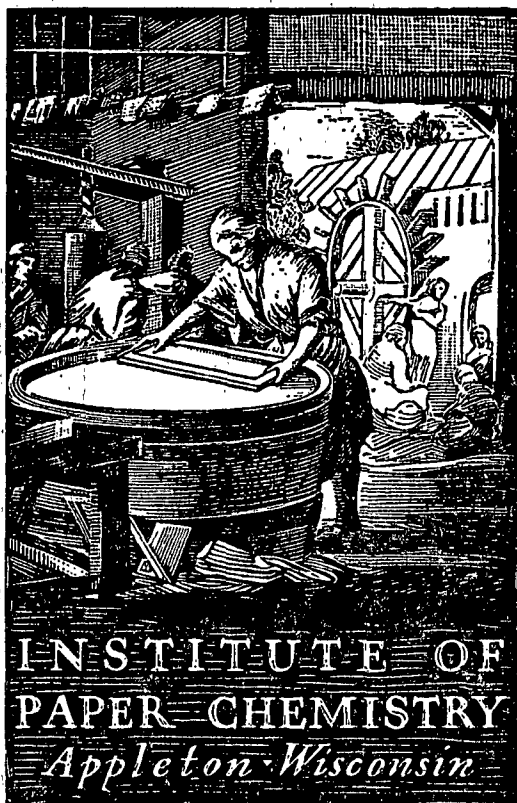




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CONTINUOUS BASE-LINE STUDY

Project 1108-13

Report 198

A Progress Report

to

FOURDRINIER KRAFT BOARD INSTITUTE, INC.

December 1, 1965

Your mill is identified by the following

code letter **V** in this report.

Valdosta

THE INSTITUTE OF PAPER CHEMISTRY

Appleton, Wisconsin

CONTINUOUS BASE-LINE STUDY

Project 1108-13

Report 198

A Progress Report

to

FOURDRINIER KRAFT BOARD INSTITUTE, INC.

December 1, 1965

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THE INSTITUTE OF PAPER CHEMISTRY

Appleton, Wisconsin

CONTINUOUS BASE-LINE STUDY

INTRODUCTION

As requested by the Technical Division of the Fourdrinier Kraft Board Institute, Inc., the reports pertinent to the continuous base-line study on 42-lb. fourdrinier kraft linerboard have been prepared by The Institute of Paper Chemistry on a bimonthly basis instead of the previous monthly basis since August 1, 1961. The current report presents results obtained during the months of October and November, 1965.

PRESENTATION AND DISCUSSION OF TEST RESULTS

Each sample lot received for evaluation during October and November was evaluated for basis weight, caliper, bursting strength, and Elmendorf tearing strength. The average strength results for each mill may be seen in Table I and are graphically presented in Fig. 1 to 5. In addition to a comparison of the current mill averages for the various tests, Table I also shows the current F.K.I. averages, the cumulative F.K.I. averages, and F.K.I. indexes. For each test, the current mill average represents the average obtained on all sample lots evaluated from a given mill during the current period, the current F.K.I. average represents the average of the current mill averages, and the cumulative F.K.I. average represents the average of the current F.K.I. averages for the previous twelve months excluding the current period. The F.K.I. index expressed in per cent is the ratio of the current F.K.I. average to the cumulative F.K.I. average.

In Table II, a tabulation of the number of sample lots submitted by each mill during the current period is shown.

Supplementary to the summary of basis weight data given in Table I, a tabulation is given in Table III of the amount by which the current basis weight average for each mill varies from the 42-lb. specification set forth in Rule 41.

Shown below from Table I are the maximum and minimum current mill averages and also the current and cumulative F.K.I. averages for each test.

TABLE I

SUMMARY OF COMPOSITE MILL AVERAGES--OCTOBER AND NOVEMBER, 1965

Mill	Basis Weight, lb.	Caliper, points	Bursting Strength, p.s.i.g.	In Machine	Elmendorf Tear, g./sheet	Cross Machine
A	42.0	12.5	111	327	391	
B	42.6	12.5	108	360	407	
C	42.7	12.3	105	308	371	
D	No samples submitted.					
E	42.6	12.9	107	342	382	
F	42.9	12.5	112	355	376	
G	42.3	12.7	112	347	380	
H	42.2	12.5	113	301	353	
I	42.7	12.4	112	308	365	
Ja ^a						
K	42.6	12.1	115	369	401	
L	42.9	12.8	111	295	351	
M	42.7	12.8	107	387	395	
N	42.1	12.8	107	289	345	
O	42.8	13.5	110	325	384	
P	42.7	12.9	119	377	399	
Q	42.7	13.1	106	316	379	
S	41.9	12.9	107	265	317	
T	42.7	12.2	115	303	367	
U	No samples submitted.					
V	42.2	12.2	110	369	403	
W	No samples submitted.					
X	41.6	12.9	105	349	363	
Current FKI average:	42.5	12.7	110	331	375	
Cumulative FKI average:	42.5	12.6	111	333	379	
FKI index, %	100.0	100.8	99.1	99.4	98.9	

^aCurrent mill averages have been omitted in compliance with Technical Committee's request that current mill averages based on evaluations of fewer than three sample lots of linerboard should be excluded from the summary table and from the calculation of the current FKI averages.

