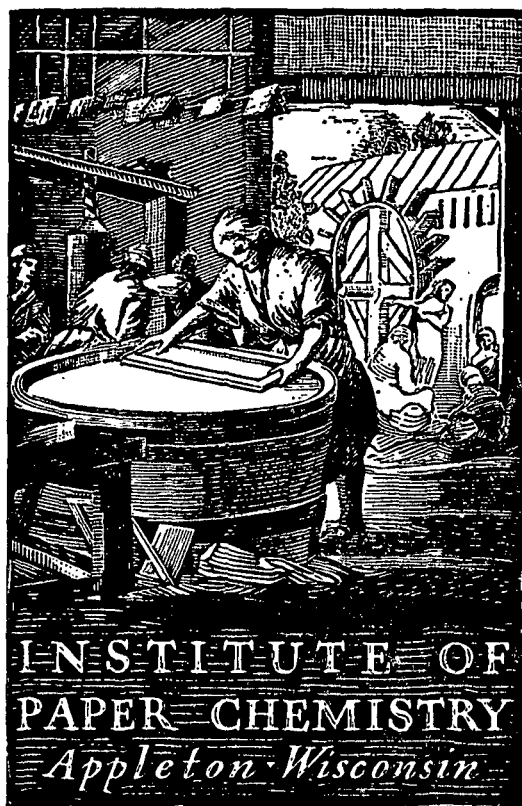


Baseline

BASE-LINE



INSTITUTE OF
PAPER CHEMISTRY
Appleton Wisconsin

CONTINUOUS EVALUATION OF CORRUGATING MEDIUM

(Data for April and May, 1967)

Project 2694-2

Report Three

A Progress Report

to

FOURDRINIER KRAFT BOARD INSTITUTE, INC.

June 1, 1967

CODE LETTERS FOR REPORT THREE

Project 2694-2

			Code Letter
1. The Chesapeake Corporation - West Point	No. 1	--	
2. Container Corporation of America - Circleville	No. 5	G'	
3. Continental Can Company, Inc. - Hopewell	No. 1	I	
- Hodge	No. 1	--	
4. Crown Zellerbach Corporation - Baltimore	No. 1	G	
- Baltimore	No. 2	A	
- Bogalusa	No. 4	P	
- Lebanon	No. 2	R	
5. Hoerner Waldorf Corporation - Ontonagon	No. 1	K	
- St. Paul	No. 4	A'	
- St. Paul	No. 5	E	
6. International Paper Company - Bastrop	No. 1	S	
- Bastrop	No. 2	D	
- Georgetown	No. 1	Z	
7. The Mead Corporation - Harriman	No. 1	C	
- Knoxville	No. 1	Y	
- Lynchburg	No. 2	C'	
- Sylva	No. 1	F	
- Sylva	No. 2	W	
8. Olinkraft, Inc. - West Monroe	No. 1	--	
- West Monroe	No. 2	B	
- West Monroe	No. 3	T	
9. Owens-Illinois, Inc. - Big Island	No. 1	U	
- Big Island	No. 3	Q	
- Tomahawk	No. 1	E'	
- Tomahawk	No. 2	O	
- Tomahawk	No. 3	N	
10. Packaging Corp. of America - Filer City	No. 1	V	
- Filer City	No. 2	F'	
11. St. Joe Paper Company - Port St. Joe	No. 1	--	
12. St. Regis Paper Company - Coshocton	No. 1	--	
13. Union Camp Corporation - Savannah	No. 2	L	
- Monroe	No. 2	H	
14. West Va. Pulp & Paper Co. - Covington	No. 6	M	
- Covington	No. 7	X	
- Williamsburg	No. 1	D'	
- Williamsburg	No. 2	B'	
15. Weyerhaeuser Company - Plymouth	No. 3	J	

BASE LINE

THE INSTITUTE OF PAPER CHEMISTRY

Appleton, Wisconsin

CONTINUOUS EVALUATION OF CORRUGATING MEDIUM

(Data for April and May, 1967)

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June 1, 1967

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THE INSTITUTE OF PAPER CHEMISTRY

Appleton, Wisconsin

CONTINUOUS EVALUATION OF CORRUGATING MEDIUM
(Data for April and May, 1967)

SUMMARY

PART I. GENERAL

A. Participation Data:

	<u>Current Report</u>	<u>Previous Report</u>
Period	April-May, 1967	Feb.-March, 1967
Number of machines	33	33
Number of rolls	241	199

B. Distribution of Mediums by Type:

Semichemical	30	29
Bogus	3	3
Kraft	--	1

C. New Participants:

None

None

D. Nonparticipants:

1. Chesapeake (West Point)	1. Chesapeake (West Point)
2. Continental Can (Hodge No. 1)	2. Olinkraft (W. Monroe No. 1)
3. Olinkraft (W. Monroe No. 1)	3. St. Regis (Coshocton No. 1)
4. St. Regis (Coshocton No. 1)	4. West Virginia (Williamsburg No. 1)
5. St. Joe (Port St. Joe No. 1)	5. West Virginia (Covington No. 7)

PART II. QUALITY DATA

A. Summary of Physical Test Data

Test	Report	Current Machine Data			12-Month
		Max.	Min.	Av.	Cum. F.K.I: Av.
Basis Weight, lb./1000 ft. ²	Cur.	28.3	25.8	27.1	27.0
	Prev.	28.4	26.0	27.1	27.0
Caliper, pt.	Cur.	11.9	9.2	10.5	10.4
	Prev.	11.4	8.9	10.4	10.4
Concora Flat Crush, p.s.i.	Cur.	40.3	29.1	35.3	35.1
	Prev.	43.1	26.0	34.9	35.2
Single-Face Flat Crush, p.s.i.	Cur.	37.9	27.7	33.1	32.1
	Prev.	39.3	23.0	32.0	32.1

B. Summary of Runnability Data

Runnability		Current Report			Previous Report		
Speed, f.p.m.	Tension, lb./in.	No. of Rolls	% of Total	Cum., %	No. of Rolls	% of Total	Cum., %
<600	Min.	24	10.0	100.0	8	4.0	100.0
600	Min.	46	19.1	90.0	35	17.6	96.0
600	1/2	54	22.4	70.9	49	24.6	78.4
600	1	32	13.3	48.5	22	11.1	53.8
600	1-1/2	85	35.3	35.3	85	42.7	42.7

C. Trends in Quality Data in Current Report With Reference to Data from Previous Report

Basis Weight:	Same as previous report.	} Only single-face flat crush changed appreciably.
Caliper:	Increased from 10.4 to 10.5 pt.	
Concora Flat Crush:	Increased from 34.9 to 35.3 p.s.i.	
Single-Face Flat Crush:	Increased from 32.0 to 33.1 p.s.i.	
Runnability:		
<600 f.p.m. at minimum tension;	Increased from 4.0 to 10.0%.	} Runnability changed appreciably only at lowest and highest levels.
600 f.p.m. at minimum tension;	Increased from 17.6 to 19.1%.	
600 f.p.m. at 1/2 lb./in. tension;	Decreased from 24.6 to 22.4%.	
600 f.p.m. at 1 lb./in. tension;	Increased from 11.1 to 13.3%.	
600 f.p.m. at 1-1/2 lb./in. tension;	Decreased from 42.7 to 35.3%.	

PART III. CONCORRA CALIBRATION DATA

A. Summary of Data

Range, %	Current Report		Previous Report		6-Month Average, % of total ^a
	No. of Machines	% of Total	No. of Machines	% of Total	
+ 1.0	11	34.4	9	29.0	22.5
+ 2.5	18	56.2	13	41.9	45.8
+ 5.0	22	68.8	18	58.1	62.8
+10.0	31	96.9	31	100.0 ^c	96.5
+ Max.	32	100.0 ^b			100.0 ^d

B. Significance of Calibration Data

The current levels of agreement between Institute and mill Concorra flat crush data compare favorably with those for the previous report and with those for the previous six-month period.

^a
Average for three previous bimonthly periods excluding the current period.

^b
Maximum percentage difference was +11.9.

^c
Maximum percentage difference was + 8.3.

^d
Maximum percentage difference was +14.9.

INTRODUCTION

As requested by the Technical Division of the Fourdrinier Kraft Board Institute, Inc., the reports pertinent to the continuous evaluation of corrugating medium have been prepared by The Institute of Paper Chemistry on a bimonthly instead of monthly basis since August 1, 1961. The current report presents results obtained during the months of April and May, 1967, on 241 rolls of corrugating medium representing the production of thirty-three machines. Each of these 241 rolls of corrugating medium was evaluated for basis weight, caliper, Concora flat crush (conditioned after fluting), H. and D. flat crush on single-faced board, and runnability. The evaluation of runnability was initiated by corrugating each roll under standardized conditions on the Institute's corrugator into A-flute board at 600 feet per minute with minimum tension and recording the draw factor at this condition if the roll ran satisfactorily. If unsatisfactory runnability occurred at this speed, however, the corrugator was slowed down in increments of 25 f.p.m. until satisfactory runnability was obtained, i.e., no fractured flutes. In this latter case the draw factor was recorded for the highest speed below 600 f.p.m. at which the roll ran satisfactorily. On the other hand, if the medium fabricated satisfactorily at 600 f.p.m. with minimum tension, further runs were made at higher tensions to determine the maximum tension the medium could sustain without fracturing. The higher tensions used were 0.5, 1.0, and 1.5 lb. per inch. Flat crush was determined on the single-faced board obtained at a speed of 600 f.p.m. with minimum tension, or if the medium could not be corrugated satisfactorily at 600 f.p.m. with minimum tension, at the highest speed the medium could be corrugated with minimum tension. The flat crush results, in addition to supplying information about quality, provide data which may be used by each participant to evaluate the nature of the quantitative relationship between Concora flat crush and combined board flat crush for his medium.

For each participating machine, test data for the current period are shown in Table I and presented graphically in Fig. 1 to 4. A tabulation of the number of rolls and type of medium evaluated is also given in Table I for each machine. The current machine test averages given in Table I are the means for each test property of the averages obtained on all rolls of corrugating medium evaluated from a given machine during the current period. In addition to the current machine test averages, Table I also presents the current F.K.I. averages, cumulative F.K.I. averages, and the F.K.I. indexes. The current F.K.I. average for each test property is the mean of the current machine averages for the same property for all machines participating in the study during a given period (excluding the current machine averages based on the evaluation of fewer than three rolls of corrugating medium as requested by the Technical Division). The cumulative F.K.I. average for each test property is the mean of the current F.K.I. averages for the same property for the previous twelve-month period excluding the average for the current period. The F.K.I. index for each test property is obtained as follows:

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

The F.K.I. index for each test property provides a ready means of comparing current average quality with that for the previous twelve months. An index greater than 100% indicates, of course, that current average quality is higher than the average result for the previous twelve months; similarly, an index below 100% indicates that current average quality is lower than that for the previous twelve months.

