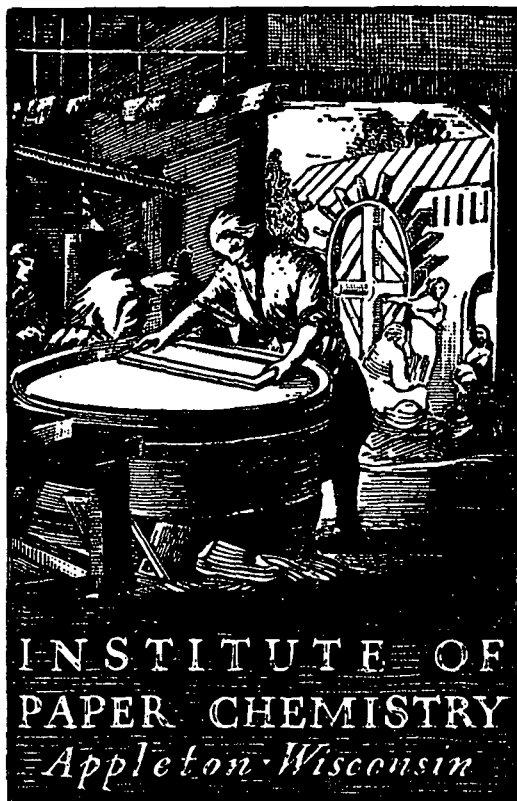


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CONTINUOUS BASELINE STUDY

Project 1108-13

Report 173

A Progress Report

to

FOURDRINIER KRAFT BOARD INSTITUTE, INC.

October 1, 1961

THE INSTITUTE OF PAPER CHEMISTRY

Appleton, Wisconsin

CONTINUOUS BASELINE STUDY

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THE INSTITUTE OF PAPER CHEMISTRY

Appleton, Wisconsin

CONTINUOUS BASELINE STUDY

INTRODUCTION

As requested by the Technical Committee of the Fourdrinier Kraft Board Institute, Inc., the reports pertinent to the continuous baseline study on 42-lb. fourdrinier kraft linerboard are now being prepared by The Institute of Paper Chemistry on a bimonthly basis instead of the previous monthly basis. This new system was initiated on August 1, 1961. Hence, this first report under the new system presents results obtained during the months of August and September.

During this first bimonthly period, 104 sample lots of 42-lb. fourdrinier kraft linerboard representing the production of seventeen mills were evaluated in August and 55 sample lots representing the production of sixteen mills were evaluated in September. The reduction in sample lots noted between August and September is associated with the revision in the study, as recommended by the Technical Committee, whereby the maximum number of sample lots submitted for evaluation by each participant was reduced from eight per month to four per month effective September 1, 1961.

PRESENTATION AND DISCUSSION OF TEST RESULTS

Each sample lot received for evaluation during August and September 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 the F.K.I. indexes. For each test, the current mill average represents the average obtained on all sample lots evaluated during a given 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 August and September is shown.

Supplementary to the basis weight data given in Table I, a tabulation is given in Table III of the amount by which the 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 for each test and also the current and cumulative F.K.I. averages:

TABLE I

SUMMARY OF COMPOSITE MILL AVERAGES

| Mill | Basis Weight, lb. | Caliper, points | Bursting Strength, p.s.i. gage | In Machine g./sheet Cross Machine | Elmendorf Tear, g./sheet |
|-------------------------|-----------------------|---------------------|--------------------------------------|---|-----------------------------|
| | | <u>August, 1961</u> | | | |
| A | 43.3 | 12.4 | 112 | 373 | 407 |
| B | 43.5 | 12.9 | 109 | 317 | 357 |
| C | 43.2 | 13.4 | 113 | 319 | 359 |
| D | 42.7 | 12.4 | 114 | 349 | 363 |
| E | No samples submitted. | | | | |
| F | 43.8 | 11.9 | 113 | 348 | 393 |
| G | 42.6 | 12.7 | 114 | 339 | 365 |
| H | No samples submitted. | | | | |
| I | 43.0 | 12.2 | 111 | 298 | 361 |
| J | 42.5 | 12.7 | 114 | 317 | 357 |
| K | 43.2 | 13.1 | 111 | 299 | 348 |
| L | 42.6 | 13.1 | 121 | 303 | 333 |
| M | 41.8 | 11.7 | 112 | 332 | 383 |
| N | 42.1 | 12.2 | 115 | 278 | 329 |
| O | 43.9 | 12.5 | 113 | 332 | 400 |
| P | 42.8 | 12.1 | 109 | 377 | 425 |
| Q | 42.2 | 13.3 | 113 | 313 | 349 |
| S | 42.8 | 12.4 | 107 | 346 | 400 |
| T | No samples submitted. | | | | |
| U | 42.5 | 12.0 | 116 | 298 | 347 |
| Current FKl Average: | 42.8 | 12.5 | 113 | 326 | 369 |
| Cumulative FKl Average: | 43.4 | 12.6 | 110 | 331 | 373 |
| FKl Index, % | 98.6 | 99.2 | 102.7 | 98.5 | 98.9 |

TABLE I (continued)
SUMMARY OF COMPOSITE MILL AVERAGES

| Mill | Basis Weight, lb. | Caliper, points | Bursting Strength, p.s.i. gage | Elmendorf Tear, g./sheet In Machine Cross Machine |
|-------------------------|-----------------------|--------------------|--------------------------------------|--|
| <u>September, 1961</u> | | | | |
| A | 43.3 | 12.6 | 113 | 371 403 |
| B | 43.2 | 14.1 | 104 | 303 360 |
| C | 42.6 | 13.8 | 118 | 306 346 |
| D | 42.5 | 12.2 | 114 | 335 350 |
| E | 43.6 | 12.8 | 110 | 322 367 |
| F | 42.9 | 11.9 | 114 | 340 385 |
| G | 43.0 | 13.2 | 116 | 342 398 |
| H | No samples submitted. | | | |
| I | 42.8 | 12.2 | 113 | 300 357 |
| J | 42.9 | 12.9 | 118 | 322 358 |
| K | 42.6 | 13.3 | 112 | 301 357 |
| L | 43.0 | 13.4 | 121 | 305 360 |
| M | No samples submitted. | | | |
| N | No samples submitted. | | | |
| O | 43.6 | 12.4 | 120 | 339 398 |
| P | 42.2 | 12.1 | 116 | 356 410 |
| Q | 42.3 | 12.9 | 121 | 323 351 |
| S | 43.1 | 12.6 | 103 | 346 389 |
| T | No samples submitted. | | | |
| U | 42.7 | 11.8 | 120 | 310 339 |
| Current FKI Average: | 42.9 | 12.8 | 115 | 326 371 |
| Cumulative FKI Average: | 43.3 | 12.6 | 110 | 330 372 |
| FKI Index, % | 99.1 | 101.6 | 104.5 | 98.8 99.7 |

TABLE II

NUMBER OF SAMPLE LOTS SUBMITTED BY EACH MILL

| Mill Code | Number of Sample Lots | |
|-----------|-----------------------|-----------|
| | August | September |
| A | 6 | 4 |
| B | 12 | 2 |
| C | 4 | 2 |
| D | 4 | 2 |
| E | 0 | 2 |
| F | 6 | 4 |
| G | 8 | 4 |
| H | 0 | 0 |
| I | 8 | 4 |
| J | 8 | 4 |
| K | 4 | 5 |
| L | 1 | 4 |
| M | 1 | 0 |
| N | 6 | 0 |
| O | 8 | 4 |
| P | 7 | 2 |
| Q | 8 | 4 |
| S | 7 | 6 |
| T | 0 | 0 |
| U | <u>6</u> | <u>2</u> |
| Total | 104 | 55 |

TABLE III
PERCENTAGE DEVIATION FROM 42-LB. BASIS WEIGHT
SPECIFICATION

| Mill Code | August | September |
|-----------|--------|-----------|
| A | +3.1 | +3.1 |
| B | +3.6 | +2.9 |
| C | +2.9 | +1.4 |
| D | +1.7 | +1.2 |
| E | -- | +3.8 |
| F | +4.3 | +2.1 |
| G | +1.4 | +2.4 |
| H | -- | -- |
| I | +2.4 | +1.9 |
| J | +1.2 | +2.1 |
| K | +2.9 | +1.4 |
| L | +1.4 | +2.4 |
| M | -0.5 | -- |
| N | +0.2 | -- |
| O | +4.5 | +3.8 |
| P | +1.9 | +0.5 |
| Q | +0.5 | +0.7 |
| S | +1.9 | +2.6 |
| T | -- | -- |
| U | +1.2 | +1.7 |

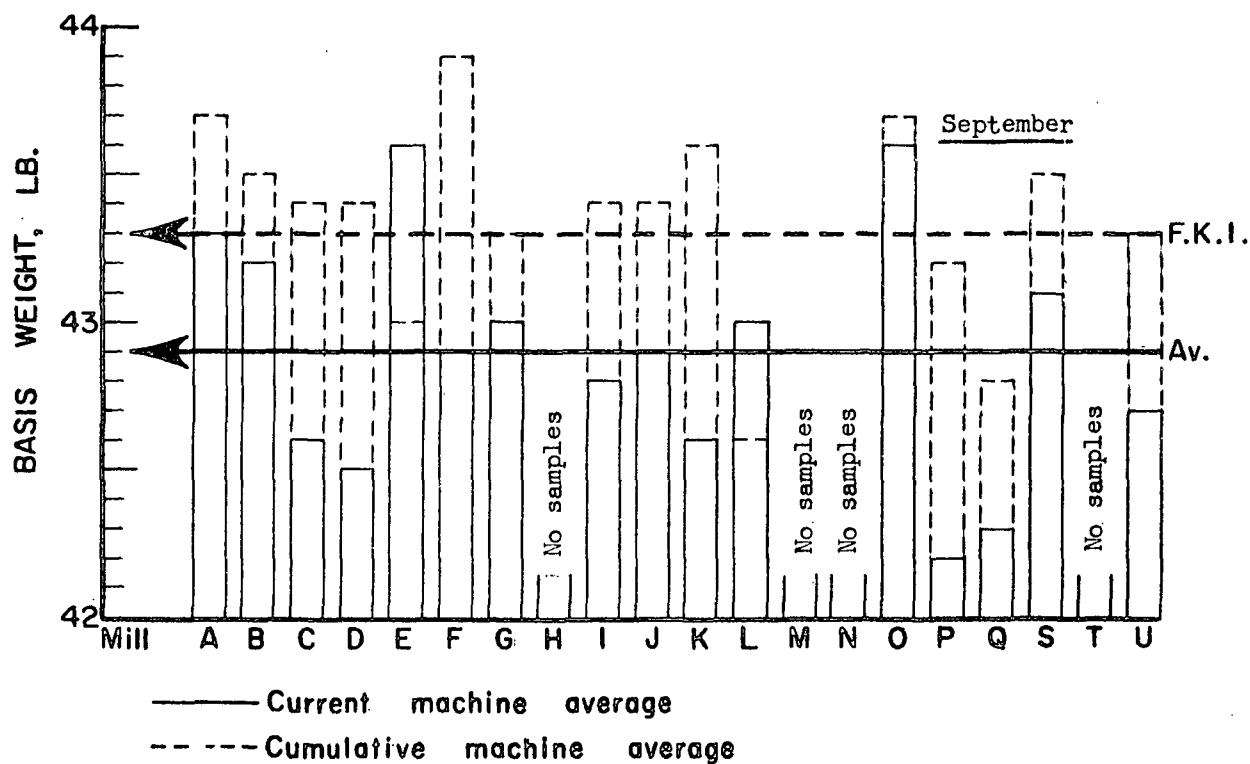
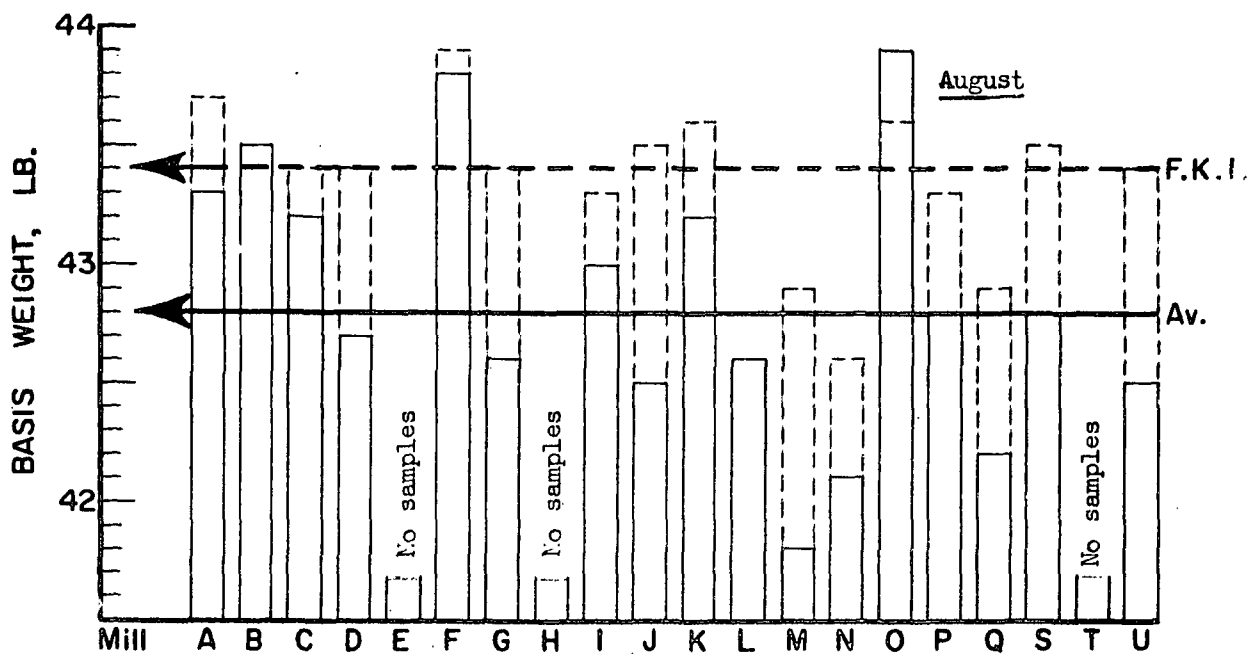