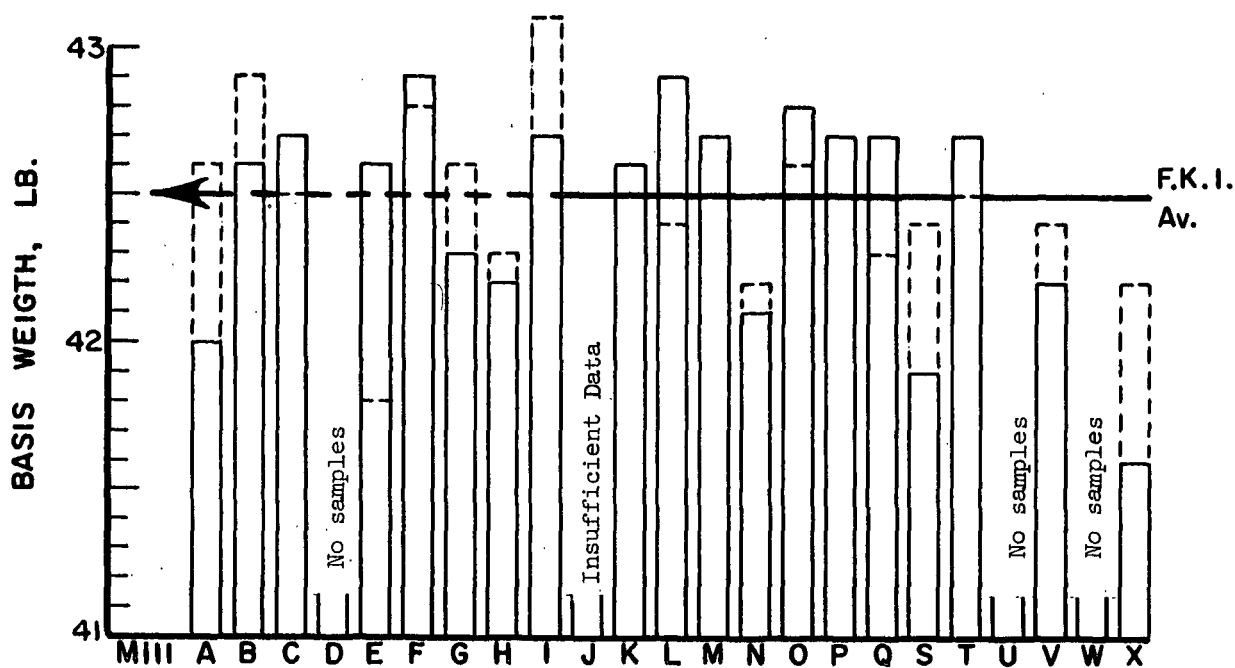


Figure 1. Comparison of Basis Weight Results

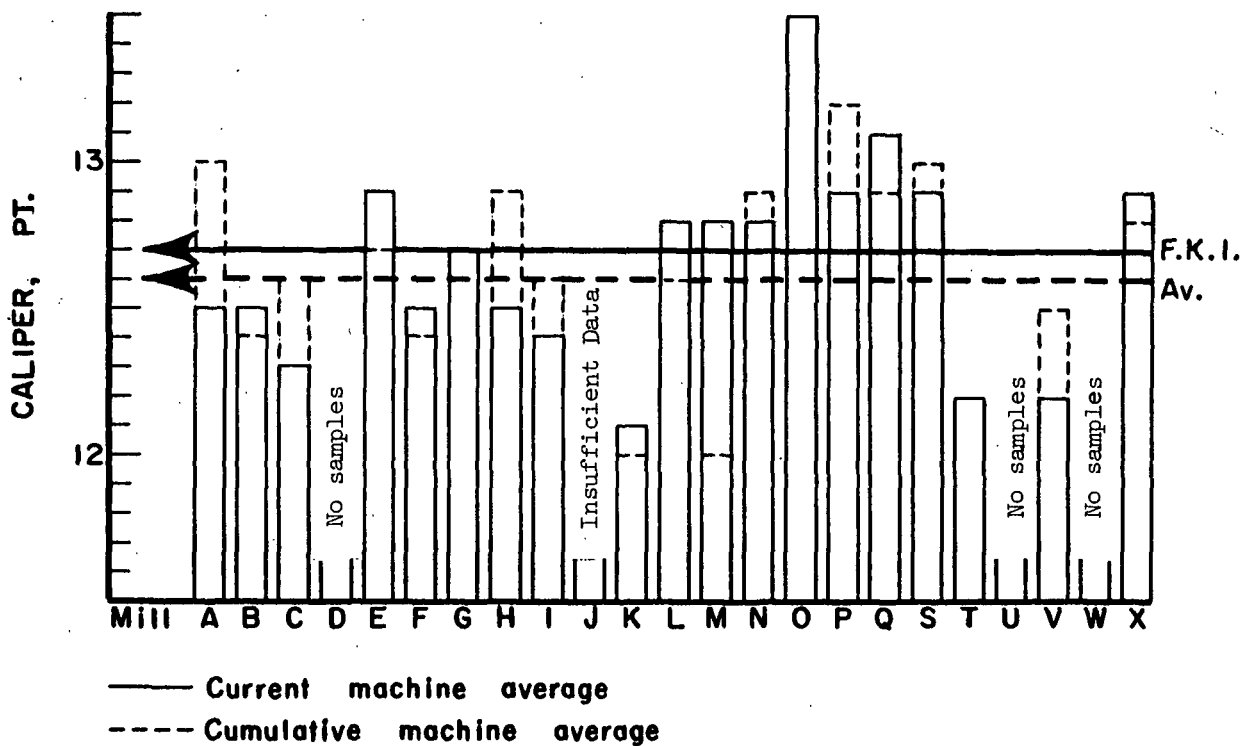


Figure 2. Comparison of Caliper Results

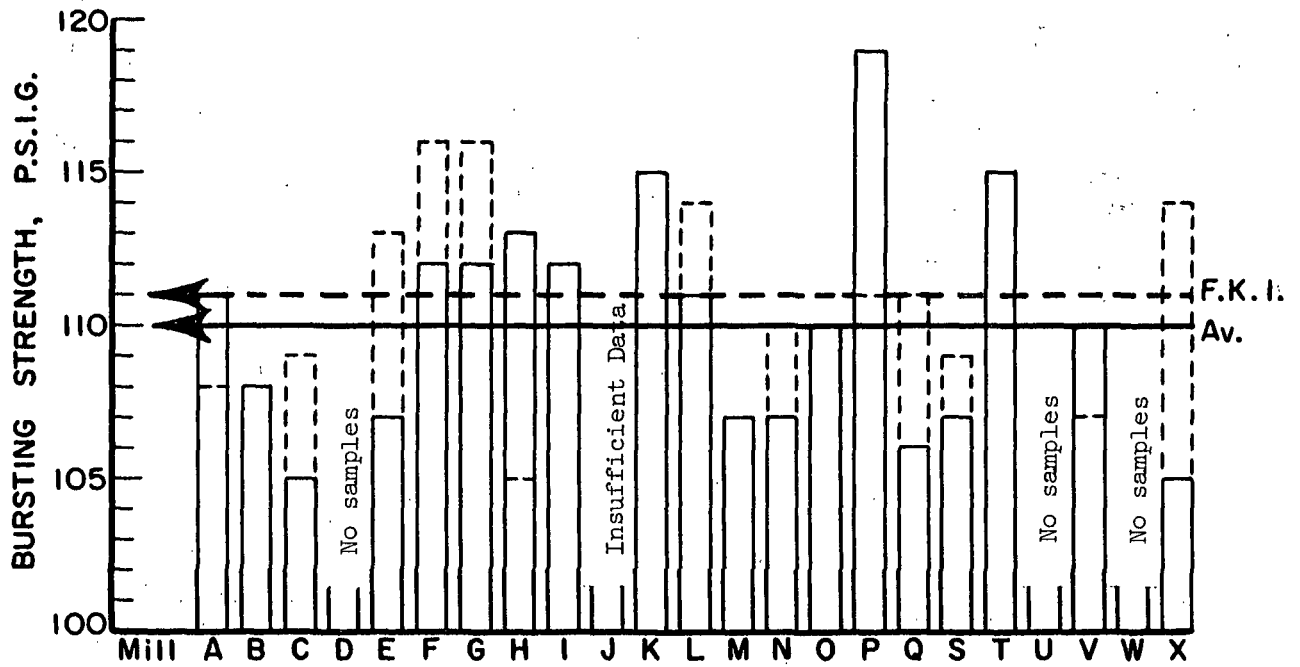


Figure 3. Comparison of Bursting Strength Results

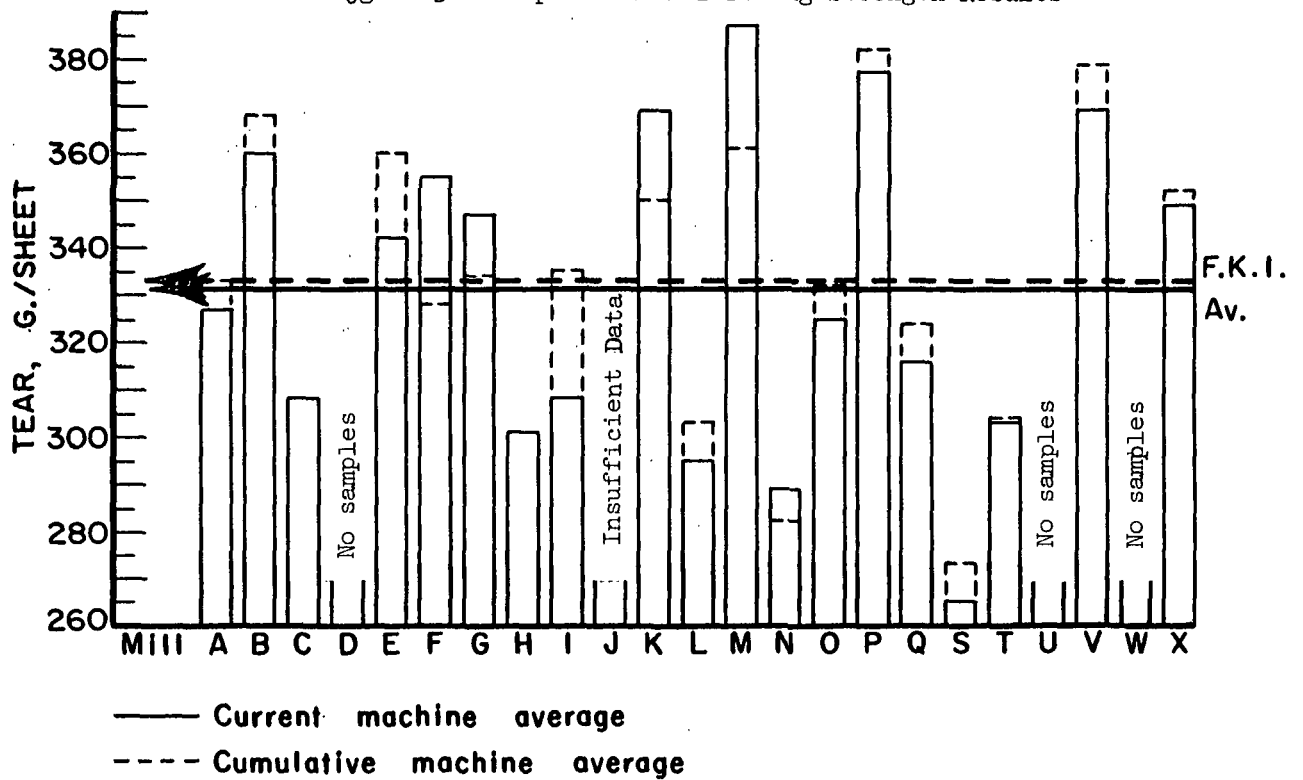


Figure 4. Comparison of Machine-Direction Tear Results

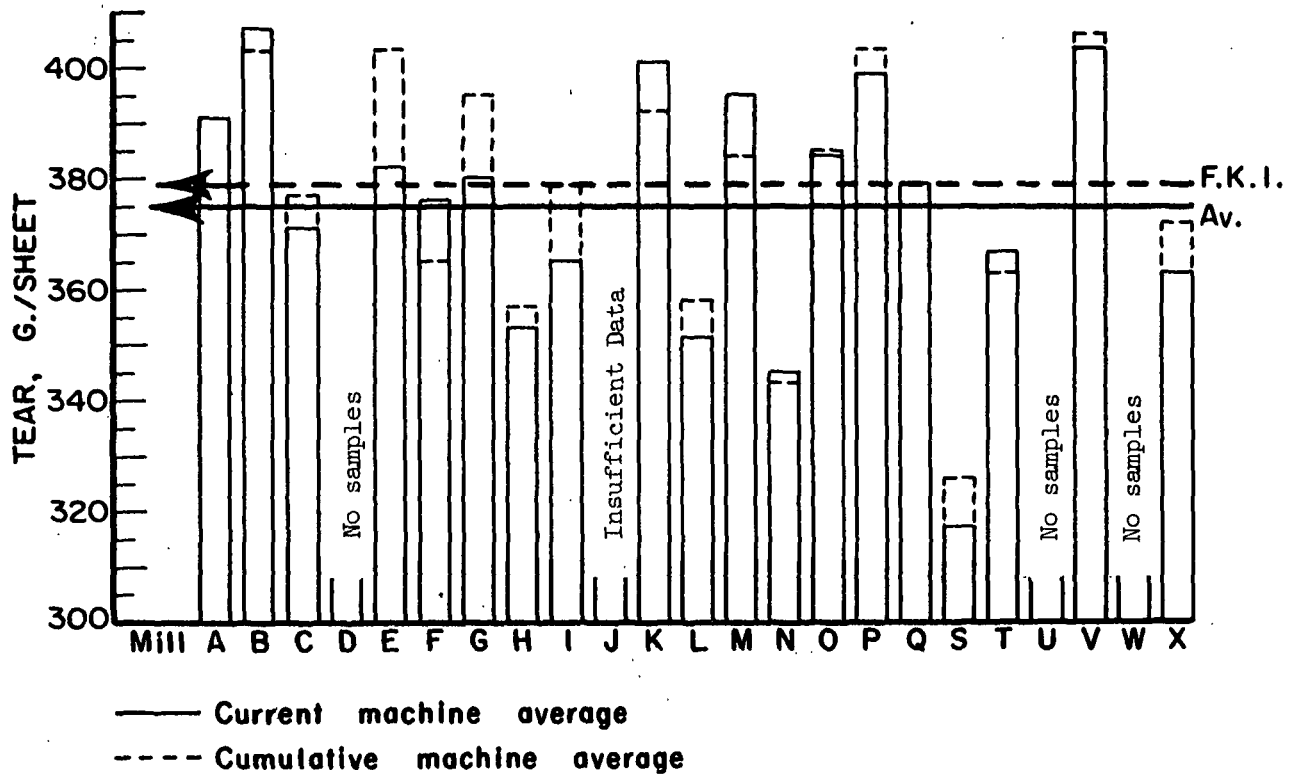


Figure 5. Comparison of Cross-Machine Direction Tear Results

TABLE II

NUMBER OF SAMPLE LOTS SUBMITTED BY EACH MILL
DURING OCTOBER AND NOVEMBER, 1965

Mill Code	Number of Sample Lots
A	8
B	8
C	9
D	0
E	3
F	8
G	8
H	10
I	10
J	2
K	4
L	8
M	3
N	8
O	8
P	4
Q	8
S	6
T	4
U	0
V	5
W	0
X	<u>3</u>
Total	127

TABLE III

PERCENTAGE DEVIATION OF CURRENT MILL AVERAGES FROM
42-LB. BASIS WEIGHT SPECIFICATION FOR
OCTOBER AND NOVEMBER, 1965

Mill Code	Percentage Deviation
A	0.0
B	+1.4
C	+1.7
D	---
E	+1.4
F	+2.1
G	+0.7
H	+0.5
I	+1.7
J	+2.9
K	+1.4
L	+2.1
M	+1.7
N	+0.2
O	+1.9
P	+1.7
Q	+1.7
S	-0.2
T	+1.7
U	---
V	+0.5
W	---
X	-1.0

Test	Current Mill Averages		F.K.I. Averages	
	Max.	Min.	Current	Cumulative
Basis weight, lb.	42.9	41.6	42.5	42.5
Caliper, points	13.5	12.1	12.7	12.6
Bursting strength, p.s.i.g.	119	105	110	111
Machine direction Elmendorf tear, g./sheet	387	265	331	333
Cross-machine direction Elmendorf tear, g./sheet	407	317	375	379

The test results obtained at the Institute and at the mill during the current period are given alphabetically in Tables IV to XXVI for each mill. Included in each of these tables are the maximum, minimum, and average test data obtained at the Institute on each sample lot of linerboard. The data obtained at the Institute include also for each test the calculation of (1) a current mill average that represents the mean of the averages obtained on the individual sample lots of linerboard evaluated during the current period, (2) a cumulative mill average that represents the mean of the current mill averages for the previous twelve months excluding the current period, (3) a mill factor expressed in per cent that represents the ratio of the current mill average to the cumulative mill average, and (4) a mill index expressed in per cent that represents the ratio of the current mill average to the cumulative F.K.I. average. The term "mean" in the preceding discussion is synonymous with the simple arithmetic average. As mentioned above, the results presented in Table IV to XXVI also include data obtained at the mills. The mill data include for each test (1) the average result obtained on each sample lot of linerboard, and (2) a current mill average (calculated at the Institute) that represents the mean of the averages obtained on the individual sample lots

(Text is continued on page 30)

TABLE IV
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL A
October and November, 1965

Date Made	Mch. No.	Finish	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i.g.			Elmendorf Tear, g./sheet			Elmendorf Tear, g./sheet													
			Institute			Institute			Institute			Institute			Institute													
			Max.	Min.	Av.	Diff.	Max.	Min.	Av.	Diff.	Max.	Min.	Av.	Diff.	Max.	Min.	Av.	Diff.										
9-11-65	WFLS	2	42.2	40.4	41.2	42.2	+1.0	12.8	11.8	12.3	11.9	-0.3	130	80	106	119	+13	400	280	322 ^a	317	-5	472	352	397 ^a	417	+20	
9-15-65	WFLS	2	42.4	40.2	41.8	42.7	+0.9	13.2	12.1	12.7	12.2	-0.5	132	88	112	111	-1	376	288	343	341	-2	424	296	387 ^a	468	+81	
9-16-65	WFLS	2	43.0	41.0	42.0	42.4	+0.4	12.9	11.8	12.3	12.0	-0.3	125	80	105	117	+12	384	280	337	318	-19	456	376	404 ^a	416	+12	
9-16-65	WFLS	2	42.2	40.4	41.4	42.3	+0.9	12.6	11.9	12.2	12.1	-0.1	124	85	106	115	+9	384	304	328	325	-3	432	336	389 ^a	421	+32	