TABLE I
SUMMARY OF CURRENT MACHINE AVERAGES

April and May, 1967

Mill Code	No. of Rolls	Type of Medium	Basis Weight, lb.	Caliper, points	Concora Flat Crush, p.s.i.	Single-Face Flat Crush, p.s.i.
A	8	Bogus	27.9	10.0	37.4	34.3
B	11	Semichemical	27.6	10.6	34.8	33.0
C	6	Semichemical	26.8	10.9	29.1	27.7
D	11	Semichemical	26.6	10.5	38.1	36.0
E	13	Semichemical	27.0	10.5	35.7	33.6
F	7	Semichemical	26.7	10.5	32.7	31.6
G	8	Bogus	27.5	10.0	35.5	33.6
H	4	Bogus	28.2	11.9	31.4	27.8
I	9	Semichemical	28.3	10.5	38.8	37.3
J	6	Semichemical	27.0	10.7	39.0	36.5
K	7	Semichemical	27.5	10.5	35.0	32.8
L	10	Semichemical	26.7	10.1	35.1	32.8
M	5	Semichemical	26.8	10.7	36.4	33.8
N	12	Semichemical	26.8	10.5	35.8	32.7
O	12	Semichemical	27.1	10.6	39.4	36.6
P	8	Semichemical	27.2	10.6	33.8	32.4
Q	8	Semichemical	26.8	10.9	38.6	35.3
R	4	Semichemical	26.8	9.5	35.1	33.4
S	3	Semichemical	27.2	10.6	39.3	37.6
T	4	Semichemical	27.1	11.4	32.6	31.0
U	8	Semichemical	26.5	9.9	36.3	33.8
V	8	Semichemical	26.9	9.7	33.8	32.0
W	7	Semichemical	26.8	10.4	33.8	31.7
X	1	Semichemical	Note ^a			
Y	4	Semichemical	25.8	11.5	32.0	31.2
Z	3	Semichemical	27.2	9.2	40.3	37.9
A'	13	Semichemical	27.3	10.4	33.4	30.6
B'	3	Semichemical	27.6	10.5	33.1	31.0
C'	10	Semichemical	26.4	10.2	37.1	33.3
D'	5	Semichemical	27.7	10.8	33.8	29.8
E'	11	Semichemical	26.9	10.3	37.8	34.6
F'	8	Semichemical	27.3	10.0	33.1	30.6
G'	4	Semichemical	27.0	10.5	32.8	31.8

Total 241

Current F.K.I. average	27.1	10.5	35.3	33.1
Cumulative F.K.I. average	27.0	10.4	35.1	32.1
F.K.I. index, %	100.4	101.0	100.6	103.1

^a
Current machine average has been omitted in compliance with the Technical Division's request that current machine averages based on evaluations of fewer than three rolls of medium should be excluded from the summary table and from the calculation of the current F.K.I. averages.