Figure 1. Comparison of Basis Weight Results

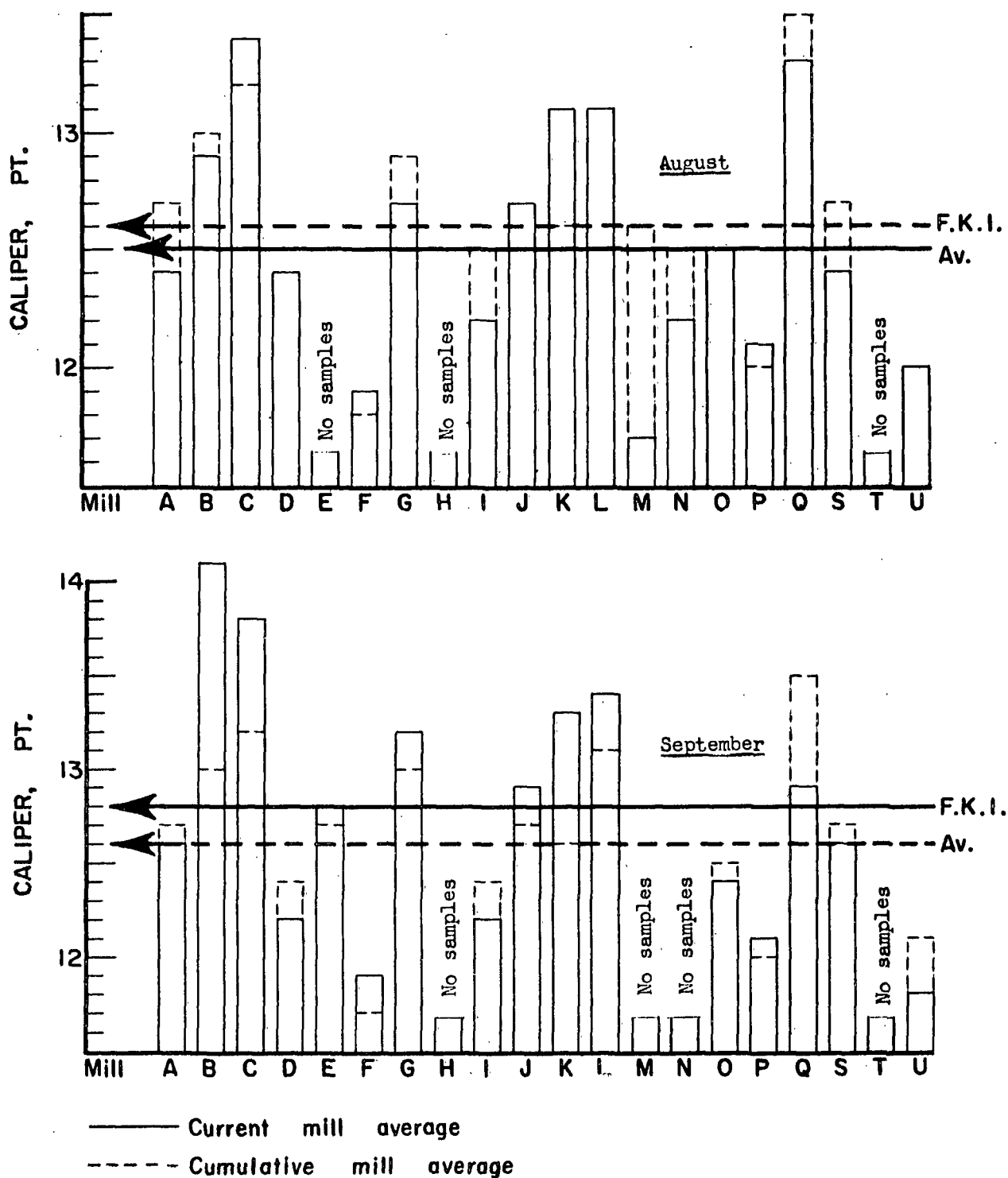


Figure 2. Comparison of Caliper Results

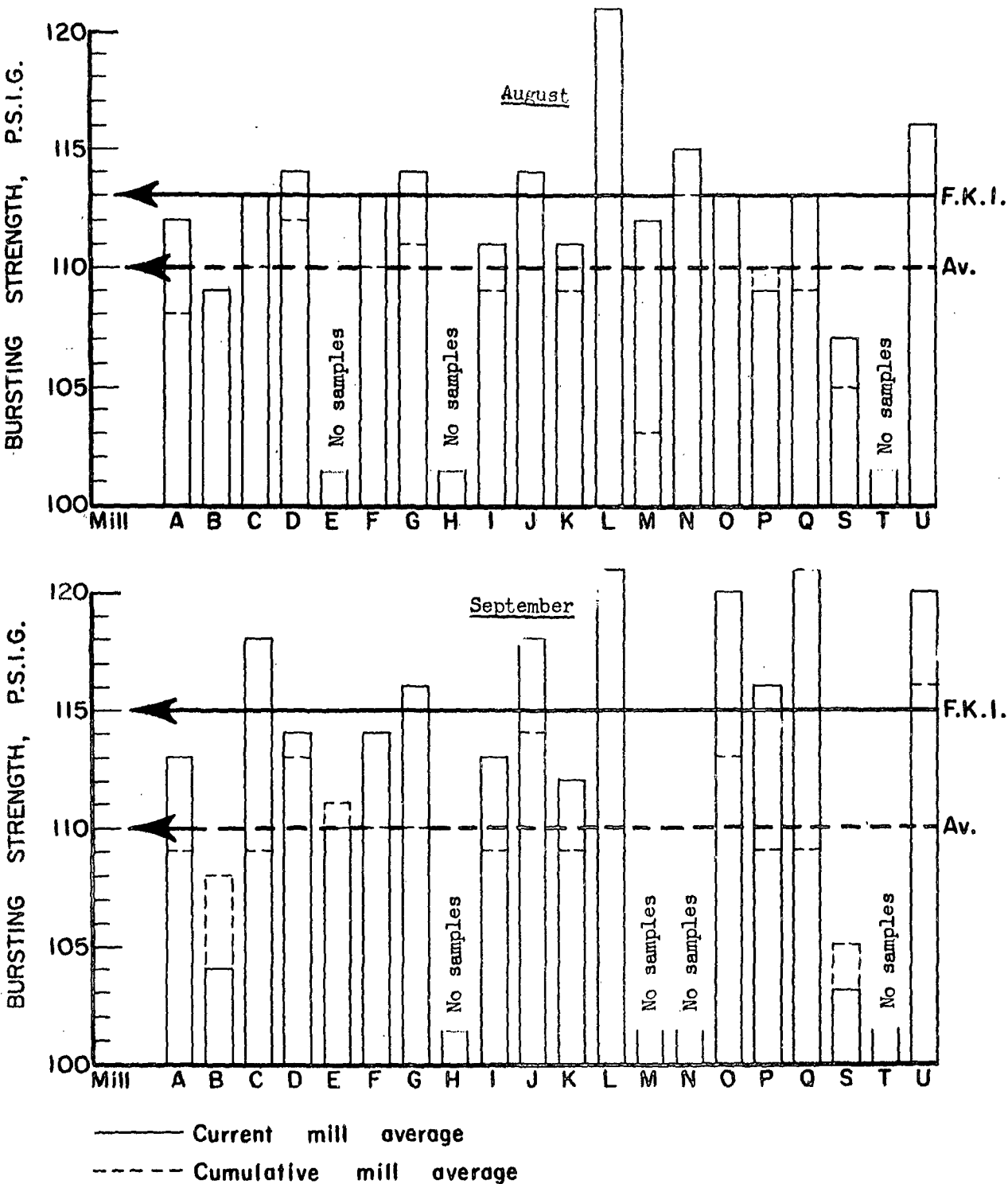
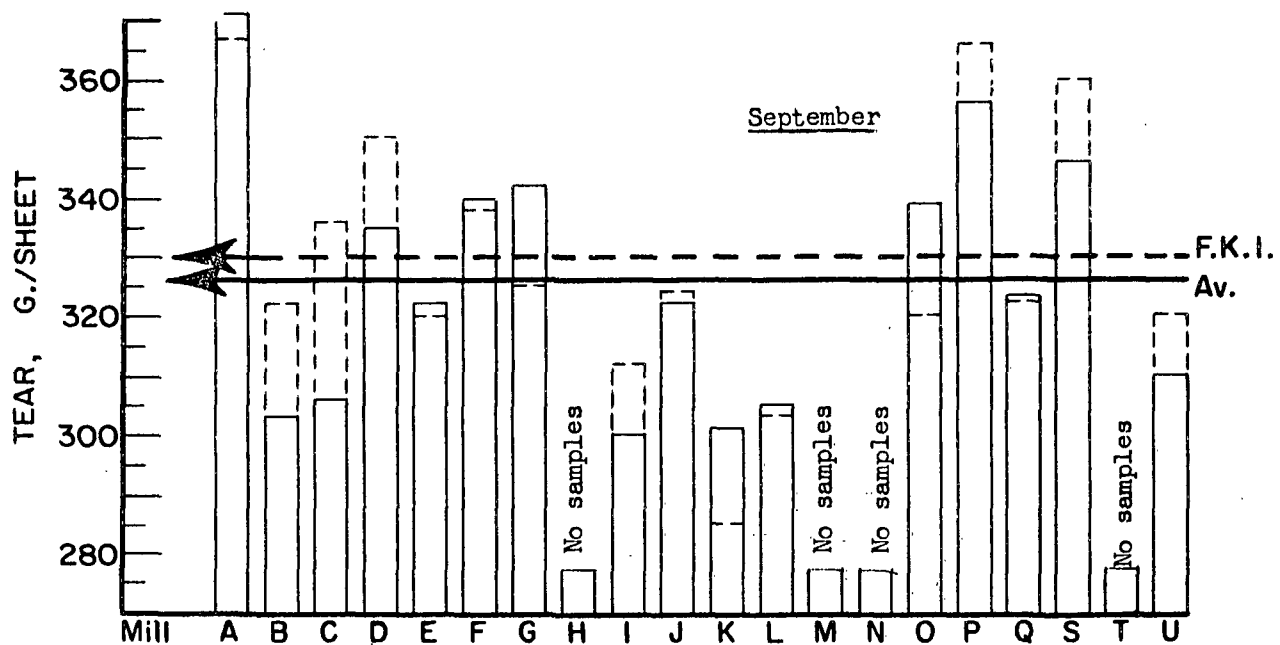
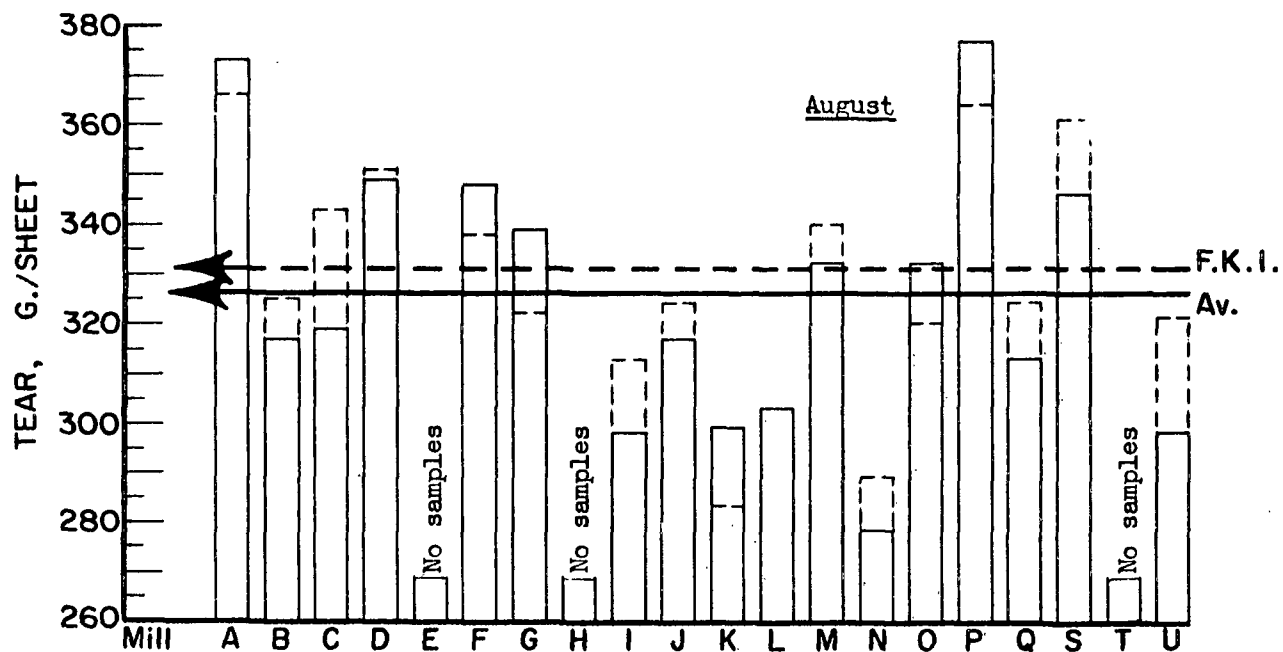


