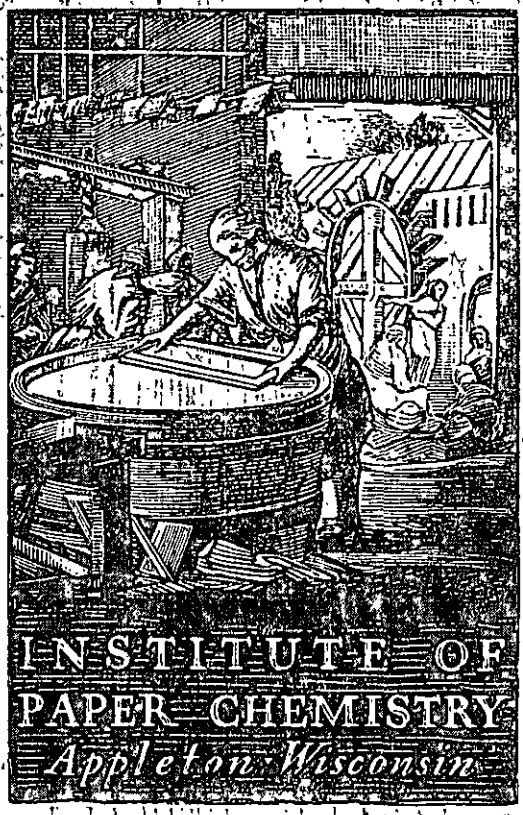

CONTINUOUS BASELINE STUDY

Project 1108-13

Progress Report 151

to

FOURDRINIER KRAFT BOARD INSTITUTE, INC.

December 1, 1959

THE INSTITUTE OF PAPER CHEMISTRY

Appleton, Wisconsin

CONTINUOUS BASELINE STUDY

Project 1108-13

Progress Report 151

to

FOURDRINIER KRAFT BOARD INSTITUTE, INC.

December 1, 1959

TABLE OF CONTENTS

THE INSTITUTE OF PAPER CHEMISTRY

Appleton, Wisconsin

PART I: PRESENTATION AND DISCUSSION OF RESULTS OBTAINED AT THE INSTITUTE OF PAPER CHEMISTRY

In conjunction with the F.K.I. Continuous Baseline Study, The Institute of Paper Chemistry has been directed to identify the participating mills by means of a scrambled system of code letters. Under this system, which was initiated in Progress Report 105, each mill is identified by a code letter different from that used for the previous month.

During the month of November, one hundred and forty different sample lots of 42-lb. Fourdrinier kraft linerboard from seventeen different F.K.I. mills were processed at The Institute of Paper Chemistry. A tabulation of the number of samples classified according to mill may be seen in Table I.

These sample lots were tested for basis weight, caliper, bursting strength, and Elmendorf tear. The average strength results for each mill may be seen in Table II and are graphically presented in Figures 1 to 5. In addition to a comparison of the mill averages for the various tests, 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. average is based on the results for the previous twelve months excluding the current period. Hence, in the case of the current report, it covers the period from November 1, 1958 to October 31, 1959. The F.K.I. indexes are obtained as follows:

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

TABLE I

NUMBER OF SAMPLE LOTS SUBMITTED BY EACH MILL

Mill Code	Number
A	6
B	9
C	8
D	8
E	2
F	8
G	12
H	8
I	6
J	0
K	6
L	0
M	10
N	12
O	11
P	8
Q	8
S	10
T	8
Total	140

TABLE II

SUMMARY OF COMPOSITE MILL AVERAGES--NOVEMBER 1 THROUGH NOVEMBER 30, 1959

Mill	Basis Weight, lb.	Caliper, points	Bursting Strength, p.s.i. gage	Elmendorf Tear, g./sheet	
				In Machine	Cross Machine
A	44.1	13.4	109	301	343
B	42.7	12.4	106	331	358
C	43.6	12.7	107	315	385
D	42.8	13.1	107	346	394
E	44.5	12.5	109	360	372
F	43.7	12.2	107	330	370
G	43.3	11.6	111	351	407
H	43.5	12.1	114	326	364
I	43.9	14.0	102	341	383
J	No samples submitted.				
K	43.2	12.3	103	353	372
L	No samples submitted.				
M	42.9	12.6	108	266	331
N	43.8	12.5	107	367	399
O	42.9	12.7	112	322	378
P	43.2	14.1	104	330	358
Q	43.2	13.2	109	340	379
S	43.8	12.2	115	330	369
T	43.6	13.4	102	334	363
Current FKI Average:	43.5	12.8	108	332	372
Cumulative FKI Average	43.4	12.7	110	330	373
FKI Index, %	100.2	100.8	98.2	100.6	99.7