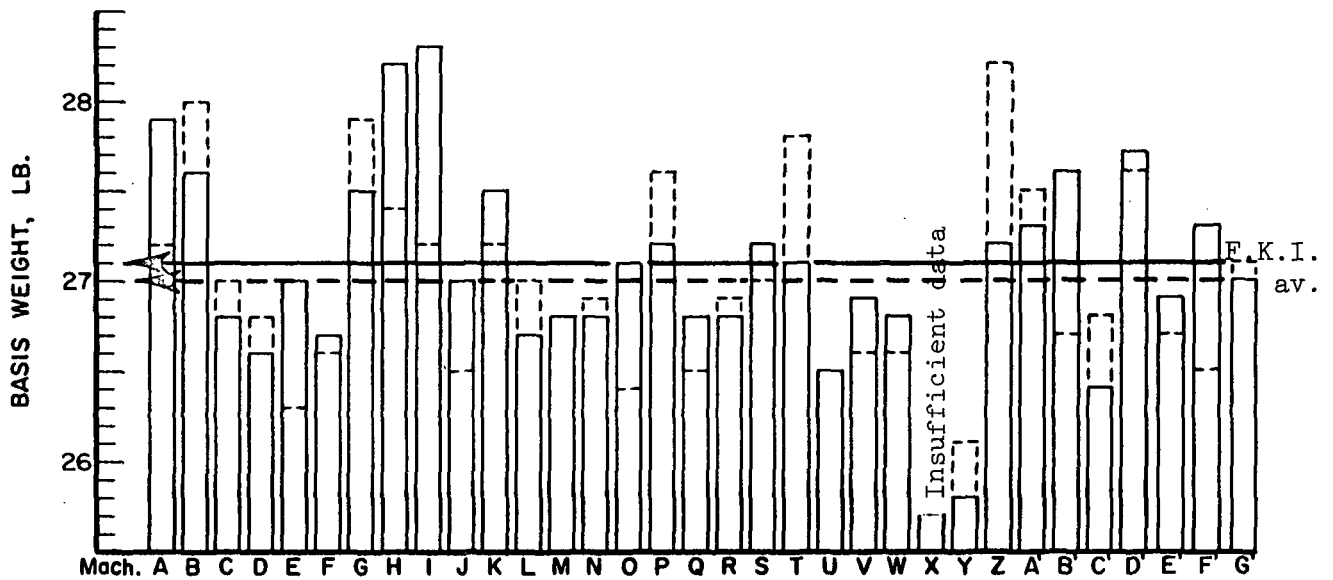


Figure 1. Comparison of Basis Weight Results

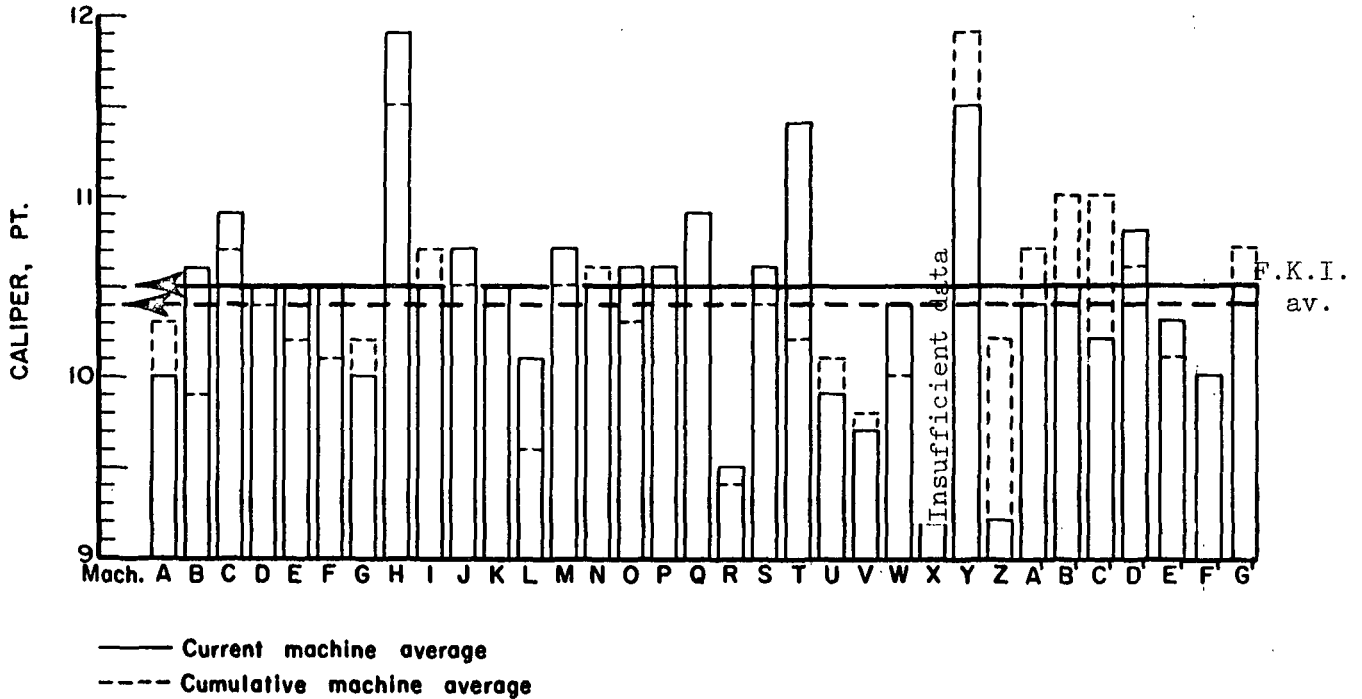


Figure 2. Comparison of Caliper Results

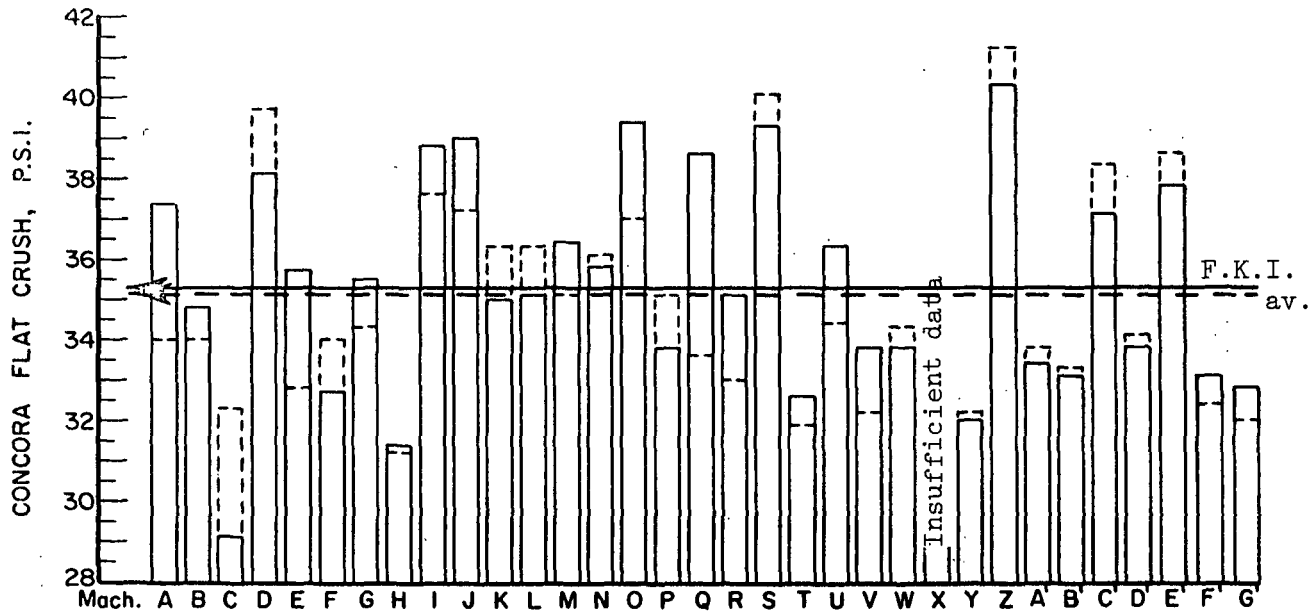


Figure 3. Comparison of Concora Flat Crush Results

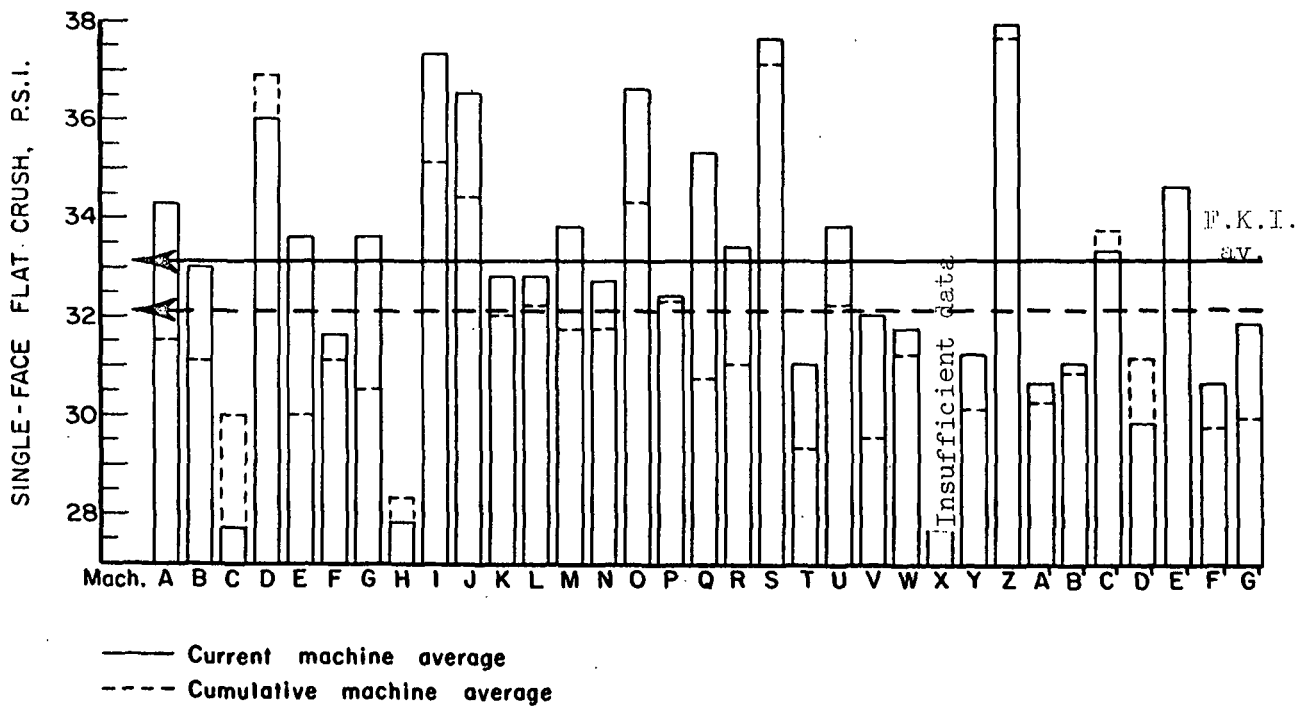


Figure 4. Comparison of Single-Face Flat Crush Results

The test results obtained on the rolls submitted from the production of individual machines during the current period are shown in Tables II through XXXIV for Machines A through Z and Machines A', B', C', D', E', F', and G', respectively. The maximum, minimum, and average results obtained on each roll are shown for all test properties except basis weight for which only the average is shown; in addition, the overall average result for all rolls submitted from a given machine is shown for each test property. The latter overall averages are reported as "current machine averages." A cumulative machine average for each test property is also shown and represents the mean of the current machine averages for the same property for the previous twelve periods (excluding the current period). Also shown for each machine and for each test property in Tables II to XXXIV are a machine factor and machine index which are defined as follows:

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

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

The machine factor and machine index provide a means for comparing the current machine average for each test property with either the previous results for the particular machine or with the cumulative results for all machines, i.e., the cumulative F.K.I. average.

(Text continued on p. 26)

SUMMARY OF TEST RESULTS FOR MACHINE A
April and May, 1967

TABLE II

(Type of medium: bogus)

Code	Date	Date	Roll	Basis Weight, lb./M ft. ²	Caliper, pt. Min. Max.	Concora Flat Crush, p.s.i. Min. Max.	Single-Face Flat Crush, p.s.i. Min. Max.	Runnability, lb./in. a draw factor b
A-1	3-8-67	4-5-67	464	28.9	10.9	37.2	34.0	1.563
A-2	3-16-67	4-5-67	465	27.8	10.3	40.2	33.0	1.550
A-3	3-21-67	4-5-67	466	26.8	10.2	39.0	34.4	1.572
A-4	3-23-67	4-5-67	467	29.2	10.5	37.2	32.6	1.571
A-5	4-8-67	5-9-67	468	27.4	10.7	37.8	34.0	1.571
A-6	4-10-67	5-9-67	469	28.4	9.8	40.2	37.0	1.561
A-7	4-17-67	5-9-67	470	26.8	8.7	41.4	35.4	1.538
A-8	4-25-67	5-9-67	471	28.2	9.8	39.0	34.9	1.546
Current machine average								
				27.9	10.0	37.4	34.3	1.556
				27.2	10.3	34.0	31.5	
				102.6	97.1	110.0	108.9	
				Machine factor, %	96.2	106.6	106.9	
				Machine index, %				

SUMMARY OF TEST RESULTS FOR MACHINE B
April and May, 1967

TABLE III

(Type of medium: semichemical)

B-1	3-7-67	3-24-67	29	28.0	10.0	33.6	28.8	1.569
B-2	3-15-67	3-24-67	30	26.2	9.7	30.6	33.7	1.548
B-3	3-16-67	3-24-67	31	27.7	10.2	40.8	37.8	1.561
B-4	3-16-67	3-24-67	32	28.7	10.8	34.8	36.2	1.551
B-5	3-16-67	3-24-67	33	29.0	11.1	35.5	34.9	1.558
B-6	3-22-67	4-18-67	34	26.2	10.2	33.8	33.4	1.550
B-7	3-26-67	4-18-67	35	27.0	10.4	35.4	34.8	1.550
B-8	4-4-67	4-20-67	36	26.9	10.8	36.2	34.0	1.565
B-9	4-7-67	4-20-67	37	27.8	11.3	37.2	34.7	1.550
B-10	4-7-67	4-20-67	38	28.5	11.5	39.0	36.0	1.552
B-11	4-10-67	4-28-67	39	27.4	11.5	38.4	35.8	1.540
				27.6	10.6	34.8	34.0	
				28.0	9.9	34.0	31.1	1.554
				98.6	107.1	102.4	106.1	
				Machine index, %	101.9	99.1	102.8	
				Current machine average				
				Machine factor, %				
				Machine index, %				

a Maximum tension at 600 f.p.m.
b Maximum speed at which this roll could be corrugated with minimum tension.
c Maximum speed at which this roll could be corrugated with minimum tension was 475 f.p.m.
d Maximum speed at which this roll could be corrugated with minimum tension was 550 f.p.m.

TABLE IV

SUMMARY OF TEST RESULTS FOR MACHINE C
April and May, 1967

April and May, 1967

(Type of medium: semichemical)

Machine	Current machine average	Cumulative machine average	Machine factor, %	Machine index, %
C-1	3-30-67	4- 7-67	1739	26.5
C-2	3-30-67	4- 7-67	1740	26.5
C-3	4-13-67	5-10-67	1747	27.4
C-4	4-13-67	5-10-67	1748	27.3
C-5	4-27-67	5-17-67	1755	26.4
C-6	4-27-67	5-17-67	1756	26.4
Mill	Roll	No.		
Basis Weight,	lb./M ft. ²	Max.	Min.	Av.
Caliper, pt.	Max.	Min.	Av.	
Concave Flat Crush,	p.s.i.	Max.	Min.	Av.
Single-Face Flat Crush, p.s.i.	Max.	Min.	Av.	
Runnability, lb./in. ² draw	1	1	Note	1.551
	1	1	Note	1.562
	1	1	Note	1.562
	1	1	Note	1.551
	1	1	Note	1.555
	1	1	Note	1.545
	1	1	Note	1.545
	1	1	Note	1.553

TABLE V

SUMMARY OF TEST RESULTS FOR MACHINE D
April and May, 1967

April and May, 1967

(Type of medium: semichemical)

[illegible]

Maximum tension at 600 f.p.m.

9 600 f.p.m., minimum tension.

600 f.p.m., minimum tension.

Maximum speed at which this roll could be corrugated with minimum tension was 525 f.p.m.

Maximum speed at which this roll could be corrugated with minimum tension was 550 f.p.m.

SUMMARY OF TEST RESULTS FOR MACHINE E
April and May, 1967

(Type of medium: semichemical)

Code	Date	Made	Date Received	Roll No.	Basin Weight, lb./M ft. ²	Caliper, pt.	Concora Flat Crush, p.s.i.	Single-Face Flat Crush, p.s.i.	Runnability, lb./in. ² draw
E-1	3-20-67	3-24-67	537373	53182	25.4	10.7	28.8	31.0	1.565
E-2	3-23-67	3-27-67	539042	53182	28.5	11.7	38.4	36.7	1.569
E-3	3-23-67	3-27-67	539052	53182	28.6	11.1	39.0	36.0	1.564
E-4	3-28-67	3-30-67	5311031	5311081	26.2	10.8	36.0	34.2	1.568
E-5	3-28-67	3-30-67	5311081	5311081	26.2	10.5	31.8	32.4	1.566
E-6	3-30-67	4-3-67	531182	541091	28.3	11.0	32.4	35.5	1.567
E-7	4-5-67	4-13-67	541091	541371	27.3	11.0	34.8	35.1	1.573
E-8	4-11-67	4-13-67	541371	541371	27.1	11.6	38.4	31.8	1.576
E-9	4-18-67	4-20-67	546891	546891	26.0	10.8	37.2	32.0	1.574
E-10	4-25-67	5-5-67	549821	549821	27.9	10.5	35.2	36.3	1.567
E-11	5-3-67	5-5-67	55861	55861	25.8	10.1	35.4	33.1	1.565
E-12	5-11-67	5-13-67	552622	552622	27.6	10.0	32.4	34.3	1.542
E-13	5-18-67	5-22-67	555123	555123	25.7	10.2	37.1	32.4	1.570
Current machine average									
					27.0	10.5	35.7	33.6	1.567
					26.3	10.2	32.8	30.0	
					102.7	102.9	108.8	112.0	
					100.0	101.0	101.7	104.7	
Machine factor, %									
Machine index, %									

SUMMARY OF TEST RESULTS FOR MACHINE F
April and May, 1967

(Type of medium: semichemical)

F-1	3-16-67	4-3-67	26.3	10.0	9.1	9.7	33.0	31.4	1.551
F-2	3-22-67	4-4-67	27.2	10.9	9.3	10.6	32.4	31.0	1.555
F-3	3-29-67	4-13-67	26.7	11.4	10.7	11.0	37.8	33.4	1.563
F-4	4-7-67	4-21-67	26.0	10.3	10.0	10.1	34.8	33.0	1.561
F-5	4-12-67	5-2-67	26.4	11.4	10.5	11.2	32.4	31.4	1.557
F-6	4-19-67	4-27-67	27.1	10.8	10.0	10.4	32.4	30.5	1.562
F-7	4-26-67	5-8-67	27.3	10.8	10.0	10.3	39.0	36.2	1.570
Current machine average					26.7	10.5	32.7	31.6	1.560
					100.4	104.0	96.2	101.6	
					98.9	101.0	93.2	98.4	
Machine factor, %									
Machine index, %									

Maximum tension at 600 f.p.m.
600 f.p.m., minimum tension.

TABLE VIII

SUMMARY OF TEST RESULTS FOR MACHINE G
April and May, 1967

(Type of medium: bogus)

Code	Date	Date	Roll	Basis Weight,	Caliper, pt.	Concora Flat Crush,	Single-Face Flat	Runnability,
	Made	Received	No.	lb./M ft. ²		p.s.i.	Crush, p.s.i.	draw ^b
						Max.	Max.	lb./in. ^a
					Min.	Min.	Min.	
					Av.	Av.	Av.	
G-1	3-14-67	4- 5-67	364	28.4	10.2	37.2	34.6	1.570
G-2	3-16-67	4- 5-67	365	27.7	10.7	35.4	33.7	1.570
G-3	3-17-67	4- 5-67	366	26.5	10.2	39.6	36.8	1.570
G-4	3-27-67	4- 5-67	367	26.6	10.6	35.4	32.4	1.570
G-5	4- 8-67	5- 9-67	368	28.2	10.8	30.6	31.8	1.575
G-6	4-10-67	5- 9-67	369	27.3	10.1	36.6	33.6	1.573
G-7	4-17-67	5- 9-67	370	27.9	10.1	40.8	38.9	1.568
G-8	4-19-67	5- 9-67	371	27.6	10.1	37.2	34.7	1.567
Current machine average				27.5	10.0	35.5	33.6	1.571
Machine factor, %				98.6	98.0	103.5	110.2	
Machine index, %				101.9	96.2	101.1	104.7	

TABLE IX
SUMMARY OF TEST RESULTS FOR MACHINE H
April and May, 1967

(Type of medium: bogus)

H-1	3-20-67	4-21-67	108	26.1	12.0	10.9	11.4	34.8	31.2	30.0	27.2	28.7	1-1/2	1.564
H-2	3-22-67	4-21-67	109	31.0	12.6	12.0	32.4	31.8	29.8	25.4	28.7	1-1/2	1.565	
H-3	4- 7-67	4-21-67	110	29.0	12.8	11.9	12.3	30.0	27.6	26.2	23.0	1	1.561	
H-4	4-11-67	4-21-67	111	26.6	12.5	11.0	11.8	33.6	29.4	31.6	30.8	28.4	1-1/2	1.567
Current machine average				28.2			11.9	31.4	31.2	27.8	1.564			
Cumulative machine average				27.4			11.5	31.2	28.3					
Machine factor, %				102.9			103.5	100.6	98.2					
Machine index, %				104.4			114.4	89.5	86.6					

^a Maximum tension at 600 f.p.m.
^b 600 f.p.m., minimum tension.

