	IPC Mill Diff.	Elmendorf Tear, g./sheet								
									In	Across							
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.							
46.4	45.2	-1.2	14.8	14.3	-0.5	102	101	-1	39	40	+1	447 ^a	455	+8	417 ^a	432	+15
45.3	44.3	-1.0	14.1	13.4	-0.7	103	102	-1	39	34	-5	462	454	-8	422 ^a	414	-8
46.1	47.3	+1.2	14.4	14.3	-0.1	98	91	-7	38	38	0	441 ^a	422	-19	423 ^a	396	-27
48.2	46.5	-1.7	14.9	14.1	-0.8	100	102	+2	41	38	-3	489 ^a	418	-71	444 ^a	388	-56
47.2	47.8	+0.6	13.5	13.3	-0.2	102	100	-2	41	42	+1	477 ^a	544	+67	451 ^a	511	+60
47.5	47.3	-0.2	14.6	14.1	-0.5	94	94	0	42	40	-2	435 ^a	472	+37	408 ^a	455	+47
46.2	46.0	-0.2	13.8	13.3	-0.5	102	97	-5	40	42	+2	455 ^a	496	+41	407 ^a	458	+51
46.7	46.3	-0.4	14.3	13.8	-0.5	100	98	-2	40	39	-1	458	466	+8	425	436	+11

Mill F-44/46-lb. Drum Linerboard

readings for one or more specimens which tore beyond the 3/8-inch limit.
 to the Institute for testing had two sheets in the "F" series marked "F-3" but none marked "F-4."

"craze" data are calculated from the totals of the individual readings.

TABLE XXVII

SUMMARY OF INDIVIDUAL TEST LOTS--JUNE 1 THROUGH JUNE 30, 1949--continued

Institute Data versus Mill Data

File No.	Mill Code	Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		IPC Mill Diff.	Bursting Strength, points		IPC Mill Diff.	IPC Mill Diff.	IPC Mill Diff.	In Mill Diff.	Elmendorf g./sh		
				IPC	Mill	IPC	Mill		IPC	Mill						IPC	Mill
136575	E-79	5/31/49	1	46.4	45.2	14.8	14.3	-0.5	102	101	-1	39	40	+1	447 ^a	455	+8
136576	E-80	6/3/49	1	45.3	44.3	14.1	13.4	-0.7	103	102	-1	39	34	-5	462	454	-8
136619	E-81	6/6/49	1	46.1	47.3	14.4	14.3	-0.1	98	91	-7	38	38	0	441 ^a	422	-19
136681	3-82 ^b	6/9/49	1	48.2	46.5	14.9	14.1	-0.8	100	102	+2	41	38	-3	489 ^a	418	-71
136746	E-84	6/16/49	1	47.2	47.8	13.5	13.3	-0.2	102	100	-2	41	42	+1	477 ^a	544	+67
136804	E-85	6/21/49	1	47.5	47.3	14.6	14.1	-0.5	94	94	0	42	40	-2	435 ^a	472	+37
136912	E-86	6/24/49	1	46.2	46.0	13.8	13.3	-0.5	102	97	-5	40	42	+2	455 ^a	496	+41
Current Mill Average:				46.7	46.3	14.3	13.8	-0.5	100	98	-2	40	39	-1	458	466	+8

Mill E-44/46-lb. Drum Linerboard

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

^b The sample which was sent to the Institute for testing had two sheets in the "F" series marked "F-3" but none marked "F-1".

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