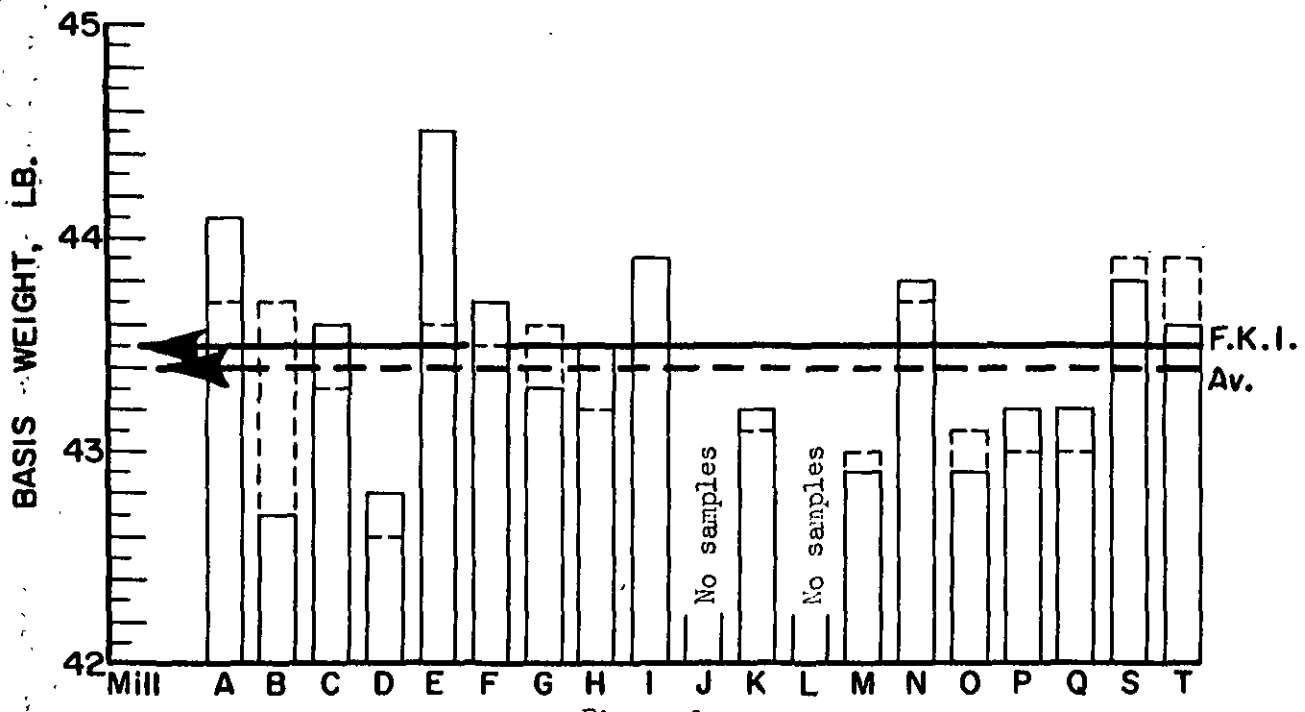

Figure 1

Comparison of Basis Weight Results for November, 1959

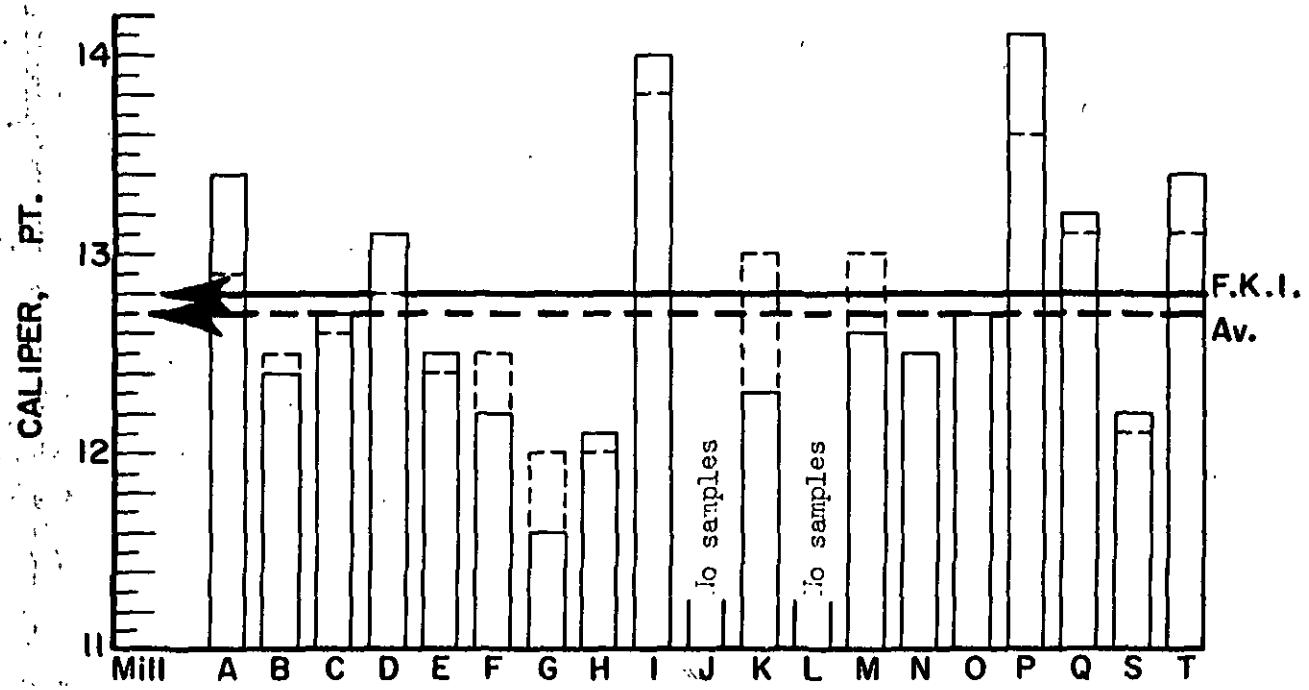

Figure 2

Comparison of Caliper Results for November, 1959

——— Current mill average

– – – – – Cumulative mill average

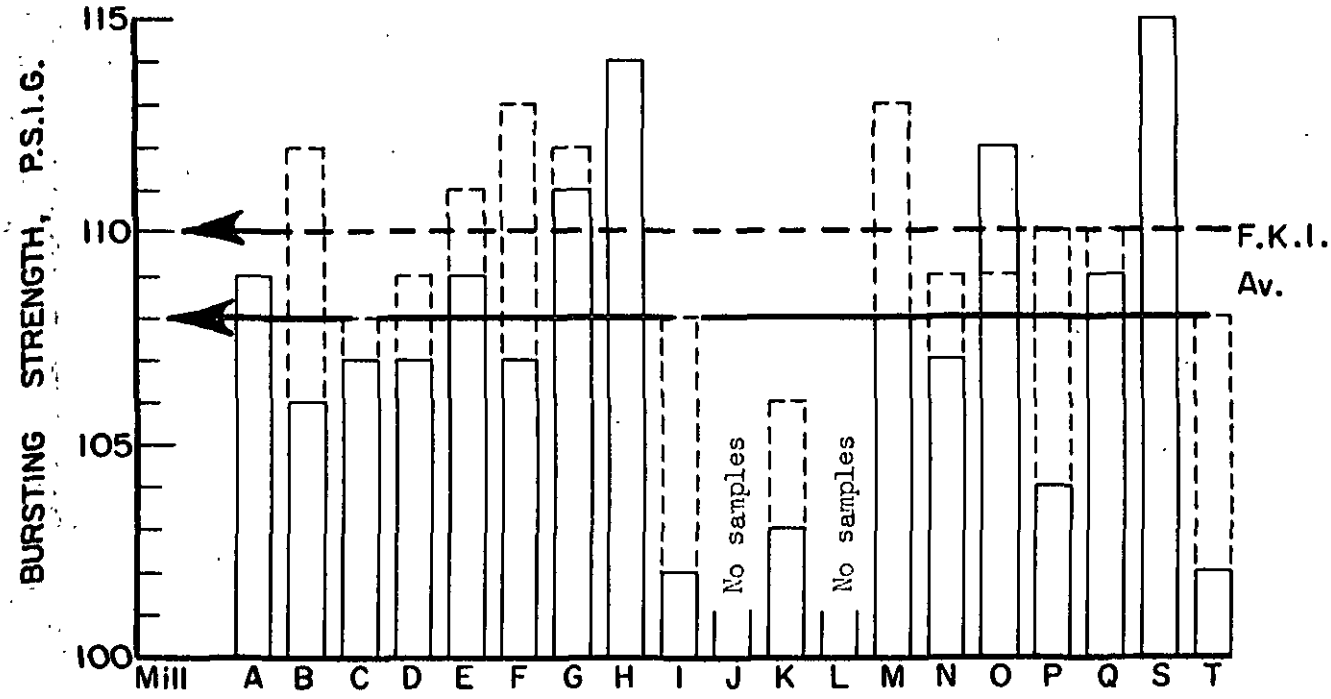

Figure 3

Comparison of Bursting Strength Results for November, 1959

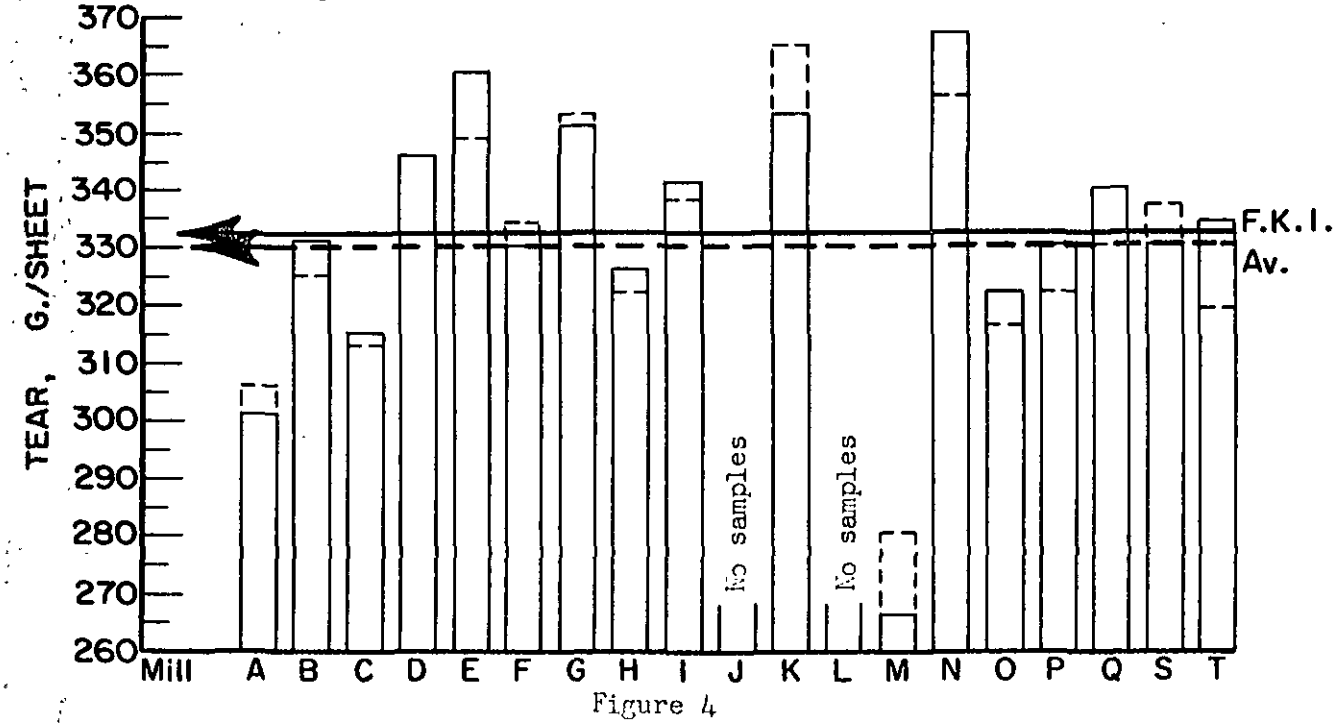

Figure 4

Comparison of Machine-Direction Tear Results for November, 1959

——— Current mill average

- - - - - Cumulative mill average

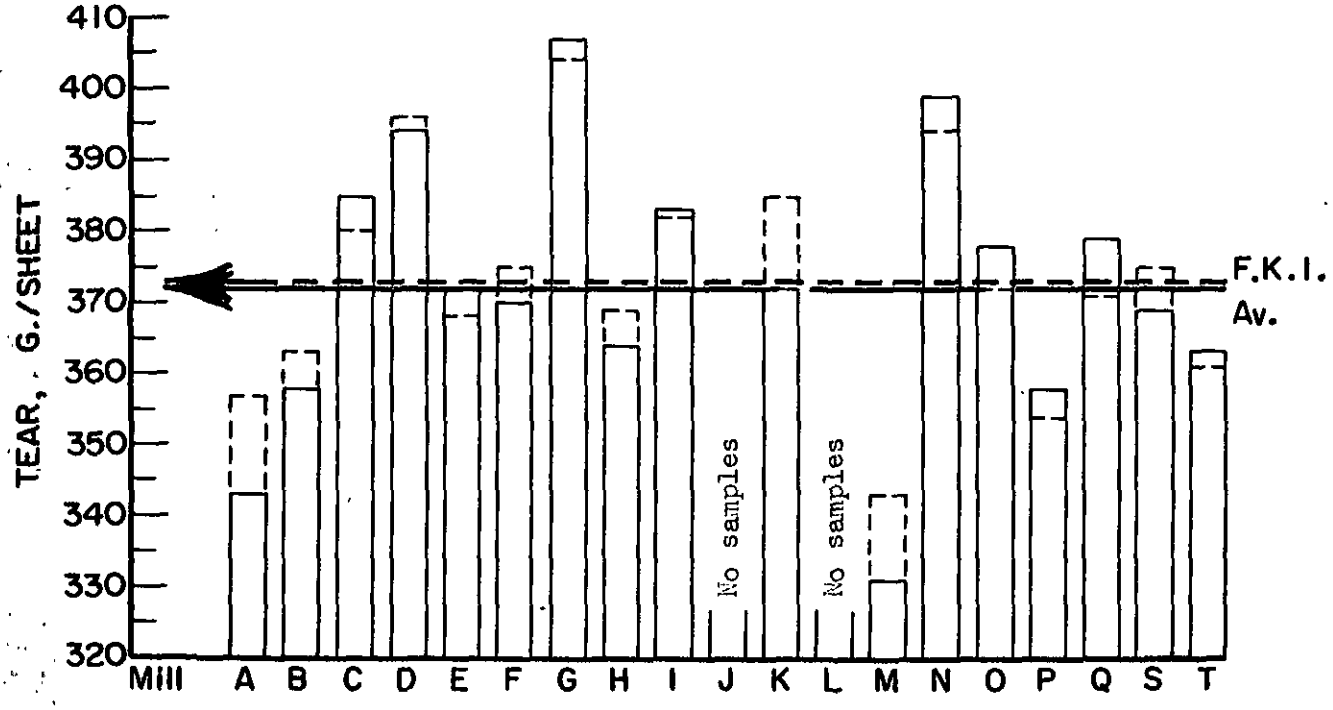

Figure 5

Comparison of Cross-Machine Direction Tear Results for November, 1959

——— Current machine average

- - - - - Cumulative machine average

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., and the cumulative F.K.I. average basis weight is 43.4 lb. Hence, the F.K.I. index for basis weight determined in per cent as indicated above is 100.2 and signifies that the current F.K.I. average basis weight is slightly higher than the cumulative F.K.I. average.

A comparison of the results in Table II and Figure 1 shows that the average basis weight results for all mills conform to the 42-lb. specification set forth in Rule 41. Mill E had the highest average basis weight of 44.5 lb. which was approximately 6.0% higher than the 42-lb. specification. The lowest average basis weight of 42.7 lb., which was 1.7% higher than the 42-lb. specification, was associated with Mill B.

The amount by which the mills vary from the 42-lb. specification is shown in Table II-A.

A comparison of the current F.K.I. basis weight average for this period with that for the previous period shows that basis weight has decreased slightly from 43.6 to 43.5 lb.

A comparison of the average caliper values for the various mills (see Figure 2) shows that the current mill averages varied from a low of 11.6 points for Mill G to a high of 14.1 points for Mill P. The current F.K.I. caliper average was 12.8 points, which was slightly higher than the cumulative F.K.I. average of 12.7 points.

TABLE II-A

PERCENTAGE DEVIATION FROM 42-LB. BASIS WEIGHT

SPECIFICATION

Mill Code	Per Cent
A	+5.0
B	+1.7
C	+3.8
D	+1.9
E	+6.0
F	+4.0
G	+3.1
H	+3.6
I	+4.5
J	--
K	+2.9
L	--
M	+2.1
N	+4.3
O	+2.1
P	+2.9
Q	+2.9
S	+4.3
T	+3.8

The average bursting strength values obtained for each mill are graphically presented in Figure 3. It may be observed in Table II and Figure 3 that the current mill averages for bursting strength ranged from a low of 102 for Mills I and T to a high of 115 for Mill S. The current F.K.I. bursting strength average was 108 p.s.i. gage, which was lower than the cumulative F.K.I. average of 110 p.s.i. gage.

The Elmendorf tear results shown in Table II for the various mills are presented graphically in Figures 4 and 5. These presentations show that Mill N had the highest machine direction tear average of 367 g./sheet, and Mill M had the lowest average of 266 g./sheet. It may be further noted in Table II that the highest cross-machine direction tear average of 407 g./sheet was obtained on the linerboard from Mill G and that the lowest average of 331 g./sheet was associated with Mill M. It may be observed also in Table II that the current F.K.I. averages for machine direction and cross-machine direction Elmendorf tear are not significantly different from their respective cumulative F.K.I. averages.

A comparison of the F.K.I. indexes indicates that, for the current period, the current F.K.I. averages for basis weight, caliper, and machine direction Elmendorf tear are slightly higher than their respective cumulative F.K.I. averages, whereas the current F.K.I. averages for bursting strength and cross-machine direction Elmendorf tear are slightly lower than their cumulative F.K.I. 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 XXI for Mills A through T, respectively.

In addition to the current and cumulative average, 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 for the previous twelve months excluding the current period. 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 are a convenient means for comparing the current mill results either with the previous results for that particular mill or with the cumulative F.K.I. results. The reports also present a comparison of the test data obtained at the mills with test data obtained at The Institute of Paper Chemistry. These test data are presented and discussed on subsequent pages of this report.

It may be noted in Tables III through XXI that the test data include information about the sheet finish. The summarized results for the mills which submitted sample lots during the current period are shown in Table XXI-A.