10-18-65	WFLS	2	44.0	42.4	43.4	43.3	-0.1	13.8	12.2	13.2	12.4	-0.8	140	90	112	119	+7	456	304	352	356	+4	432	336	391 ^a	453	+62	
10-27-65	W.F.	2	43.0	41.6	42.0	42.7	+0.7	13.2	12.1	12.6	12.1	-0.5	132	96	115	109	-6	336	240	302	339	+37	448	352	396 ^a	430	+34	
10-27-65	WFLS	2	43.0	40.6	41.9	42.5	+0.6	12.9	12.1	12.4	12.1	-0.3	132	89	112	113	+1	352	272	311	333	+22	416	352	380 ^a	436	+56	
10-27-65	WFLS	2	42.6	41.0	42.0	42.5	+0.5	13.0	12.2	12.5	12.1	-0.4	129	99	117	121	+4	352	272	321	339	+18	416	352	382 ^a	420	+38	
Current mill average:			42.0		42.6	+0.6		12.5	12.1	-0.4	111	116	+5			327	333	+6			327	333	+6	391	433		442	
Cumulative mill average:			42.6					13.0			108					333					333			391				
Mill factor, %			98.6					96.2			102.8					98.2					98.2			100.0				
Mill index, %			98.8					99.2			100.0					98.2					98.2			103.2				

^aThis 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 V
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL B
October and November, 1965

Date Made	Mch. Finish No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i.g.			Elmendorf Tear, g./sheet In Machine			Elmendorf Tear, g./sheet Cross Machine																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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^aThis 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 VI
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL C
October and November, 1965

Date Made	Mch. Finish No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i.g.			Elmendorf Tear, g./sheet			Elmendorf Tear, g./sheet												
		Max.	Institute	Mill	Max.	Institute	Mill	Max.	Institute	Mill	Max.	Institute	Mill	Max.	Institute	Mill										
		Min.	Av.	Diff.	Min.	Av.	Diff.	Min.	Av.	Diff.	Min.	Av.	Diff.	Min.	Av.	Diff.										
9-14-65	WFLS 1	43.6	42.4	43.3	43.1	-0.2	13.8	11.8	12.6	12.4	-0.2	130	86	105	111	+6	352	272	303	326	+23	432	336	375 ^a	410	+35
9-21-65	WFLS 1	44.0	42.4	43.4	43.3	-0.1	13.5	12.0	12.7	12.3	-0.4	126	86	102	102	0	384	264	317	351	+34	440	344	386 ^a	417	+31
9-28-65	WFLS 1	44.2	42.4	43.4	42.8	-0.6	13.2	12.0	12.6	12.6	0.0	127	81	108	107	-1	384	256	330 ^a	336	+6	464	336	395 ^a	409	+14
10-5-65	WFLS 1	43.6	42.0	42.8	43.2	-0.4	13.0	11.5	12.2	12.3	+0.1	127	78	102	106	+4	352	248	293	310	+17	400	352	374 ^a	393	+19
10-12-65	WFLS 1	44.2	42.0	43.3	43.1	-0.2	12.9	11.7	12.2	12.1	-0.1	131	86	109	107	-2	368	272	313	323	+10	400	280	365 ^a	410	+45
10-19-65	WFLS 1	42.8	40.6	41.9	42.8	+0.9	12.9	11.8	12.4	12.0	-0.4	120	82	102	105	+3	344	272	309	340	+31	400	304	356 ^a	403	+47
10-26-65	WFLS 1	42.8	40.8	41.8	42.5	+0.7	12.4	11.3	11.8	12.2	+0.4	123	90	107	106	-1	384	264	313	336	+23	400	304	357 ^a	405	+48
11-2-65	WFLS 1	42.0	40.4	41.5	42.2	+0.7	12.4	11.2	12.0	12.0	0.0	120	89	104	104	0	344	240	289	351	+62	400	336	369 ^a	427	+58
11-5-65	WFLS 1	43.8	41.2	42.6	42.5	-0.1	12.3	11.8	12.1	11.9	-0.2	125	83	104	108	+4	344	256	303	323	+20	392	320	361 ^a	389	+28
Current mill average:			42.7	42.8	+0.1		12.3	12.2	-0.1			105	106	+1		308	333	+25				371	407	+36		
Cumulative mill average:			42.5				12.6					109				308						377				
Mill factor, %			100.5				97.6					96.3				100.0						98.4				
Mill index, %			100.5				97.6					94.6				92.5						97.9				

^aThis 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 VII
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL D
October and November, 1965

Date Made	Mch. No.	Finish	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i.g.			Elmendorf Tear, g./sheet			Elmendorf Tear, g./sheet		
			Max.	Min.	Av.	Institute	Mill	Diff.	Max.	Min.	Av.	Institute	Mill	Diff.	Max.	Min.	Av.