Figure 3. Comparison of Bursting Strength Results



— Current machine average
- - - Cumulative machine average

Figure 4. Comparison of Machine-Direction Tear Results

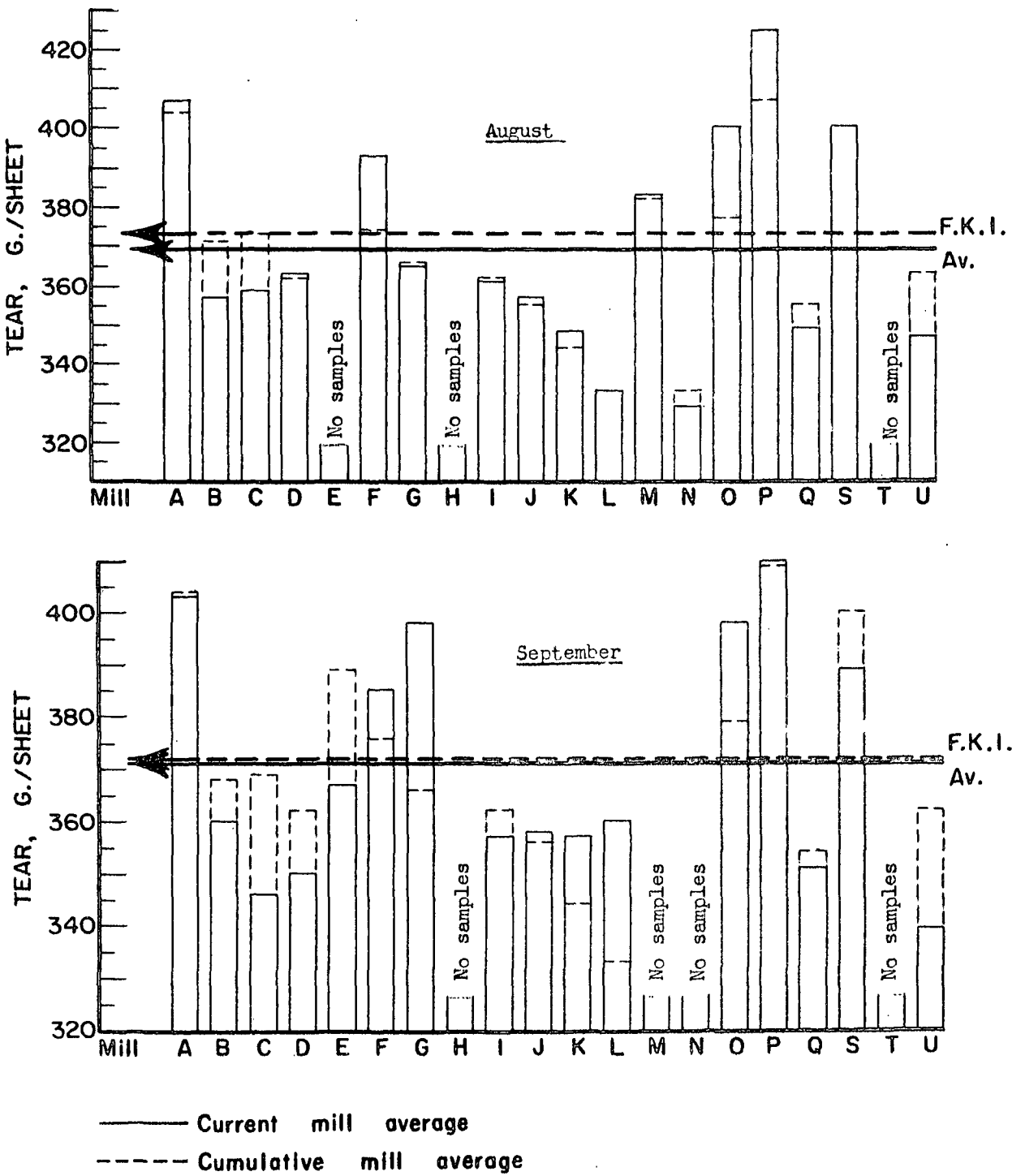


Figure 5. Comparison of Cross-Machine Direction Tear Results

| Test | Month | Current Mill Averages | | F.K.I. Averages | |
|---|-----------|--------------------------|------|-----------------|------------|
| | | Max. | Min. | Current | Cumulative |
| Basis weight, lb. | August | 43.9 | 41.8 | 42.8 | 43.4 |
| | September | 43.6 | 42.2 | 42.9 | 43.3 |
| Caliper, points | August | 13.4 | 11.7 | 12.5 | 12.6 |
| | September | 14.1 | 11.8 | 12.8 | 12.6 |
| Bursting Strength, p.s.i. gage | August | 121 | 107 | 113 | 110 |
| | September | 121 | 103 | 115 | 110 |
| Machine direction Elmendorf tear, g./sheet | August | 377 | 278 | 326 | 331 |
| | September | 371 | 300 | 326 | 330 |
| Cross-machine direction Elmendorf tear, g./sheet | August | 425 | 329 | 369 | 373 |
| | September | 410 | 339 | 371 | 372 |

The test results obtained at the Institute and at the mill during August and September are given alphabetically in Tables IV to XXIII 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 during each month include also for each test the calculation of (1) a current mill average that represents the average of the averages obtained on the individual sample lots of linerboard evaluated during a given month, (2) a cumulative mill average that represents the average of the current mill averages for the previous twelve months excluding the current month, (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. As mentioned above, the results presented in Tables IV to XXIII 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

TABLE IV
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL A

| Date Made | Finish | Mch. No. | Basis Weight, lb. | | | Caliper, points | | | Bursting Strength, P.s.i. Page | | | Elmendorf Tear, g./sheet In Machine | | | Elmendorf Tear, g./sheet Cross Machine | | | | | | | | | | | | |
|--------------------------|--------|----------|-------------------|------|------|-----------------|------|-------|--------------------------------|------|------|-------------------------------------|-------|-------|--|------|-----|-----------|------|------------------|-----|-----|-------|-----|------------------|-----|-----|
| | | | Max. | Min. | Av. | Institute | Mill | Diff. | Max. | Min. | Av. | Institute | Mill | Diff. | Max. | Min. | Av. | Institute | Mill | Diff. | | | | | | | |
| August, 1961 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7-16-61 | W.F. | - | 44.0 | 42.2 | 43.2 | 43.1 | -0.1 | 12.7 | 11.5 | 12.0 | 12.0 | 0.0 | 134 | 90 | 111 | 108 | -3 | 432 | 320 | 372 ^a | 389 | +17 | 424 | 352 | 391 ^a | 408 | +17 |
| 7-16-61 | W.F. | - | 44.0 | 43.0 | 43.7 | 43.6 | -0.1 | 13.1 | 12.0 | 12.6 | 12.5 | -0.1 | 128 | 84 | 109 | 106 | -3 | 456 | 320 | 376 ^a | 396 | +20 | 460 | 352 | 409 ^a | 445 | +36 |
| 7-25-61 | W.F. | - | 44.0 | 42.0 | 43.0 | 43.2 | +0.2 | 13.7 | 11.7 | 12.4 | 11.9 | -0.5 | 138 | 95 | 110 | 112 | +2 | 408 | 304 | 362 ^a | 376 | +14 | 472 | 376 | 409 ^a | 447 | +38 |
| 8- 8-61 | W.F. | - | 43.8 | 42.0 | 43.3 | 42.9 | -0.4 | 13.0 | 11.8 | 12.5 | 12.2 | -0.3 | 127 | 99 | 114 | 109 | -5 | 416 | 336 | 374 ^a | 384 | +10 | 440 | 368 | 411 ^a | 389 | -22 |
| 8- 8-61 | W.F. | - | 44.0 | 42.2 | 43.4 | 43.3 | -0.1 | 12.9 | 11.9 | 12.4 | 12.0 | -0.4 | 129 | 98 | 116 | 121 | +5 | 416 | 336 | 381 ^a | 396 | +15 | 456 | 384 | 419 ^a | 409 | -10 |
| 8-10-61 | W.F. | - | 44.0 | 42.0 | 43.1 | 42.9 | -0.2 | 13.0 | 12.1 | 12.6 | 12.1 | -0.5 | 129 | 89 | 112 | 112 | 0 | 440 | 320 | 374 | 368 | - 6 | 440 | 368 | 405 ^a | 411 | + 6 |
| Current Mill Average: | | | 43.3 | | | 43.2 | -0.1 | 12.4 | | | 12.1 | -0.3 | 112 | | | 111 | -1 | 373 | | | 385 | +12 | 407 | | | 418 | +11 |
| Cumulative Mill Average: | | | 43.7 | | | | | 12.7 | | | | | 108 | | | | | 366 | | | | | 404 | | | | |
| Mill Factor, % | | | 99.1 | | | | | 97.6 | | | | | 103.7 | | | | | 101.9 | | | | | 106.7 | | | | |
| Mill Index, % | | | 99.8 | | | | | 98.4 | | | | | 101.8 | | | | | 112.7 | | | | | 109.1 | | | | |

^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 IV (continued)

September, 1961

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

| Date Made | Mch. No. | Finish | Basis Weight, lb. | | | Caliper, points | | | Bursting Strength, p.s.i. gage | | | Elmendorf Tear, g./sheet | | | | | | | | | | | | | | | |
|--------------------------|----------|--------|-------------------|-----------|------|-----------------|-----------|-------|--------------------------------|-----------|------|--------------------------|-----------|-----|-----|-----|----|------|-----|------------------|-----|-----|------|-----|------------------|-----|-----|
| | | | Institute | Max. Min. | Av. | Institute | Max. Min. | Av. | Institute | Max. Min. | Av. | Institute | Max. Min. | Av. | | | | | | | | | | | | | |
| August, 1961 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6-15-61 | ---- | ---- | 44.2 | 42.8 | 43.7 | 43.8 | +0.1 | 13.8 | 12.1 | 13.0 | 12.7 | -0.3 | 137 | 91 | 113 | 111 | -2 | 416 | 264 | 349 ^a | 322 | -27 | 376 | 320 | 351 ^a | 364 | +13 |
| 6-16-61 | ---- | ---- | 44.0 | 43.0 | 43.7 | 43.6 | -0.1 | 13.5 | 12.8 | 13.1 | 12.6 | -0.5 | 129 | 90 | 110 | 114 | +4 | 368 | 240 | 329 ^a | 318 | +11 | 416 | 312 | 367 ^a | 360 | -7 |
| 6-27-61 | ---- | ---- | 44.6 | 42.2 | 43.5 | 43.8 | +0.3 | 13.6 | 12.0 | 12.7 | 12.3 | -0.4 | 120 | 70 | 99 | 99 | 0 | 400 | 304 | 339 ^a | 307 | -32 | 432 | 344 | 383 ^a | 374 | -9 |
| 6-27-61 | ---- | ---- | 44.0 | 42.0 | 42.9 | 43.2 | +0.3 | 13.7 | 12.0 | 12.8 | 12.5 | -0.3 | 129 | 96 | 112 | 108 | -4 | 336 | 264 | 297 ^a | 294 | -3 | 416 | 320 | 357 ^a | 358 | +1 |
| 7-24-61 | ---- | ---- | 46.4 | 44.0 | 45.1 | 44.5 | -0.6 | 14.3 | 12.7 | 13.5 | 12.5 | -1.0 | 145 | 85 | 114 | 117 | +3 | 408 | 256 | 325 ^a | 294 | -31 | 440 | 336 | 379 ^a | 371 | -8 |
| 7-24-61 | ---- | ---- | 45.6 | 42.2 | 43.9 | 43.4 | -0.5 | 13.3 | 12.1 | 12.7 | 12.2 | -0.5 | 141 | 85 | 119 | 116 | -3 | 384 | 272 | 309 ^a | 286 | -23 | 408 | 328 | 383 ^a | 372 | -11 |
| 7-24-61 | ---- | ---- | 46.0 | 42.2 | 44.2 | 44.0 | -0.2 | 14.1 | 12.4 | 13.5 | 12.6 | -0.9 | 137 | 80 | 111 | 112 | +1 | 392 | 280 | 319 ^a | 300 | -19 | 432 | 344 | 371 ^a | 369 | +18 |
| 7-25-61 | ---- | ---- | 46.0 | 42.4 | 44.2 | 43.8 | +0.4 | 14.1 | 12.0 | 13.5 | 12.7 | -0.6 | 142 | 85 | 109 | 109 | 0 | 344 | 240 | 302 ^a | 275 | -27 | 400 | 320 | 352 ^a | 346 | -6 |
| 8-3-61 | ---- | ---- | 44.0 | 41.8 | 42.7 | 42.9 | +0.2 | 13.7 | 12.0 | 12.9 | 12.2 | -0.7 | 116 | 87 | 101 | 98 | -3 | 416 | 296 | 349 ^a | 318 | -31 | 392 | 320 | 355 ^a | 387 | +2 |
| 8-7-61 | ---- | ---- | 43.6 | 42.0 | 43.0 | 43.0 | 0.0 | 13.4 | 12.3 | 12.9 | 12.2 | -0.7 | 126 | 82 | 105 | 104 | -1 | 328 | 240 | 279 ^a | 277 | -2 | 368 | 304 | 341 ^a | 347 | +6 |
| 8-12-61 | ---- | ---- | 43.6 | 41.2 | 42.4 | 42.5 | +0.1 | 13.1 | 12.0 | 12.6 | 12.0 | -0.6 | 118 | 83 | 101 | 102 | +1 | 376 | 232 | 297 | 264 | -33 | 360 | 280 | 321 ^a | 318 | -3 |
| 8-13-61 | ---- | ---- | 44.0 | 41.6 | 43.3 | 43.8 | -0.5 | 13.1 | 11.2 | 12.1 | 11.9 | -0.2 | 126 | 83 | 111 | 109 | -2 | 344 | 272 | 307 | 281 | -26 | 360 | 304 | 327 ^a | 340 | +13 |
| Current Mill Average: | | | 43.5 | 43.5 | 0.0 | | | 12.9 | 12.4 | -0.5 | | | 109 | 108 | -1 | | | 317 | 295 | -22 | | | 357 | 361 | +4 | | |
| Cumulative Mill Average: | | | 43.5 | | | | | 13.0 | | | | | 109 | | | | | 325 | | | | | 371 | | | | |
| Mill Factor, % | | | 100.0 | | | | | 99.2 | | | | | 100.0 | | | | | 97.5 | | | | | 96.2 | | | | |
| Mill Index, % | | | 100.2 | | | | | 102.4 | | | | | 99.1 | | | | | 95.8 | | | | | 95.7 | | | | |

^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 V (continued)