SUMMARY OF INSTITUTE DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1959

TABLE III

MILL A -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
183786	W.F.	11/ 3/59	10/23/59	1	44.2	42.4	43.6	14.5	13.5	13.9	133	88	110	360	264	311[a]	360	320	342[a]
183787	W.F.	11/ 3/59	10/26/59	1	46.0	43.8	44.8	13.5	13.0	13.1	132	82	111	344	280	311[a]	368	312	342[a]
183838	W.F.	11/ 6/59	10/29/59	1	45.0	43.6	44.3	13.3	12.9	13.1	127	88	109	352	248	305[a]	424	312	353[a]
183884	W.F.	11/10/59	11/ 2/59	1	45.0	42.4	44.2	13.7	12.9	13.1	128	83	108	344	256	307	368	320	349[a]
183928	W.F.	11/13/59	11/ 5/59	1	45.6	42.2	44.3	13.7	13.0	13.1	126	85	107	312	256	286[a]	352	312	331[a]
184000	W.F.	11/23/59	11/10/59	1	44.4	42.2	43.6	14.2	13.2	13.7	128	88	106	352	248	287[a]	384	296	339[a]
Current Mill Average:							44.1			13.4			109			301			343
Cumulative Mill Average:							43.7			12.9			109			306			357
Mill Factor, %							100.9			103.9			100.0			98.4			96.1
Mill Index, %							101.6			105.5			99.1			91.2			92.0

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

SUMMARY OF INSTITUTE DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1959 (continued)

TABLE IV

MILL B -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
183818	W.F.	11/ 5/59	10/28/59	-	42.4	41.6	42.0	13.5	13.0	13.1	118	83	94	384	280	331[a]	392	304	349[a]
183819	W.F.	11/ 5/59	10/29/59	-	44.0	42.0	42.7	13.1	12.5	12.9	126	79	104	376	296	343[a]	392	344	364[a]
183820	W.F.	11/ 5/59	10/30/59	-	44.0	42.0	43.2	12.8	11.9	12.3	119	91	106	360	288	325[a]	384	304	339[a]
183853	W.F.	11/ 9/59	11/ 4/59	-	43.2	41.8	42.2	12.3	12.0	12.1	144	87	110	384	320	338[a]	424	360	391[a]
183854	W.F.	11/ 9/59	11/ 5/59	-	43.8	42.2	43.1	13.1	12.2	12.8	130	85	108	384	304	333[a]	408	336	373[a]
183855	W.F.	11/ 9/59	11/ 6/59	-	42.2	41.8	42.0	12.2	11.8	12.0	125	96	110	368	288	335[a]	368	296	329[a]
183949	W.F.	11/16/59	11/11/59	-	44.2	43.8	44.0	12.8	11.6	12.2	139	103	116	360	296	328[a]	384	320	359[a]
183950	W.F.	11/16/59	11/12/59	-	44.0	42.0	42.7	12.7	12.0	12.2	119	85	103	376	280	324[a]	408	336	364[a]
183951	W.F.	11/16/59	11/13/59	-	43.0	42.0	42.5	12.4	11.9	12.2	123	87	107	368	288	321[a]	384	328	354[a]
Current Mill Average:							42.7			12.4			106			331			358
Cumulative Mill Average:							43.7			12.5			112			325			363
Mill Factor, %							97.7			99.2			94.6			101.8			98.6
Mill Index, %							98.4			97.6			96.4			100.3			96.0

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

SUMMARY OF INSTITUTE DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1959 (continued)

TABLE V

MILL C -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
183719	WF1S	11/ 2/59	10/20/59	1	44.4	42.6	43.4	13.1	12.0	12.8	120	85	106	400	240	315	464	328	384[a]
183803	WF1S	11/ 4/59	10/23/59	1	44.0	42.0	43.4	12.5	11.9	12.1	125	84	111	368	280	320[a]	416	352	385[a]
183804	WF1S	11/ 4/59	10/25/59	1	44.0	42.2	43.3	12.9	12.0	12.2	127	84	109	368	264	318[a]	480	360	400[a]
183805	WF1S	11/ 4/59	10/27/59	1	44.2	42.2	43.7	13.1	12.1	12.5	130	97	111	384	288	328[a]	448	344	399[a]
183859	WF1S	11/ 9/59	10/31/59	1	44.2	42.4	43.7	14.2	12.4	13.0	130	92	109	368	248	315[a]	432	336	385[a]
183947	WF1S	11/16/59	11/ 4/59	1	44.0	42.6	43.6	13.4	12.2	12.9	128	82	102	344	272	309[a]	432	344	376[a]
183948	WF1S	11/16/59	11/ 9/59	1	44.4	42.6	43.8	13.2	12.2	12.8	116	89	104	328	248	294	440	312	370[a]
184020	WF1S	11/23/59	11/17/59	1	44.2	43.2	43.8	13.2	12.1	12.8	120	87	104	392	272	317[a]	408	360	382[a]
Current Mill Average:							43.6			12.7			107			315			385
Cumulative Mill Average:							43.3			12.6			108			313			380
Mill Factor, %							100.7			100.8			99.1			100.6			101.3
Mill Index, %							100.5			100.0			97.3			95.5			103.2

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

SUMMARY OF INSTITUTE DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1959 (continued)

TABLE VI

MILL D -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
183712	WF1S	11/ 2/59	10/22/59	2	44.0	42.0	42.9	13.8	12.9	13.1	127	84	109	392	288	345[a]	448	344	393[a]
183734	WF1S	11/ 2/59	10/26/59	2	44.0	42.0	43.0	13.9	13.0	13.4	127	83	111	360	296	336[a]	432	304	370[a]
183821	WF1S	11/ 5/59	10/29/59	1	43.4	42.0	42.4	13.0	12.2	12.7	124	92	112	344	280	315[a]	384	328	363[a]
183887	WF1S	11/10/59	11/ 4/59	2	42.4	41.0	41.8	13.7	12.8	13.0	127	79	104	400	312	349	448	352	395[a]
183935	WF1S	11/16/59	11/ 5/59	2	45.0	42.0	43.4	13.9	12.7	13.3	127	87	109	392	336	359[a]	432	392	408[a]
183936	WF1S	11/16/59	11/ 6/59	2	44.0	42.0	42.8	13.9	12.6	13.3	118	83	103	424	328	369[a]	512	352	409[a]
183937	WF1S	11/16/59	11/ 9/59	2	45.4	43.6	44.2	13.9	12.8	13.4	136	76	108	400	296	348	440	384	417[a]
183999	WF1S	11/23/59	11/16/59	2	42.4	40.8	41.9	13.7	12.3	12.9	121	88	102	408	288	343	432	352	394[a]
Current Mill Average:							42.8			13.1			107			346			394
Cumulative Mill Average:							42.6			12.8			109			346			396
Mill Factor, %							100.5			102.3			98.2			100.0			99.5
Mill Index, %							98.6			103.1			97.3			104.8			105.6

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

SUMMARY OF INSTITUTE DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1959 (continued)

TABLE VII

MILL E -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
183730	W.F.	11/ 2/59	10/13/59	-	45.8	43.4	44.9	12.9	12.0	12.3	127	86	110	392	336	365[a]	392	328	372[a]
183731	W.F.	11/ 2/59	10/13/59	-	44.4	43.6	44.1	13.1	12.0	12.7	122	95	107	384	328	355[a]	400	352	371[a]
Current Mill Average:							44.5			12.5			109			360			372
Cumulative Mill Average:							43.6			12.4			111			349			368
Mill Factor, %							102.1			100.8			98.2			103.2			101.1
Mill Index, %							102.5			98.4			99.1			109.1			99.7

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

SUMMARY OF INSTITUTE DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1959 (continued)

TABLE VIII

MILL F -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
183782	W.F.	11/ 3/59	10/13/59	2	44.2	43.0	43.7	12.7	12.1	12.2	125	81	103	344	280	315[a]	416	328	359[a]
183783	W.F.	11/ 3/59	10/14/59	2	44.0	42.8	43.6	12.6	12.1	12.3	127	81	103	368	296	329[a]	392	320	362[a]
183784	W.F.	11/ 3/59	10/18/59	2	43.8	42.4	43.1	12.5	11.7	12.1	120	72	99	368	320	339[a]	392	328	360[a]
183785	W.F.	11/ 3/59	10/19/59	2	44.4	43.4	44.0	12.5	12.0	12.2	134	92	113	368	280	337[a]	392	344	368[a]
183933	W.F.	11/16/59	10/25/59	2	44.4	43.8	44.0	12.5	12.0	12.2	130	85	115	352	280	315[a]	408	336	364[a]
183934	W.F.	11/16/59	10/27/59	2	44.4	43.4	44.0	12.5	11.8	12.2	128	93	113	352	304	333[a]	408	344	378[a]
184002	W.F.	11/23/59	11/ 6/59	2	44.2	43.2	43.8	12.8	11.8	12.3	122	90	106	384	304	336[a]	432	352	385[a]
184003	W.F.	11/23/59	11/ 7/59	2	44.2	43.4	43.8	13.0	12.0	12.4	129	76	104	368	296	333[a]	432	360	382[a]
Current Mill Average:							43.7			12.2			107			330			370
Cumulative Mill Average:							43.5			12.5			113			334			375
Mill Factor, %							100.5			97.6			94.7			98.8			98.7
Mill Index, %							100.7			96.1			97.3			100.0			99.2

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

SUMMARY OF INSTITUTE DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1959 (continued)

TABLE IX

MILL G -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
183713	W.B.	11/ 2/59	10/ 7/59	-	44.2	42.2	43.5	12.2	11.9	12.0	137	90	110	400	344	368[a]	432	376	407[a]
183714	W.B.	11/ 2/59	10/ 9/59	-	44.0	42.2	43.4	12.0	11.0	11.6	139	92	114	360	312	337	440	360	401[a]
183715	W.B.	11/ 2/59	10/12/59	-	44.0	42.0	43.1	12.4	11.3	11.7	132	88	113	368	320	344	432	368	403[a]
183801	W.B.	11/ 4/59	10/18/59	-	44.8	43.8	44.1	12.2	11.1	11.9	132	89	112	408	328	367	456	392	422[a]
183802	W.B.	11/ 4/59	10/19/59	-	44.4	42.4	43.5	12.0	10.9	11.5	124	87	106	400	304	353[a]	440	360	400[a]
183858	W.B.	11/ 9/59	10/22/59	-	43.8	42.0	42.5	12.1	11.0	11.6	133	97	115	432	288	359[a]	480	368	429[a]
183885	W.B.	11/10/59	10/28/59	-	44.0	41.8	43.1	11.9	10.9	11.3	118	86	105	392	312	340	448	352	403[a]
183886	W.B.	11/10/59	10/30/59	-	43.8	41.8	42.4	11.9	10.3	11.1	134	99	111	408	312	344	424	352	391[a]
184001	W.B.	11/23/59	11/ 3/59	-	44.2	42.0	43.7	12.5	11.0	11.7	130	93	108	384	328	356[a]	432	368	401[a]
184032	W.B.	11/27/59	11/ 4/59	-	44.2	42.4	43.9	12.1	11.1	11.6	132	85	113	400	320	360[a]	480	376	410[a]
184033	W.B.	11/27/59	11/ 6/59	-	44.0	42.2	43.0	11.8	10.8	11.2	122	85	110	384	312	344[a]	448	384	414[a]
184034	W.B.	11/27/59	11/ 9/59	-	44.0	42.2	43.5	12.2	11.0	11.6	134	83	109	368	288	342[a]	440	368	407[a]
Current Mill Average:							43.3			11.6			111			351			407
Cumulative Mill Average:							43.6			12.0			112			353			404
Mill Factor, %							99.3			96.7			99.1			99.4			100.7
Mill Index, %							99.8			91.3			100.9			106.4			109.1

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

SUMMARY OF INSTITUTE DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1959 (continued)