No samples submitted.

TABLE VIII
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL E

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^aThis 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 II
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL F
October and November, 1965

Date Made	Finish No.	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i.g.			Elmendorf Tear, g./sheet			Elmendorf Tear, g./sheet												
			Institute	Max.	Min.	Av.	Diff.	Institute	Max.	Min.	Av.	Diff.	Institute	Max.	Min.	Av.	Diff.	Institute	Max.	Min.	Av.	Diff.					
9-30-65	W.F.	-	44.2	43.6	43.7	43.5	-0.2	12.8	12.0	12.4	12.0	-0.4	142	81	119	120	+1	448	320	359	369	-50	448	336	373 ^a	368	-5
10-1-65	W.F.	-	44.4	42.4	43.2	43.1	-0.1	12.9	12.0	12.6	12.1	-0.5	127	96	114	120	+6	456	304	362 ^a	312	-50	432	368	397 ^a	355	-42
10-8-65	W.F.	-	43.4	41.0	42.5	43.1	+0.6	14.5	13.0	13.5	12.6	-0.9	128	90	114	118	+4	400	288	329	323	-6	440	336	387 ^a	337	-50
10-22-65	W.F.	-	44.2	41.6	43.0	42.9	-0.1	13.0	11.9	12.4	12.2	-0.2	130	70	108	107	-1	384	272	332 ^a	327	-5	416	320	367 ^a	371	+4
11-4-65	W.F.	-	42.8	40.6	41.8	42.4	+0.6	12.8	11.6	12.1	11.8	-0.3	132	87	106	108	+2	448	328	377 ^a	351	-26	384	344	361 ^a	359	-2
11-5-65	W.F.	-	44.6	43.4	44.0	44.7	+0.7	13.5	12.5	12.9	12.8	-0.1	128	80	110	108	-2	424	320	375 ^a	365	-10	432	360	394 ^a	396	+2
11-12-65	W.F.	-	43.6	41.6	42.4	42.8	+0.4	12.3	11.8	12.1	12.1	0.0	143	75	116	115	-1	400	280	360 ^a	352	-8	416	336	363 ^a	375	+12
11-19-65	W.F.	-	43.8	41.4	42.7	42.8	+0.1	12.9	12.0	12.3	12.2	-0.1	127	90	110	108	-2	376	312	346 ^a	353	+7	416	336	371 ^a	417	+46
Current mill average:			42.9	43.2	+0.3			12.5	12.2	-0.3			112	113	+1			355	336	-19			376	372	-4		
Cumulative mill average:			42.8					12.4					116					328					365				
Mill factor, %			100.2					100.8					96.6					108.2					103.0				
Mill index, %			100.9					99.2					100.9					106.6					99.2				

^aThis average includes the readings for one or more specimens which were beyond the 3/8-inch limit.

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

TABLE I
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL G
October and November, 1965

Date Made	Mch. Finish No.	Basis Weight, lb.			Caliper, points			Bursting Strength, P.s.i.g.			Elmendorf Tear, g./sheet			Elmendorf Tear, g./sheet												
		Institute	Max.	Min.	Av.	Diff.	Institute	Max.	Min.	Av.	Diff.	Institute	Max.	Min.	Av.	Diff.	Institute	Max.	Min.	Av.	Diff.					
9-25-65	W.F. 1	43.6	41.8	42.7	42.7	0.0	13.1	12.2	12.8	12.6	-0.2	127	81	109	113	+4	416	328	365 ^a	341	-24	464	352	391 ^a	383	-8
9-25-65	W.F. 1	43.6	42.2	42.9	42.8	-0.1	13.1	12.1	12.8	12.7	-0.1	125	92	111	112	+1	384	352	362 ^a	348	-14	432	344	388 ^a	385	-3
10-4-65	W.F. 2	42.2	40.6	41.3	41.9	+0.6	12.6	11.8	12.2	12.3	+0.1	130	90	115	120	+5	376	272	333	299	-34	416	352	377 ^a	368	-9
10-4-65	W.F. 2	42.0	40.0	41.1	41.8	+0.7	12.7	11.8	12.3	12.2	-0.1	127	96	115	119	+4	368	304	339	302	-37	448	368	395 ^a	372	-23
10-11-65	W.F. 2	42.2	40.8	41.6	42.4	+0.8	13.2	12.0	12.6	12.6	0.0	136	90	111	117	+6	448	272	329	324	-5	440	320	373 ^a	376	+3
10-11-65	W.F. 2	43.6	41.0	41.8	42.5	+0.7	13.1	12.1	12.6	12.7	+0.1	143	88	112	117	+5	384	304	337 ^a	323	-14	400	320	369 ^a	377	+8
10-27-65	W.F. 1	43.8	42.6	43.5	43.7	+0.2	13.7	13.1	13.3	13.3	0.0	139	76	112	117	+5	448	304	353 ^a	337	-16	400	344	368 ^a	384	+16
10-27-65	W.F. 1	44.0	42.6	43.4	43.8	+0.4	13.8	13.0	13.3	13.1	-0.2	135	81	112	117	+5	400	320	359	334	-5	432	336	377 ^a	401	+24
Current mill average:		42.3	42.7	42.7	42.7	+0.4		12.7	12.7	12.7	0.0		112	116	116	+4		347	329	329	-18			380	381	+1
Cumulative mill average:		42.6			42.6			12.7					116					334						395		
Mill factor, %		99.3			99.3			100.0					96.6					103.9						96.2		
Mill index, %		99.5			99.5			100.8					100.9					104.2						100.3		

^aThis 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 XI
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL H
October and November, 1965

Date Made	Mch. Finish No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i.g.			Elmendorf Tear, g./sheet In Machine			Elmendorf Tear, g./sheet Cross Machine												
		Institute	Max.	Min.	Institute	Max.	Min.	Institute	Max.	Min.	Institute	Max.	Min.	Institute	Max.	Min.										
		Av.	Av.	Diff.	Av.	Av.	Diff.	Av.	Av.	Diff.	Av.	Av.	Diff.	Av.	Av.	Diff.										
8-30-65	----	43.4	40.8	42.2	42.9	+0.7	13.9	12.0	12.9	12.6	-0.3	136	86	112	103	-9	320	264	297	295	-2	392	268	349 ^a	370	+21
8-31-65	----	43.4	40.2	42.1	42.5	+0.4	13.4	11.8	12.7	12.5	-0.2	133	85	109	108	-1	368	232	292	292	0	352	272	325 ^a	374	+49
8-24-65	----	43.6	41.0	42.2	42.6	+0.4	13.8	11.9	12.8	12.6	-0.2	127	65	110	104	-6	336	240	281	295	+14	384	336	355 ^a	370	+15
8-23-65	----	44.4	42.4	43.4	43.8	+0.4	13.9	12.8	13.3	13.0	-0.3	129	94	112	109	-3	400	256	334	328	-6	464	328	382 ^a	404	+22
9-21-65	----	43.8	41.6	42.2	43.4	+1.2	13.2	12.0	12.6	12.4	-0.2	134	83	109	106	-3	352	256	289	289	0	400	304	352 ^a	381	+29
9-22-65	----	42.4	40.4	41.4	42.7	+1.3	13.1	11.2	12.4	12.1	-0.3	124	83	106	105	-1	360	240	297	270	-27	384	312	337 ^a	360	+23
9-24-65	----	43.6	42.0	42.7	43.4	+0.7	12.8	11.8	12.2	11.8	-0.4	132	91	112	106	-6	384	240	293	263	-30	368	304	330 ^a	357	+27
10-1-65	----	42.6	41.6	42.0	43.0	+1.0	12.6	11.3	11.9	11.7	-0.2	148	100	123	116	-7	360	272	311 ^a	300	-11	392	344	361 ^a	384	+23
10-3-65	----	43.8	41.4	42.3	42.5	+0.2	12.1	11.6	11.9	11.6	-0.3	142	99	120	117	-3	320	256	290	303	+13	400	320	359 ^a	405	+46
10-24-65	----	42.6	41.0	41.9	42.6	+0.7	12.4	11.5	12.0	11.6	-0.4	145	92	121	115	-6	416	256	326	322	-4	424	344	377 ^a	402	+25
Current mill average:		42.2	43.0	+0.8	12.5	12.2	-0.3	113	109	4		301	296	-5	353	381	+28									
Cumulative mill average:		42.3			12.9			105				301			357											
Mill factor, %		99.8			96.9			107.6				100.0			98.9											
Mill index, %		99.3			99.2			101.8				90.4			93.1											

^aThis 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 XII
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL I
October and November, 1965