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL B

| Date Yade | Finish | Mch. No. | Basis Weight, lb. | | | Caliper, points | | | Bursting Strength, p.s.i., gage | | | Elmendorf Tear, g./sheet | | | | | | | | | | | | | | | |
|--------------------------|--------|-------------|-------------------|------|------|-----------------|------|-------|------------------------------------|------|------|--------------------------|------|------|-----|-----|----|-----|------|------------------|-----|-----|-----|------|------------------|-----|-----|
| | | | Institute | | Mill | Institute | | Mill | Institute | | Mill | Institute | | Mill | | | | | | | | | | | | | |
| | | | Max. | Min. | Av. | Max. | Min. | Av. | Max. | Min. | Av. | Max. | Min. | Av. | | | | | | | | | | | | | |
| September, 1961 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9- 2-61 | ---- | 1 | 44.2 | 41.2 | 42.9 | 43.3 | +0.4 | 14.4 | 12.8 | 13.5 | 13.1 | -0.4 | 129 | 79 | 107 | 106 | -1 | 368 | 248 | 299 | 279 | -20 | 400 | 336 | 361 ^a | 390 | +29 |
| 9- 6-61 | ---- | 1 | 44.6 | 42.0 | 43.5 | 43.6 | +0.1 | 15.4 | 13.9 | 14.8 | 13.9 | -0.9 | 119 | 79 | 101 | 100 | -1 | 352 | 256 | 307 ^a | 269 | -38 | 416 | 320 | 360 ^a | 350 | -10 |
| Current Mill Average: | | | 43.2 | 43.4 | +0.2 | | | 14.1 | 13.5 | -0.6 | | | 104 | 103 | -1 | | | | 303 | 274 | -29 | | | 360 | 370 | -10 | |
| Cumulative Mill Average: | | | 43.5 | | | | | 13.0 | | | | | 108 | | | | | | 322 | | | | | 368 | | | |
| Mill Factor, % | | | 99.3 | | | | | 108.5 | | | | | 96.3 | | | | | | 94.1 | | | | | 97.8 | | | |
| Mill Index, % | | | 99.8 | | | | | 111.9 | | | | | 94.5 | | | | | | 91.8 | | | | | 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 VI
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL C

| Date Made | Mch. No. | Finish | Basis Weight, lb. | | | Caliper, points | | | Bursting Strength, P.s.i. gage | | | 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. | Max. | Min. | Av. | Max. | Min. | Av. | Diff. | Max. | Min. | Av. | Diff. | | | | | | | | | |
| August, 1961 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7-15-61 | WFLS | 1 | 43.4 | 42.2 | 42.6 | 43.4 | +0.6 | | 14.5 | 13.2 | 14.0 | 14.0 | 0.0 | 131 | 92 | 110 | 104 | -6 | 392 | 312 | 347 ^a | 410 | +63 | 416 | 320 | 360 ^a | 441 | +81 |
| 8-14-61 | WFLS | 1 | 44.0 | 43.0 | 43.7 | 42.8 | -0.9 | | 13.8 | 13.0 | 13.2 | 12.7 | -0.5 | 132 | 90 | 114 | 107 | -7 | 360 | 272 | 305 | 326 | +21 | 376 | 328 | 352 ^a | 382 | +30 |
| 8-14-61 | WFLS | 1 | 43.8 | 42.2 | 43.0 | 42.9 | -0.1 | | 14.0 | 13.0 | 13.3 | 12.6 | -0.7 | 135 | 90 | 113 | 111 | -2 | 352 | 256 | 295 | 301 | +6 | 364 | 320 | 356 ^a | 339 | -17 |
| 8-15-61 | WFLS | 1 | 44.0 | 42.8 | 43.4 | 42.9 | -0.5 | | 13.8 | 13.0 | 13.3 | 12.6 | -0.7 | 135 | 99 | 116 | 114 | -2 | 392 | 272 | 329 ^a | 307 | -22 | 400 | 328 | 369 ^a | 356 | -13 |
| Current Mill Average: | | | 43.2 | | | 43.0 | -0.2 | | 13.4 | 13.0 | -0.4 | | | 113 | 109 | -4 | | | 319 | 336 | +17 | | | 359 | 360 | +21 | | |
| Cumulative Mill Average: | | | 43.4 | | | | | 13.2 | | | | | | 110 | | | | | 343 | | | | | 373 | | | | |
| Mill Factor, % | | | 99.5 | | | | | 101.5 | | | | | | 102.7 | | | | | 93.0 | | | | | 96.2 | | | | |
| Mill Index, % | | | 99.5 | | | | | 106.3 | | | | | | 102.7 | | | | | 96.2 | | | | | 96.2 | | | | |
| September, 1961 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9-3-61 | WFLS | 1 | 43.4 | 42.0 | 42.6 | 43.2 | +0.6 | | 14.2 | 13.1 | 13.8 | 13.1 | -0.7 | 136 | 98 | 119 | 109 | -10 | 352 | 248 | 306 ^a | 347 | -41 | 352 | 320 | 340 ^a | 385 | +45 |
| 9-5-61 | WFLS | 1 | 43.8 | 42.0 | 42.6 | 43.2 | +0.6 | | 14.3 | 13.1 | 13.8 | 13.2 | -0.6 | 141 | 88 | 118 | 107 | -11 | 336 | 272 | 306 ^a | 351 | +45 | 364 | 320 | 352 ^a | 393 | +41 |
| Current Mill Average: | | | 42.6 | | | 43.2 | +0.6 | | 13.8 | 13.2 | -0.6 | | | 118 | 108 | -10 | | | 306 | 349 | +43 | | | 346 | 369 | +43 | | |
| Cumulative Mill Average: | | | 43.4 | | | | | 13.2 | | | | | | 109 | | | | | 336 | | | | | 369 | | | | |
| Mill Factor, % | | | 98.2 | | | | | 104.5 | | | | | | 108.3 | | | | | 91.1 | | | | | 93.8 | | | | |
| Mill Index, % | | | 98.4 | | | | | 109.5 | | | | | | 107.3 | | | | | 92.7 | | | | | 95.0 | | | | |

^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 VII
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL D

| Date Made | Mch. No. | Finish | Basis Weight, lb. | | | Caliper, points | | | Bursting Strength, P.S.I. Gauge | | | 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. | Diff. | Av. | Diff. | Av. | Diff. | Av. | Diff. | Av. | Diff. | Av. | Diff. | Av. | Diff. | Av. | Diff. | | | | | | | | | |
| August, 1961 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | - | N.F. | 43.8 | 42.2 | 43.2 | 43.1 | -0.1 | 13.0 | 11.1 | 12.3 | 12.4 | +0.1 | 130 | 90 | 115 | 110 | -5 | 448 | 312 | 356 ^a | 342 | -14 | 472 | 328 | 366 ^a | 363 | -23 |
| | - | N.F. | 43.5 | 42.0 | 42.9 | 42.8 | -0.1 | 13.1 | 11.5 | 12.4 | 12.5 | -0.1 | 136 | 91 | 117 | 110 | -7 | 400 | 304 | 349 ^a | 317 | -32 | 400 | 320 | 355 ^a | 352 | -3 |
| | - | N.F. | 44.0 | 42.0 | 43.0 | 43.3 | +0.3 | 13.2 | 12.0 | 12.6 | 12.3 | -0.3 | 134 | 89 | 114 | 106 | -8 | 448 | 320 | 348 ^a | 325 | -23 | 400 | 320 | 354 ^a | 373 | +19 |
| | - | N.F. | 42.4 | 40.4 | 41.6 | 42.5 | +0.9 | 12.9 | 11.5 | 12.2 | 12.4 | +0.2 | 132 | 95 | 111 | 109 | -2 | 368 | 312 | 344 | 346 | +2 | 416 | 320 | 357 ^a | 371 | +14 |
| Current Mill Average: | | | 42.7 | 42.9 | +0.2 | 12.4 | 12.4 | 0.0 | 114 | 109 | -5 | 349 | 332 | -17 | 363 | 365 | +2 | | | | | | | | | | |
| Cumulative Mill Average: | | | 43.4 | | | 12.4 | | | 112 | | | 351 | | | 362 | | | | | | | | | | | | |
| Mill Factor, % | | | 98.4 | | | 100.0 | | | 101.8 | | | 99.4 | | | 100.3 | | | | | | | | | | | | |
| Mill Index, % | | | 98.4 | | | 98.4 | | | 103.6 | | | 105.4 | | | 97.3 | | | | | | | | | | | | |
| September, 1961 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | - | N.F. | 43.6 | 42.0 | 43.0 | 43.4 | +0.4 | 13.0 | 12.0 | 12.4 | 12.4 | 0.0 | 126 | 100 | 112 | 102 | -10 | 392 | 304 | 347 ^a | 337 | -10 | 384 | 328 | 357 ^a | 344 | -13 |
| | - | N.F. | 42.4 | 41.0 | 42.0 | 41.9 | -0.1 | 13.0 | 11.3 | 12.1 | 12.0 | -0.1 | 129 | 94 | 115 | 106 | -9 | 376 | 272 | 322 ^a | 309 | -13 | 400 | 304 | 344 ^a | 351 | +7 |
| Current Mill Average: | | | 42.5 | 42.6 | +0.1 | 12.2 | 12.2 | 0.0 | 114 | 104 | -10 | 335 | 323 | -12 | 350 | 348 | -2 | | | | | | | | | | |
| Cumulative Mill Average: | | | 43.4 | | | 12.4 | | | 113 | | | 350 | | | 362 | | | | | | | | | | | | |
| Mill Factor, % | | | 97.9 | | | 98.4 | | | 100.9 | | | 95.7 | | | 96.7 | | | | | | | | | | | | |
| Mill Index, % | | | 98.2 | | | 98.8 | | | 103.6 | | | 101.5 | | | 94.1 | | | | | | | | | | | | |

^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 VIII
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL E

| Date Made | Finish No. | Mch. No. | Basis Weight, lb. | | | Caliber, points | | | Bursting Strength, P.s.i. x 60 | | | Elmendorf Tear, g./sheet in Machine | | | Elmendorf Tear, g./sheet in Machine | | | | | | | | | | | | |
|--------------------------|------------|----------|-------------------|------|------|-----------------|------|------|--------------------------------|-------|------|-------------------------------------|-----|-------|-------------------------------------|------|------|-------|-------|------------------|-----|-----|-----|------|------------------|-----|-----|
| | | | Institute | | Mill | Institute | | Mill | Institute | | Mill | Institute | | Mill | Institute | | Mill | | | | | | | | | | |
| | | | Max. | Min. | Av. | Diff. | Max. | Min. | Av. | Diff. | Max. | Min. | Av. | Diff. | Max. | Min. | Av. | Diff. | | | | | | | | | |
| <u>August, 1961</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| No samples submitted. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <u>September, 1961</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8-29-61 | NFLS | 1 | 44.0 | 42.6 | 43.6 | 43.9 | -0.3 | 14.3 | 12.1 | 13.0 | 12.7 | -0.3 | 124 | 100 | 110 | 103 | -7 | 416 | 272 | 325 ^a | 365 | -40 | 416 | 328 | 366 ^a | 424 | -56 |
| 9-7-61 | NFLS | 1 | 44.0 | 42.6 | 43.6 | 43.4 | -0.2 | 13.4 | 11.9 | 12.5 | 12.8 | +0.3 | 123 | 97 | 110 | 102 | -8 | 352 | 272 | 313 ^a | 343 | +24 | 392 | 336 | 369 ^a | 424 | -55 |
| Current Mill Average: | | | 43.6 | 43.6 | 43.6 | 43.6 | 0.0 | | 12.8 | 12.8 | 12.8 | 0.0 | | 110 | 102 | 102 | -8 | | 322 | 354 | 354 | -32 | | 267 | 424 | 424 | -57 |
| Cumulative Mill Average: | | | 43.0 | | | | | | 12.7 | | | | | 111 | | | | | 320 | | | | | 369 | | | |
| Mill Factor, % | | | 101.4 | | | | | | 100.8 | | | | | 99.1 | | | | | 100.6 | | | | | 94.3 | | | |
| Mill Index, % | | | 100.7 | | | | | | 101.6 | | | | | 100.0 | | | | | 97.6 | | | | | 96.7 | | | |

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

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

TABLE IX
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL F

| Date Made | Finish | Mch. No. | Basis Weight, lb. | | | Caliber, points | | | Bursting Strength, P.s.i. gage | | | Elmendorf Tear, g./sheet | | | | | | | | | | | | | | | | | |
|--------------------------|--------|----------|-------------------|------|------|-----------------|-------|------|--------------------------------|------|------|--------------------------|-------|------|-----------|------|------|-------|-------|------------------|-------|-----|-----|-------|------------------|-----|-------|--|--|
| | | | Institute | Max. | Min. | Av. | Diff. | Mill | Institute | Max. | Min. | Av. | Diff. | Mill | Institute | Max. | Min. | Av. | Diff. | | | | | | | | | | |
| August, 1961 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7-11-61 | W.F. | 3 | 45.6 | 44.6 | 45.2 | 44.5 | -0.7 | 12.6 | 11.8 | 12.1 | 11.7 | -0.4 | 129 | 105 | 118 | 116 | -2 | 432 | 320 | 372 ^a | 364 | -8 | 440 | 368 | 408 ^a | 424 | -16 | | |
| 7-16-61 | W.F. | 3 | 44.0 | 42.6 | 43.4 | 43.1 | -0.3 | 12.2 | 11.2 | 11.6 | 11.3 | -0.3 | 122 | 89 | 106 | 105 | -1 | 416 | 296 | 345 | 331 | -14 | 448 | 328 | 374 ^a | 378 | -4 | | |
| 7-26-61 | W.F. | 3 | 44.8 | 42.2 | 43.4 | 43.5 | +0.1 | 12.1 | 11.3 | 11.9 | 11.4 | -0.5 | 128 | 89 | 106 | 109 | +3 | 384 | 304 | 337 ^a | 342 | +5 | 432 | 360 | 393 ^a | 395 | +2 | | |
| 8-1-61 | W.F. | 3 | 44.2 | 43.8 | 44.0 | 44.8 | +0.8 | 12.3 | 11.5 | 12.0 | 11.8 | -0.2 | 131 | 102 | 118 | 116 | -2 | 392 | 312 | 352 | 347 | -5 | 432 | 360 | 397 ^a | 403 | -6 | | |
| 8-7-61 | W.F. | 2 | 43.8 | 42.4 | 43.0 | 43.4 | +0.4 | 12.3 | 11.2 | 11.7 | 11.3 | -0.4 | 135 | 92 | 112 | 115 | +3 | 344 | 264 | 317 | 334 | +17 | 416 | 352 | 386 ^a | 393 | +7 | | |
| 8-15-61 | W.F. | 2 | 44.4 | 43.8 | 44.0 | 44.4 | +0.4 | 12.4 | 11.9 | 12.1 | 11.9 | -0.2 | 141 | 100 | 117 | 119 | +2 | 424 | 312 | 363 | 344 | -19 | 456 | 352 | 399 ^a | 404 | +5 | | |
| Current Mill Average: | | | 43.8 | | | 43.9 | +0.1 | 11.9 | | | 11.6 | -0.3 | 113 | | | 113 | 0 | 348 | | | 344 | -4 | 393 | | | 460 | -7 | | |
| Cumulative Mill Average: | | | 43.9 | | | 43.9 | | | 11.8 | | | 110 | | | 338 | | | 374 | | | 105.1 | | | 105.1 | | | 105.1 | | |
| Mill Factor, % | | | 99.8 | | | 99.8 | | | 100.8 | | | 102.7 | | | 103.0 | | | 103.0 | | | 105.1 | | | 105.1 | | | 105.1 | | |
| Mill Index, % | | | 100.9 | | | 100.9 | | | 94.4 | | | 102.7 | | | 105.1 | | | 105.1 | | | 105.1 | | | 105.1 | | | 105.1 | | |