TABLE X

MILL H -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
183722	W.F.	11/ 2/59	10/22/59	1	43.8	42.0	42.6	12.1	11.3	11.7	132	92	115	352	296	323[a]	392	320	363[a]
183723	W.F.	11/ 2/59	10/21/59	2	44.0	42.2	43.5	12.5	11.2	11.9	135	101	117	376	264	319	416	344	370[a]
183724	W.F.	11/ 2/59	10/22/59	1	44.0	42.2	43.2	13.9	12.0	12.7	125	81	109	384	304	345[a]	400	352	373[a]
183725	W.F.	11/ 2/59	10/22/59	1	44.0	42.4	43.4	13.1	12.1	12.7	133	95	114	368	312	339[a]	400	360	375[a]
183915	W.F.	11/11/59	10/27/59	1	44.0	43.0	43.6	12.2	11.2	11.9	130	106	118	368	280	323[a]	424	328	367[a]
183916	W.F.	11/11/59	10/27/59	2	45.2	44.0	44.2	12.2	11.2	11.8	145	90	118	360	296	332[a]	384	328	355[a]
183917	W.F.	11/11/59	11/ 3/59	2	44.2	43.8	44.0	12.5	11.3	12.0	127	98	114	352	304	330[a]	408	336	372[a]
183918	W.F.	11/11/59	11/ 3/59	2	44.0	42.2	43.6	13.1	12.0	12.4	121	95	109	328	248	296[a]	376	288	341[a]
Current Mill Average:							43.5			12.1			114			326			364
Cumulative Mill Average:							43.2			12.0			114			322			369
Mill Factor, %							100.7			100.8			100.0			101.2			98.6
Mill Index, %							100.2			95.3			103.6			98.8			97.6

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

SUMMARY OF INSTITUTE DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1959 (continued)

TABLE XI

MILL I -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
183718	WF1S	11/ 2/59	10/18/59	2	44.6	43.4	44.1	14.9	13.1	13.8	122	85	99	352	288	327[a]	400	336	367[a]
183796	WF1S	11/ 4/59	10/18/59	2	44.2	42.6	43.7	14.7	13.7	14.1	122	84	101	408	312	348[a]	448	368	407[a]
183857	WF1S	11/ 9/59	10/28/59	2	45.2	42.2	44.0	14.9	13.9	14.3	134	78	105	368	304	331[a]	408	336	377[a]
183929	WF1S	11/13/59	11/ 1/59	2	44.4	43.0	43.9	14.9	13.1	13.9	117	85	103	400	296	367[a]	424	352	383[a]
184028	WF1S	11/27/59	11/10/59	2	46.2	43.8	44.3	15.2	13.5	14.2	118	80	102	392	288	350[a]	480	352	397[a]
184029	WF1S	11/27/59	11/11/59	2	44.2	42.0	43.5	14.0	13.0	13.4	124	88	104	360	288	325[a]	392	312	363[a]
Current Mill Average:							43.9			14.0			102			341			383
Cumulative Mill Average:							43.9			13.8			108			338			382
Mill Factor, %							100.0			101.4			94.4			100.9			100.3
Mill Index, %							101.2			110.2			92.7			103.3			102.7

TABLE XII

MILL J -- 42-LB. LINERBOARD

No samples submitted.

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

SUMMARY OF INSTITUTE DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1959 (continued)

TABLE XIII

MILL K -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
183732	W.	11/ 2/59	10/26/59	4	44.0	42.0	43.1	11.9	11.0	11.5	123	80	102	400	328	359[a]	400	344	363[a]
183733	W.	11/ 2/59	10/28/59	4	44.2	42.0	43.1	12.1	11.3	11.9	117	88	103	368	320	343[a]	384	320	352[a]
183953	W.	11/17/59	10/28/59	4	44.0	42.0	43.0	12.3	11.4	11.8	121	78	105	416	344	371[a]	432	328	378[a]
183954	W.	11/17/59	11/ 6/59	2	44.6	42.0	43.4	14.2	13.2	13.7	122	78	100	368	288	330[a]	400	360	383[a]
184030	W.	11/27/59	11/ 8/59	2	44.2	43.8	44.0	14.0	13.0	13.6	121	84	105	400	280	340[a]	424	360	392[a]
184031	W.	11/27/59	11/19/59	4	44.4	40.4	42.7	12.2	11.0	11.4	127	82	104	432	328	377[a]	424	328	361[a]
Current Mill Average:							43.2			12.3			103			353			372
Cumulative Mill Average:							43.1			13.0			106			365			385
Mill Factor, %							100.2			94.6			97.2			96.7			96.6
Mill Index, %							99.5			96.9			93.6			107.0			99.7

TABLE XIV

MILL L -- 42-LB. LINERBOARD

No samples submitted.

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

SUMMARY OF INSTITUTE DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1959 (continued)

TABLE XV

MILL M -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
183726	W.F.	11/ 2/59	9/ 9/59	1	44.0	42.0	43.2	12.7	12.0	12.4	135	98	113	336	240	285	400	320	349[a]
183727	W.F.	11/ 2/59	9/12/59	1	44.0	42.2	43.0	13.5	12.5	13.0	128	92	106	344	240	283[a]	400	312	352[a]
183728	W.F.	11/ 2/59	9/15/59	1	43.6	41.8	42.2	12.8	11.5	12.0	126	92	107	280	224	253	328	288	313[a]
183729	W.F.	11/ 2/59	9/18/59	1	43.8	42.0	43.1	13.0	12.0	12.6	130	81	107	304	224	267[a]	368	296	337[a]
183945	W.F.	11/16/59	10/ 5/59	1	44.0	42.0	43.6	13.7	13.0	13.1	124	87	106	288	216	258	384	328	346[a]
183946	W.F.	11/16/59	10/ 8/59	1	43.0	42.0	42.4	13.0	12.4	12.7	121	91	107	280	232	257[a]	328	280	313[a]
184004	W.F.	11/23/59	10/13/59	1	43.8	42.2	43.4	13.0	12.1	12.6	130	90	110	296	232	261	344	304	321[a]
184005	W.F.	11/23/59	10/16/59	1	43.4	41.8	42.1	12.5	11.4	12.0	121	89	106	312	224	258[a]	336	296	317[a]
184006	W.F.	11/23/59	10/19/59	1	43.2	41.8	42.3	12.9	12.0	12.6	130	86	106	312	224	261	368	288	332[a]
184007	W.F.	11/23/59	10/22/59	1	44.2	43.2	43.6	13.1	12.1	12.7	130	96	113	304	240	276[a]	368	312	329[a]
Current Mill Average:							42.9			12.6			108			266			331
Cumulative Mill Average:							43.0			13.0			113			280			343
Mill Factor, %							99.8			96.9			95.6			95.0			96.5
Mill Index, %							98.8			99.2			98.2			80.6			88.7

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

SUMMARY OF INSTITUTE DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1959 (continued)

TABLE XVI

MILL N -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
183938	W.F.	11/16/59	11/ 2/59	-	44.8	42.8	43.9	13.2	11.5	12.5	133	88	111	424	336	371[a]	424	368	401[a]
183939	W.F.	11/16/59	11/ 6/59	-	45.2	43.4	44.6	13.7	12.7	13.1	119	86	105	416	328	380[a]	432	360	397[a]
183940	W.F.	11/16/59	11/ 6/59	-	46.0	44.0	44.5	13.1	12.1	12.7	126	74	105	448	336	389[a]	464	360	415[a]
183941	W.F.	11/16/59	11/ 6/59	-	44.2	40.8	43.0	12.9	12.0	12.5	122	85	105	424	328	375[a]	464	352	403[a]
184011	W.F.	11/23/59	11/12/59	-	44.0	42.0	43.3	13.1	11.2	12.5	130	83	107	376	320	348[a]	456	344	399[a]
184012	W.F.	11/23/59	11/12/59	-	44.2	42.4	43.8	13.0	11.1	12.1	131	74	104	424	304	359[a]	464	352	401[a]
184013	W.F.	11/23/59	11/12/59	-	44.8	43.2	44.0	13.2	12.0	12.5	130	87	105	408	304	366[a]	472	376	411[a]
184014	W.F.	11/23/59	11/12/59	-	44.2	42.4	43.6	12.9	11.9	12.5	128	76	106	408	336	371[a]	432	344	389[a]
184015	W.F.	11/23/59	11/13/59	-	44.4	42.6	43.6	13.0	12.1	12.6	126	81	108	392	304	351[a]	440	344	389[a]
184016	W.F.	11/23/59	11/14/59	-	44.8	42.6	43.7	13.1	12.0	12.5	140	85	108	424	320	364[a]	456	352	398[a]
184017	W.F.	11/23/59	11/14/59	-	44.4	42.0	43.7	13.1	12.0	12.6	147	90	106	440	336	373[a]	416	344	385[a]
184018	W.F.	11/23/59	11/14/59	-	44.8	43.0	43.8	13.0	11.8	12.5	135	84	108	384	336	361[a]	432	376	399[a]
Current Mill Average:							43.8			12.5			107			367			399
Cumulative Mill Average:							43.7			12.5			109			356			394
Mill Factor, %							100.2			100.0			98.2			103.1			101.3
Mill Index, %							100.9			98.4			97.3			111.2			107.0

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

SUMMARY OF INSTITUTE DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1959 (continued)

TABLE XVII

MILL O -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
183709	----	11/ 2/59	10/ 2/59	1	44.4	40.2	42.4	13.2	11.5	12.3	142	101	118	368	264	313[a]	408	320	379[a]
183710	----	11/ 2/59	10/ 3/59	1	44.0	42.0	42.8	12.7	11.3	12.2	138	103	120	376	320	345[a]	440	320	382[a]
183711	----	11/ 2/59	10/ 6/59	1	44.0	40.6	42.6	13.0	12.0	12.5	145	87	113	400	288	329[a]	432	352	395[a]
183798	----	11/ 4/59	10/15/59	1	44.2	41.8	43.0	13.2	11.9	12.3	145	96	117	376	288	327[a]	440	320	377[a]
183927	----	11/13/59	10/15/59	1	43.2	40.8	42.0	13.9	12.0	12.8	125	84	108	344	264	304[a]	384	328	355[a]
183919	----	11/11/59	10/23/59	1	44.0	41.8	42.6	13.3	12.5	13.0	143	86	112	360	272	313[a]	384	344	366[a]
183920	----	11/11/59	10/23/59	1	45.2	42.8	44.2	14.0	13.0	13.4	145	83	112	368	312	339	440	360	401[a]
183921	----	11/11/59	10/23/59	1	44.2	42.0	43.4	13.8	12.2	13.0	152	80	109	400	280	339	448	344	391[a]
184008	----	11/23/59	11/ 2/59	1	44.0	40.0	42.3	13.4	12.2	12.9	135	90	106	328	280	307[a]	400	336	370[a]
184009	----	11/23/59	11/ 3/59	1	43.8	41.8	42.7	13.1	11.9	12.5	125	85	108	328	240	287[a]	392	312	353[a]
184010	----	11/23/59	11/ 4/59	1	45.0	42.2	43.9	13.1	12.1	12.5	132	80	106	432	280	337[a]	472	368	395[a]
Current Mill Average:							42.9			12.7			112			322			378
Cumulative Mill Average:							43.1			12.7			109			316			372
Mill Factor, %							99.5			100.0			102.8			101.9			101.6
Mill Index, %							98.8			100.0			101.8			97.6			101.3

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

SUMMARY OF INSTITUTE DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1959 (continued)