Date Made	Vch. No.	Finish	Basis Weight, lb.			Caliber, points			Bursting Strength, p.s.i.g.			Elmendorf Tear, g./sheet			Elmendorf Tear, g./sheet													
			Institute		Mill	Institute		Mill	Institute		Mill	Institute		Mill	Institute		Mill											
			Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.											
8-3-65	W.F.	1	43.8	42.0	43.2	43.6	+0.4	12.5	11.9	12.2	11.9	-0.3	132	84	113	124	+1	384	240	315	367	+52	384	336	356 ^a	372	+16	
8-4-65	W.F.	1	43.6	41.8	42.4	43.3	+0.9	12.8	11.9	12.2	11.9	-0.3	132	99	117	112	-5	352	256	311	335	+24	392	328	359 ^a	385	+26	
8-18-65	W.F.	3	43.6	41.8	42.7	43.0	+0.3	13.1	12.0	12.6	12.7	+0.1	130	90	111	111	0	368	256	323	313	-10	424	320	375 ^a	377	+2	
9-18-65	W.F.	3	43.6	42.2	42.6	43.7	+1.1	13.0	11.7	12.4	12.4	0.0	145	92	117	119	+2	352	240	299	305	+6	400	352	370 ^a	361	-9	
9-21-65	W.F.	3	43.8	41.8	42.6	43.6	+1.0	13.0	12.2	12.7	12.0	-0.7	138	99	117	118	+1	352	248	307	314	+7	416	320	363 ^a	391	+26	
9-27-65	W.F.	3	43.8	42.4	43.4	44.1	+0.7	13.0	12.4	12.8	12.2	-0.6	134	96	111	114	+3	368	272	319	326	+7	432	352	381 ^a	406	+25	
10-9-65	W.F.	3	43.6	42.6	43.4	44.3	+0.9	12.9	12.1	12.6	12.6	0.0	129	83	107	114	+7	352	288	325	318	-7	392	344	375 ^a	402	+27	
10-10-65	W.F.	3	43.0	42.0	42.5	42.5	0.0	12.8	11.8	12.2	12.3	+0.1	130	91	109	113	+4	320	240	289	325	+36	400	320	361 ^a	399	+36	
10-27-65	W.F.	3	43.0	42.0	42.4	42.8	+0.4	12.8	11.8	12.2	12.1	-0.1	126	92	108	112	+4	336	264	297	305	+8	416	344	359 ^a	370	+11	
10-29-65	W.F.	3	42.4	41.6	42.1	42.5	+0.4	12.7	11.8	12.2	12.1	-0.1	128	85	108	111	+3	320	240	297	316	+19	368	336	349 ^a	367	+18	
Current mill average:			42.7	43.3	+0.6			12.4	12.2	12.2	12.2	-0.2		112	124	124	+2		308	322	322	322	+14		365	363	363	+16
Cumulative mill average:			43.1					12.6						112					335						379			
Mill factor, %			99.1					98.4						100.0					91.9						96.3			
Mill index, %			100.5					98.4						100.9					92.5						96.3			

^aThis 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 XIII

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL J

October and November, 1965

Date Made	Mch. Finish No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i.g.			Elmendorf Tear, g./sheet			Elmendorf Tear, g./sheet												
		Institute	Max. Min.	Av.	Institute	Max. Min.	Av.	Institute	Max. Min.	Av.	Institute	Max. Min.	Av.	Institute	Max. Min.	Av.										
10-21-65	1	44.0	41.8	43.2	43.9	+0.7	13.9	12.8	13.3	13.5	+0.2	130	82	110	100	-10	464	328	380 ^a	368	-12	488	368	441 ^a	434	-7
11-1-65	1	45.0	41.6	43.2	43.6	+0.4	13.8	12.2	13.1	12.8	-0.3	128	79	103	100	-3	448	320	397	363	-34	464	368	413 ^a	426	+13
Current mill average:		43.2			43.7	+0.5	13.2		13.1	-0.1	107		100	-7	389		366	-23	427		430	+3				
Cumulative mill average:		---			---	---	---		---	---	---		---	---	---		---	---	---		---	---	---	---	---	---
Mill factor, %		---			---	---	---		---	---	---		---	---	---		---	---	---		---	---	---	---	---	---
Mill index, %		101.6					104.8				96.4				116.8				112.7							

^aThis 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 XIV
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL E
October and November, 1965

Date Made	Mch. Finish No.	Basis Weight, lb.			Caliber, points			Bursting Strength, p.s.i.g.			Elmendorf Tear, g./sheet			Elmendorf Tear, g./sheet													
		Institute	Mill	Diff.	Institute	Mill	Diff.	Institute	Mill	Diff.	Institute	Mill	Diff.	Institute	Mill	Diff.											
		Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.											
10- 6-65	W.F.	1	43.2	41.6	42.4	42.1	-0.3	12.5	11.7	12.1	11.8	-0.3	135	92	112	114	+2	400	336	373	357	-16	448	376	402 ^a	371	-31
10- 7-65	W.F.	1	43.8	42.2	43.0	43.3	+0.3	12.8	11.8	12.2	12.0	-0.2	129	85	114	113	-1	472	336	390 ^a	378	-12	440	368	405 ^a	385	-20
10- 6-65	W.F.S.	1	43.0	41.0	42.0	42.1	+0.1	12.2	11.6	11.9	11.7	-0.2	129	88	114	118	+4	456	304	367 ^a	334	-33	448	376	405 ^a	382	-21
11- 9-65	W.F.	1	43.8	42.2	43.0	43.8	+0.8	12.5	11.9	12.1	11.9	-0.2	135	103	117	116	-1	416	296	345 ^a	405	+60	440	368	394 ^a	368	-26
Current mill average:			42.6	42.8	+0.2			12.1	11.8	-0.3			115	115	0			369	369	0			401	376	-25		
Cumulative mill average:			42.6					12.0					115					350					392				
Mill factor, %			100.0					100.8					100.0					105.4					102.3				
Mill index, %			100.2					96.0					103.6					110.8					105.8				

^aThis 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 IV
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL L
October and November, 1965

Date Made	Finish No.	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, P.S.I.g.			Elmendorf Tear, g./sheet In Machine			Elmendorf Tear, g./sheet Gross Machine												
			Institute		Mill	Institute		Mill	Institute		Mill	Institute		Mill	Institute		Mill										
			Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.										
9-11-65	WFLS	2	43.6	42.6	43.2	43.2	0.0	12.5	12.0	12.2	12	-0.2	146	94	123	113	-10	352	264	303	288	-15	416	320	353 ^a	400	+47
9-16-65	WFLS	2	43.8	42.8	43.3	43.0	-0.3	12.7	12.1	12.3	12	-0.3	150	86	119	114	-5	336	256	294 ^a	336	+42	400	320	362 ^a	400	+38
9-24-65	WFLS	2	43.6	42.2	42.9	42.8	-0.1	12.9	12.0	12.3	12.3	0.0	140	92	114	111	-3	376	240	294 ^a	296	+2	384	304	357 ^a	392	+35
10-3-65	WFLS	2	43.4	42.4	42.8	43.5	+0.7	12.9	12.0	12.5	12	-0.5	143	89	113	110	-3	352	232	287 ^a	312	+25	392	312	351 ^a	416	+65
10-11-65	WFLS	2	43.6	42.4	42.6	43.0	+0.4	13.8	12.8	13.2	12.7	-0.5	125	84	107	109	+2	360	264	313	320	+7	368	312	343 ^a	416	+73
10-18-65	WFLS	2	43.4	42.0	42.8	43.0	+0.2	13.7	12.9	13.2	13	-0.2	128	85	105	110	+5	344	264	299	304	+5	384	296	349 ^a	432	+83
10-26-65	WFLS	2	43.6	42.0	42.6	43.0	+0.4	13.8	12.8	13.2	13	-0.2	128	73	102	107	+5	336	240	280	288	+8	384	320	351 ^a	400	+49
11-5-65	WFLS	2	43.6	42.0	42.7	43.2	+0.5	13.7	12.9	13.2	12.7	-0.5	130	81	106	110	+4	344	240	287	320	+33	368	312	340 ^a	416	+76
Current mill average:			42.9		43.1	+0.2	12.8		12.5	-0.3	111		111	0	295		308	+13	351		409	+58					
Cumulative mill average:			42.4				12.6				114				303				358								
Mill factor, %			101.2				101.6				97.4				97.4				98.0								
Mill index, %			100.9				101.6				100.0				88.6				92.6								

^aThis 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 XVI
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL #
October and November, 1965

Date Made	Mch. Finish No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i.g.			Elmendorf Tear, g./sheet In Machine			Elmendorf Tear, g./sheet Cross Machine		
		Institute Max.	Institute Min.	Av.	Institute Max.	Institute Min.	Av.	Institute Max.	Institute Min.	Av.	Institute Max.	Institute Min.	Av.	Institute Max.	Institute Min.	Av.
10-7-65	----	43.0	41.4	42.0	12.8	11.2	12.0	11.5	-0.5	134	77	106	112	448	344	388 ^a
10-22-65	----	44.0	41.8	43.1	13.9	12.5	13.2	12.6	-0.6	130	85	109	108	432	336	374
10-26-65	----	44.4	42.0	43.1	13.9	12.4	13.1	12.7	-0.4	127	91	106	111	440	352	398
Current mill average:		42.7	42.7	0.0	12.8	12.3	-0.5	107	110	+3	387	375	-12	387	375	-12
Cumulative mill average:		42.7			12.0			107			361			384		
Mill factor, %		100.0			106.7			100.0			107.2			102.9		
Mill index, %		100.5			101.6			96.4			116.2			104.2		

^aThis 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 XVII
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL N
October and November, 1965