^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 IX (continued)
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL F

| Date Made | Mch. No. | Basis Weight, lb. | | | Caliper, points | | | Bursting Strength, p.s.i. | | | Elmendorf Tear, g./sheet | | | Elmendorf Tear, g./sheet | | | | | | | | | | | | | |
|--------------------------|----------|-------------------|------|------|-----------------|------|-------|---------------------------|-------|------|--------------------------|------|-------|--------------------------|------|-----|-----------|------|-------|------------------|-----|-----|-----|-------|------------------|-----|-----|
| | | Max. | Min. | Av. | Institute | Mill | Diff. | Max. | Min. | Av. | Institute | Mill | Diff. | Max. | Min. | Av. | Institute | Mill | Diff. | | | | | | | | |
| September, 1961 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8-21-61 | W.F. | 3 | 43.6 | 42.0 | 43.0 | 43.4 | -0.4 | 12.1 | 11.3 | 11.8 | 11.5 | -0.3 | 136 | 90 | 116 | 114 | -2 | 416 | 280 | 346 | 333 | -13 | 440 | 344 | 391 ^a | 385 | -6 |
| 8-28-61 | W.F. | 3 | 43.8 | 42.8 | 43.2 | 43.2 | 0.0 | 12.3 | 11.6 | 12.0 | 11.5 | -0.5 | 136 | 95 | 117 | 112 | -5 | 384 | 320 | 349 | 322 | -27 | 448 | 352 | 399 ^a | 377 | -22 |
| 9-6-61 | W.F. | 3 | 43.6 | 42.6 | 43.0 | 43.4 | +0.4 | 12.1 | 11.2 | 11.8 | 11.4 | -0.4 | 133 | 98 | 113 | 113 | 0 | 360 | 304 | 335 | 341 | -6 | 408 | 336 | 383 ^a | 393 | -10 |
| 9-11-61 | W.F. | 3 | 43.0 | 42.0 | 42.2 | 42.6 | -0.4 | 12.7 | 11.7 | 12.1 | 11.6 | -0.5 | 133 | 86 | 110 | 110 | 0 | 368 | 288 | 328 ^a | 332 | +4 | 400 | 296 | 367 ^a | 394 | -27 |
| Current Mill Average: | | | 42.9 | | 43.1 | -0.2 | | | 11.9 | 11.5 | -0.4 | | | 114 | 112 | -2 | | | 340 | 332 | -8 | | | 365 | 367 | -2 | |
| Cumulative Mill Average: | | | 43.9 | | | | | | 11.7 | | | | | 110 | | | | | 338 | | | | | 376 | | | |
| Mill Factor, % | | | 97.7 | | | | | | 101.7 | | | | | 103.6 | | | | | 100.6 | | | | | 102.4 | | | |
| Mill Index, % | | | 99.1 | | | | | | 94.4 | | | | | 103.6 | | | | | 103.0 | | | | | 103.5 | | | |

^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 I
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL G

| Date Made | Mch. No. | Finish | Basis Weight, lb. | | | Caliper, points | | | Bursting Strength, P.S.I. 48g | | | Elmendorf Tear, g./sheet In Machine | | | Elmendorf Tear, g./sheet Cross Machine | | | | | | | | | | | | |
|--------------------------|-------------|--------|-------------------|-----------|-------|-----------------|-----------|-------|----------------------------------|-----------|-------|--|-----------|-------|---|-----------|-------|-------|-----|------------------|-----|-----|------|-----|------------------|-----|-----|
| | | | Institute | Max. Min. | Av. | Institute | Max. Min. | Av. | Institute | Max. Min. | Av. | Institute | Max. Min. | Av. | Institute | Max. Min. | Av. | | | | | | | | | | |
| | | | Diff. | Diff. | Diff. | Diff. | Diff. | Diff. | Diff. | Diff. | Diff. | Diff. | Diff. | Diff. | Diff. | Diff. | Diff. | | | | | | | | | | |
| August, 1961 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7-18-61 | WFLS | 2 | 43.2 | 42.0 | 42.5 | 42.8 | +0.3 | 12.2 | 11.1 | 11.8 | 11.8 | 0.0 | 130 | 99 | 112 | 110 | -2 | 432 | 312 | 368 ^a | 403 | +35 | 384 | 328 | 359 ^a | 383 | +24 |
| 7-21-61 | ---- | 2 | 42.8 | 41.6 | 42.1 | 42.6 | +0.5 | 12.2 | 11.9 | 12.0 | 11.8 | -0.2 | 126 | 91 | 109 | 111 | +2 | 440 | 352 | 385 ^a | 409 | +24 | 400 | 336 | 365 ^a | 402 | +37 |
| 7-25-61 | WFLS | 2 | 42.6 | 41.8 | 42.1 | 42.8 | -0.7 | 12.2 | 11.5 | 11.9 | 11.3 | -0.6 | 129 | 103 | 115 | 108 | -7 | 424 | 320 | 362 ^a | 399 | +37 | 416 | 320 | 355 ^a | 406 | +51 |
| 8- 7-61 | WFLS | 2 | 43.8 | 41.6 | 42.6 | 42.4 | -0.2 | 13.4 | 12.5 | 13.1 | 12.5 | -0.6 | 135 | 98 | 117 | 116 | -1 | 336 | 272 | 301 | 302 | + 1 | 400 | 312 | 357 ^a | 374 | +17 |
| 8- 8-61 | WFLS | 2 | 43.0 | 41.4 | 42.1 | 43.2 | +1.1 | 13.8 | 12.8 | 13.2 | 12.9 | -0.3 | 133 | 90 | 116 | 110 | -6 | 336 | 288 | 309 | 317 | + 8 | 392 | 336 | 364 ^a | 405 | +41 |
| 8- 9-61 | WFLS | 2 | 43.0 | 41.0 | 42.3 | 42.8 | +0.5 | 13.5 | 12.5 | 13.0 | 12.9 | -0.1 | 143 | 90 | 117 | 113 | -4 | 376 | 240 | 308 ^a | 319 | +11 | 424 | 312 | 366 ^a | 370 | + 4 |
| 8-13-61 | WFLS | 2 | 44.0 | 42.2 | 43.5 | 43.4 | -0.1 | 13.6 | 12.9 | 13.3 | 13.0 | -0.3 | 128 | 86 | 109 | 113 | -4 | 424 | 312 | 355 | 377 | +22 | 416 | 368 | 396 ^a | 425 | +29 |
| 8-16-61 | WFLS | 2 | 44.0 | 42.4 | 43.1 | 43.3 | +0.2 | 13.4 | 12.8 | 13.1 | 13.0 | -0.1 | 138 | 95 | 117 | 115 | -2 | 376 | 272 | 321 | 345 | +24 | 400 | 312 | 355 ^a | 417 | +62 |
| Current Mill Average: | | | 42.6 | 42.9 | +0.3 | | | 12.7 | 12.4 | -0.3 | | | 114 | 112 | -2 | | | 339 | 359 | +20 | | | 365 | 398 | +33 | | |
| Cumulative Mill Average: | | | 43.4 | | | | | 12.9 | | | | | 111 | | | | | 322 | | | | | 366 | | | | |
| Mill Factor, % | | | 98.2 | | | | | 98.4 | | | | | 102.7 | | | | | 105.3 | | | | | 99.7 | | | | |
| Mill Index, % | | | 98.2 | | | | | 100.8 | | | | | 103.6 | | | | | 102.4 | | | | | 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 X (continued)
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL G

| Date Made | Mch. No. | Finish | Basis Weight, lb. | | | Caliper, points | | | Bursting Strength, p.s.i. | | | Elmendorf Tear, g./sheet | | | | | | | | | | | | | | | |
|--------------------------|----------|--------|-------------------|-------|------|-----------------|-------|-------|---------------------------|-------|------|--------------------------|-------|------|-----|-------|-------|-----|-----|------------------|-----|-------|-----|------------------|------------------|-----|-----|
| | | | Institute | Max. | Min. | Institute | Max. | Min. | Institute | Max. | Min. | Institute | Max. | Min. | | | | | | | | | | | | | |
| | | | Av. | Diff. | | Av. | Diff. | | Av. | Diff. | | Av. | Diff. | | Av. | Diff. | | | | | | | | | | | |
| September, 1961 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8-24-61 | 2 | WFLS | 44.0 | 42.0 | 43.0 | 43.1 | +0.1 | 13.9 | 12.4 | 13.2 | 12.9 | -0.3 | 140 | 105 | 118 | 0 | 392 | 264 | 329 | 349 | +20 | 424 | 360 | 394 ^a | 423 | +29 | |
| 8-25-61 | 2 | ---- | 43.6 | 42.0 | 42.7 | 42.8 | +0.1 | 13.5 | 12.6 | 13.0 | 12.6 | -0.4 | 139 | 93 | 115 | 109 | -6 | 384 | 280 | 347 | 337 | -10 | 456 | 368 | 405 ^a | 415 | +10 |
| 8-29-61 | 2 | WFLS | 44.0 | 42.0 | 42.9 | 43.2 | +0.3 | 13.9 | 12.9 | 13.2 | 12.9 | -0.3 | 130 | 95 | 114 | 114 | 0 | 424 | 288 | 332 ^a | 343 | +11 | 432 | 344 | 389 ^a | 433 | +44 |
| 9-3-61 | 2 | WFLS | 44.0 | 42.8 | 43.6 | 43.1 | -0.5 | 13.8 | 12.9 | 13.4 | 13.0 | -0.4 | 138 | 80 | 116 | 111 | -5 | 440 | 296 | 361 ^a | 353 | -8 | 456 | 376 | 406 ^a | 441 | +35 |
| Current Mill Average: | | | 43.0 | 43.1 | 43.1 | 43.1 | +0.1 | 13.2 | 12.8 | 13.2 | 12.8 | -0.4 | 116 | 113 | 113 | -3 | 342 | 345 | 345 | 345 | +3 | 398 | 428 | 428 | 428 | +30 | |
| Cumulative Mill Average: | | | 43.3 | | | | | 13.0 | | | | | 110 | | | | 325 | | | | | 366 | | | | | |
| Mill Factor, % | | | 99.3 | | | | | 101.5 | | | | | 105.5 | | | | 105.2 | | | | | 108.7 | | | | | |
| Mill Index, % | | | 99.3 | | | | | 104.8 | | | | | 105.5 | | | | 103.6 | | | | | 107.0 | | | | | |

^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 XI
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL H

| Date Made | Mch. No. | Basis Weight, lb. | | Caliper, points | | Bursting Strength, p.s.i. gage | | Elmendorf Tear, g./sheet | | Elmendorf Tear, g./sheet | |
|-----------|----------|-------------------|------|-----------------|------|--------------------------------|------|--------------------------|------|--------------------------|------|
| | | Institute | Mill | Institute | Mill | Institute | Mill | Institute | Mill | Institute | Mill |

Max. Min. Av. Diff.

Max. Min. Av. Diff.

Max. Min. Av. Diff.

Max. Min. Av. Diff.

August, 1961

No samples submitted.

September, 1961

No samples submitted.

TABLE XII
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL I

| Date Made | Mch. No. | Finish | Basis Weight, lb. | | | Caliper, points | | | Bursting Strength, p.s.i. | | | Elmendorf Tear, g./sheet | | | Elmendorf Tear, g./sheet | | | | | | | | | | | | |
|--------------------------|----------|--------|-------------------|-------|-------|-----------------|-----------|-------|---------------------------|-------|-----------|--------------------------|-------|-------|--------------------------|-------|-------|-----|-----|------------------|-----|-----|-----|-----|------------------|-----|-----|
| | | | Institute | Max. | Min. | Av. | Institute | Max. | Min. | Av. | Institute | Max. | Min. | Av. | Institute | Max. | Min. | Av. | | | | | | | | | |
| | | | Diff. | Diff. | Diff. | Diff. | Diff. | Diff. | Diff. | Diff. | Diff. | Diff. | Diff. | Diff. | Diff. | Diff. | Diff. | | | | | | | | | | |
| August, 1961 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7-16-61 | W.F. | 1 | 44.8 | 43.0 | 44.0 | 44.1 | +0.1 | 12.9 | 12.0 | 12.4 | 12.3 | -0.1 | 129 | 93 | 114 | 111 | -3 | 384 | 272 | 320 ^a | 317 | -3 | 432 | 344 | 381 ^a | 429 | +48 |
| 7-22-61 | W.F. | 1 | 44.8 | 43.0 | 44.0 | 43.6 | -0.4 | 12.5 | 11.9 | 12.1 | 11.9 | -0.2 | 133 | 96 | 115 | 115 | 0 | 336 | 224 | 303 | 296 | -7 | 416 | 352 | 373 ^a | 389 | +16 |
| 7-24-61 | W.F. | 1 | 42.0 | 40.2 | 41.4 | 41.8 | +0.4 | 12.5 | 11.7 | 12.0 | 11.8 | -0.2 | 127 | 94 | 112 | 112 | 0 | 336 | 264 | 293 | 295 | +2 | 432 | 320 | 361 ^a | 408 | +47 |
| 7-15-61 | W.F. | 1 | 44.4 | 42.8 | 43.6 | 43.8 | +0.2 | 13.0 | 11.9 | 12.4 | 12.3 | -0.1 | 134 | 95 | 114 | 113 | -1 | 360 | 248 | 301 ^a | 313 | +12 | 384 | 336 | 353 ^a | 402 | +49 |
| 8-1-61 | W.F. | 1 | 43.8 | 41.0 | 42.1 | 42.4 | +0.3 | 12.9 | 11.1 | 11.9 | 11.8 | -0.1 | 126 | 88 | 109 | 109 | 0 | 296 | 256 | 272 | 289 | +17 | 392 | 296 | 339 ^a | 364 | +25 |
| 8-10-61 | W.F. | 1 | 46.0 | 42.0 | 44.5 | 44.9 | +0.4 | 13.6 | 12.0 | 12.8 | 13.0 | +0.2 | 134 | 83 | 108 | 108 | 0 | 384 | 256 | 308 ^a | 370 | +62 | 416 | 368 | 395 ^a | 451 | +56 |
| 8-8-61 | W.F. | 1 | 42.6 | 39.8 | 41.2 | 41.8 | +0.6 | 12.0 | 11.0 | 11.7 | 11.7 | 0.0 | 125 | 90 | 108 | 108 | 0 | 336 | 256 | 289 ^a | 318 | +29 | 384 | 296 | 334 ^a | 374 | +40 |
| 8-8-61 | W.F. | 1 | 44.0 | 42.0 | 43.2 | 43.9 | +0.7 | 13.0 | 11.9 | 12.4 | 12.4 | 0.0 | 128 | 89 | 111 | 111 | 0 | 336 | 256 | 299 ^a | 325 | -26 | 384 | 320 | 351 ^a | 401 | +50 |
| Current Mill Average: | | | 43.0 | 43.3 | +0.3 | 12.2 | 12.1 | -0.1 | 111 | 111 | 111 | 0 | 298 | 315 | -17 | 361 | 402 | -41 | | | | | | | | | |
| Cumulative Mill Average: | | | 43.3 | | | 12.5 | | | 109 | | | | 313 | | | 362 | | | | | | | | | | | |
| Mill Factor, % | | | 99.3 | | | 97.6 | | | 101.8 | | | | 95.2 | | | 99.7 | | | | | | | | | | | |
| Mill Index, % | | | 99.1 | | | 96.8 | | | 100.9 | | | | 90.0 | | | 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 XII (continued)
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL I