TABLE XVIII

MILL P -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
183788	WF1S	11/ 4/59	10/ 1/59	2	44.8	43.4	44.0	15.1	14.0	14.3	127	86	106	368	280	325[a]	448	328	371[a]
183789	WF1S	11/ 4/59	10/ 7/59	2	44.0	42.0	43.0	14.4	13.2	13.9	115	93	104	368	280	316[a]	416	312	351[a]
183790	WF1S	11/ 4/59	10/ 8/59	2	44.0	41.2	42.6	14.2	13.2	13.9	121	81	103	344	280	318[a]	384	320	355[a]
183791	WF1S	11/ 4/59	10/ 9/59	2	45.2	43.2	44.2	15.1	14.1	14.6	127	80	104	376	272	330[a]	400	336	369[a]
183792	WF1S	11/ 4/59	10/10/59	2	44.2	41.8	43.4	14.3	12.9	13.7	115	76	99	384	320	353[a]	432	328	366[a]
183793	WF1S	11/ 4/59	10/11/59	2	45.2	42.0	43.4	14.2	13.4	14.0	121	83	101	400	312	359[a]	400	312	355[a]
183794	WF1S	11/ 4/59	10/13/59	2	43.6	41.8	42.8	14.2	13.5	14.0	119	93	106	352	264	320[a]	416	312	359[a]
183795	WF1S	11/ 4/59	10/18/59	2	43.8	41.6	42.6	14.8	13.2	14.0	128	86	106	384	280	316[a]	368	304	340[a]
Current Mill Average:							43.2			14.1			104			330			358
Cumulative Mill Average:							43.0			13.6			110			322			354
Mill Factor, %							100.5			103.7			94.5			102.5			101.1
Mill Index, %							99.5			111.0			94.5			100.0			96.0

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

SUMMARY OF INSTITUTE DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1959 (continued)

TABLE XIX

MILL Q -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet In			Elmendorf Tear, g./sheet Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
183720	WF1S	11/ 2/59	10/ 6/59	1	44.0	42.2	43.6	13.4	12.0	12.9	133	101	115	432	288	347[a]	416	352	381[a]
183721	WF1S	11/ 2/59	10/23/59	1	44.2	42.4	43.8	14.2	13.0	13.4	133	95	108	424	320	364[a]	400	352	378[a]
183800	WF1S	11/ 4/59	10/27/59	1	44.2	42.4	43.5	14.0	13.0	13.3	124	99	113	424	304	345[a]	488	352	405[a]
183856	WF1S	11/ 9/59	11/ 2/59	1	44.0	42.8	43.6	14.1	12.8	13.4	122	91	106	400	296	343	400	328	368[a]
183930	WF1S	11/13/59	11/ 1/59	1	43.0	42.0	42.4	13.1	12.2	12.8	122	87	108	360	296	325[a]	408	352	375[a]
183942	WF1S	11/16/59	11/ 7/59	1	43.0	42.0	42.5	13.4	12.3	12.9	129	94	111	360	272	327[a]	400	344	369[a]
183971	WF1S	11/19/59	11/ 8/59	1	43.8	42.2	42.9	13.9	13.0	13.3	126	90	106	368	280	337	432	336	389[a]
184019	WF1S	11/23/59	11/ 9/59	1	44.0	42.4	43.3	14.1	13.0	13.4	123	91	106	352	320	336[a]	416	328	365[a]
Current Mill Average:							43.2			13.2			109			340			379
Cumulative Mill Average:							43.0			13.1			110			330			371
Mill Factor, %							100.5			100.8			99.1			103.0			102.2
Mill Index, %							99.5			103.9			99.1			103.0			101.6

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

SUMMARY OF INSTITUTE DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1959 (continued)

TABLE XX

MILL S -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
183716	W.F.	11/ 2/59	10/21/59	2	45.0	42.4	43.8	12.7	11.5	12.1	121	86	106	384	296	333[a]	400	344	367[a]
183717	W.F.	11/ 2/59	10/21/59	2	45.0	43.0	43.9	12.0	11.3	11.7	134	97	116	360	280	327[a]	376	328	353[a]
183797	W.F.	11/ 4/59	10/25/59	2	44.4	43.6	44.1	12.5	11.8	12.1	140	100	121	360	280	329[a]	400	336	381[a]
183799	W.F.	11/ 4/59	10/28/59	2	44.2	42.0	43.5	12.2	11.7	12.0	131	94	114	384	272	321[a]	400	320	357[a]
183943	W.F.	11/16/59	11/ 2/59	2	45.0	43.8	44.3	13.4	12.4	12.8	137	100	115	368	304	335[a]	408	360	380[a]
183944	W.F.	11/16/59	11/ 2/59	2	44.0	42.2	43.5	12.6	12.0	12.2	133	100	115	352	296	330[a]	376	328	355[a]
183995	W.F.	11/23/59	11/10/59	1	44.0	43.0	43.6	13.0	12.2	12.6	131	93	114	368	288	327[a]	392	336	360[a]
183996	W.F.	11/23/59	11/11/59	2	44.6	43.2	44.0	12.5	11.8	12.2	137	101	121	360	304	334[a]	432	352	380[a]
183997	W.F.	11/23/59	11/15/59	2	44.2	43.4	43.8	12.7	12.0	12.2	138	83	116	344	304	327[a]	416	352	388[a]
183998	W.F.	11/23/59	11/15/59	2	44.8	43.4	44.0	12.7	11.9	12.3	138	96	114	368	296	337[a]	400	352	369[a]
Current Mill Average:							43.8			12.2			115			330			369
Cumulative Mill Average:							43.9			12.1			115			337			375
Mill Factor, %							99.8			100.8			100.0			97.9			98.4
Mill Index, %							100.9			96.1			104.5			100.0			98.9

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

SUMMARY OF INSTITUTE DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1959 (continued)

TABLE XXI

MILL T -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
183839	W.F.	11/ 6/59	10/ 9/59	1	44.0	42.0	43.0	13.7	12.9	13.1	118	80	100	360	280	321[a]	400	328	361[a]
183840	W.F.	11/ 6/59	10/11/59	1	44.2	42.2	43.4	13.5	12.0	13.0	126	87	106	376	288	329[a]	392	336	358[a]
183841	W.F.	11/ 6/59	10/11/59	1	44.2	43.6	43.9	14.0	13.0	13.4	115	84	101	344	296	325[a]	384	320	351[a]
183842	W.F.	11/ 6/59	10/12/59	1	44.6	43.6	44.1	14.1	13.1	13.8	121	86	103	392	288	343[a]	416	320	369[a]
183843	W.F.	11/ 6/59	10/14/59	1	45.0	43.0	44.1	14.1	13.3	13.8	122	84	103	376	280	327[a]	472	328	369[a]
183844	W.F.	11/ 6/59	10/15/59	1	44.0	42.0	43.0	13.8	12.5	13.2	118	84	99	408	296	338[a]	416	328	359[a]
183845	W.F.	11/ 6/59	10/14/59	1	44.2	42.0	43.3	13.9	13.0	13.3	122	79	106	368	296	321[a]	392	304	352[a]
183846	W.F.	11/ 6/59	10/15/59	1	44.0	42.4	43.6	13.9	13.0	13.3	118	70	99	448	312	367[a]	416	336	383[a]
Current Mill Average:							43.6			13.4			102			334			363
Cumulative Mill Average:							43.9			13.1			108			319			361
Mill Factor, %							99.3			102.3			94.4			104.7			100.6
Mill Index, %							100.5			105.5			92.7			101.2			97.3

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

TABLE XXI-A

SUMMARY OF SHEET FINISH DATA

Mill Code	Number of Sample Lots		
	Water Finish	Water Finish One Side	Other
A	6		
B	9		
C		8	
D		8	
E	2		
F	8		
G	12		
H	8		
I		6	
J	No samples submitted.		
K	6		
L	No samples submitted.		
M	10		
N	12		
O			11[a]
P		8	
Q		8	
S	10		
T	8		
Totals	91	38	11

[a] Unidentified.

PART II: COMPARISON OF RESULTS OBTAINED AT THE INSTITUTE OF PAPER CHEMISTRY WITH THOSE OBTAINED AT THE MILLS

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. Mill test conditions are shown in Table XXII, where it may be noted that the atmospheric conditions used prior to and during the testing period were relatively uniform for the mills which reported this information. However, the preconditioning and conditioning time periods varied considerably.

A summary of the Institute and mill test results for the current period is shown in Table XXIII, and a comparison of differences between Institute and mill test results is given in Table XXIV for the current period and the two previous periods.

A comparison of the test data in Tables XXIII and XXIV reveals the level of agreement between mill and Institute data for basis weight, caliper, bursting strength, and Elmendorf tear. Table XXIII shows the over-all average difference between Institute and mill results for each of these tests based on the data for all sample lots submitted by each mill for the current period. In addition, the maximum difference encountered in comparing the Institute and mill test results for a given sample lot is shown. In Table XXIV, the over-all average differences shown for each test in Table XXIII have been calculated on a percentage basis for each mill. In addition, for purposes of comparison, the average percentage differences for the preceding two periods are shown.

TABLE XXII

PRECONDITIONING AND CONDITIONING DATA FOR MILL TESTS

Mill Code	Preconditioning			Conditioning		
	R.H., %	Temperature, °F.	Time, hr.	R.H., %	Temperature, °F.	Time, hr.
A	44-63	64-80	0.5	50	73	24-48
B	35-36	77-78	8	48-52	72-73	16
C		None		52-55	68-73	--
D		None		50	73	24
E		None		50	73	0.5
F		None		50	73	24
G		None		46-55	70-72	48
H	50	73	24	50	73	24
I	50	72	120	50	72	120
J	No samples submitted.					
K		None		53	73	--
L	No samples submitted.					
M		None		47-75	77-82	--
N	50-53	72-74	48+	50	73	48+
O	49-50	72	48-72	49-50	72	4-6
P	50	72	24		None	
Q		None		35-71	69-83	--
S		None		50	73	24
T	50	73	24	50	73	24

TABLE XXIII

SUMMARY OF TEST RESULT COMPARISONS (AVERAGE MILL AND INSTITUTE RESULTS)

Mills*	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	S	T
No. of Samples Compared	6	9	8	8	2	8	12	8	6	0	6	0	10	12	11	8	8	10	8
Basis Weight																			
Institute	44.1	42.7	43.6	42.8	44.5	43.7	43.3	43.5	43.9		43.2		42.9	43.8	42.9	43.2	43.2	43.8	43.6
Mill	43.2	42.6	42.9	41.8	43.7	43.3	42.7	43.4	43.2		42.9		42.1	42.9	42.7	43.5	42.6	43.3	43.1
Av. Diff.**	-0.9	-0.1	-0.7	-1.0	-0.8	-0.4	-0.6	-0.1	-0.7		-0.3		-0.8	-0.9	-0.2	+0.3	-0.6	-0.5	-0.5
Max. Diff.***	-1.4	-1.3	-1.1	-1.5	-0.9	-0.7	-1.0	-0.5	-1.0		-0.7		-1.7	-1.3	+1.2	+0.6	-1.2	-1.1	-0.9
Caliper																			
Institute	13.4	12.4	12.7	13.1	12.5	12.2	11.6	12.1	14.0		12.3		12.6	12.5	12.7	14.1	13.2	12.2	13.4
Mill	13.1	12.0	12.3	12.6	11.9	12.2	11.3	11.9	13.5		11.8		12.5	12.4	12.2	14.0	12.8	11.9	13.1
Av. Diff.**	-0.3	-0.4	-0.4	-0.5	-0.6	0.0	-0.3	-0.2	-0.5		-0.5		-0.1	-0.1	-0.5	-0.1	-0.4	-0.3	-0.3
Max. Diff.***	-0.6	-0.7	-0.5	-1.1	-0.8	-0.3	-0.6	-0.4	-1.0		-0.6		±0.2	-0.3	-0.8	+0.3	-0.9	-1.0	-0.5
Bursting Strength																			
Institute	109	106	107	107	109	107	111	114	102		103		108	107	112	104	109	115	102
Mill	109	111	109	106	109	109	113	112	102		109		108	108	108	101	109	117	107
Av. Diff.**	0	+5	+2	-1	0	+2	+2	-2	0		+6		0	+1	-4	-3	0	+2	+5
Max. Diff.***	±3	+10	+6	-5	+1	+5	+7	-6	±3		+9		-5	+9	-10	-6	-5	+10	+9
Tearing Strength, in																			
Institute	301	331	315	346	360	330	351	326	341		353		266	367	322	330	340	330	334
Mill	294	312	358	--	326	345	339	322	345		347		252	399	310	318	315	331	330
Av. Diff.**	-7	-19	+43	--	-34	+15	-12	-4	+4		-6		-14	+32	-12	-12	-25	+1	-4
Max. Diff.***	-24	-39	+115	--	- 38	+39	-29	-26	+32		-50		-33	+64	-40	-23	-81	+17	+24
Tearing Strength, across																			
Institute	343	358	385	394	372	370	407	364	383		372		331	399	378	358	379	369	363
Mill	351	341	426	--	350	394	416	383	426		350		333	376	396	380	374	389	376
Av. Diff.**	+8	-17	+41	--	-22	+24	+9	+19	+43		-22		+7	-23	+18	+22	-5	+20	+13
Max. Diff.***	+22	-56	+59	--	-26	+57	+21	+46	+70		-48		+31	-51	+43	+38	+61	+43	+23

* Comparison based on averages involved 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 averages for any sample submitted by that particular mill.