Date Made	Mch. No.	Finish	Basis Weight, lb.			Caliber, points			Bursting Strength, p.s.i.g.			Elmendorf Tear, g./sheet			Elmendorf Tear, g./sheet													
			Institute		Mill	Institute		Mill	Institute		Mill	Institute		Mill	Institute		Mill											
			Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Diff.							
9-16-65	W.F.	1	43.8	41.0	42.4	42.1	-0.3	13.1	12.1	12.8	12.4	-0.4	125	89	108	111	+3	320	240	295 ^a	239	-56	400	336	359 ^a	332	-27	
9-23-65	W.F.	1	43.0	41.6	42.2	42.2	0.0	13.6	13.0	13.2	12.9	-0.3	126	74	102	107	+5	376	264	300	261	-39	384	320	353 ^a	343	-10	
9-29-65	W.F.	1	42.2	41.6	41.8	42.4	+0.6	12.9	12.2	12.6	13.1	+0.5	126	95	114	120	+6	288	224	255	284	+29	368	296	329 ^a	356	+27	
10-8-65	W.F.	1	41.8	40.0	40.9	41.6	+0.7	13.2	12.1	12.6	12.6	0.0	129	82	108	108	0	328	248	289	239	-50	376	288	344 ^a	316	-28	
10-14-65	W.F.	1	44.0	42.6	43.6	43.0	-0.6	13.7	12.8	13.2	13.0	-0.2	140	90	110	110	0	352	264	313	238	-75	408	320	359 ^a	333	-26	
10-22-65	W.F.	1	43.8	42.2	42.9	42.6	-0.3	13.5	12.8	13.1	13.0	-0.1	128	74	100	107	+7	368	256	301	238	-63	400	304	345 ^a	326	-19	
10-29-65	W.F.	1	43.4	41.4	42.1	42.2	+0.1	13.0	12.3	12.7	12.5	-0.2	125	90	109	111	+2	296	272	285	244	-41	376	320	346 ^a	337	-11	
11-6-65	W.F.	1	41.6	40.0	40.6	41.8	+1.2	12.9	12.0	12.4	12.6	+0.2	117	86	103	110	+7	312	248	273	242	-31	352	280	321 ^a	322	+1	
Current mill average:			42.1	42.3	+0.2	12.8	12.8	0.0	107	110	+3	289	248	-41	345	333	-12											
Cumulative mill average:			42.2			12.9			110			282			343													
Mill factor, %			99.8			99.2			97.3			102.5			100.6													
Mill index, %			99.1			101.6			96.4			86.8			91.0													

^aThis 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 XVIII
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL O
October and November, 1965

Date Made	Vch. Finish Co.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i.g.			Elmendorf Tear, g./sheet			Elmendorf Tear, g./sheet													
		Max.	Institute	Mill	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.											
9-20-65	WFLS	1	44.2	43.6	43.8	43.2	-0.6	14.3	12.8	13.5	13.0	-0.5	130	101	117	113	-4	384	312	347	360	+13	464	368	407 ^a	433	+26
9-27-65	WFLS	1	43.8	41.0	42.2	41.4	-0.8	13.5	12.5	13.0	12.9	-0.1	130	82	107	105	-2	336	288	309	329	+20	448	352	384 ^a	380	-4
10-4-65	WFLS	1	43.2	41.6	42.2	41.4	-0.8	13.9	12.8	13.3	13.0	-0.3	123	81	105	107	+2	368	272	308	334	+26	400	320	365 ^a	385	+20
10-9-65	WFLS	1	45.6	42.8	44.1	44.0	-0.1	15.3	13.5	14.3	13.5	-0.8	130	87	108	106	-2	400	272	347 ^a	348	+1	448	336	387 ^a	405	+18
10-18-65	WFLS	1	44.0	42.4	43.3	43.5	+0.2	14.9	13.5	14.1	13.7	-0.4	133	93	111	108	-3	392	288	343	329	-14	448	352	383 ^a	368	+5
10-24-65	WFLS	1	43.2	41.4	42.2	42.2	0.0	13.9	12.7	13.4	13.0	-0.4	132	87	113	107	-6	360	272	323 ^a	336	+13	448	344	385 ^a	392	+7
11-1-65	WFLS	1	43.0	41.6	42.2	42.4	+0.2	13.8	12.9	13.3	12.9	-0.4	129	90	108	109	+1	352	272	310	305	-5	416	352	385 ^a	364	-21
11-8-65	WFLS	1	42.8	41.4	42.3	42.4	+0.1	13.7	12.9	13.2	12.8	-0.4	133	94	110	108	-2	360	272	311	315	+4	456	336	374 ^a	385	+11
Current mill average:			42.8	42.6	-0.2			13.5	13.1	-0.4			110	108	-2			325	332	+7			384	391	+7		
Cumulative mill average:			42.6					13.5					110					332					385				
Mill factor, %			100.5					100.0					100.0					97.9					99.7				
Mill index, %			100.7					107.1					99.1					97.6					101.3				

^aThis 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 XII

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL F

October and November, 1965

Date Made	Mch. Finish No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i.g.			Elmendorf Tear, g./sheet In Machine			Elmendorf Tear, g./sheet Cross Machine											
		Institute	Mill	Diff.	Max.	Min.	Av.	Institute	Mill	Diff.	Max.	Min.	Av.	Institute	Mill	Diff.									
10-4-65	W.F.	44.4	42.4	43.7	+0.3	13.2	12.2	12.7	12.9	+0.2	142	101	124	113	-11	432	304	362 ^a	349	-13	448	352	395 ^a	383	-12
10-4-65	W.F.	44.0	42.0	43.0	+0.4	13.3	12.7	13.0	13.0	0.0	140	91	114	110	-4	424	336	380 ^a	331	-49	448	328	398 ^a	379	-19
10-28-65	W.F.	43.4	41.4	42.2	-0.3	13.7	12.7	13.1	12.7	-0.4	136	87	118	113	-5	424	288	387	339	-48	448	368	402 ^a	381	-21
10-28-65	W.F.	43.4	41.6	42.3	-0.5	13.5	12.2	13.0	12.6	-0.4	132	92	119	109	-10	432	336	377 ^a	329	-48	440	368	401 ^a	374	-27
Current mill average:		42.7	42.7	0.0		12.9	12.8	-0.1			119	111	-8			377	337	-40			399	379	-20		
Cumulative mill average:		42.7				13.2					111					382					403				
Mill factor, %		100.0				97.7					107.2					98.7					99.0				
Mill index, %		100.5				102.4					107.2					113.2					105.3				

^aThis 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 XI
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL 2
October and November, 1965

Date Made	Mch. Finish No.	Basis Weight, lb.			Caliber, points			Bursting Strength, P.S.I.			Elmendorf Tear, g./sheet In Machine			Elmendorf Tear, g./sheet Cross Machine												
		Institute	Max.	Min.	Av.	Diff.	Institute	Max.	Min.	Av.	Diff.	Institute	Max.	Min.	Av.	Diff.										
9- 2-65	D.F. 1	44.0	42.4	43.4	43.3	-0.1	14.0	12.5	13.3	13.0	-0.3	124	90	107	109	+2	384	272	323	299	-24	432	336	379 ^a	386	+7
9- 4-65	D.F. 1	43.6	42.2	42.8	42.8	0.0	13.1	11.9	12.6	12.3	-0.3	128	96	111	112	+1	400	256	319 ^a	274	-45	432	336	373 ^a	374	+1
9-20-65	D.F. 1	43.6	41.6	42.6	42.9	+0.3	13.7	12.2	12.9	12.8	-0.1	118	83	105	114	+9	376	288	333 ^a	289	-44	464	320	407 ^a	376	-31
9-23-65	D.F. 1	43.6	42.4	43.0	42.9	-0.1	13.7	12.4	13.1	12.6	-0.5	123	73	104	107	+3	376	288	336 ^a	298	-38	464	336	383 ^a	387	+4
10- 5-65	D.F. 1	43.4	42.0	42.6	42.9	+0.3	14.5	13.2	13.7	13.3	-0.4	122	87	106	115	+9	368	264	323	302	-21	408	352	383 ^a	404	+21
10-11-65	D.F. 1	44.0	42.0	43.0	43.6	+0.6	13.7	12.6	13.0	12.8	-0.2	125	98	113	115	+2	336	240	299	291	-8	472	344	387 ^a	373	-14
10-20-65	D.F. 1	42.8	41.6	42.1	42.4	+0.3	13.3	12.0	12.8	12.4	-0.4	115	86	105	111	+6	336	232	289	289	0	448	320	359 ^a	362	+3
10-21-65	D.F. 1	42.6	41.4	42.0	42.4	+0.4	13.7	12.0	13.0	12.8	-0.2	115	81	101	107	+6	368	240	303 ^a	279	-24	384	320	359 ^a	360	+1
Current mill average:		42.7	42.9	+0.2	13.1	12.7	-0.4	106	111	+5	316	290	-26	379	378	-1										
Cumulative mill average:		42.3			12.9		111					324		379												
Mill factor, %		100.9			101.6		95.5					97.5		100.0												
Mill index, %		100.5			104.0		95.5					94.9		100.0												