| Date Yrds | Mch. No. | Finish | Basis Weight, lb. | | | Caliper, points | | | Bursting Strength, p.s.i. gage | | | Elmendorf Tear, g./sheet | | | Elmendorf Tear, g./sheet | | | | | | | | | | | | | |
|--------------------------|-------------|--------|----------------------------|-------------|-------|----------------------------|-------------|-------|-----------------------------------|-------------|-------|----------------------------|-------------|-------|----------------------------|-------------|-------|-----|-----|------------------|-----|-----|-----|------|------------------|-----|-----|--|
| | | | Institute Max. Min. Av. | Mill Av. | Diff. | Institute Max. Min. Av. | Mill Av. | Diff. | Institute Max. Min. Av. | Mill Av. | Diff. | Institute Max. Min. Av. | Mill Av. | Diff. | Institute Max. Min. Av. | Mill Av. | Diff. | | | | | | | | | | | |
| September, 1961 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8-12-61 | 1 | W.F. | 45.0 | 42.0 | 42.8 | 43.8 | +1.0 | 13.2 | 12.0 | 12.5 | 12.6 | +0.1 | 132 | 84 | 110 | 108 | - 2 | 320 | 272 | 297 ^a | 336 | +39 | 416 | 320 | 360 ^a | 421 | +61 | |
| 8-27-61 | 1 | W.F. | 44.0 | 42.0 | 42.8 | 43.5 | +0.7 | 13.1 | 12.0 | 12.7 | 12.8 | -0.1 | 134 | 89 | 110 | 113 | + 3 | 376 | 264 | 310 | 338 | +28 | 432 | 336 | 379 ^a | 430 | +51 | |
| 8-26-61 | 1 | W.F. | 44.2 | 40.8 | 42.5 | 43.1 | +0.6 | 12.3 | 11.5 | 11.9 | 12.2 | +0.3 | 133 | 95 | 117 | 107 | -10 | 320 | 256 | 294 | 333 | +39 | 384 | 312 | 344 ^a | 419 | +75 | |
| 8-28-61 | 1 | W.F. | 44.2 | 42.2 | 43.2 | 44.0 | +0.8 | 12.2 | 11.5 | 11.9 | 12.1 | -0.2 | 130 | 98 | 114 | 111 | - 3 | 320 | 256 | 299 ^a | 327 | +28 | 392 | 296 | 347 ^a | 408 | +61 | |
| Current Mill Average: | | | 42.8 | 43.6 | +0.8 | | | 12.2 | 12.4 | +0.2 | | | 113 | 110 | - 3 | 300 | 333 | +33 | | | | | | 357 | 419 | +62 | | |
| Cumulative Mill Average: | | | 43.4 | | | | | 12.4 | | | | | 109 | | | 312 | | | | | | | | 362 | | | | |
| Mill Factor, % | | | 98.6 | | | | | 98.4 | | | | | 103.7 | | | 96.2 | | | | | | | | 98.6 | | | | |
| Mill Index, % | | | 98.8 | | | | | 96.8 | | | | | 102.7 | | | 90.9 | | | | | | | | 96.0 | | | | |

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

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

TABLE XIII
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL J

| Date Made | Finish | Mch. No. | Basis Weight, lb. | | | Caliper, points | | | Bursting Strength, P.S.I. 800 | | | Elmendorf Tear, g./sheet In Machine | | | Elmendorf Tear, g./sheet Cross 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. | | | | | | | | | | |
| August, 1961 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8-2-61 | M.F. | - | 44.0 | 42.0 | 42.9 | 43.2 | +0.3 | 12.8 | 12.0 | 12.4 | 12.0 | -0.4 | 130 | 101 | 116 | 114 | -2 | 336 | 272 | 305 ^a | 293 | -12 | 416 | 320 | 371 ^a | 344 | -27 |
| 8-3-61 | M.F. | - | 43.6 | 42.6 | 43.2 | 43.1 | -0.1 | 13.2 | 12.5 | 12.9 | 12.2 | -0.7 | 134 | 89 | 112 | 112 | 0 | 368 | 256 | 313 ^a | 299 | -14 | 376 | 320 | 352 ^a | 327 | -25 |
| 8-4-61 | M.F. | - | 43.4 | 42.0 | 42.8 | 43.0 | -0.2 | 13.1 | 12.8 | 13.0 | 12.1 | -0.9 | 129 | 101 | 117 | 115 | -2 | 360 | 280 | 318 ^a | 289 | -29 | 392 | 336 | 364 ^a | 344 | -20 |
| 8-9-61 | M.F. | - | 41.8 | 40.2 | 41.0 | 41.6 | -0.6 | 12.2 | 11.3 | 11.9 | 11.7 | -0.2 | 131 | 91 | 109 | 112 | +3 | 344 | 288 | 313 ^a | 276 | -37 | 392 | 320 | 356 ^a | 300 | -56 |
| 8-12-61 | M.F. | - | 42.0 | 40.4 | 41.6 | 41.8 | -0.2 | 13.1 | 12.1 | 12.7 | 12.4 | -0.3 | 125 | 95 | 108 | 114 | +6 | 352 | 288 | 317 | 272 | -45 | 392 | 312 | 343 ^a | 305 | -36 |
| 8-11-61 | M.F. | - | 44.0 | 41.8 | 42.8 | 42.8 | 0.0 | 13.5 | 12.0 | 13.1 | 12.9 | -0.2 | 127 | 100 | 113 | 113 | 0 | 368 | 268 | 321 ^a | 293 | -26 | 406 | 320 | 356 ^a | 323 | -35 |
| 8-17-61 | M.F. | - | 43.8 | 42.4 | 43.2 | 43.7 | -0.5 | 13.2 | 12.4 | 12.9 | 12.4 | -0.5 | 143 | 94 | 121 | 121 | 0 | 360 | 264 | 314 ^a | 284 | -30 | 392 | 336 | 365 ^a | 326 | -35 |
| 8-18-61 | M.F. | - | 43.0 | 42.0 | 42.6 | 43.2 | -0.6 | 13.1 | 12.5 | 12.9 | 12.4 | -0.5 | 129 | 104 | 114 | 114 | 0 | 392 | 288 | 335 ^a | 297 | -36 | 384 | 320 | 347 ^a | 343 | -4 |
| Current Mill Average: | | | 42.5 | 42.8 | 42.3 | | | 12.7 | 12.3 | | | -0.4 | | 114 | 114 | | 0 | 317 | 268 | | | -29 | 357 | 327 | | | -30 |
| Cumulative Mill Average: | | | 43.5 | | | | | 12.7 | | | | | | 114 | | | | 324 | | | | | 355 | | | | |
| Mill Factor, % | | | 97.7 | | | | | 100.0 | | | | | | 100.0 | | | | 97.8 | | | | | 100.6 | | | | |
| Mill Index, % | | | 97.9 | | | | | 100.8 | | | | | | 103.6 | | | | 95.8 | | | | | 95.7 | | | | |

^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 XIII (continued)
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL J

| Late Grade | Finish | Mch. No. | Basis Weight, lb. | | | Caliper, points | | | Bursting Strength, P.S.I. gage | | | Elmendorf Tear, g./sheet in Machine | | | Elmendorf Tear, g./sheet Cross Machine | | | | | | | | | | | | |
|--------------------------|--------|-------------|-------------------|------|------|-----------------|------|-------|-----------------------------------|------|------|--|-------|-------|---|------|-----|-----------|------|------------------|-----|-----|-------|-----|------------------|-----|-----|
| | | | Max. | Min. | Av. | Institute | Mill | Diff. | Max. | Min. | Av. | Institute | Mill | Diff. | Max. | Min. | Av. | Institute | Mill | Diff. | | | | | | | |
| September, 1961 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8-30-61 | W.F. | - | 44.0 | 40.2 | 43.0 | 43.4 | -0.4 | 13.0 | 12.2 | 12.6 | 12.3 | -0.3 | 135 | 102 | 116 | 116 | 0 | 336 | 272 | 309 | 285 | -24 | 384 | 328 | 363 ^a | 343 | -20 |
| 8-31-61 | W.F. | - | 43.6 | 42.2 | 42.8 | 43.7 | +0.9 | 13.0 | 12.0 | 12.5 | 12.2 | -0.3 | 138 | 99 | 117 | 114 | -3 | 368 | 264 | 307 ^a | 281 | -26 | 368 | 296 | 333 ^a | 321 | -12 |
| 9-8-61 | W.F. | - | 43.4 | 42.8 | 43.0 | 43.5 | +0.5 | 14.0 | 12.9 | 13.2 | 12.9 | -0.3 | 146 | 99 | 121 | 112 | -9 | 416 | 280 | 344 ^a | 308 | -34 | 400 | 344 | 375 ^a | 348 | -27 |
| 9-15-61 | W.F. | - | 43.6 | 42.2 | 42.9 | 43.3 | -0.4 | 13.7 | 12.9 | 13.2 | 12.9 | -0.3 | 136 | 91 | 118 | 116 | -2 | 376 | 272 | 329 ^a | 291 | -38 | 400 | 336 | 363 ^a | 351 | -12 |
| Current Mill Average: | | | 42.9 | 43.5 | -0.6 | | | 12.9 | 12.6 | -0.3 | | | 118 | 114 | 114 | 114 | -4 | 322 | 291 | -31 | | | 356 | 341 | -17 | | |
| Cumulative Mill Average: | | | 43.4 | | | | | 12.7 | | | | | 114 | | | | | 324 | | | | | 356 | | | | |
| Mill Factor, % | | | 98.8 | | | | | 101.6 | | | | | 103.5 | | | | | 99.4 | | | | | 110.5 | | | | |
| Mill Index, % | | | 99.1 | | | | | 102.4 | | | | | 107.3 | | | | | 97.6 | | | | | 95.2 | | | | |

^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 XIV
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL K

| Date Made | Mch. Finish No. | Basis Weight, lb. | | | Caliper, points | | | Bursting Strength, p.s.i. gauge | | | Elmendorf Tear, g./sheet | | | | | | | | | | | | | | | | |
|--------------------------|-----------------|-------------------|------|------|-----------------|-------|-----------|---------------------------------|------|------|--------------------------|-----------|------|------|-----|-------|-------|-------|-------|------------------|-------|------|-----|------------------|------------------|------|-----|
| | | Institute | Max. | Min. | Av. | Diff. | Institute | Max. | Min. | Av. | Diff. | Institute | Max. | Min. | Av. | Diff. | | | | | | | | | | | |
| August, 1961 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7-3-61 | W.F. | 1 | 44.2 | 40.4 | 42.7 | 42.9 | +0.2 | 14.2 | 13.0 | 13.7 | 13.1 | -0.6 | 129 | 97 | 113 | 108 | -5 | 352 | 240 | 293 | 287 | -6 | 400 | 320 | 352 ^a | 367 | -15 |
| 7-14-61 | W.F. | 1 | 44.6 | 42.0 | 43.5 | 43.2 | -0.3 | 13.0 | 12.0 | 12.4 | 11.9 | -0.5 | 120 | 88 | 107 | 109 | +2 | 320 | 264 | 295 ^a | 287 | -8 | 360 | 320 | 340 ^a | 355 | -15 |
| 7-24-61 | W.F. | 1 | 45.0 | 42.0 | 43.7 | 43.4 | -0.3 | 13.0 | 11.5 | 12.3 | 12.0 | -0.3 | 132 | 88 | 111 | 109 | -2 | 344 | 248 | 297 ^a | 273 | -24 | 400 | 312 | 353 ^a | 340 | -13 |
| 8-1-61 | W.F. | 1 | 44.2 | 41.6 | 42.8 | 42.8 | 0.0 | 14.7 | 13.0 | 13.7 | 13.1 | -0.6 | 131 | 90 | 112 | 109 | -3 | 344 | 288 | 313 | 275 | -38 | 376 | 312 | 348 ^a | 347 | -1 |
| Current Mill Average: | | | | | | | | | | | | | | | | | 352 | 240 | 293 | 287 | -6 | 400 | 320 | 352 ^a | 367 | -15 | |
| Cumulative Mill Average: | | | | | | | | | | | | | | | | | 348 | 256 | 299 | 283 | -36 | 360 | 304 | 337 ^a | 320 | -17 | |
| Mill Factor, % | | | | | | | | | | | | | | | | | 99.1 | 283 | 105.7 | 101.8 | 101.2 | 95.3 | 344 | 101.6 | 96.0 | 91.2 | |
| Mill Index, % | | | | | | | | | | | | | | | | | 104.0 | 100.9 | 90.3 | 101.8 | 101.2 | 95.3 | 344 | 101.6 | 96.0 | 91.2 | |
| September, 1961 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8-8-61 | W.F. | 1 | 44.8 | 41.8 | 43.4 | 43.4 | 0.0 | 13.2 | 11.0 | 12.4 | 12.0 | -0.4 | 129 | 95 | 111 | 107 | -4 | 336 | 256 | 299 | 283 | -36 | 360 | 304 | 337 ^a | 320 | -17 |
| 8-11-61 | W.F. | 1 | 44.0 | 40.4 | 42.4 | 43.0 | +0.6 | 14.1 | 13.0 | 13.7 | 13.1 | -0.6 | 127 | 100 | 113 | 110 | -3 | 376 | 248 | 298 | 278 | -20 | 416 | 312 | 369 ^a | 348 | -21 |
| 8-14-61 | W.F. | 1 | 44.0 | 41.0 | 42.4 | 42.7 | -0.3 | 14.1 | 13.1 | 13.8 | 13.1 | -0.7 | 133 | 94 | 117 | 110 | -7 | 328 | 248 | 292 | 283 | -9 | 384 | 320 | 353 ^a | 339 | -13 |
| 8-30-61 | W.F. | 1 | 43.6 | 42.0 | 42.6 | 42.7 | -0.1 | 14.0 | 12.6 | 13.5 | 12.8 | -0.7 | 131 | 85 | 110 | 110 | 0 | 384 | 260 | 318 ^a | 285 | -33 | 364 | 328 | 365 ^a | 367 | -2 |
| 9-6-61 | W.F. | 1 | 43.6 | 41.0 | 42.2 | 42.3 | +0.1 | 14.0 | 12.9 | 13.3 | 12.8 | -0.5 | 132 | 91 | 115 | 109 | -1 | 336 | 240 | 299 ^a | 272 | -27 | 424 | 328 | 365 ^a | 356 | -9 |
| Current Mill Average: | | | | | | | | | | | | | | | | | 348 | 256 | 299 | 283 | -36 | 360 | 304 | 337 ^a | 320 | -17 | |
| Cumulative Mill Average: | | | | | | | | | | | | | | | | | 344 | 283 | 105.7 | 101.8 | 101.2 | 95.3 | 344 | 101.6 | 96.0 | 91.2 | |
| Mill Factor, % | | | | | | | | | | | | | | | | | 99.1 | 283 | 105.7 | 101.8 | 101.2 | 95.3 | 344 | 101.6 | 96.0 | 91.2 | |
| Mill Index, % | | | | | | | | | | | | | | | | | 104.0 | 100.9 | 90.3 | 101.8 | 101.2 | 95.3 | 344 | 101.6 | 96.0 | 91.2 | |