SUMMARY OF TEST RESULTS FOR MACHINE I
April and May, 1967

(Type of medium: semichemical)

Code	Date	Made	Date Received	Roll No.	Basis Weight, lb./M ft. ²	Caliper, pt.	Concora Flat Crush, p.s.i.	Single-Face Flat Crush, p.s.i.	Runnability, lb./in. ^a	Factor ^b
I-1	2-2-67	4-10-67	592	28.4	10.5	10.1	39.0	35.6	37.1	1.569
I-2	2-9-67	4-4-67	593	28.4	10.8	10.2	39.6	38.0	37.2	1.568
I-3	2-17-67	4-3-67	594	28.8	10.9	10.4	36.0	36.3	36.3	1.566
I-4	2-23-67	4-4-67	595	28.8	10.8	10.2	36.6	38.0	36.9	1.566
I-5	3-3-67	4-3-67	596	28.2	10.8	10.0	38.4	36.2	36.5	1.568
I-6	3-9-67	5-17-67	597	28.2	10.8	10.1	37.8	37.8	38.8	1.563
I-7	3-16-67	5-17-67	598	28.1	10.9	10.3	37.8	36.6	37.9	1.567
I-8	3-23-67	5-16-67	599	27.7	10.7	10.5	36.6	36.8	37.5	1.569
I-9	3-30-67	5-17-67	600	27.8	10.9	10.4	40.8	36.8	37.6	1.562
Current machine average										
				28.3	10.5	10.7	38.8	37.3	37.3	1.566
				27.2	10.7	10.7	37.6	35.1	35.1	
				104.0	98.1	101.0	103.2	106.3	106.3	
				Machine factor, %						
				Machine index, %						

SUMMARY OF TEST RESULTS FOR MACHINE J
April and May, 1967

(Type of medium: semichemical)

J-1	3-16-67	4-4-67	297	26.8	11.0	10.3	34.8	33.6	34.8	1.545
J-2	3-21-67	4-13-67	479	27.5	10.9	10.0	38.4	36.0	36.6	1.546
J-3	3-24-67	4-13-67	582	27.8	11.0	10.5	40.8	36.2	36.6	1.547
J-4	4-3-67	5-15-67	97	26.1	10.6	10.1	43.2	35.6	37.4	1.544
J-5	4-6-67	5-15-67	97	27.3	11.2	10.3	42.6	35.2	37.0	1.544
J-6	4-17-67	5-15-67	464	26.7	11.9	10.7	42.6	35.6	36.8	1.557
				27.0	10.7	10.5	39.0	36.5	36.5	1.549
				26.5	10.5	10.5	37.2	34.4	34.4	
				101.9	101.9	102.9	104.8	106.1	106.1	
				Machine factor, %						
				Machine index, %						

a Maximum tension at 600 f.p.m.

b 600 f.p.m., minimum tension:

c Maximum speed at which this roll could be corrugated with minimum tension was 400 f.p.m.

d Maximum speed at which this roll could be corrugated with minimum tension was 475 f.p.m.

e Maximum speed at which this roll could be corrugated with minimum tension was 275 f.p.m.

SUMMARY OF TEST RESULTS FOR MACHINE K
April and May, 1967

TABLE XII

(Type of medium: semichemical)												
Code	Date	Made	Date Received	Roll No.	Basit Weight, lb./M ft.	Caliper, pt.	Max.	Min.	Av.	Concora Flat Crush, p.s.i.	Max.	Min.
K-1	3-27-67	4-4-67	116	27.8	11.1	10.3	10.7	31.8	35.4	36.2	33.6	34.9
K-2	3-31-67	4-7-67	117	27.7	11.2	10.6	10.8	36.6	32.4	34.8	30.6	32.3
K-3	4-7-67	4-20-67	118	27.1	10.7	10.0	10.2	39.0	37.0	37.4	34.5	34.5
K-4	4-13-67	4-20-67	119	26.6	10.0	9.2	9.7	36.0	34.1	32.8	29.4	31.4
K-5	4-17-67	4-21-67	120	27.6	10.6	10.0	10.2	34.8	32.5	32.0	28.2	29.8
K-6	4-28-67	5-8-67	121	28.2	12.0	10.0	11.1	37.2	36.0	37.6	35.2	36.3
K-7	5-1-67	5-8-67	122	27.4	11.0	10.2	10.6	37.8	34.6	31.2	29.8	30.4
Current machine average												
Cumulative machine average												
Machine factor, %												
Machine index, %												
101.1												
101.9												
27.5												
10.5												
10.5												
36.3												
96.4												
99.7												
102.5												
102.2												
32.8												
1.561												
Min.												
1.560												
1.562												
1.560												
Min.												
1.561												
Min.												
1.558												
1/2												
1.566												
Min.												
1.560												
1.561												
1.562												
1.559												
Min.												
Runnability, draw b												
Lb./in. a												
Factor												
Crush, p.s.i.												
Single-Face Flat												
Av.												
32.8												
32.0												
102.5												
102.2												

SUMMARY OF TEST RESULTS FOR MACHINE L
April and May, 1967

TABLE XIII

(Type of medium: semichemical)												
L-1	3-16-67	3-30-67	726	25.4	10.3	9.1	9.7	32.4	28.8	29.6	28.4	29.3
L-2	3-19-67	3-30-67	727	26.2	10.8	9.2	9.9	38.4	30.6	34.1	34.8	33.7
L-3	3-25-67	4-3-67	728	27.2	11.8	9.9	10.5	35.4	32.4	33.6	31.4	29.4
L-4	4-13-67	4-13-67	729	26.9	10.6	9.3	10.0	38.4	34.8	36.1	37.2	32.4
L-5	4-13-67	5-1-67	730	26.9	11.0	9.8	10.4	39.6	36.0	38.0	36.0	35.2
L-6	4-15-67	5-1-67	731	26.7	10.1	9.3	9.6	37.8	33.6	36.1	35.6	34.0
L-7	4-24-67	5-16-67	732	27.5	10.9	9.8	10.2	39.6	35.4	37.8	36.6	34.4
L-8	4-27-67	5-17-67	733	27.0	11.3	9.9	10.6	37.2	32.4	34.8	32.4	29.4
L-9	4-27-67	5-17-67	734	26.0	11.2	9.1	10.0	38.4	35.4	31.2	28.8	30.6
L-10	5-5-67	5-22-67	735	26.8	11.7	9.2	10.3	37.2	33.6	34.9	35.8	34.3
Current machine average				26.7	10.1	9.6	10.1	35.1	32.8	32.8	32.8	1.557
Cumulative machine average				98.9	105.2	96.7	100.0	36.3	96.7	101.9	102.2	
Machine factor, %				98.9	9.6							
Machine index, %				98.9	97.1							

SUMMARY OF TEST RESULTS FOR MACHINE M
April and May, 1967

TABLE XIV

(Type of medium: semichemical)

Code	Date Made	Date Received	Roll No.	Basis Weight, lb./M ft. ²	Max.	Min.	Av.	Concora Flat Crush, p.s.i.	Max.	Min.	Av.	Single-Face Flat Crush, p.s.i.	Max.	Min.	Av.	Runnability, lb./in. draw ^b
M-1	3-18-67	4-25-67	68	27.1	11.4	10.9	11.1	37.8	34.2	36.6	34.4	29.0	31.7	34.4	31.7	1.562
M-2	4-3-67	4-25-67	69	26.9	10.7	10.0	10.3	39.0	36.0	37.1	36.6	34.8	35.5	36.6	34.8	1.559
M-3	4-15-67	5-18-67	70	26.4	10.7	10.0	10.3	39.0	35.4	36.4	35.4	32.0	33.8	34.2	31.7	1.561
M-4	4-29-67	5-18-67	71	27.6	11.8	11.0	11.2	38.4	33.0	36.0	35.0	33.6	34.2	34.2	31.7	1.555
M-5	5-15-67	5-18-67	72	26.2	11.2	10.3	10.7	37.2	34.2	35.8	35.2	32.6	33.7	34.2	31.7	1.560
Current machine average																
				26.8				10.7				36.4				1.559
				26.8				10.5				35.1				
				100.0				101.9				103.7				
				Machine factor, %				102.9				103.7				
				Machine index, %												

SUMMARY OF TEST RESULTS FOR MACHINE N
April and May, 1967

TABLE XV

(Type of medium: semichemical)

N-1	3-9-67	3-27-67	--	27.1	11.3	10.3	10.8	41.4	29.4	35.0	33.6	29.8	31.4	33.6	29.8	1.561
N-2	3-17-67	3-27-67	--	26.8	10.9	10.4	10.6	34.2	30.6	31.9	31.4	27.0	29.2	31.4	29.8	1.565
N-3	3-19-67	3-27-67	--	27.4	11.2	10.8	11.2	37.8	34.8	36.5	34.4	31.6	33.0	34.4	31.6	1.562
N-4	3-23-67	5-1-67	--	27.4	11.5	11.0	11.1	37.8	34.8	36.8	34.6	31.8	33.3	34.6	31.8	1.538
N-5	4-18-67	4-27-67	--	26.5	10.7	10.2	10.4	42.0	31.2	35.9	34.4	31.0	33.0	34.4	31.0	1.560
N-6	4-19-67	4-27-67	--	26.6	10.8	10.2	10.5	36.0	34.2	34.9	34.4	31.2	33.0	34.4	31.2	1.559
N-7	4-25-67	5-9-67	--	26.6	10.6	10.0	10.3	39.6	37.2	37.9	35.0	33.0	34.1	35.0	33.0	1.568
N-8	5-3-67	5-18-67	--	26.8	10.9	9.7	10.3	40.8	33.0	37.1	35.2	33.0	34.0	35.0	33.0	1.564
N-9	5-8-67	5-18-67	--	26.9	10.6	9.6	10.1	39.6	30.6	34.7	34.0	30.4	32.6	34.0	30.4	1.563
N-10	5-9-67	5-18-67	--	26.5	11.0	10.0	10.4	36.6	30.6	34.2	33.8	30.2	32.5	34.0	30.2	1.563
N-11	5-13-67	5-18-67	--	26.5	10.7	10.1	10.4	40.8	34.8	37.6	34.8	32.6	33.6	34.8	32.6	1.564
N-12	5-14-67	5-18-67	--	26.9	10.7	10.0	10.3	37.8	34.8	36.8	34.0	32.0	33.1	34.0	32.0	1.566
				26.8				10.5				35.8				1.561
				26.9				10.6				36.1				
				99.6				99.1				99.2				
				Machine index, %												
				Current machine average				101.0				102.0				
				Cumulative machine average				10.5				32.7				
				Machine factor, %				31.7				103.2				
				Machine index, %												

a Maximum tension at 600 f.p.m.
b 600 f.p.m., minimum tension.
c Maximum speed at which this roll could be corrugated with minimum tension was 375 f.p.m.

TABLE XVI

SUMMARY OF TEST RESULTS FOR MACHINE O
April and May, 1967

April and May, 1967

(Type of medium: semi-chemical)

[illegible]

TABLE XVII.