^aThis 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 XII

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL S

October and November, 1965

Date Made	Mch. Finish No.	Basic Weight, lb.			Caliper, points			Bursting Strength, p.s.i.g.			Elmendorf Tear, g./sheet																	
		Institute		Mill Av.	Institute		Mill Av.	Institute		Mill Av.	Institute		Mill Av.															
		Max.	Min.		Max.	Min.		Max.	Min.																			
8-28-65	----	1	43.6	41.6	42.2	42.8	+0.6	13.9	12.9	13.3	12.8	-0.5	129	88	107	104	-3	336	240	285	314	+29	400	280	334 ^a	365	+31	
9- 9-65	----	1	43.0	41.2	42.3	42.8	+0.5	13.8	12.8	13.2	12.7	-0.5	130	83	109	107	-2	320	224	259 ^a	279	+20	392	296	323 ^a	324	+1	
9-27-65	----	1	42.0	40.0	41.3	42.3	+1.0	12.8	12.0	12.4	12.1	-0.3	125	95	107	104	-3	288	208	248	269	+21	320	272	301 ^a	338	+37	
9-30-65	----	1	42.6	41.6	42.1	42.8	+0.7	12.4	11.9	12.1	12.2	+0.1	139	82	110	106	-4	320	208	273	273	0	336	288	314 ^a	335	+21	
10- 8-65	----	1	42.2	40.4	41.7	42.3	+0.6	13.7	12.8	13.1	12.8	-0.3	128	84	109	104	-5	320	232	268	272	+4	360	288	319 ^a	368	+49	
11- 1-65	----	1	42.8	41.6	42.0	42.6	+0.6	13.7	12.8	13.2	12.7	-0.5	118	79	100	102	+2	288	240	259	253	-6	320	296	311 ^a	357	+46	
Current mill average:			41.9	42.6	+0.7			12.9	12.6	-0.3	107	104	-3	265	277	+12	317	348	+31									
Cumulative mill average:			42.4					13.0			109			273			326											
Mill factor, %			98.8					99.2			98.2			97.1			97.2											
Mill index, %			98.6					102.4			96.4			79.6			83.6											

^aThis 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 XIII

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL T

October and November, 1965

Date Made	Finish No.	Nch.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i.g.			Elmendorf Tear, g./sheet In Machine			Elmendorf Tear, g./sheet Cross Machine												
			Institute	Max.	Min.	Av.	Diff.	Institute	Max.	Min.	Av.	Diff.	Institute	Max.	Min.	Av.	Diff.	Institute	Max.	Min.	Av.	Diff.					
9-4-65	W.F.	2	43.4	41.6	42.4	42.4	0.0	12.9	11.2	12.1	11.7	-0.4	142	94	115	114	-1	360	272	311	277	-34	408	336	371 ^a	353	-18
9-8-65	N.F.	1	43.4	41.8	42.6	42.6	0.0	12.9	11.5	12.2	11.6	-0.6	134	100	117	116	-1	320	256	296	278	-18	400	288	362 ^a	357	-5
9-13-65	W.F.	1	44.0	42.0	43.4	42.9	-0.5	12.7	11.5	12.1	11.8	-0.3	136	90	112	110	-2	352	264	307	282	-25	432	328	368 ^a	365	-3
10-11-65	W.F.	1	43.2	41.6	42.3	42.5	+0.3	12.9	11.8	12.3	11.8	-0.5	137	90	117	112	-5	328	256	299	267	-32	384	336	367 ^a	355	-12
Current mill average:			42.7	42.6	-0.1				12.2	11.7	-0.5		115	115	-2	303	276	-27	367	358	-9						
Cumulative mill average:			42.5						12.2				115			304			363								
Mill factor, %			100.5						100.0				100.0			99.7			101.1								
Mill index, %			100.5						96.8				103.6			91.0			96.8								

^aThis 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 XIII

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL U

October and November, 1965

Date Made	Mch. Finish No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i.g.			Elmendorf Tear, g./sheet		
		Institute	Max. Min.	Av.	Institute	Max. Min.	Av.	Institute	Max. Min.	Av.	Institute	Max. Min.	Av.

No samples submitted.

TABLE XIV

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL V

9-18-65	W.B.	-	43.6	41.4	42.2	43.0	+0.8	12.8	11.8	12.2	12.3	+0.1	124	89	105	108	+3	400	320	361 ^a	379	+18	448	376	404 ^a	417	+13
9-20-65	W.B.	-	43.6	41.4	42.2	42.7	+0.5	12.3	11.7	12.0	11.8	-0.2	130	96	115	112	-3	400	344	369 ^a	401	+32	448	368	403 ^a	419	+16
9-23-65	W.B.	-	43.8	41.8	42.5	42.8	+0.3	12.9	11.9	12.4	12.3	-0.1	135	97	109	108	-1	440	336	374 ^a	395	+21	448	360	402 ^a	435	+33
9-23-65	W.B.	-	42.2	41.0	41.8	42.2	+0.4	12.8	12.0	12.3	12.4	+0.1	126	93	107	109	+2	416	336	370 ^a	391	+21	440	360	395 ^a	401	+6
9-26-65	W.B.	-	43.4	41.0	42.1	42.2	+0.1	12.8	11.8	12.3	12.3	0.0	132	98	112	111	-1	446	304	372 ^a	387	+15	464	368	411 ^a	421	+10
Current mill average:			42.2		42.6	+0.4		12.2	12.2	0.0				110	110	0		369	390		369	+21	403	419		+16	
Cumulative mill average:			42.4					12.5						107				379			379		406				
Mill factor, %			99.5					97.6						102.8				97.4			97.4				99.3		
Mill index, %			99.3					96.8						99.1				110.8			110.8				106.3		

^aThis 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 XIV

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL W

October and November, 1965

Date Made	Mch. Finish No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i.g.			Elmendorf Tear, g./sheet		
		Max.	Institute	Mill	Max.	Institute	Mill	Max.	Institute	Mill	Max.	Institute	Mill
		Min.	Av.	Diff.	Min.	Av.	Diff.	Min.	Av.	Diff.	Min.	Av.	Diff.

No samples submitted.

TABLE XXVI

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL X

10-11-65	----	-	42.0	40.0	41.1	41.8	+0.7	14.0	12.1	13.1	12.7	-0.4	144	76	103	111	+ 8	376	320	348	---	464	304	364 ^a	---	
10-26-65	----	1	42.4	40.0	41.6	42.0	+0.4	13.8	12.0	12.8	12.6	-0.2	140	70	107	114	+ 7	448	232	347 ^a	---	400	288	349 ^a	---	
11- 1-65	----	1	42.6	41.2	42.1	42.7	+0.6	13.3	12.3	12.8	12.8	0.0	136	67	105	115	+10	408	304	352	---	448	344	376 ^a	---	
Current mill average:			41.6	42.2	+0.6				12.9	12.7	-0.2			105	114	+ 9		349					363			
Cumulative mill average:			42.2						12.8					114				352					372			
Mill factor, %			98.6						100.8					92.1				99.1					97.6			
Mill index, %			97.9						102.4					94.6				104.8					95.8			

^aThis 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.

of linerboard. In addition to the presentations of Institute and mill data described above, Tables IV through XXVI also include under each test heading a column labeled "Diff." This column shows the differences between averages obtained at the Institute and those obtained at the mills. The data obtained at the Institute are used as the reference in calculating these differences.

The average test results obtained at the Institute and at the mills are summarized in Table XXVII for the current period. Shown in this table for each mill is the difference for each test between the current mill average based on Institute data and the current mill average based on mill data. In addition, for each test the maximum difference encountered in comparing Institute and mill averages for individual sample lots is shown. In Table XXVIII, the differences for each test between the current mill averages based on Institute data and those based on mill data shown in Table XXVII have been converted to per cent (based on Institute data as a reference). In addition, for purposes of comparison, the percentage differences from the previous two bimonthly reports are shown in Table XXVIII.

A summary of the agreement obtained in the comparisons of Institute and mill test data for the current period is shown in Table XXIX. This summary is based on the results given in Table XXVIII. The tabulated data show the number of mills, and the percentage of all mills which this number represents, whose average test results for the current period fall within designated percentages from the average test results obtained at the Institute. It may be noted from this summary that agreement between the results obtained at the Institute and those obtained at the mills was generally good.

TABLE XXVII
SUMMARY OF TEST RESULT COMPARISONS (Average Mill and Institute Results) FOR OCTOBER AND NOVEMBER, 1965