TABLE XV
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL L

| Date Made | Mch. Finish No. | Basis Weight, lb. | | | Caliper, points | | | Bursting Strength, p.s.i. | | | Elmendorf Tear, g./sheet In Machine | | | Elmendorf Tear, g./sheet Cross 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. | | | | | | | | | | |
| August, 1961 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8-1-61 | ---- | 43.8 | 41.8 | 42.6 | 43.5 | +0.9 | 13.6 | 12.8 | 13.1 | 13.1 | 0.0 | 140 | 99 | 121 | 129 | +8 | 352 | 264 | 303 ^a | 325 | +22 | 368 | 288 | 333 ^a | 395 | +62 |
| Current Mill Average: | | | | 42.6 | 43.5 | +0.9 | | | 13.1 | 13.1 | 0.0 | | | 121 | 129 | +8 | | | 303 | 325 | +22 | | | 333 | 395 | +62 |
| Cumulative Mill Average: | | | | ---- | | | | | ---- | | | | | ---- | | | | | ---- | | | | | | ---- | |
| Mill Factor, % | | | | ---- | | | | | ---- | | | | | ---- | | | | | ---- | | | | | | ---- | |
| Mill Index, % | | | | 98.2 | | | | | 104.0 | | | | 110.0 | | | | | | 91.5 | | | | | | 89.3 | |
| September, 1961 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8-15-61 | ---- | 44.0 | 42.2 | 43.3 | 43.4 | +0.1 | 14.0 | 13.1 | 13.5 | 13.3 | -0.2 | 135 | 102 | 121 | 125 | +4 | 304 | 256 | 277 | 304 | -27 | 368 | 336 | 350 ^a | 378 | -28 |
| 8-23-61 | ---- | 44.0 | 42.2 | 43.5 | 43.6 | +0.1 | 14.0 | 13.1 | 13.6 | 13.5 | -0.1 | 139 | 103 | 121 | 131 | +10 | 448 | 336 | 383 | 327 | -56 | 456 | 312 | 401 ^a | 384 | -17 |
| 8-28-61 | ---- | 43.8 | 42.4 | 42.8 | 43.5 | +0.7 | 13.8 | 12.9 | 13.1 | 13.0 | -0.1 | 141 | 105 | 124 | 132 | +8 | 336 | 256 | 283 | 335 | -52 | 376 | 328 | 345 ^a | 383 | -38 |
| 8-30-61 | ---- | 43.0 | 42.0 | 42.3 | 42.9 | +0.6 | 14.0 | 12.4 | 13.3 | 13.2 | -0.1 | 135 | 100 | 116 | 117 | +1 | 312 | 240 | 277 ^a | 306 | -29 | 376 | 312 | 346 ^a | 365 | -19 |
| Current Mill Average: | | | | 43.0 | 43.4 | -0.4 | | | 13.4 | 13.3 | -0.1 | | | 121 | 126 | +5 | | | 305 | 316 | +13 | | | 360 | 378 | -18 |
| Cumulative Mill Average: | | | | 42.6 | | | | | 13.1 | | | | | 121 | | | | | 303 | | | | | 333 | | |
| Mill Factor, % | | | | 100.9 | | | | | 102.3 | | | | 100.0 | | | | | | 100.7 | | | | | 108.1 | | |
| Mill Index, % | | | | 99.3 | | | | | 106.3 | | | | 110.0 | | | | | | 92.4 | | | | | 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 XVI
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL M

| Date Made | Mch. Finish No. | Basis Weight, lb. | | | Caliper, points | | | Bursting Strength, p.s.i. gauge | | | Elmendorf Tear, g./sheet | | | | | | | | | | | | | | | | | | |
|-----------|-----------------|-------------------|------|-------|-----------------|------|------|---------------------------------|-----------|------|--------------------------|-----|-----------|------|------|-----|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | | Max. | Min. | Av. | Institute | Max. | Min. | Av. | Institute | Max. | Min. | Av. | Institute | Max. | Min. | Av. | | | | | | | | | | | | | |
| | | | | Diff. | | | | | | | | | | | | | | | | | | | | | | | | | |
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August, 1961

September, 1961

No samples submitted.

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

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

TABLE XVII
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL N

| Date Made | Mch. No. | Finish | Basis Weight, lb. | | | Caliper, points | | | Bursting Strength, p.s.i. gage | | | Elmendorf Tear, g./sheet In Machine | | | Elmendorf Tear, g./sheet Cross 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. | Max. | Min. | Av. | Diff. | | | | | | |
| August, 1961 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7-25-61 | - | ---- | 42.6 | 41.4 | 42.0 | 41.9 | -0.1 | 12.8 | 11.9 | 12.1 | 12.0 | -0.1 | 142 | 80 | 113 | 115 | +2 | 336 | 240 | 277 ^a | 240 | -37 | 376 | 272 | 329 ^a | 325 | -4 |
| 7-28-61 | - | ---- | 42.4 | 41.6 | 42.2 | 42.0 | -0.2 | 12.7 | 12.0 | 12.2 | 12.0 | -0.2 | 132 | 91 | 117 | 118 | +1 | 328 | 240 | 285 | 240 | -45 | 352 | 304 | 327 ^a | 326 | -1 |
| 8-1-61 | - | ---- | 42.2 | 40.4 | 41.7 | 41.9 | +0.2 | 12.5 | 11.6 | 12.1 | 12.0 | -0.1 | 134 | 92 | 114 | 116 | +2 | 320 | 208 | 269 | 242 | -27 | 368 | 296 | 329 ^a | 325 | -4 |
| 8-4-61 | - | ---- | 42.2 | 41.4 | 41.9 | 42.0 | +0.1 | 12.5 | 11.9 | 12.1 | 12.0 | -0.1 | 135 | 85 | 114 | 116 | +2 | 320 | 236 | 282 ^a | 239 | -43 | 384 | 272 | 315 ^a | 326 | +11 |
| 8-7-61 | - | ---- | 43.6 | 41.8 | 42.6 | 42.0 | -0.6 | 13.3 | 12.2 | 12.9 | 12.0 | -0.9 | 134 | 90 | 114 | 116 | +2 | 320 | 240 | 267 | 242 | -25 | 392 | 328 | 352 ^a | 324 | -28 |
| 8-10-61 | - | ---- | 42.6 | 41.2 | 42.0 | 41.9 | -0.1 | 12.4 | 11.4 | 12.0 | 12.0 | 0.0 | 140 | 88 | 115 | 115 | 0 | 360 | 240 | 290 ^a | 239 | -51 | 352 | 280 | 321 ^a | 325 | +4 |
| Current Mill Average: | | | 42.1 | 42.0 | -0.1 | 12.2 | 12.0 | -0.2 | 115 | 116 | +1 | 278 | 240 | -36 | 329 | 325 | -4 | | | | | | | | | | |
| Cumulative Mill Average: | | | 42.6 | | | 12.5 | | | 113 | | | 289 | | | 333 | | | | | | | | | | | | |
| Mill Factor, % | | | 98.8 | | | 97.6 | | | 101.8 | | | 96.2 | | | 98.8 | | | | | | | | | | | | |
| Mill Index, % | | | 97.0 | | | 96.8 | | | 104.5 | | | 84.0 | | | 86.2 | | | | | | | | | | | | |

September, 1961

No samples submitted.

^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

| Date Made | Sch. No. | Finish | Basis Weight, lb. | | | Caliper, points | | | Bursting Strength, p.s.i. | | | 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. | | | | | | | | | | | | |
| August, 1961 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7-19-61 | W.F. | 2 | 43.6 | 42.0 | 42.5 | 42.1 | -0.4 | 12.8 | 11.1 | 11.9 | 11.6 | -0.3 | 126 | 89 | 110 | 108 | -2 | 368 | 272 | 312 | 311 | -1 | 416 | 320 | 369 ^a | 385 | +16 | | |
| 7-19-61 | W.F. | 2 | 43.6 | 41.8 | 42.5 | 42.0 | -0.5 | 12.9 | 11.5 | 12.1 | 11.5 | -0.6 | 128 | 88 | 106 | 109 | +3 | 360 | 256 | 309 | 311 | +2 | 400 | 336 | 375 ^a | 385 | +10 | | |
| 7-27-61 | W.F. | 2 | 44.0 | 42.6 | 43.7 | 43.2 | -0.5 | 12.2 | 11.5 | 12.0 | 11.7 | -0.3 | 130 | 98 | 113 | 114 | +1 | 448 | 272 | 348 | 340 | -8 | 480 | 384 | 417 ^a | 422 | -5 | | |
| 7-27-61 | W.F. | 2 | 44.2 | 42.4 | 43.5 | 43.2 | -0.3 | 12.2 | 11.7 | 11.9 | 11.8 | -0.1 | 130 | 96 | 115 | 114 | -1 | 400 | 280 | 334 | 337 | -3 | 416 | 384 | 399 ^a | 428 | -29 | | |
| 8-2-61 | W.F. | 2 | 45.4 | 44.0 | 44.6 | 43.9 | -0.9 | 13.2 | 12.4 | 13.0 | 12.4 | -0.6 | 146 | 90 | 119 | 116 | -3 | 416 | 272 | 332 | 349 | +17 | 464 | 368 | 413 ^a | 434 | -21 | | |
| 8-2-61 | W.F. | 2 | 45.6 | 44.2 | 44.8 | 43.8 | -1.0 | 13.2 | 12.2 | 12.9 | 12.4 | -0.5 | 138 | 95 | 117 | 114 | -3 | 416 | 272 | 345 | 359 | -14 | 472 | 352 | 415 ^a | 428 | +13 | | |
| 8-3-61 | W.F. | 2 | 45.6 | 43.8 | 44.5 | 43.9 | -0.6 | 13.5 | 12.7 | 13.1 | 12.8 | -0.3 | 136 | 89 | 111 | 111 | 0 | 368 | 296 | 333 ^a | 346 | -13 | 480 | 376 | 413 ^a | 425 | -12 | | |
| 8-3-61 | W.F. | 2 | 45.4 | 44.0 | 44.7 | 44.0 | -0.7 | 13.4 | 12.3 | 13.1 | 12.7 | -0.4 | 139 | 71 | 110 | 109 | -1 | 384 | 296 | 347 | 359 | +12 | 464 | 352 | 401 ^a | 443 | +42 | | |
| Current Mill Average: | | | 43.9 | | | 43.3 | -0.6 | 12.5 | | | 12.1 | -0.4 | 113 | | | 112 | -1 | 332 | | | 339 | -7 | 400 | | | 419 | +19 | | |
| Cumulative Mill Average: | | | 43.6 | | | 12.5 | | | 113 | | | 320 | | | 377 | | | | | | | | | | | | | | |
| Mill Factor, % | | | 100.7 | | | 100.0 | | | 100.0 | | | 100.0 | | | 106.1 | | | | | | | | | | | | | | |
| Mill Index, % | | | 101.2 | | | 99.2 | | | 102.7 | | | 100.3 | | | 107.2 | | | | | | | | | | | | | | |

^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 XVIII (continued)
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL O

| Date Made | Finish | Mch. No. | Basis Weight, lb. | | | Caliper, points | | | Bursting Strength, p.s.i. | | | Elmendorf Tear, g./sheet | | | Elmendorf Tear, g./sheet | | | | | | | | | | | | |
|--------------------------|--------|----------|-------------------|------|------|-----------------|------|------|---------------------------|------|------|--------------------------|-------|------|--------------------------|------|------|-------|------|------|------|------|-------|-----|------------------|-----|-----|
| | | | Institute | | Mill | Institute | | Mill | Institute | | Mill | Institute | | Mill | Institute | | Mill | | | | | | | | | | |
| | | | Max. | Min. | | Max. | Min. | | Max. | Min. | | Max. | Min. | | Max. | Min. | | Max. | Min. | Max. | Min. | Max. | Min. | | | | |
| September, 1961 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8-19-61 | W.F. | 2 | 44.0 | 42.6 | 43.4 | 43.6 | +0.2 | 12.7 | 11.9 | 12.2 | 12.0 | -0.2 | 139 | 103 | 121 | 114 | - 7 | 424 | 264 | 354 | 345 | - 9 | 432 | 360 | 389 ^a | 430 | +41 |
| 8-19-61 | W.F. | 2 | 45.6 | 42.4 | 43.8 | 43.7 | -0.1 | 12.8 | 11.4 | 12.2 | 12.0 | -0.2 | 130 | 105 | 119 | 113 | - 6 | 392 | 280 | 327 | 349 | +22 | 496 | 368 | 422 ^a | 426 | - 6 |
| 8-29-61 | W.F. | 2 | 44.0 | 43.4 | 43.8 | 44.1 | +0.3 | 13.0 | 12.0 | 12.5 | 12.4 | -0.1 | 140 | 90 | 117 | 113 | - 4 | 392 | 304 | 337 | 339 | + 2 | 496 | 344 | 393 ^a | 414 | +21 |
| 8-29-61 | W.F. | 2 | 44.0 | 42.8 | 43.3 | 44.1 | +0.8 | 13.1 | 12.0 | 12.6 | 12.4 | -0.2 | 149 | 101 | 123 | 112 | -11 | 400 | 280 | 337 | 334 | - 3 | 424 | 344 | 387 ^a | 412 | +25 |
| Current Mill Average: | | | 43.6 | | 43.9 | +0.3 | | 12.4 | | 12.2 | -0.2 | | 120 | 113 | | - 7 | | 339 | | 342 | + 3 | | 398 | | 421 | | +23 |
| Cumulative Mill Average: | | | 43.7 | | | | | 12.5 | | | | | 113 | | | | | 320 | | | | | 379 | | | | |
| Mill Factor, % | | | 99.8 | | | | | 99.2 | | | | | 106.2 | | | | | 105.9 | | | | | 105.0 | | | | |
| Mill Index, % | | | 100.7 | | | | | 98.4 | | | | | 109.1 | | | | | 102.7 | | | | | 107.0 | | | | |