SUMMARY OF TEST RESULTS FOR MACHINE P
April and May, 1967

April and May, 1967

(Type of medium: semichemical)

P-1	P-2	P-3	P-4	P-5	P-6	P-7	P-8
3-10-67	3-17-67	3-30-67	4- 5-67	4-12-67	4-20-67	4-24-67	5- 1-67
27.6	26.1	28.0	27.7	26.3	27.9	26.2	28.2
11.0	10.8	11.0	10.9	11.9	11.6	10.7	11.0
10.5	9.4	10.0	10.1	10.2	10.8	9.6	10.3
10.8	32.4	38.4	35.4	35.4	36.6	34.8	37.2
31.8	30.0	34.2	30.0	30.6	30.0	33.0	33.6
33.6	31.4	35.6	32.0	33.2	34.3	33.8	35.3
32.4	30.6	33.6	32.0	34.0	34.0	30.8	35.8
29.6	31.0	35.1	29.0	31.2	32.6	29.6	34.0
31.2	31.0	35.1	30.8	32.7	33.3	30.2	34.9
1	1-1/2	1-1/2	1	1/2	1	1-1/2	1-1/2
1.570	1.571	1.566	1.566	1.562	1.563	1.570	1.573
Current machine average	Cumulative machine average	Machine factor, %	Machine index, %				
27.2	27.6	98.6	100.7				
10.6	10.0	96.3	101.9				
33.8	35.1	96.3	96.3				
32.4	32.3	100.3	100.9				
1.568							

a
Maximum tension at 600 f.p.m.

600 F.P.M., minimum tension.

Maximum speed at which this roll could be corrugated with minimum tension was 225 f.p.m.

SUMMARY OF TEST RESULTS FOR MACHINE Q
April and May, 1967

(Type of medium: semichemical)

Code	Date	Received	No.	Roll	Base Weight, lb./M ft. ²	Caliper, pt. Max. Min. Av.	Concave Flat Crush, p.s.i. Max. Min. Av.	Single-Face Flat Crush, p.s.i. Max. Min. Av.	Runnability, lb./in. draw ^b
Q-1	3-30-67	5-4-67	6609		26.8	11.7	33.0	32.4	1.553
Q-2	4-7-67	5-4-67	1472		26.3	11.1	40.7	37.8	1.558
Q-3	4-11-67	5-4-67	2408		26.5	11.0	39.5	36.1	1.560
Q-4	4-17-67	5-4-67	3912		26.6	11.3	38.5	33.8	1.560
Q-5	4-27-67	5-19-67	6080		27.0	11.9	38.2	34.6	1.565
Q-6	4-30-67	5-19-67	6696		26.3	11.2	37.6	35.6	1.565
Q-7	5-6-67	5-19-67	1467		27.6	11.9	39.8	36.3	1.568
Q-8	5-10-67	5-19-67	2344		27.1	11.8	39.1	37.6	1.565
Current machine average			26.8		10.9	11.2	38.6	35.3	1.562
Cumulative machine average			26.5		10.9	11.2	33.6	30.7	
Machine factor, %			101.1		100.0		114.9	115.0	
Machine index, %			99.3		104.8		110.0	110.0	

TABLE XVII

SUMMARY OF TEST RESULTS FOR MACHINE R
April and May, 1967

(Type of medium: semichemical)

R-1	3-9-67	3-30-67	C-1	27.2	10.0	9.1	36.6	35.2	34.4	1-1/2	1.570
R-2	3-9-67	3-30-67	C-2	26.8	9.6	8.9	37.2	33.6	33.3	1-1/2	1.576
R-3	3-9-67	3-30-67	C-3	26.9	9.7	9.0	36.6	34.2	33.4	1-1/2	1.577
R-4	3-9-67	3-30-67	C-4	26.4	10.1	9.3	37.2	33.7	32.3	1-1/2	1.572
Current machine average			26.8		9.5		35.1	33.4			1.574
Cumulative machine average			26.9		9.4		33.0	31.0			
Machine factor, %			99.6		101.1		106.4	107.7			
Machine index, %			99.3		91.3		100.0	104.0			

TABLE XX

SUMMARY OF TEST RESULTS FOR MACHINE S
April and May, 1967

(Type of medium: semichemical)

S-1	3-13-67	3-24-67	790	27.5	11.3	9.9	40.8	38.4	36.1	Min.	1.554
S-2	3-29-67	4-10-67	791	27.0	11.0	10.3	43.2	39.8	38.2	1	1.560
S-3	4-24-67	5-3-67	792	27.1	10.7	10.3	40.8	39.7	38.5	1	1.552
Current machine average			27.2		10.6		39.3	37.6			1.550
Cumulative machine average			27.0		10.4		40.1	37.1			
Machine factor, %			100.7		101.9		98.0	101.3			
Machine index, %			100.7		101.9		112.0	117.1			

a
Maximum tension at 600 f.p.m.

b
600 f.p.m., minimum tension.

SUMMARY OF TEST RESULTS FOR MACHINE 1
April and May, 1967

TABLE XXI

(Type of medium: semichemical)									
Code	Date	Made	Date Received	Roll No.	Basic Weight, lb./M ft. ²	Max.	Min.	Av.	Concora Flat Crush, p.s.i.
T-1	4-18-67	4-28-67	40	26.3	11.9	11.3	11.6	36.0	27.6
T-2	4-20-67	5-3-67	41	26.4	11.8	11.1	11.5	33.0	31.7
T-3	5-3-67	5-12-67	42	28.2	12.0	11.2	11.7	35.4	30.6
T-4	5-3-67	5-12-67	43	27.5	11.0	10.5	10.8	36.6	28.2
Current machine average					27.1	11.4	10.2	32.6	31.9
Machine factor, %					97.5	111.8	109.6	102.2	92.9
Machine index, %					100.4				

(Type of medium: semichemical)

SUMMARY OF TEST RESULTS FOR MACHINE U
April and May, 1967

TABLE XXII

(Type of Medium: semichemical)									
Code	Date	Made	Date Received	Roll No.	Basic Weight, lb./M ft. ²	Max.	Min.	Av.	Concora Flat Crush, p.s.i.
U-1	3-30-67	5-4-67	3266	26.3	10.5	9.9	10.2	36.0	34.2
U-2	4-4-67	5-4-67	424	26.3	10.7	9.9	10.2	36.6	34.8
U-3	4-11-67	5-4-67	1352	26.3	10.5	9.9	10.3	36.0	34.2
U-4	4-17-67	5-4-67	2117	26.3	10.4	10.0	10.2	36.6	34.2
U-5	4-21-67	5-19-67	2525	26.8	9.7	9.3	9.5	39.0	34.8
U-6	4-27-67	5-19-67	3213	26.5	9.8	9.3	9.5	40.2	38.4
U-7	5-2-67	5-19-67	178	26.6	9.7	9.3	9.5	37.8	35.4
U-8	5-8-67	5-19-67	864	26.8	9.7	9.3	9.5	39.6	36.6
Current machine average					26.5	9.9	10.1	36.3	36.3
Machine factor, %					100.0	98.0	103.4	105.5	103.4
Machine index, %					98.1				

a
Maximum tension at 600 f.p.m.
b
600 f.p.m., minimum tension.
c
Maximum speed at which this roll could be corrugated with minimum tension was 500 f.p.m.

TABLE XXIII

SUMMARY OF TEST RESULTS FOR MACHINE V
April and May, 1967

(Type of medium: semichemical)

Code	Date Made	Date Received	Mill Roll No.	Basis Weight, lb./M ft. ²	Caliper, pt.			Concora Flat Crush, p.s.i.			Single-Face Flat Crush, p.s.i.			Runnability, draw factor ^b	
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	lb./in. ^a	
V-1	3-20-67	3-27-67	260	26.9	10.1	9.6	9.9	35.4	31.8	33.0	33.6	32.2	32.8	1-1/2	1.574
V-2	3-27-67	3-31-67	261	27.1	10.2	9.2	9.8	37.2	32.4	35.0	34.0	31.4	32.9	1-1/2	1.564
V-3	4- 2-67	4- 5-67	262	27.8	10.8	10.0	10.2	37.8	31.8	34.1	32.8	31.6	32.2	1-1/2	1.574
V-4	4- 7-67	4-17-67	263	26.7	10.3	9.2	9.8	36.6	30.0	31.9	31.8	30.8	31.2	1-1/2	1.571
V-5	4-17-67	4-21-67	264	26.8	9.9	9.1	9.4	37.2	33.6	35.8	33.0	30.4	31.3	1-1/2	1.573
V-6	4-22-67	4-27-67	265	26.7	10.0	9.3	9.6	35.4	34.2	34.6	34.8	32.6	33.6	1	1.563
V-7	4-29-67	5- 4-67	266	26.0	9.5	9.0	9.3	34.2	32.4	33.4	32.6	30.4	31.5	1-1/2	1.567
V-8	5- 6-67	5-11-67	267	27.0	10.2	9.2	9.9	34.2	31.2	32.8	31.4	29.8	30.5	1	1.564
Current machine average				26.9			9.7			33.8			32.0		1.569
Cumulative machine average				26.6			9.8			32.2			29.5		
Machine factor, %				101.1			99.0			105.0			108.5		
Machine index, %				99.6			93.3			96.3			99.7		

TABLE XXIV

SUMMARY OF TEST RESULTS FOR MACHINE W
April and May, 1967

(Type of medium: semichemical)

W-1	3-15-67	4- 3-67	4	26.2	10.0	9.8	9.9	35.4	31.8	33.6	32.4	30.0	31.1	Note ^c	1.549
W-2	3-22-67	4- 4-67	5	26.7	10.2	9.8	10.1	35.4	31.2	33.1	35.2	31.2	32.8	Note ^d	1.551
W-3	3-31-67	4-13-67	6	26.4	10.7	10.4	10.6	34.8	32.4	33.6	32.4	28.0	30.7	1-1/2	1.572
W-4	4- 7-67	4-21-67	7	27.6	11.0	10.3	10.8	31.8	29.4	30.2	30.8	26.4	28.9	Min.	1.550
W-5	4-12-67	5- 2-67	8	27.9	11.5	10.5	11.0	36.0	30.6	33.4	34.8	30.0	32.4	Min.	1.548
W-6	4-19-67	4-27-67	9	27.0	10.6	10.1	10.4	37.8	33.6	36.0	34.8	31.4	32.9	Note ^e	1.554
W-7	4-26-67	5- 8-67	11	26.0	10.1	9.0	9.9	39.0	33.6	36.8	35.0	31.4	33.2	1/2	1.565
Current machine average				26.8			10.4			33.8			31.7		1.556
Cumulative machine average				26.6			10.0			34.3			31.2		
Machine factor, %				100.8			104.0			98.5			101.6		
Machine index, %				99.3			100.0			96.3			98.8		

^aMaximum tension at 600 f.p.m.

^b600 f.p.m., minimum tension

^cMaximum speed at which this roll could be corrugated with minimum tension was 525 f.p.m.

^dMaximum speed at which this roll could be corrugated with minimum tension was 550 f.p.m.

^eMaximum speed at which this roll could be corrugated with minimum tension was 400 f.p.m.