TABLE XXIV

COMPARISON OF INSTITUTE-MILL DIFFERENCES BY PERIODS
Average Difference, Per Cent

Mill	Period	Basis Weight	Caliper	Bursting Strength	Tear, in	Tear, across
A	Current	-2	-2	0	-2	+2
	150th	-2	-2	+2	-1	+4
	149th	-1	-3	+2	-2	+5
B	Current	-0.2	-3	+5	-6	-5
	150th	-1	-0.8	+3	-4	-2
	149th	-0.9	-2	+0.9	-2	-5
C	Current	-2	-3	+2	+14	+11
	150th	-2	-2	0	+12	+10
	149th	-2	-2	-4	+9	+6
D	Current	-2	-4	-0.9	--	--
	150th	-3	-6	+0.9	--	--
	149th	-3	-7	-7	--	--
E	Current	-2	-5	0	-9	-6
	150th	-2	-2	-0.9	-10	-6
	149th	-3	-4	-4	-14	-10
F	Current	-0.9	0	+2	+5	+6
	150th	-1	-3	+4	+2	+5
	149th	-0.2	0	+0.9	+5	+8
G	Current	-1	-3	+2	-3	+2
	150th	-1	-2	+3	-3	+3
	149th	-0.9	-2	+4	+2	+5
H	Current	-0.2	-2	-2	-1	+5
	150th	-0.9	-2	-4	-0.9	+3
	149th	-0.9	-0.8	-7	+6	+8
I	Current	-2	-4	0	+1	+11
	150th	-2	-3	-2	-4	+7
	149th	-1	-4	-0.9	+0.9	+13
J	Current	--	--	--	---	--
	150th	--	--	--	--	--
	149th	--	--	--	--	--
K	Current	-0.7	-4	+6	-2	-6
	150th	-0.5	-3	+3	0	-4
	149th	-0.7	-4	+3	-4	-2
L	Current	--	--	--	--	--
	150th	-0.9	-2	+4	+2	+6
	149th	-1	-3	+6	+2	+6
M	Current	-2	-0.8	0	-5	+2
	150th	-2	-0.8	-3	+3	+4
	149th	-0.9	-0.8	-3	+0.8	+4
N	Current	-2	-0.8	+0.9	+9	-6
	150th	-3	-0.8	+1	+7	-4
	149th	-2	0	0	+16	+0.8
O	Current	-0.5	-4	-4	-4	+5
	150th	-0.2	-4	-3	-4	+4
	149th	-1	-2	-2	-0.3	+5
P	Current	+0.7	-0.7	-3	-4	+6
	150th	+0.7	0	-3	+5	+9
	149th	+1	-2	-3	+6	+10
Q	Current	-1	-3	0	-7	-1
	150th	-2	-4	0	+13	+11
	149th	-0.9	-2	-5	+9	+13
S	Current	-1	-2	+2	+0.3	+5
	150th	-1	-0.8	+0.9	+8	+10
	149th	-1	-0.8	0	+9	+13
T	Current	-1	-2	+5	-1	+4
	150th	-1	-1	+3	0	+8
	149th	-0.9	-4	+0.9	+0.9	+6

It may be noted in Table XXIV that for the current period the largest average difference (per cent) between the average basis weight results of the Institute and those of a given mill on corresponding samples was two per cent. By comparison, the largest average difference (per cent) noted for the previous two periods was three per cent. Further, it may be noted that the average basis weight result for Mill P was higher than that for the Institute, and the average results for the other mills were lower. In general, agreement was good.

The maximum variation in caliper for the current period was five per cent. This was slightly lower than the maximum variation of seven per cent for the previous two periods. Compared with the Institute's results, the average test result for Mill F was the same and the average test results for the other mills were lower. The variation of five per cent noted for Mill E appeared to be excessive. Otherwise, agreement was good.

It may be noted in Table XXIV that the bursting strength results exhibited a maximum variation of six per cent for the current period. The maximum variation for the two preceding periods was seven per cent. The average results for Mills B, C, F, G, K, N, S, and T were higher than those for the Institute, the average results for Mills A, E, I, M, and Q were the same as those for the Institute, and the average results for the other mills were lower. Only the variation for Mill K appeared to be excessive.

It may be seen in Tables XXIII and XXIV that the average machine direction tear results for Mills C, F, I, N, and S were higher than those for the Institute, and the average results for the other mills were lower.

The maximum variation for the current period was fourteen per cent compared with a maximum variation of sixteen per cent for the two preceding periods. Agreement between the Institute and mill results was good. Only the variation associated with Mill C appeared to be excessive.

With regard to the cross-machine direction tear results, it may be noted that the average results for Mills B, E, K, N, and Q were lower than those for the Institute, and the average results for the other mills were higher. The maximum variation for the current period was eleven per cent, whereas the maximum variation for the two preceding periods was thirteen per cent. As in the case of the machine direction results, agreement between Institute and mill results was good. The only differences greater than ten per cent were associated with Mills C and I.

The comparisons of Institute and mill data for individual sample lots are given in Tables XXV to XLIII for the various mills. In all the comparisons given in Tables XXV to XLIII, the Institute's test values have been used as the reference line.

COMPARISON OF INSTITUTE AND MILL DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1959

TABLE XXV

MILL A -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
183786	W.F.	10/23/59	1	43.6	43.0	-0.6	13.9	13.5	-0.4	110	107	-3	311[a]	287	-24	342[a]	349	+ 7
183787	W.F.	10/26/59	1	44.8	43.4	-1.4	13.1	13.0	-0.1	111	109	-2	311[a]	303	- 8	342[a]	361	+19
183838	W.F.	10/29/59	1	44.3	43.8	-0.5	13.1	12.8	-0.3	109	111	+2	305[a]	288	-17	353[a]	350	- 3
183884	W.F.	11/ 2/59	1	44.2	43.2	-1.0	13.1	13.0	-0.1	108	110	+2	307	298	- 9	349[a]	349	0
183928	W.F.	11/ 5/59	1	44.3	43.1	-1.2	13.1	13.0	-0.1	107	110	+3	286[a]	293	+ 7	331[a]	353	+22
184000	W.F.	11/10/59	1	43.6	42.9	-0.7	13.7	13.1	-0.6	106	108	+2	287[a]	292	+ 5	339[a]	343	+ 4
Current Mill Average:				44.1	43.2	-0.9	13.4	13.1	-0.3	109	109	0	301	294	- 7	343	351	+ 8

[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.

COMPARISON OF INSTITUTE AND MILL DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1959 (continued)

TABLE XXVI

MILL B -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
183818	W.F.	10/28/59	-	42.0	42.4	+0.4	13.1	12.4	-0.7	94	104	+10	331[a]	316	-15	349[a]	328	-21
183819	W.F.	10/29/59	-	42.7	43.1	+0.4	12.9	12.3	-0.6	104	108	+ 4	343[a]	307	-36	364[a]	327	-37
183820	W.F.	10/30/59	-	43.2	42.9	-0.3	12.3	12.1	-0.2	106	108	+ 2	325[a]	296	-29	339[a]	340	+ 1
183853	W.F.	11/ 4/59	-	42.2	42.2	0.0	12.1	11.9	-0.2	110	112	+ 2	338[a]	313	-25	391[a]	335	-56
183854	W.F.	11/ 5/59	-	43.1	42.6	-0.5	12.8	12.1	-0.7	108	111	+ 3	333[a]	300	-33	373[a]	319	-54
183855	W.F.	11/ 6/59	-	42.0	42.6	+0.6	12.0	11.6	-0.4	110	117	+ 7	335[a]	296	-39	329[a]	320	- 9
183949	W.F.	11/11/59	-	44.0	42.7	-1.3	12.2	12.0	-0.2	116	121	+ 5	328[a]	307	-21	359[a]	371	+12
183950	W.F.	11/12/59	-	42.7	42.4	-0.3	12.2	12.0	-0.2	103	111	+ 8	324[a]	341	+17	364[a]	352	-12
183951	W.F.	11/13/59	-	42.5	42.9	+0.4	12.2	11.9	-0.3	107	109	+ 2	321[a]	333	+12	354[a]	377	+23
Current Mill Average:				42.7	42.6	-0.1	12.4	12.0	-0.4	106	111	+ 5	331	312	-19	358	341	-17

[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.

COMPARISON OF INSTITUTE AND MILL DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1959 (continued)

TABLE XXVII

MILL C -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet In			Elmendorf Tear, g./sheet Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
183719	WF1S	10/20/59	1	43.4	42.6	-0.8	12.8	12.4	-0.4	106	110	+4	315	371	+ 56	384[a]	443	+59
183803	WF1S	10/23/59	1	43.4	42.7	-0.7	12.1	11.8	-0.3	111	112	+1	320[a]	340	+ 20	385[a]	424	+39
183804	WF1S	10/25/59	1	43.3	42.8	-0.5	12.2	11.8	-0.4	109	109	0	318[a]	433	+115	400[a]	451	+51
183805	WF1S	10/27/59	1	43.7	43.3	-0.4	12.5	12.4	-0.1	111	112	+1	328[a]	361	+ 33	399[a]	406	+ 7
183859	WF1S	10/31/59	1	43.7	43.5	-0.2	13.0	12.5	-0.5	109	108	-1	315[a]	352	+ 37	385[a]	431	+46
183947	WF1S	11/ 4/59	1	43.6	42.7	-0.9	12.9	12.6	-0.3	102	108	+6	309[a]	347	+ 38	376[a]	423	+47
183948	WF1S	11/ 9/59	1	43.8	42.7	-1.1	12.8	12.6	-0.2	104	106	+2	294	329	+ 35	370[a]	419	+49
184020	WF1S	11/17/59	1	43.8	42.8	-1.0	12.8	12.7	-0.1	104	107	+3	317[a]	335	+ 18	382[a]	414	+32
Current Mill Average:				43.6	42.9	-0.7	12.7	12.3	-0.4	107	109	+2	315	358	+ 43	385	426	+41

[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.