Mills ^a	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	S	T	U	V	W	X
No. samples compared	8	8	9	0	3	8	8	10	10	2	4	8	3	8	8	4	8	6	4	0	5	0	3
Institute	42.0	42.6	42.7	---	42.6	42.9	42.3	42.2	42.7	43.2	42.6	42.9	42.7	42.1	42.8	42.7	42.7	41.9	42.7	---	42.2	---	41.6
Mill	42.6	42.6	42.8	---	42.5	43.2	42.7	43.0	43.3	43.7	42.8	43.1	42.7	42.3	42.6	42.7	42.9	42.6	42.6	---	42.6	---	42.2
Av. Diff. ^b	+0.6	0.0	+0.1	---	-0.1	+0.3	+0.4	+0.8	+0.6	+0.5	+0.2	+0.2	0.0	+0.2	-0.2	0.0	+0.2	+0.7	-0.1	---	+0.4	---	+0.6
Max. Diff. ^c	+1.0	+0.4	+0.9	---	-0.2	+0.7	+0.8	+1.3	+1.1	+0.7	+0.8	+0.7	+0.1	+1.2	-0.8	-0.5	+0.6	+1.0	-0.5	---	+0.8	---	+0.7
Caliper																							
Institute	12.5	12.5	12.3	---	12.9	12.5	12.7	12.5	12.4	13.2	12.1	12.8	12.8	12.8	13.5	12.9	13.1	12.9	12.2	---	12.2	---	12.9
Mill	12.1	12.3	12.2	---	12.5	12.2	12.7	12.2	12.2	13.1	11.8	12.5	12.3	12.8	13.1	12.8	12.7	12.6	11.7	---	12.2	---	12.7
Av. Diff. ^b	-0.4	-0.2	-0.1	---	-0.4	-0.3	0.0	-0.3	-0.2	-0.1	-0.3	-0.3	-0.5	-0.0	-0.4	-0.1	-0.4	-0.3	-0.5	---	0.0	---	-0.2
Max. Diff. ^c	-0.8	-0.6	+0.4	---	-0.4	-0.9	-0.2	-0.4	-0.7	-0.3	-0.3	-0.5	-0.6	+0.5	-0.8	-0.4	-0.5	-0.5	-0.6	---	-0.2	---	-0.4
Bursting Strength																							
Institute	111	108	105	---	107	112	112	113	112	107	115	111	107	107	110	119	106	107	115	---	110	---	105
Mill	116	113	106	---	109	113	116	109	114	100	115	111	110	110	108	111	111	104	113	---	110	---	114
Av. Diff. ^b	+5	+5	+1	---	+2	+1	+4	-4	+2	-7	0	0	+3	+3	-2	-8	+5	-3	-2	---	0	---	+9
Max. Diff. ^c	+13	+10	+6	---	+3	+6	+6	-9	+7	-10	+4	-10	+6	+7	-6	-11	+9	-5	-5	---	+3	---	+10
Tearing Strength, in																							
Institute	327	360	308	---	342	355	347	301	308	389	369	295	387	289	325	377	316	265	303	---	369	---	349
Mill	333	---	333	---	330	336	329	296	322	366	369	308	375	248	332	337	290	277	276	---	390	---	---
Av. Diff. ^b	+6	---	+25	---	-12	-19	-18	-5	+14	-23	0	+13	-12	-41	+7	-40	-26	+12	-27	---	+21	---	---
Max. Diff. ^c	+37	---	+62	---	-30	-50	-37	-30	+52	-34	+60	+42	-21	-75	+26	-49	-45	+29	-34	---	+32	---	---
Tearing Strength, cross																							
Institute	391	407	371	---	382	376	380	353	365	427	401	351	395	345	384	399	379	317	367	---	403	---	363
Mill	433	---	407	---	370	372	381	381	383	430	376	409	394	333	391	379	378	348	358	---	419	---	---
Av. Diff. ^b	+42	---	+36	---	-12	-4	+1	+28	+18	+3	-25	+58	-1	-12	+7	-20	-1	+31	-9	---	+16	---	---
Max. Diff. ^c	+81	---	+58	---	-21	-50	+24	+49	+38	+13	-31	+83	-9	-28	+26	-27	-31	+49	-18	---	+33	---	---

^aComparison based on averages involved only those samples on which mill test data were submitted.

^bAverage difference is the difference between the Institute mill average and the mill average based on mill test data.

^cMaximum difference encountered in comparing the Institute average and the mill averages for any sample submitted by that particular mill.

TABLE XXVIII
COMPARISON OF INSTITUTE-MILL DIFFERENCES FOR OCTOBER AND NOVEMBER, 1965

Mill	Period	Basis Weight	Caliper	Bursting Strength	Average Difference, %		Mill	Period	Basis Weight	Caliper	Bursting Strength	Tear, in	Tear, cross
					Tear, in	Tear, cross							
A	June-July	+1	-3	+7	+7	+12	M	June-July	+0.7	-3	+2	+0.8	+0.5
	Aug.-Sept.	0	-6	+2	+3	+7		Aug.-Sept.	+0.5	-5	+2	-4	-2
	Current	+1	-3	+5	+2	+11		Current	0	-4	+3	-3	-0.3
B	June-July	+0.2	0	+0.9	--	--	N	June-July	+0.2	0	0	-2	+4
	Aug.-Sept.	+0.5	0	+3	--	--		Aug.-Sept.	+1	0	-3	+2	+9
	Current	0	-2	+5	--	--		Current	+0.5	0	+3	-14	-3
C	June-July	+0.9	-2	-2	+10	+9	O	June-July	-0.2	-4	-6	+5	+2
	Aug.-Sept.	+0.7	-2	-4	+10	+11		Aug.-Sept.	+0.2	-4	-0.9	+3	+5
	Current	+0.2	-0.8	+1	+8	+10		Current	-0.5	-3	-2	+2	+2
D	June-July	--	--	--	--	--	P	June-July	+0.7	-0.7	-7	-2	+3
	Aug.-Sept.	--	--	--	--	--		Aug.-Sept.	0	-2	-4	-9	-2
	Current	--	--	--	--	--		Current	0	-0.8	-7	-11	-5
E	June-July	+0.5	-2	0	-9	-5	Q	June-July	+2	-2	-0.9	-11	-2
	Aug.-Sept.	+0.2	-4	+2	-4	-1		Aug.-Sept.	+0.7	-2	0	-6	+0.3
	Current	-0.2	-3	+2	-4	-3		Current	+0.5	-3	+5	-8	-0.3
F	June-July	+0.5	-0.8	-3	-2	-0.3	S	June-July	+1	-4	-4	+9	+10
	Aug.-Sept.	+0.9	-2	-2	-2	-2		Aug.-Sept.	+2	-2	-5	+6	+6
	Current	+0.7	-2	+0.9	-5	-1		Current	+2	-2	-3	+5	+10
G	June-July	+0.5	-2	-4	-4	-0.3	T	June-July	0	-2	-4	-4	+1
	Aug.-Sept.	+0.5	-2	-3	-5	-2		Aug.-Sept.	-0.2	-2	-3	-11	-2
	Current	+0.9	0	+4	-5	+0.3		Current	-0.2	-4	-2	-9	-2
H	June-July	+0.9	-2	+4	-4	0	U	June-July	--	--	--	--	--
	Aug.-Sept.	+0.5	-2	0	+4	+7		Aug.-Sept.	--	--	--	--	--
	Current	+2	-2	-4	-2	+8		Current	--	--	--	--	--
I	June-July	+2	-0.8	-0.9	-6	+3	V	June-July	+0.5	-2	-2	-10	-4
	Aug.-Sept.	+3	0	-3	-0.3	+2		Aug.-Sept.	+0.5	0	+3	-9	-0.7
	Current	+1	-2	+2	+5	+5		Current	+0.9	0	0	+6	+4
J	June-July	--	--	--	--	--	W	June-July	--	--	--	--	--
	Aug.-Sept.	--	--	--	--	--		Aug.-Sept.	--	--	--	--	--
	Current	+1	-0.8	-7	-6	+0.7		Current	--	--	--	--	--
K	June-July	--	--	--	--	--	X	June-July	+1	-2	0	--	--
	Aug.-Sept.	+0.9	-2	+2	-2	-4		Aug.-Sept.	+1	-2	+0.8	--	--
	Current	+0.5	-2	0	0	-6		Current	+1	-2	+9	--	--
L	June-July	+2	-3	-2	+11	+17		June-July	--	--	--	--	--
	Aug.-Sept.	+0.9	-2	+2	+11	+22		Aug.-Sept.	--	--	--	--	--
	Current	+0.5	-2	0	+4	+17		Current	--	--	--	--	--

TABLE XXIX
SUMMARY OF AGREEMENT BETWEEN INSTITUTE AND MILL RESULTS
FOR OCTOBER AND NOVEMBER, 1965

		Average Percentage Difference Between ^a Institute and Mill Test Results									
		+0.5	+1	+2	+3	+4	+5	+7.5	+10	+17	
Basis weight	Number of mills	11	18	20							
	Percentage of mills	55.0	90.0	100.0							
Caliper	Number of mills	3	6	14	18	20					
	Percentage of mills	15.0	30.0	70.0	90.0	100.0					
Bursting strength	Number of mills	3	5	9	12	14	17	19	20		
	Percentage of mills	15.0	25.0	45.0	60.0	70.0	85.0	95.0	100.0		
Tearing strength, in	Number of mills	1	1	4	5	7	11	13	16	18	
	Percentage of mills	5.6	5.6	22.2	27.8	38.9	61.1	72.2	88.9	100.0	
Tearing strength, cross	Number of mills	3	5	7	9	10	12	13	16	18	
	Percentage of mills	16.7	27.8	38.9	50.0	55.6	66.7	72.2	88.9	100.0	

^aBased on the average percentage differences between Institute and mill data given in Table XXVIII.

Preconditioning and conditioning data pertinent to the test results obtained at the mills during the current period are given in Table XXX.

TABLE XXX

PRECONDITIONING AND CONDITIONING DATA FOR MILL TESTS
OCTOBER AND NOVEMBER, 1965

Mill Code	Preconditioning			Conditioning		
	R.H., %	Temp., °F.	Time, hr.	R.H., %	Temp., °F.	Time, hr.
A	50	70-72	120	50	70-72	120
B	49-50	72-74	24-48	49-50	72-74	24
C ^b	55	72	--	55	72	--
D	--	--	--	--	--	--
E	50	72	48-72	50	72	48
F	34-35	75-77	8	48-52	71-72	16
G	50	73	24	50	73	24
H	50	70-74	48-720	50	70-74	3.5-4
I	--	--	--	50	73	24
J	49-50	73-74	18-20	49-50	73-74	18-20
K	31-48	72-73	24-48	48-50	72-73	48
L	50	72	24	--	--	--
M ^a	--	--	--	--	--	--
N	--	--	--	40-69	72-88	--
O	50	72-73	24	50	72-73	24
P	--	--	--	50	73	24
Q	30	73	48	50	73	48
S	50	72	72	50	72	72
T ^b	38-48	78-93	0.5	50	72-73	24
U ^b	--	--	--	--	--	--
V ^b	56-60	70-73	48	50	73	--
W ^b	--	--	--	--	--	--
X	--	--	--	56-62	71-72	2-4

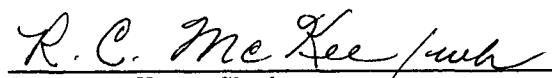
^aNo data were submitted relative to preconditioning and conditioning.

^bNo samples were submitted for evaluation during the current period.

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