TABLE XXV
SUMMARY OF TEST RESULTS FOR MACHINE X
April and May, 1967

(Type of medium: semichemical)

Code	Date Made	Date Received	Mill Roll No.	Basis Weight, lb./M ft. ²	Caliper, pt.			Concora Flat Crush, p.s.i.			Single-Face Flat Crush, p.s.i.			Runnability, lb./in ^a draw ^b factor ^b	
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Min.	
X-1	3-16-67	4-25-67	67	26.7	11.3	10.7	11.0	37.2	31.2	34.2	33.0	32.0	32.4	Min.	1.557
Current machine average				26.7			11.0			34.2			32.4		1.557
Cumulative machine average				27.5			10.4			35.2			33.6		
Machine factor, %				97.1			105.8			97.2			96.4		
Machine index, %				98.9			105.8			97.4			100.9		

TABLE XXVI
SUMMARY OF TEST RESULTS FOR MACHINE Y
April and May, 1967

(Type of medium: semichemical)

Y-1	3-27-67	4- 3-67	21	26.5	12.0	11.2	11.7	33.6	30.0	32.2	33.0	29.8	31.7	Min.	1.559
Y-2	3-27-67	4- 3-67	22	26.1	11.8	11.2	11.6	34.8	30.0	32.3	33.8	31.0	32.2	1/2	1.558
Y-3	5- 2-67	5-15-67	23	25.4	11.6	11.0	11.3	34.8	30.0	32.3	31.2	29.8	30.4	1	1.564
Y-4	5- 2-67	5-15-67	24	25.2	11.7	10.8	11.3	33.0	30.0	31.2	32.2	29.6	30.5	1	1.564
Current machine average				25.8			11.5			32.0			31.2		1.561
Cumulative machine average				26.1			11.9			32.2			30.1		
Machine factor, %				98.9			96.6			99.4			103.7		
Machine index, %				95.6			110.6			91.2			97.2		

TABLE XXVII
SUMMARY OF TEST RESULTS FOR MACHINE Z
April and May, 1967

(Type of medium: semichemical)

Z-1	3- 8-67	5- 8-67	655	27.3	9.5	9.0	9.2	40.8	38.4	40.2	40.0	36.6	38.6	Note ^c	1.544
Z-2	3-27-67	5- 8-67	656	27.2	9.5	9.0	9.2	42.6	38.4	39.5	38.4	35.8	37.0	Note ^d	1.543
Z-3	3-28-67	5- 8-67	657	27.0	9.6	8.9	9.2	43.2	39.6	41.2	39.8	36.8	38.2	Note ^e	1.545
Current machine average				27.2			9.2			40.3			37.9		1.544
Cumulative machine average				28.2			10.2			41.2			37.6		
Machine factor, %				96.5			90.2			97.8			100.8		
Machine index, %				100.7			88.5			114.8			118.1		

^aMaximum tension at 600 f.p.m.

^b600 f.p.m. minimum tension.

^cMaximum speed at which this roll could be corrugated with minimum tension was 300 f.p.m.

^dMaximum speed at which this roll could be corrugated with minimum tension was 450 f.p.m.

^eMaximum speed at which this roll could be corrugated with minimum tension was 475 f.p.m.

TABLE XXVIII

SUMMARY OF TEST RESULTS FOR MACHINE A'
April and May, 1967

(Type of medium: semichemical)

Code	Date Made	Date Received	Mill Roll No.	Basis Weight, lb./M ft. ²	Caliper, pt.			Concora Flat Crush, p.s.i.			Single-Face Flat Crush, p.s.i.			Runnability, lb./in. ^a draw factor ^b	
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.		
A'-1	3-28-67	3-30-67	436552	26.5	10.3	9.8	10.1	37.8	30.0	34.4	33.8	31.8	32.4	Min.	1.565
A'-2	3-28-67	3-30-67	436622	28.9	11.3	10.7	11.0	36.6	28.2	33.5	33.0	29.0	31.3	Min.	1.567
A'-3	3-28-67	3-30-67	436632	28.7	11.4	10.0	10.6	35.4	30.6	32.2	31.0	29.0	30.6	1/2	1.576
A'-4	3-28-67	3-30-67	436692	27.4	10.8	10.3	10.6	34.2	28.8	31.8	31.2	28.8	30.3	Min.	1.562
A'-5	3-30-67	4- 3-67	437452	26.0	10.8	9.9	10.2	36.6	29.4	32.9	31.6	30.2	31.1	1-1/2	1.569
A'-6	3-30-67	4- 3-67	437465	26.1	10.5	9.9	10.1	32.4	30.6	31.3	30.8	28.6	30.1	1-1/2	1.569
A'-7	4- 6-67	4-13-67	441842	27.4	10.4	9.2	10.1	36.0	31.8	33.6	31.8	30.2	31.0	1-1/2	1.577
A'-8	4-12-67	4-13-67	444172	26.6	11.0	10.2	10.6	34.8	31.8	33.4	28.8	28.2	28.5	1-1/2	1.574
A'-9	4-18-67	4-20-67	445198	27.9	11.0	10.0	10.6	36.6	33.0	35.0	31.6	30.4	31.0	1/2	1.573
A'-10	4-26-67	5- 5-67	447922	27.4	10.6	9.9	10.1	35.4	33.0	34.1	31.6	29.0	30.3	1-1/2	1.572
A'-11	5- 3-67	5- 4-67	45772	27.6	11.0	9.3	10.4	36.6	32.4	34.8	31.2	29.8	30.4	1/2	1.574
A'-12	5-11-67	5-13-67	452192	27.8	10.9	9.0	10.0	35.4	33.0	34.2	32.6	30.8	31.9	1/2	1.566
A'-13	5-18-67	5-22-67	454693	27.1	10.9	10.3	10.6	33.6	32.4	33.1	29.0	28.0	28.6	1-1/2	1.572
Current machine average				27.3			10.4			33.4			30.6		1.570
Cumulative machine average				27.5			10.7			33.8			30.2		
Machine factor, %				99.3			97.2			98.8			101.3		
Machine, index, %				101.1			100.0			95.2			95.3		

TABLE XXIX

SUMMARY OF TEST RESULTS FOR MACHINE B'
April and May, 1967

(Type of medium: semichemical)

B'-1	3- 3-67	4- 5-67	148	28.4	11.2	10.9	11.1	34.8	32.4	33.6	33.4	31.6	32.4	Note ^c	1.554
B'-2	4- 5-67	5-11-67	149	27.6	11.0	10.0	10.4	37.8	31.2	34.6	32.2	29.2	31.2	Min.	1.549
B'-3	4-14-67	5-11-67	150	26.8	10.2	9.7	10.0	33.0	28.8	31.2	30.2	28.4	29.5	Min.	1.560
Current machine average				27.6			10.5			33.1			31.0		1.554
Cumulative machine average				26.7			11.0			33.3			30.8		
Machine factor, %				103.4			95.5			99.4			100.6		
Machine index, %				102.2			101.0			94.3			96.6		

^aMaximum tension at 600 f.p.m.^b600 f.p.m. minimum tension.^cMaximum speed at which this roll could be corrugated with minimum tension was 500 f.p.m.

TABLE XXX
SUMMARY OF TEST RESULTS FOR MACHINE C'
April and May, 1967

(Type of medium: semichemical)

Code	Date Made	Date Received	Mill Roll No.	Basis Weight, lb./M ft. ^c	Caliper, pt.			Concora Flat Crush, p.s.i.			Single-Face Flat Crush, p.s.i.			Runnability, lb./in. ^a	draw factor ^b
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.		
C'-1	3-22-67	4- 7-67	505	26.5	10.9	10.6	10.7	35.4	33.6	34.7	34.0	32.2	32.9	1-1/2	1.568
C'-2	3-22-67	4- 7-67	506	26.8	11.0	10.3	10.6	37.8	33.6	35.5	34.0	31.0	32.4	1-1/2	1.569
C'-3	4- 6-67	4-18-67	513	26.0	9.9	9.2	9.5	42.0	37.8	39.5	35.0	33.0	34.0	1-1/2	1.568
C'-4	4- 6-67	4-13-67	514	25.4	10.0	9.2	9.6	37.8	32.4	35.3	34.0	30.0	32.0	1-1/2	1.570
C'-5	4- 8-67	4-18-67	521	26.8	10.5	10.0	10.2	42.0	34.2	38.2	34.4	32.8	33.8	1-1/2	1.573
C'-6	4- 8-67	4-18-67	522	26.8	10.7	10.0	10.3	40.2	34.8	38.4	34.8	32.8	34.0	1-1/2	1.577
C'-7	4-29-67	5-16-67	529	27.0	10.5	10.0	10.2	42.6	38.4	39.7	37.8	35.4	36.9	1-1/2	1.575
C'-8	4-29-67	5-16-67	530	27.2	10.4	10.0	10.2	42.6	34.2	39.7	36.6	34.6	35.9	1-1/2	1.565
C'-9	5-13-67	5-23-67	537	26.1	11.0	10.0	10.5	39.0	31.8	35.5	30.8	28.4	30.0	1-1/2	1.568
C'-10	5-13-67	5-23-67	538	25.9	11.0	10.3	10.7	39.6	28.8	34.2	32.4	29.4	31.1	1-1/2	1.570
Current machine average				26.4			10.2			37.1			33.3		1.570
Cumulative machine average				26.8			11.0			38.3			33.7		
Machine factor, %				98.5			92.7			96.9			98.8		
Machine index, %				97.8			98.1			105.7			103.7		

TABLE XXXI

SUMMARY OF TEST RESULTS FOR MACHINE D'
April and May, 1967

(Type of medium: semichemical)

Code	Date Made	Date Received	Mill Roll No.	Basis Weight, lb./M ft. ^c	Caliper, pt.			Concora Flat Crush, p.s.i.			Single-Face Flat Crush, p.s.i.			Runnability, lb./in. ^a	draw factor ^b
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.		
D'-1	3- 9-67	4- 5-67	145	27.4	11.2	10.8	11.0	33.0	30.6	32.4	30.2	27.6	28.8	Note ^c	1.549
D'-2	3-15-67	4- 5-67	146	27.6	11.5	10.8	11.0	34.8	31.8	33.2	32.0	27.6	28.7	Note ^c	1.541
D'-3	3-23-67	4- 5-67	147	27.6	10.9	10.7	10.8	34.8	29.4	32.5	29.8	26.6	28.4	Note ^c	1.555
D'-4	4-19-67	5-11-67	151	28.5	11.0	10.0	10.6	38.4	36.0	37.1	32.6	30.6	31.8	Note ^d	1.548
D'-5	4-27-67	5-11-67	152	27.6	11.0	10.1	10.6	36.0	31.8	34.0	32.0	30.4	31.3	Min.	1.555
Current machine average				27.7			10.8			33.8			29.8		1.550
Cumulative machine average				27.6			10.6			34.1			31.1		
Machine factor, %				100.4			101.9			99.1			95.8		
Machine index, %				102.6			103.8			96.3			92.8		

^aMaximum tension at 600 f.p.m.

^b600 f.p.m. minimum tension.

^cMaximum speed at which this roll could be corrugated with minimum tension was 500 f.p.m.

^dMaximum speed at which this roll could be corrugated with minimum tension was 550 f.p.m.