COMPARISON OF INSTITUTE AND MILL DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1959 (continued)

TABLE XXVIII

MILL D -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
183712	WF1S	10/22/59	2	42.9	41.8	-1.1	13.1	12.1	-1.0	109	104	-5	345[a]			393[a]		
183734	WF1S	10/26/59	2	43.0	41.8	-1.2	13.4	12.3	-1.1	111	106	-5	336[a]			370[a]		
183821	WF1S	10/29/59	1	42.4	41.3	-1.1	12.7	11.9	-0.8	112	111	-1	315[a]			363[a]		
183887	WF1S	11/ 4/59	2	41.8	41.1	-0.7	13.0	12.8	-0.2	104	103	-1	349			395[a]		
183935	WF1S	11/ 5/59	2	43.4	42.5	-0.9	13.3	13.0	-0.3	109	105	-4	359[a]			408[a]		
183936	WF1S	11/ 6/59	2	42.8	41.7	-1.1	13.3	13.0	-0.3	103	107	+4	369[a]			409[a]		
183937	WF1S	11/ 9/59	2	44.2	42.7	-1.5	13.4	13.1	-0.3	108	106	-2	348			417[a]		
183999	WF1S	11/16/59	2	41.9	41.2	-0.7	12.9	12.7	-0.2	102	106	+4	343			394[a]		
Current Mill Average:				42.8	41.8	-1.0	13.1	12.6	-0.5	107	106	-1	346			394		

TABLE XXIX

MILL E -- 42-LB. LINERBOARD

183730	W.F.	10/13/59	-	44.9	44.0	-0.9	12.3	11.5	-0.8	110	110	0	365[a]	334	-31	372[a]	355	-17
183731	W.F.	10/13/59	-	44.1	43.4	-0.7	12.7	12.3	-0.4	107	108	+1	355[a]	317	-38	371[a]	345	-26
Current Mill Average:				44.5	43.7	-0.8	12.5	11.9	-0.6	109	109	0	360	326	-34	372	350	-22

[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.

COMPARISON OF INSTITUTE AND MILL DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1959 (continued)

TABLE XXX

MILL F -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
183782	W.F.	10/13/59	2	43.7	43.4	-0.3	12.2	12.2	0.0	103	105	+2	315[a]	354	+39	359[a]	416	+57
183783	W.F.	10/14/59	2	43.6	43.4	-0.2	12.3	12.4	+0.1	103	103	0	329[a]	336	+ 7	362[a]	381	+19
183784	W.F.	10/18/59	2	43.1	42.7	-0.4	12.1	12.2	+0.1	99	103	+4	339[a]	336	- 3	360[a]	388	+28
183785	W.F.	10/19/59	2	44.0	43.6	-0.4	12.2	12.1	-0.1	113	112	-1	337[a]	343	+ 6	368[a]	392	+24
183933	W.F.	10/25/59	2	44.0	43.4	-0.6	12.2	12.3	+0.1	115	116	+1	315[a]	345	+30	364[a]	379	+15
183934	W.F.	10/27/59	2	44.0	43.5	-0.5	12.2	12.1	-0.1	113	114	+1	333[a]	341	+ 8	378[a]	405	+27
184002	W.F.	11/ 6/59	2	43.8	43.5	-0.3	12.3	12.0	-0.3	106	111	+5	336[a]	350	+14	385[a]	399	+14
184003	W.F.	11/ 7/59	2	43.8	43.1	-0.7	12.4	12.1	-0.3	104	107	+3	333[a]	355	+22	382[a]	392	+10
Current Mill Average:				43.7	43.3	-0.4	12.2	12.2	0.0	107	109	+2	330	345	+15	370	394	+24

[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.

COMPARISON OF INSTITUTE AND MILL DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1959 (continued)

TABLE XXXI

MILL G -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
183713	W.B.	10/ 7/59	-	43.5	43.0	-0.5	12.0	11.6	-0.4	110	114	+4	368[a]	339	-29	407[a]	423	+16
183714	W.B.	10/ 9/59	-	43.4	42.5	-0.9	11.6	11.4	-0.2	114	119	+5	337	331	- 6	401[a]	416	+15
183715	W.B.	10/12/59	-	43.1	42.6	-0.5	11.7	11.4	-0.3	113	115	+2	344	340	- 4	403[a]	401	- 2
183801	W.B.	10/18/59	-	44.1	43.8	-0.3	11.9	11.6	-0.3	112	118	+6	367	357	-10	422[a]	436	+14
183802	W.B.	10/19/59	-	43.5	42.8	-0.7	11.5	11.3	-0.2	106	109	+3	353[a]	351	- 2	400[a]	404	+ 4
183858	W.B.	10/22/59	-	42.5	42.4	-0.1	11.6	11.5	-0.1	115	109	-6	359[a]	332	-27	429[a]	416	-13
183885	W.B.	10/28/59	-	43.1	42.6	-0.5	11.3	11.0	-0.3	105	112	+7	340	337	- 3	403[a]	424	+21
183886	W.B.	10/30/59	-	42.4	42.1	-0.3	11.1	11.1	0.0	111	114	+3	344	333	-11	391[a]	399	+ 8
184001	W.B.	11/ 3/59	-	43.7	42.8	-0.9	11.7	11.1	-0.6	108	114	+6	356[a]	332	-24	401[a]	407	+ 6
184032	W.B.	11/ 4/59	-	43.9	43.1	-0.8	11.6	11.4	-0.2	113	116	+3	360[a]	341	-19	410[a]	429	+19
184033	W.B.	11/ 6/59	-	43.0	42.6	-0.4	11.2	10.9	-0.3	110	110	0	344[a]	323	-21	414[a]	420	+ 6
184034	W.B.	11/ 9/59	-	43.5	42.5	-1.0	11.6	11.5	-0.1	109	108	-1	342[a]	355	+13	407[a]	423	+16
Current Mill Average:				43.3	42.7	-0.6	11.6	11.3	-0.3	111	113	+2	351	339	-12	407	416	+ 9

[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.

COMPARISON OF INSTITUTE AND MILL DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1959 (continued)

TABLE XXXII

MILL H -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
183722	W.F.	10/22/59	1	42.6	42.7	+0.1	11.7	11.7	0.0	115	109	-6	323[a]	311	-12	363[a]	367	+ 4
183723	W.F.	10/21/59	2	43.5	43.1	-0.4	11.9	11.7	-0.2	117	113	-4	319	301	-18	370[a]	381	+11
183724	W.F.	10/22/59	1	43.2	43.2	0.0	12.7	12.4	-0.3	109	109	0	345[a]	345	0	373[a]	397	+24
183725	W.F.	10/22/59	1	43.4	43.3	-0.1	12.7	12.3	-0.4	114	110	-4	339[a]	344	+ 5	375[a]	396	+21
183915	W.F.	10/27/59	1	43.6	43.1	-0.5	11.9	11.6	-0.3	118	115	-3	323[a]	297	-26	367[a]	369	+ 2
183916	W.F.	10/27/59	2	44.2	44.4	+0.2	11.8	11.6	-0.2	118	118	0	332[a]	340	+ 8	355[a]	401	+46
183917	W.F.	11/ 3/59	2	44.0	44.3	+0.3	12.0	11.7	-0.3	114	117	+3	330[a]	337	+ 7	372[a]	394	+22
183918	W.F.	11/ 3/59	2	43.6	43.3	-0.3	12.4	12.0	-0.4	109	108	-1	296[a]	304	+ 8	341[a]	356	+15
Current Mill Average:				43.5	43.4	-0.1	12.1	11.9	-0.2	114	112	-2	326	322	- 4	364	383	+19

[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.

COMPARISON OF INSTITUTE AND MILL DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1959 (continued)

TABLE XXXIII

MILL I -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
183718	WF1S	10/18/59	2	44.1	43.3	-0.8	13.8	13.7	-0.1	99	102	+3	327[a]	359	+32	367[a]	391	+24
183796	WF1S	10/18/59	2	43.7	43.6	-0.1	14.1	13.1	-1.0	101	103	+2	348[a]	332	-16	407[a]	421	+14
183857	WF1S	10/28/59	2	44.0	43.1	-0.9	14.3	14.0	-0.3	105	104	-1	331[a]	338	+ 7	377[a]	410	+33
183929	WF1S	11/ 1/59	2	43.9	43.1	-0.8	13.9	13.4	-0.5	103	102	-1	367[a]	352	-15	383[a]	453	+70
184028	WF1S	11/10/59	2	44.3	43.7	-0.6	14.2	13.6	-0.6	102	103	+1	350[a]	359	+ 9	397[a]	467	+70
184029	WF1S	11/11/59	2	43.5	42.5	-1.0	13.4	13.2	-0.2	104	101	-3	325[a]	327	+ 2	363[a]	414	+51
Current Mill Average:				43.9	43.2	-0.7	14.0	13.5	-0.5	102	102	0	341	345	+ 4	383	426	+43

TABLE XXXIV

MILL J -- 42-LB. LINERBOARD

No samples submitted

[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.

COMPARISON OF INSTITUTE AND MILL DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1959 (continued)

TABLE XXXV

MILL K -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet In			Elmendorf Tear, g./sheet Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
183732	W.	10/26/59	4	43.1	42.8	-0.3	11.5	11.0	-0.5	102	110	+8	359[a]	354	- 5	363[a]	358	- 5
183733	W.	10/28/59	4	43.1	43.1	0.0	11.9	11.4	-0.5	103	110	+7	343[a]	341	- 2	352[a]	340	-12
183953	W.	10/28/59	4	43.0	42.7	-0.3	11.8	11.2	-0.6	105	114	+9	371[a]	362	- 9	378[a]	330	-48
183954	W.	11/ 6/59	2	43.4	43.3	-0.1	13.7	13.1	-0.6	100	104	+4	330[a]	345	+15	383[a]	375	- 8
184030	W.	11/ 8/59	2	44.0	43.3	-0.7	13.6	13.0	-0.6	105	107	+2	340[a]	353	+13	392[a]	375	-17
184031	W.	11/19/59	4	42.7	42.5	-0.2	11.4	11.0	-0.4	104	106	+2	377[a]	327	-50	361[a]	319	+42
Current Mill Average:				43.2	42.9	-0.3	12.3	11.8	-0.5	103	109	+6	353	347	- 6	372	350	-22

TABLE XXXVI

MILL L -- 42-LB. LINERBOARD

No samples submitted

[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.

COMPARISON OF INSTITUTE AND MILL DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1959 (continued)

TABLE XXXVII

MILL M -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
183726	W.F.	9/ 9/59	1	43.2	42.2	-1.0	12.4	12.4	0.0	113	108	-5	285	252	-33	349[a]	320	-29
183727	W.F.	9/12/59	1	43.0	41.9	-1.1	13.0	12.9	-0.1	106	107	+1	283[a]	253	-30	352[a]	341	-11
183728	W.F.	9/15/59	1	42.2	42.0	-0.2	12.0	11.8	-0.2	107	107	0	253	252	- 1	313[a]	334	+21
183729	W.F.	9/18/59	1	43.1	41.8	-1.3	12.6	12.5	-0.1	107	107	0	267[a]	256	-11	337[a]	342	+ 5
183945	W.F.	10/ 5/59	1	43.6	41.9	-1.7	13.1	12.9	-0.2	106	108	+2	258	255	- 3	346[a]	343	- 3
183946	W.F.	10/ 8/59	1	42.4	42.1	-0.3	12.7	12.8	+0.1	107	110	+3	257[a]	234	-23	313[a]	344	+31
184004	W.F.	10/13/59	1	43.4	41.8	-1.6	12.6	12.6	0.0	110	106	-4	261	264	+ 3	321[a]	326	+ 5
184005	W.F.	10/16/59	1	42.1	42.2	+0.1	12.0	11.8	-0.2	106	108	+2	258[a]	253	- 5	317[a]	335	+18
184006	W.F.	10/19/59	1	42.3	42.1	-0.2	12.6	12.8	+0.2	106	109	+3	261	235	-26	332[a]	341	+ 9
184007	W.F.	10/22/59	1	43.6	42.7	-0.9	12.7	12.6	-0.1	113	112	-1	276[a]	263	-13	329[a]	356	+27
Current Mill Average:				42.9	42.1	-0.8	12.6	12.5	-0.1	108	108	0	266	252	-14	331	338	+ 7

[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.

COMPARISON OF INSTITUTE AND MILL DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1959 (continued)

TABLE XXXVIII

MILL N -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
183938	W.F.	11/ 2/59	-	43.9	43.5	-0.4	12.5	12.4	-0.1	111	109	-2	371[a]	401	+30	401[a]	396	- 5
183939	W.F.	11/ 6/59	-	44.6	43.6	-1.0	13.1	13.0	-0.1	105	105	0	380[a]	403	+23	397[a]	387	-10
183940	W.F.	11/ 6/59	-	44.5	43.8	-0.7	12.7	12.4	-0.3	105	108	+3	389[a]	413	+24	415[a]	385	-30
183941	W.F.	11/ 6/59	-	43.0	42.2	-0.8	12.5	12.4	-0.1	105	106	+1	375[a]	384	+ 9	403[a]	397	- 6
184011	W.F.	11/12/59	-	43.3	42.0	-1.3	12.5	12.2	-0.3	107	114	+7	348[a]	381	+33	399[a]	389	-10
184012	W.F.	11/12/59	-	43.8	42.7	-1.1	12.1	12.2	+0.1	104	113	+9	359[a]	423	+64	401[a]	377	-24
184013	W.F.	11/12/59	-	44.0	42.8	-1.2	12.5	12.4	-0.1	105	109	+4	366[a]	421	+55	411[a]	360	-51
184014	W.F.	11/12/59	-	43.6	42.8	-0.8	12.5	12.3	-0.2	106	106	0	371[a]	373	+ 2	389[a]	356	-33
184015	W.F.	11/13/59	-	43.6	42.6	-1.0	12.6	12.3	-0.3	108	110	+2	351[a]	397	+46	389[a]	369	-20
184016	W.F.	11/14/59	-	43.7	42.9	-0.8	12.5	12.5	0.0	108	105	-3	364[a]	396	+32	398[a]	363	-35
184017	W.F.	11/14/59	-	43.7	42.7	-1.0	12.6	12.5	-0.1	106	108	+2	373[a]	404	+31	385[a]	369	-16
184018	W.F.	11/14/59	-	43.8	42.8	-1.0	12.5	12.4	-0.1	108	106	-2	361[a]	392	+31	399[a]	367	-32
Current Mill Average:				43.8	42.9	-0.9	12.5	12.4	-0.1	107	108	+1	367	399	+32	399	376	-23

[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.

COMPARISON OF INSTITUTE AND MILL DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1959 (continued)

TABLE XXXIX

MILL O -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
183709	----	10/ 2/59	1	42.4	42.4	0.0	12.3	11.9	-0.4	118	115	- 3	313[a]	289	-24	379[a]	391	+12
183710	----	10/ 3/59	1	42.8	42.3	-0.5	12.2	11.7	-0.5	120	118	- 2	345[a]	305	-40	382[a]	373	- 9
183711	----	10/ 6/59	1	42.6	41.8	-0.8	12.5	12.0	-0.5	113	111	- 2	329[a]	321	- 8	395[a]	388	- 7
183798	----	10/15/59	1	43.0	42.7	-0.3	12.3	12.3	0.0	117	107	-10	327[a]	303	-24	377[a]	392	+15
183927	----	10/15/59	1	42.0	43.2	+1.2	12.8	12.0	-0.8	108	113	+ 5	304[a]	304	0	355[a]	389	+34
183919	----	10/23/59	1	42.6	42.3	-0.3	13.0	12.2	-0.8	112	107	- 5	313[a]	283	-30	366[a]	372	+ 6
183920	----	10/23/59	1	44.2	44.2	0.0	13.4	12.8	-0.6	112	105	- 7	339	340	+ 1	401[a]	441	+40
183921	----	10/23/59	1	43.4	43.6	+0.2	13.0	12.4	-0.6	109	107	- 2	339	325	-14	391[a]	416	+25
184008	----	11/ 2/59	1	42.3	41.7	-0.6	12.9	12.6	-0.3	106	99	- 7	307[a]	308	+ 1	370[a]	398	+28
184009	----	11/ 3/59	1	42.7	42.0	-0.7	12.5	12.1	-0.4	108	102	- 6	287[a]	311	-24	353[a]	396	+43
184010	----	11/ 4/59	1	43.9	43.4	-0.5	12.5	12.1	-0.4	106	102	- 4	337[a]	321	-16	395[a]	394	- 1
Current Mill Average:				42.9	42.7	-0.2	12.7	12.2	-0.5	112	108	- 4	322	310	-12	378	396	+18

[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.

COMPARISON OF INSTITUTE AND MILL DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1959 (continued)

TABLE XL

MILL P -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet: In			Elmendorf Tear, g./sheet: Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
183788	WF1S	10/ 1/59	2	44.0	43.8	-0.2	14.3	14.2	-0.1	106	102	-4	325[a]	311	-14	371[a]	395	+24
183789	WF1S	10/ 7/59	2	43.0	43.1	+0.1	13.9	13.9	0.0	104	100	-4	316[a]	299	-17	351[a]	372	+21
183790	WF1S	10/ 8/59	2	42.6	42.7	+0.1	13.9	13.8	-0.1	103	100	-3	318[a]	295	-23	355[a]	393	+38
183791	WF1S	10/ 9/59	2	44.2	44.7	+0.5	14.6	14.5	-0.1	104	100	-4	330[a]	331	+ 1	369[a]	390	+21
183792	WF1S	10/10/59	2	43.4	43.5	+0.1	13.7	14.0	+0.3	99	98	-1	353[a]	332	-21	366[a]	365	- 1
183793	WF1S	10/11/59	2	43.4	44.0	+0.6	14.0	13.8	-0.2	101	106	+5	359[a]	358	- 1	355[a]	386	+31
183794	WF1S	10/13/59	2	42.8	43.0	+0.2	14.0	14.0	0.0	106	100	-6	320[a]	315	- 5	359[a]	362	+ 3
183795	WF1S	10/18/59	2	42.6	43.0	+0.4	14.0	14.0	0.0	106	103	-3	316[a]	299	-17	340[a]	374	+34
Current Mill Average:				43.2	43.5	+0.3	14.1	14.0	-0.1	104	101	-3	330	318	-12	358	380	+22

[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.

COMPARISON OF INSTITUTE AND MILL DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1959 (continued)

TABLE XLI

MILL Q -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
183720	WF1S	10/ 6/59	1	43.6	42.9	-0.7	12.9	13.0	+0.1	115	113	-2	347[a]	328	-19	381[a]	369	-12
183721	WF1S	10/23/59	1	43.8	43.2	-0.6	13.4	13.2	-0.2	108	109	+1	364[a]	396	+32	378[a]	439	+61
183800	WF1S	10/27/59	1	43.5	43.4	-0.1	13.3	13.3	0.0	113	108	-5	345[a]	389	+44	405[a]	443	+38
183856	WF1S	11/ 2/59	1	43.6	42.4	-1.2	13.4	12.7	-0.7	106	103	-3	343	306	-37	368[a]	365	- 3
183930	WF1S	11/ 1/59	1	42.4	41.9	-0.5	12.8	12.0	-0.8	108	110	+2	325[a]	244	-81	375[a]	328	-47
183942	WF1S	11/ 7/59	1	42.5	42.0	-0.5	12.9	12.0	-0.9	111	109	-2	327[a]	252	-75	369[a]	337	-32
183971	WF1S	11/ 8/59	1	42.9	42.6	-0.3	13.3	13.1	-0.2	106	109	+3	337	305	-32	389[a]	357	-32
184019	WF1S	11/ 9/59	1	43.3	42.6	-0.7	13.4	13.1	-0.3	106	109	+3	336[a]	303	-33	365[a]	356	- 9
Current Mill Average:				43.2	42.6	-0.6	13.2	12.8	-0.4	109	109	0	340	315	-25	379	374	- 5

[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.

COMPARISON OF INSTITUTE AND MILL DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1959 (continued)

TABLE XLII

MILL S -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet In			Elmendorf Tear, g./sheet Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
183716	W.F.	10/21/59	2	43.8	43.4	-0.4	12.1	11.7	-0.4	106	116	+10	333[a]	325	- 8	367[a]	392	+25
183717	W.F.	10/21/59	2	43.9	43.4	-0.5	11.7	11.7	0.0	116	120	+ 4	327[a]	344	+17	353[a]	380	+27
183797	W.F.	10/25/59	2	44.1	43.5	-0.6	12.1	11.6	-0.5	121	122	+ 1	329[a]	346	+17	381[a]	390	+ 9
183799	W.F.	10/28/59	2	43.5	43.4	-0.1	12.0	11.8	-0.2	114	115	+ 1	321[a]	329	+ 8	357[a]	392	+35
183943	W.F.	11/ 2/59	2	44.3	43.6	-0.7	12.8	12.5	-0.3	115	115	0	335[a]	324	-11	380[a]	402	+22
183944	W.F.	11/ 2/59	2	43.5	42.9	-0.6	12.2	12.1	-0.1	115	111	- 4	330[a]	322	- 8	355[a]	398	+43
183995	W.F.	11/10/59	1	43.6	43.2	-0.4	12.6	11.6	-1.0	114	114	0	327[a]	322	- 5	360[a]	378	+18
183996	W.F.	11/11/59	2	44.0	43.4	-0.6	12.2	12.1	-0.1	121	118	- 3	334[a]	323	-11	380[a]	370	-10
183997	W.F.	11/15/59	2	43.8	43.5	-0.3	12.2	12.0	-0.2	116	117	+ 1	327[a]	340	+13	388[a]	389	+ 1
183998	W.F.	11/15/59	2	44.0	42.9	-1.1	12.3	11.9	-0.4	114	117	+ 3	337[a]	333	- 4	369[a]	397	+28
Current Mill Average:				43.8	43.3	-0.5	12.2	11.9	-0.3	115	117	+ 2	330	331	+ 1	369	389	+20

[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.

COMPARISON OF INSTITUTE AND MILL DATA--NOVEMBER 1 THROUGH NOVEMBER 30, 1959 (continued)

TABLE XLIII

MILL T -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet In			Elmendorf Tear, g./sheet Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
183839	W.F.	10/ 9/59	1	43.0	42.4	-0.6	13.1	12.9	-0.2	100	105	+5	321[a]	314	- 7	361[a]	375	+14
183840	W.F.	10/11/59	1	43.4	42.5	-0.9	13.0	12.8	-0.2	106	111	+5	329[a]	313	-16	358[a]	372	+14
183841	W.F.	10/11/59	1	43.9	43.2	-0.7	13.4	13.2	-0.2	101	110	+9	325[a]	309	-16	351[a]	363	+12
183842	W.F.	10/12/59	1	44.1	43.7	-0.4	13.8	13.3	-0.5	103	106	+3	343[a]	320	-23	369[a]	382	+13
183843	W.F.	10/14/59	1	44.1	43.7	-0.4	13.8	13.4	-0.4	103	106	+3	327[a]	351	+24	369[a]	385	+16
183844	W.F.	10/15/59	1	43.0	42.6	-0.4	13.2	12.9	-0.3	99	103	+4	338[a]	344	+ 6	359[a]	375	+16
183845	W.F.	10/14/59	1	43.3	43.4	+0.1	13.3	13.1	-0.2	106	108	+2	321[a]	333	+12	352[a]	375	+23
183846	W.F.	10/15/59	1	43.6	43.6	0.0	13.3	13.1	-0.2	99	106	+7	367[a]	357	-10	383[a]	381	- 2
Current Mill Average:				43.6	43.1	-0.5	13.4	13.1	-0.3	102	107	+5	334	330	- 4	363	376	+13

[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.

THE INSTITUTE OF PAPER CHEMISTRY

W. N. Hubert

W. N. Hubert, Research Aide
Container Section

R C M Kee

R. C. McKee, Chief, Container Section