TABLE XXXII

SUMMARY OF TEST RESULTS FOR MACHINE E'
April and May, 1967

(Type of medium: semichemical)

Code	Date Made	Date Received	Mill Roll No.	Basis Weight, lb./M ft. ²	Caliper, pt.			Concora Flat Crush, p.s.i.			Single-Face Flat Crush, p.s.i.			Runnability, lb./in. ^a draw factor ^b	
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.		
E'-1	3-18-67	3-27-67	--	27.5	10.6	10.0	10.2	36.6	33.6	35.2	36.2	32.4	34.6	1	1.564
E'-2	3-19-67	3-27-67	--	27.5	10.3	9.7	10.0	36.0	33.6	34.8	34.8	32.6	33.8	1/2	1.567
E'-3	3-23-67	5-1-67	--	26.9	10.3	10.0	10.1	37.2	34.8	36.2	35.8	33.6	34.4	Note	1.540
E'-4	4-18-67	4-27-67	--	27.0	11.0	10.2	10.6	41.4	36.6	39.0	34.4	33.2	33.6	Min.	1.553
E'-5	4-19-67	4-27-67	--	27.0	10.9	10.3	10.5	41.4	36.6	39.4	36.6	34.0	35.2	1/2	1.555
E'-6	4-25-67	5-9-67	--	26.8	10.9	10.0	10.3	39.0	33.0	35.9	32.4	31.2	31.9	1/2	1.560
E'-7	4-26-67	5-9-67	--	26.5	10.6	10.1	10.3	37.2	34.8	36.0	34.6	32.2	33.3	1-1/2	1.568
E'-8	5-10-67	5-18-67	--	26.9	10.7	10.1	10.4	42.0	36.6	40.0	37.4	34.6	35.6	1-1/2	1.575
E'-9	5-11-67	5-18-67	--	26.4	10.5	10.0	10.2	41.4	36.6	38.8	35.0	34.2	34.7	1-1/2	1.573
E'-10	5-16-67	5-23-67	--	26.9	10.6	10.0	10.3	41.4	38.4	39.8	39.0	36.0	37.6	1-1/2	1.571
E'-11	5-17-67	5-23-67	--	27.0	10.5	10.2	10.3	43.8	39.6	30.6	37.6	32.6	35.6	1-1/2	1.569
Current machine average				26.9			10.3			37.8			34.6		1.563
Cumulative machine average				26.7			10.1			38.6			34.6		
Machine factor, %				100.7			102.0			97.9			100.0		
Machine index, %				99.6			99.0			107.7			107.8		

TABLE XXXIII

SUMMARY OF TEST RESULTS FOR MACHINE F'
April and May, 1967

(Types of medium: semichemical)

F'-1	3-20-67	3-27-67	260	27.1	10.9	10.0	10.5	34.2	28.2	32.6	31.6	30.8	31.3	1-1/2	1.570
F'-2	3-27-67	3-31-67	261	29.3	11.9	11.0	11.4	33.6	30.6	32.4	31.6	29.4	30.8	1/2	1.560
F'-3	4-1-67	4-5-67	262	26.6	10.0	9.9	10.0	33.0	30.0	31.8	30.6	27.8	29.2	1-1/2	1.571
F'-4	4-9-67	4-21-67	263	31.0	10.3	9.9	10.1	31.2	28.2	30.2	27.2	24.4	25.7	1-1/2	1.577
F'-5	4-16-67	4-21-67	264	25.7	9.8	9.0	9.3	36.0	33.6	35.0	33.6	29.6	32.3	1-1/2	1.573
F'-6	4-22-67	4-27-67	265	26.3	9.5	9.1	9.3	36.6	34.2	35.8	34.6	33.6	34.0	1	1.565
F'-7	4-29-67	5-4-67	266	26.2	10.2	9.5	9.9	36.0	32.4	34.0	31.0	28.8	29.9	1-1/2	1.565
F'-8	5-6-67	5-11-67	267	26.2	10.2	9.5	9.8	34.8	30.6	33.1	33.4	29.6	31.7	1-1/2	1.570
Current machine average				27.3			10.0			33.1			30.6		1.569
Cumulative machine average				26.5			10.0			32.4			29.7		
Machine factor, %				103.0			100.0			102.2			103.0		
Machine index, %				101.1			96.2			94.3			95.3		

^aMaximum tension at 600 f.p.m.

^b600 f.p.m., minimum tension.

^cMaximum speed at which this roll could be corrugated with minimum tension was 400 f.p.m.

TABLE XXXIV
SUMMARY OF TEST RESULTS FOR MACHINE G'
April and May, 1967

(Type of medium: semichemical)

Code	Date Made	Date Received	Mill Roll No.	Basis Weight, lb./M ft. ²	Caliper, pt.			Concora Flat Crush, p.s.i.			Single-Face Flat Crush, p.s.i.			Runnability, draw ^b	
					Max.	Min.	Av.	Max.	Min.	Ac.	Max.	Min.	Av.	lb./in. ^a	factor ^b
G'-1	4-18-67	5-18-67	161	27.0	10.9	10.1	10.6	33.0	30.6	32.3	33.0	30.0	32.0	1/2	1.565
G'-2	4-18-67	5-18-67	162	27.1	11.0	10.0	10.5	34.8	31.2	33.0	33.0	31.2	31.8	1/2	1.560
G'-3	4-18-67	5-18-67	163	26.8	10.8	10.2	10.5	37.8	31.2	33.7	31.8	29.6	31.1	1/2	1.562
G'-4	4-18-67	5-18-67	164	27.1	10.7	10.0	10.3	33.0	31.2	32.0	32.8	31.8	32.2	1/2	1.562
Current machine average				27.0			10.5			32.8			31.8		1.562
Cumulative machine average				27.1			10.7			32.0			29.9		
Machine factor, %				99.6			98.1			102.5			106.4		
Machine index, %				100.0			101.0			93.4			99.1		

^aMaximum tension at 600 f.p.m.

^b600 f.p.m. minimum tension.

DISCUSSION OF RESULTS

Shown below from Table I are the maximum and minimum current machine averages obtained for each test property during the current period (April and May, 1967). Also shown below for each test property is the current F.K.I. average which represents the mean of the current machine averages for the current period and, hence is indicative of the test level being maintained by the industry as a whole to the extent that the industry is represented by the participating machines. Also given below for each test property is the cumulative F.K.I. average which represents the mean of the current F.K.I. averages for the previous twelve months.

	<u>Current Machine Averages</u>		<u>F.K.I. Averages</u>	
	Maximum	Minimum	Current	Cumulative
Basis wt., lb.	28.3	25.8	27.1	27.0
Caliper, pt.	11.9	9.2	10.5	10.4
Concora flat crush, p.s.i.	40.3	29.1	35.3	35.1
Single-face flat crush, p.s.i.	37.9	27.7	33.1	32.1

The runnability data for the 241 rolls evaluated during the current period are summarized as follows:

Runnability	Number of Rolls	Percentage of Total Rolls	Cumulative Percentage
Less than 600 f.p.m. with minimum tension	24	10.0	100.0
600 f.p.m. - minimum tension	46	19.1	90.0
600 f.p.m. - 1/2 lb. per in. tension	54	22.4	70.9
600 f.p.m. - 1 lb. per in. tension	32	13.3	48.5
600 f.p.m. - 1-1/2 lb. per in. tension	85	35.3	35.3

Supplementary to the runnability data described, draw factors were determined for each roll of medium at 600 f.p.m. with minimum tension (or, for rolls with poor runnability, at the maximum speed runnable with minimum tension) and are given in Tables II through XXXIV for Machines A to Z and Machines A', B', C', D', E', F', and G', respectively.

In Table XXXV a comparison of Institute and mill Concora flat crush test results obtained on conditioned specimens is given for each machine for the current period. The inclusion of these comparisons is made possible by the fact that interested participants submit their Concora flat crush test results to The Institute of Paper Chemistry (on data sheets obtainable from the Institute). This affords each participant the opportunity to review the level of agreement noted for his data with the levels noted for the other participants. Comparisons of this kind are a helpful adjunct to other calibration procedures. Shown in Table XXXV are (1) the Institute and mill Concora averages for each roll included in these comparisons, (2) the difference between the roll average based on Institute data and that based on mill data, (3) the Institute and mill averages based on all rolls included in the comparison, and (4) the difference between these overall averages.

The Concora flat crush data shown in Table XXXV are summarized in Part I of Table XXXVI where for each machine the following information is given:

(1) Current machine average based on Institute data, (2) current machine average based on mill data, (3) the average difference - that is, the difference between the current machine average based on Institute data and that based on mill data, and (4) the maximum difference encountered in comparing Institute and mill test averages for individual rolls. In Part II of Table XXXVI the average differences

INSTITUTE AND MILL CONCORDA FLAT CRUSH TEST RESULTS ON INDIVIDUAL ROLLS FOR APRIL AND MAY, 1967

TABLE XXXV

Machine A										Machine B										Machine C									
Concorda Flat Crush,										Concorda Flat Crush,										Concorda Flat Crush,									
P.S.I.										P.S.I.										P.S.I.									
Code	Roll	Date	Instl-	tute	Mill	Differ-	ence			Code	Roll	Date	Instl-	tute	Mill	Differ-	ence			Code	Roll	Date	Instl-	tute	Mill	Differ-	ence		
A-1	464	3-8-67			35.8		-1.5	B-1	29	3-7-67			31.1		29.5		-1.6	C-1	1739	3-30-67			30.7		29.3		-1.4		
A-2	465	3-16-67			37.0		-3.3	B-2	30	3-15-67			33.7		32.3		-1.4	C-2	1740	3-30-67			30.2		30.7		+0.5		
A-3	466	3-21-67			37.1		-0.1	B-3	31	3-16-67			37.8		34.3		-3.5	C-3	1747	4-13-67			30.0		29.4		-0.6		
A-4	467	3-23-67			36.5		-3.7	B-4	32	3-16-67			34.9		34.3		-0.6	C-4	1748	4-13-67			29.0		29.9		+0.9		
A-5	468	4-8-67			37.2		-4.7	B-5	33	3-16-67			35.5		35.4		-0.1	C-5	1755	4-27-67			27.1		28.6		+1.5		
A-6	469	4-10-67			38.9		-3.1	B-6	34	3-22-67			33.8		35.2		+1.4	C-6	1756	4-27-67			27.5		28.2		+0.7		
A-7	470	4-17-67			39.5		-2.5	B-7	35	3-26-67			35.4		35.9		+0.5												
A-8	471	4-25-67			37.4		-3.9	B-8	36	4-4-67			31.4		33.1		+1.7												
					37.0			B-9	37	4-7-67			37.2		36.8		+0.6												
					38.5			B-10	38	4-7-67			37.3		37.5		+0.2												
					39.5			B-11	39	4-10-67			35.8		35.9		+0.1												
Current machine av.										Current machine av.										Current machine av.									
37.4										34.8										29.1									
34.6										34.6										29.4									
-2.8										-0.2										+0.3									
Machine D										Machine E										Machine F									
D-1	503	3-14-67			37.6		-0.8	E-1	537373	3-20-67			31.8		33.4		+1.6	F-1	4	3-16-67			31.4		31.7		+0.3		
D-2	504	3-21-67			37.6		-0.3	E-2	539042	3-23-67			36.7		38.2		+1.5	F-2	5	3-22-67			31.0		30.1		-0.9		
D-3	505	3-24-67			39.2		-1.2	E-3	539052	3-23-67			36.5		38.6		+2.1	F-3	6	3-29-67			30.5		30.5		-4.8		
D-4	506	3-29-67			38.3		-1.1	E-4	5311031	3-28-67			34.3		32.8		-1.5	F-4	7	4-1-67			33.0		30.1		-2.9		
D-5	507	4-6-67			37.7		-0.7	E-5	5311081	3-28-67			33.5		34.1		+0.6	F-5	8	4-12-67			31.4		32.9		+1.5		
D-6	508	4-13-67			38.8		-1.6	E-7	541091	4-5-67			38.2		36.7		-1.5	F-6	9	4-19-67			30.5		33.2		+2.7		
D-7	509	4-17-67			37.2		+0.6	E-8	544371	4-11-67			37.2		35.9		-1.3	F-7	11	4-26-67			36.2		31.0		-5.2		
D-8	510	4-17-67			37.0		+0.8	E-9	546891	4-18-67			35.2		35.0		-0.2												
D-9	511	4-21-67			37.2		+0.6	E-10	549821	4-25-67			37.2		37.8		+0.6												
D-10	512	5-2-67			39.8		-2.4	E-11	55861	5-3-67			35.4		35.0		-0.4												
D-11	513	5-3-67			38.8		-1.6	E-12	552622	5-11-67			36.0		37.0		+1.0												
Current machine av.										Current machine av.										Current machine av.									
38.1										35.7										32.7									
37.4										35.9										31.4									
-0.7										+0.2										-1.3									
Machine G										Machine H										Machine I									
G-1	364	3-14-67			34.6		-2.4	H-1	108	3-20-67			33.1		34.0		+0.9	I-1	592	2-2-67			39.5		40.7		+1.2		
G-2	365	3-16-67			34.2		-0.9	H-2	109	3-22-67			31.8		31.7		-0.1	I-2	593	2-9-67			38.2		40.8		+2.6		
G-3	366	3-17-67			36.6		-4.0	H-3	110	4-7-67			29.0		30.8		+1.8	I-3	594	2-17-67			39.6		40.3		+0.7		
G-4	367	3-27-67			32.8		-0.9	H-4	111	4-11-67			31.6		32.9		+1.3	I-4	595	2-23-67			39.0		38.2		-0.8		
G-5	368	4-8-67			35.2		-4.7											I-5	596	3-3-67			37.7		38.4		+0.7		
G-6	369	4-10-67			37.1		-3.6											I-6	597	3-9-67			39.7		40.1		+0.4		
G-7	370	4-17-67			38.9		-1.9											I-7	598	3-16-67			39.2		39.4		-0.2		
G-8	371	4-19-67			34.7		-2.7											I-8	599	3-23-67			38.0		37.4		-0.6		
Current machine av.										Current machine av.										Current machine av.									
35.5										31.4										38.8									
32.9										32.4										39.2									
-2.6										+1.0										+0.4									

See end of table for footnote.

TABLE XXXV (Continued)

See end of table for footnote.

INSTITUTE AND WILL CONCORDA FLAT CRUSH TEST RESULTS ON INDIVIDUAL BOLTS FOR APRIL AND MAY, 1967

See end of table for footnote.

TABLE XXXV (Continued)

INSTITUTE AND MILL CONCORDA FLAT CRUSH TEST RESULTS ON INDIVIDUAL ROLLS FOR APRIL AND MAY, 1967

Machine C'										Machine D'										Machine E'									
Code	No.	Made	Date	Insti-	tute	MILL	Differ-	ence	p.s.i.	Code	No.	Made	Date	Insti-	tute	MILL	Differ-	ence	p.s.i.	Code	No.	Made	Date	Insti-	tute	MILL	Differ-	ence	p.s.i.
C'-1	505	3-22-67			34.7	33.6	-1.1			D'-1	145	3-9-67			32.4	36.1	+3.7			E'-1	3-18-67			35.2	38.5			+3.3	
C'-2	506	3-22-67			35.5	32.2	-3.3			D'-2	146	3-15-67			33.2	32.9	-0.3			E'-2	3-19-67			34.8	35.2			+0.4	
C'-3	513	4-6-67			39.5	37.8	-1.7			D'-3	147	3-23-67			32.5	34.0	+1.5			E'-3	3-23-67			36.2	36.4			+0.2	
C'-4	514	4-6-67			35.3	37.2	+1.9			D'-4	151	4-19-67			37.1	38.0	+0.9			E'-4	4-18-67			39.0	35.8			-3.2	
C'-5	521	4-8-67			38.2	39.0	+0.8			D'-5	152	4-27-67			34.0	36.8	+2.8			E'-5	4-19-67			39.4	37.2			-2.2	
C'-6	522	4-8-67			38.4	41.3	+2.9													E'-6	4-25-67			35.9	35.8			-0.1	
C'-7	529	4-29-67			39.7	39.8	+0.1													E'-7	4-26-67			35.5	35.5			-0.5	
C'-8	530	4-29-67			39.7	40.2	+0.5													E'-8	5-10-67			40.0	39.6			-0.4	
C'-9	537	5-13-67			35.5	38.1	+2.6													E'-9	5-11-67			38.8	39.4			+0.6	
C'-10	538	5-13-67			34.2	32.9	-1.3													E'-10	5-16-67			39.8	38.0			-1.8	
Current machine av.										Current machine av.										Current machine av.									
37.1										33.8										37.8									
37.2										35.6										37.2									
+0.1										+1.8										-0.6									
Machine F'										Machine G'																			
P'-1	260	3-20-67			32.6	35.0	+2.4			G'-1	161	4-18-67			32.3	33.4	+1.1												
P'-2	261	3-27-67			32.4	35.6	+3.2			G'-2	162	4-18-67			33.0	33.7	0.0												
P'-3	262	4-1-67			31.8	33.6	+1.8			G'-3	163	4-18-67			33.1	33.7	0.0												
P'-4	263	4-9-67			30.2	30.8	+0.6			G'-4	164	4-18-67			32.0	34.3	+2.3												
P'-5	264	4-16-67			35.0	36.0	+1.0																						
P'-6	265	4-22-67			35.8	38.0	+2.2																						
P'-7	266	4-29-67			34.0	35.0	+1.0																						
P'-8	267	5-6-67			33.1	33.6	+0.5																						
Current machine av.										Current machine av.										Current machine av.									
33.1										32.8										33.6									
34.7										32.8										+0.8									
+1.6																													

This difference is the amount in p.s.i. units by which the mill result is higher or lower than the Institute results.

TABLE XXXVI

PART I: A COMPARATIVE SUMMARY FOR EACH MACHINE OF THE CONCORA FLAT CRUSH AVERAGES BASED ON INSTITUTE DATA AND THOSE BASED ON MILL DATA
FOR THE CURRENT PERIOD (APRIL AND MAY, 1967)

Machine Code	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Number of rolls compared	8	11	6	11	12	7	8	4	9	6	0	10	5	12	12	8
Concora flat crush, p.s.i.																
Current machine av. (Institute) ^a	37.4	34.8	29.1	38.1	35.7	32.7	35.5	31.4	38.8	39.0	--	35.1	36.4	35.8	39.4	33.8
Current machine av. (Mill) ^b	34.6	34.6	29.4	37.4	35.9	31.4	32.9	32.4	39.2	36.7	--	37.2	36.6	35.6	38.6	33.5
Average difference	-2.8	-0.2	+0.3	-0.7	+0.2	-1.3	-2.6	+1.0	+0.4	-2.3	--	+2.1	+0.2	-0.2	-0.8	-0.3
Maximum difference ^c	-4.7	-3.5	+1.5	-2.4	+2.1	-5.2	-4.7	+1.8	+2.6	-4.2	--	+3.8	+1.5	-3.2	-3.5	+2.1

PART II: A TABULATION FOR EACH MACHINE OF THE AVERAGE DIFFERENCE (PERCENT) BETWEEN THE CONCORA FLAT CRUSH
BASED ON INSTITUTE DATA AND THAT BASED ON MILL DATA

Average difference, % ^d																
Current report (April-May)	-7.5	-0.6	+1.0	-1.8	+0.6	-4.0	-7.3	+3.2	+1.0	-5.9	--	+6.0	+0.5	-0.6	-2.0	-0.9
2nd report (Feb.-March)	-5.1	-3.0	+0.6	-0.8	+7.1	-6.6	-4.7	+7.8	-5.8	+0.5	--	+2.9	+5.2	+8.3	-0.5	-2.4
1st report (Dec.-Jan.)	+0.6	-1.6	-0.3	-0.3	+5.5	-4.6	+0.3	+14.9	+4.4	-1.7	--	+4.8	-5.7	-1.4	-0.6	-1.2

^aComparisons based on current machine average include only those rolls for which mill data were submitted.

^bAverage difference is the difference between the current machine average based on Institute test results and that based on mill test results with the Institute test results used as the reference. See Table XXXV.

^cMaximum difference is the greatest difference encountered in comparing Institute and mill test averages for individual rolls. See Table XXXV.

^dAverage difference (percent) is computed by dividing the average difference in p.s.i. (shown above in Part I of this table) by the Institute current machine average and multiplying the result by 100.

TABLE XXXVI (Continued)

PART I: A COMPARATIVE SUMMARY FOR EACH MACHINE OF THE CONCORA FLAT CRUSH AVERAGES BASED ON INSTITUTE DATA AND THOSE BASED ON MILL DATA
FOR THE CURRENT PERIOD (APRIL AND MAY, 1967)

Machine code	Q	R	S	T	U	V	W	X	Y	Z	A'	B'	C'	D'	E'	F'	G'
Number of rolls compared	8	4	3	4	8	8	7	1	4	3	11	3	10	5	11	8	4
Concora flat crush, p.s.i.																	
Current machine av. (Institute) ^a	38.6	35.1	39.3	32.6	36.3	33.8	33.8	34.2	32.0	40.3	33.4	33.1	37.1	33.8	37.8	33.1	32.8
Current machine av. (Mill) ^a	39.5	33.3	39.4	35.2	35.6	36.2	33.9	33.4	35.8	38.5	33.4	35.5	37.2	35.6	37.2	34.7	33.6
Average difference ^b	+0.9	-1.8	+0.1	+2.6	-0.7	+2.4	+0.1	-0.8	+3.8	-1.8	0.0	+2.4	+0.1	+1.8	-0.6	+1.6	+0.8
Maximum difference ^c	+2.7	-3.6	+1.5	+4.3	-3.1	+3.7	+3.6	-0.8	+4.8	-2.8	-1.8	+3.5	-3.3	+3.7	+3.3	+3.2	+2.3

PART II: A TABULATION FOR EACH MACHINE OF THE AVERAGE DIFFERENCE (PERCENT) BETWEEN THE CONCORA FLAT CRUSH
BASED ON INSTITUTE DATA AND THAT BASED ON MILL DATA

Average difference, % ^d																	
Current report (April-May)	+2.3	-5.1	+0.3	+8.0	-1.9	+7.1	+0.3	-2.3	+11.9	-4.5	0.0	+7.3	+0.3	+5.3	-1.6	+4.8	+2.4
2nd report (Feb.-March)	+6.5	+0.3	+0.8	-1.0	+1.4	+6.9	-2.0	--	+6.8	-7.2	+0.6	--	0.0	+5.8	-2.6	+3.9	-8.0
1st report (Dec.-Jan.)	+7.6	--	+0.8	-4.7	+6.6	+7.5	+1.6	-2.7	+12.3	-5.2	+9.8	--	-6.3	+7.1	-4.7	+5.9	--

^aComparisons based on current machine average include only those rolls for which mill data were submitted.

^bAverage difference is the difference between the current machine average based on Institute test results and that based on mill test results with the Institute test results used as the reference. See Table XXXV.

^cMaximum difference is the greatest difference encountered in comparing Institute and mill test averages for individual rolls. See Table XXXV.

^dAverage difference (percent) is computed by dividing the average difference in p.s.i. (shown above in Part I of this table) by the Institute current machine average and multiplying the result by 100.

given in Part I are expressed as percentage differences; corresponding data from the previous two reports are included in Part II of Table XXXVI so that the current level of agreement may be interpreted with this additional information at hand.

In Table XXXVII a summary of the agreement between Institute and mill Concora flat crush data is given for the current period with corresponding data from the previous bimonthly period also included. The data shown for the current period indicate that agreement between Institute and mill Concora data was good, and, in general, somewhat better than the satisfactory level of agreement shown for the previous period.

TABLE XXXVII

SUMMARY OF AGREEMENT BETWEEN INSTITUTE AND MILL
CONCORA FLAT CRUSH DATA

Average Percentage Difference Between Institute and Mill Concora Flat Crush Test Results ^a	Percentage of All Machines Included Within the Indicated Range	
	Previous Period ^b	Current Period ^c
<u>+ 1.0</u>	29.0	34.4
<u>+ 2.5</u>	41.9	56.2
<u>+ 5.0</u>	58.1	68.8
<u>+10.0</u>	100.0 ^d	96.9
Max.		100.0 ^e

^a

The average obtained at the Institute was used as the reference in the calculation of the percentage differences.

^b

February and March, 1967.

^c

April and May, 1967.

^d

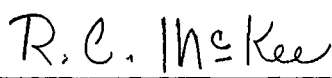
Maximum percentage difference was + 8.3.

^e

Maximum percentage difference was +11.9.

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