^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 XIX
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL P

| Date Made | Mch. No. | Finish | Basis Weight, lb. | | | Caliper, points | | | Bursting Strength, p.s.i. gage | | | Elmendorf Tear, g./sheet | | | Cross Machine | | | | | | | | | | | | |
|--------------------------|----------|--------|-------------------|------|------|-----------------|------|------|--------------------------------|-----------|------|--------------------------|-----|-----------|---------------|------|-----|-------|-------|------------------|-------|-------|-------|-------|------------------|-----|-----|
| | | | Max. | Min. | Av. | Institute | Max. | Min. | Av. | Institute | Max. | Min. | Av. | Institute | Max. | Min. | Av. | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | Diff. | Diff. | Diff. | Diff. | Diff. | Diff. | Diff. | | | |
| August, 1961 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7-21-61 | - | W.B. | 44.0 | 43.0 | 43.5 | 43.3 | -0.2 | 12.9 | 11.3 | 12.1 | 11.9 | -0.2 | 128 | 90 | 112 | 107 | -5 | 480 | 328 | 396 ^a | 365 | -31 | 450 | 400 | 431 ^a | 427 | -4 |
| 8-5-61 | - | W.B. | 44.0 | 42.0 | 42.8 | 42.3 | -0.5 | 12.6 | 11.5 | 12.1 | 11.8 | -0.3 | 124 | 82 | 104 | 106 | +2 | 432 | 304 | 377 ^a | 369 | -8 | 448 | 392 | 431 ^a | 397 | -34 |
| 8-6-61 | - | W.B. | 42.8 | 40.2 | 41.7 | 41.4 | -0.3 | 12.2 | 11.3 | 11.7 | 11.6 | -0.1 | 139 | 83 | 103 | 105 | +2 | 432 | 328 | 379 ^a | 345 | -34 | 472 | 368 | 415 ^a | 403 | -12 |
| 8-9-61 | - | W.B. | 43.8 | 42.0 | 42.9 | 42.5 | -0.4 | 12.9 | 11.7 | 12.2 | 11.8 | -0.4 | 128 | 97 | 112 | 109 | -3 | 528 | 336 | 405 ^a | 369 | -36 | 460 | 400 | 439 ^a | 423 | -16 |
| 8-13-61 | - | W.B. | 44.4 | 42.0 | 42.9 | 42.3 | -0.6 | 12.4 | 11.1 | 11.7 | 11.5 | -0.2 | 125 | 99 | 109 | 110 | +1 | 392 | 320 | 355 | 327 | -28 | 456 | 400 | 417 ^a | 428 | +11 |
| 8-18-61 | - | W.B. | 44.0 | 42.4 | 43.4 | 42.8 | -0.6 | 12.5 | 11.9 | 12.2 | 11.8 | -0.4 | 133 | 93 | 112 | 109 | -3 | 392 | 320 | 361 ^a | 360 | -1 | 464 | 384 | 419 ^a | 404 | -15 |
| 8-20-61 | - | W.B. | 43.6 | 41.4 | 42.6 | 42.1 | -0.7 | 13.2 | 11.5 | 12.4 | 12.1 | -0.3 | 128 | 86 | 111 | 107 | -4 | 432 | 328 | 365 ^a | 356 | -9 | 448 | 400 | 419 ^a | 436 | -17 |
| Current Mill Average: | | | 42.8 | 42.4 | -0.4 | 12.1 | 11.8 | -0.3 | 109 | 107 | -2 | 377 | 356 | -21 | 425 | 417 | -8 | | | | | | | | | | |
| Cumulative Mill Average: | | | 43.3 | | | 12.0 | | | 110 | | | 364 | | | 407 | | | | | | | | | | | | |
| Mill Factor, % | | | 98.8 | | | 100.8 | | | 99.1 | | | 103.6 | | | 104.4 | | | | | | | | | | | | |
| Mill Index, % | | | 98.6 | | | 96.0 | | | 99.1 | | | 113.9 | | | 113.9 | | | | | | | | | | | | |
| September, 1961 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8-23-61 | - | W.B. | 43.8 | 41.8 | 42.4 | 41.8 | -0.6 | 12.5 | 11.2 | 11.8 | 11.5 | -0.3 | 131 | 95 | 116 | 114 | -2 | 448 | 304 | 350 ^a | 331 | -19 | 456 | 368 | 417 ^a | 415 | -2 |
| 8-30-61 | - | W.B. | 43.2 | 40.2 | 42.1 | 42.0 | -0.1 | 13.2 | 11.7 | 12.4 | 12.1 | -0.3 | 129 | 95 | 116 | 111 | -5 | 424 | 328 | 363 ^a | 345 | -18 | 432 | 360 | 403 ^a | 424 | +21 |
| Current Mill Average: | | | 42.2 | 41.9 | -0.3 | 12.1 | 11.8 | -0.3 | 116 | 112 | -4 | 356 | 336 | -18 | 410 | 419 | +9 | | | | | | | | | | |
| Cumulative Mill Average: | | | 43.2 | | | 12.0 | | | 109 | | | 366 | | | 409 | | | | | | | | | | | | |
| Mill Factor, % | | | 97.7 | | | 100.8 | | | 106.4 | | | 97.3 | | | 100.2 | | | | | | | | | | | | |
| Mill Index, % | | | 97.5 | | | 96.0 | | | 105.5 | | | 107.9 | | | 110.2 | | | | | | | | | | | | |

^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 XX
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL Q

| Date Made | Mch. No. | Basis Weight, lb. | | | Caliper, points | | | Bursting Strength, p.s.i. edge | | | Elmendorf Tear, g./sheet in Machine | | | Elmendorf Tear, g./sheet Cross Machine | | | | | | | | | | | | |
|--------------------------|----------|-------------------|-----------|------|-----------------|-----------|------|--------------------------------|-----------|-------|-------------------------------------|-----------|------|--|-----------|---------|-----|------|------------------|-----|-----|-----|------|------------------|-----|-----|
| | | Max. | Institute | Min. | Max. | Institute | Min. | Max. | Institute | Min. | Max. | Institute | Min. | Max. | Institute | Min. | | | | | | | | | | |
| Finish | | Av. | | Av. | Av. | | Av. | Av. | Av. | Av. | Av. | Av. | Av. | Av. | Av. | Diff. | | | | | | | | | | |
| | | Diff. | | | | | | | | | | | | | | Diff. | | | | | | | | | | |
| August, 1961 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7-30-61 | WFIS | 2 | 43.4 | 41.6 | 42.5 | 42.8 | +0.3 | 13.7 | 12.8 | 13.1 | 13.2 | +0.1 | 124 | 90 | 108 | 110 + 2 | 392 | 320 | 343 ^a | 322 | -21 | 400 | 320 | 355 ^a | 355 | 0 |
| 8-1-61 | WFIS | 2 | 42.6 | 41.8 | 42.2 | 43.0 | +0.8 | 13.3 | 12.6 | 13.1 | 12.8 | -0.3 | 148 | 103 | 123 | 120 - 3 | 336 | 248 | 300 | 309 | + 9 | 384 | 328 | 355 ^a | 381 | +26 |
| 8-3-61 | WFIS | 2 | 42.2 | 41.8 | 42.0 | 42.7 | +0.7 | 13.9 | 13.0 | 13.3 | 13.2 | -0.1 | 135 | 93 | 116 | 118 + 2 | 336 | 272 | 307 ^a | 319 | +12 | 376 | 320 | 349 ^a | 387 | +38 |
| 8-4-61 | WFIS | 2 | 42.0 | 40.8 | 41.7 | 42.8 | +1.1 | 13.9 | 12.7 | 13.2 | 13.0 | -0.2 | 125 | 90 | 106 | 109 + 3 | 376 | 304 | 334 ^a | 324 | -10 | 384 | 304 | 341 ^a | 386 | +45 |
| 8-5-61 | WFIS | 2 | 44.0 | 42.0 | 42.8 | 43.2 | +0.4 | 14.0 | 13.4 | 13.8 | 13.6 | -0.2 | 141 | 85 | 114 | 112 - 2 | 352 | 272 | 305 ^a | 303 | - 2 | 400 | 328 | 366 ^a | 396 | +30 |
| 8-6-61 | WFIS | 2 | 43.8 | 41.8 | 42.8 | 43.7 | +0.9 | 14.4 | 12.8 | 13.6 | 13.4 | -0.2 | 125 | 99 | 112 | 110 - 2 | 320 | 248 | 297 ^a | 301 | + 4 | 384 | 296 | 344 ^a | 377 | +33 |
| 8-17-61 | WFIS | 2 | 42.4 | 40.2 | 41.6 | 42.3 | +0.7 | 13.5 | 12.2 | 12.9 | 12.8 | -0.1 | 133 | 101 | 117 | 107 -10 | 360 | 288 | 325 ^a | 314 | -11 | 424 | 304 | 343 ^a | 364 | +21 |
| 8-18-61 | WFIS | 2 | 42.2 | 41.0 | 41.9 | 41.7 | -0.2 | 13.7 | 12.9 | 13.2 | 12.8 | -0.4 | 133 | 88 | 111 | 108 - 3 | 320 | 264 | 294 ^a | 301 | + 7 | 384 | 304 | 341 ^a | 386 | +45 |
| Current Mill Average: | | | | | 42.2 | 42.7 | +0.5 | | | 13.3 | 13.1 | -0.2 | | 113 | 112 | - 1 | | 313 | 312 | 312 | - 1 | | 349 | 379 | 379 | +30 |
| Cumulative Mill Average: | | | | | 42.9 | | | | | 13.5 | | | | 109 | | | | 324 | | | | | 355 | | | |
| Mill Factor, % | | | | | 98.4 | | | | | 98.5 | | | | 103.7 | | | | 96.6 | | | | | 98.3 | | | |
| Mill Index, % | | | | | 97.2 | | | | | 105.6 | | | | 102.7 | | | | 94.6 | | | | | 93.6 | | | |

^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 XI (continued)
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL Q

| Date Made | Finish | Mch. No. | Basis Weight, lb. | | | Caliper, points | | | Bursting Strength, P.s.i. | | | Elmendorf Tear, g./sheet | | | | | | | | | | | | | | | |
|--------------------------|--------|----------|-------------------|------|-------|-----------------|------|-------|---------------------------|------|-------|--------------------------|------|-------|------|-----|-------|------|-------|------------------|------|-----|-------|------|------------------|-----|-----|
| | | | Institute | Max. | Mill | Institute | Max. | Mill | Institute | Max. | Mill | Institute | Max. | Mill | | | | | | | | | | | | | |
| | | | Min. | Av. | Diff. | Min. | Av. | Diff. | Min. | Av. | Diff. | Min. | Av. | Diff. | Min. | Av. | Diff. | Min. | Av. | Diff. | Min. | Av. | Diff. | | | | |
| September, 1961 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6-29-61 | WPLS | 2 | 44.0 | 42.0 | 43.2 | 44.0 | +0.6 | 13.6 | 11.9 | 12.7 | 12.5 | -0.2 | 130 | 100 | 116 | 109 | -7 | 384 | 312 | 343 ^a | 326 | -17 | 400 | 320 | 364 ^a | 360 | .6 |
| 8-30-61 | WPLS | 2 | 42.2 | 41.0 | 41.8 | 43.0 | +1.2 | 13.2 | 12.1 | 12.5 | 12.3 | -0.2 | 145 | 111 | 128 | 120 | -8 | 376 | 304 | 331 ^a | 324 | -7 | 376 | 312 | 342 ^a | 360 | .18 |
| 9-10-61 | WPLS | 2 | 43.8 | 41.8 | 42.8 | 43.0 | +0.2 | 14.2 | 13.0 | 13.6 | 13.2 | -0.4 | 145 | 100 | 124 | 122 | -2 | 368 | 272 | 311 | 304 | -7 | 472 | 336 | 371 ^a | 394 | .24 |
| 9-18-61 | WPLS | 2 | 42.4 | 40.6 | 41.4 | 42.3 | +0.9 | 13.0 | 12.3 | 12.6 | 12.5 | -0.1 | 131 | 98 | 116 | 114 | -2 | 368 | 248 | 307 ^a | 291 | -16 | 352 | 274 | 335 ^a | 356 | .21 |
| Current Mill Average: | | | 42.3 | 43.1 | -0.8 | | | | 12.9 | 12.6 | -0.3 | | | 121 | 116 | -5 | | | 323 | 311 | -12 | | | 351 | 368 | .17 | |
| Cumulative Mill Average: | | | 42.8 | | | | | | 13.5 | | | | | 107 | | | | | 302 | | | | | 374 | | | |
| Mill Index, Y | | | 98.8 | | | | | | 98.4 | | | | | 111.6 | | | | | 106.4 | | | | | 99.2 | | | |
| Mill Index, X | | | 97.9 | | | | | | 100.3 | | | | | 110.0 | | | | | 97.9 | | | | | 94.4 | | | |

^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 XXII

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL T

| Date Made | Mch. No. | Basis Weight, lb. | | Caliber, points | | Bursting Strength, p.s.i. | | Elrendorf Tear, g./sheet | |
|-----------|----------|-------------------|---------------|-----------------|---------------|---------------------------|---------------|--------------------------|---------------|
| | | 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. | Max. Min. Av. | Max. Min. Av. |

August, 1961

No samples submitted.

September, 1961

No samples submitted.

TABLE XIII
SUMMARY OF INSTITUTE AND MILL DATA FOR MILL U

| Date Made | Finish | Veh. No. | Basis Weight, lb. | | | Caliper, points | | | Bursting Strength, p.s.i. gage | | | Elmendorf Tear, g./sheet In Machine | | | Elmendorf Tear, g./sheet Cross Machine | | | | | | | | | | | | | | |
|--------------------------|--------|----------|-------------------|------|------|-----------------|-----------|-------|--------------------------------|------|------|-------------------------------------|-----------|------|--|------|------|-------|-----|------------------|-----|------|-----|-----|------------------|-----|-----|--|--|
| | | | Max. | Min. | Av. | Diff. | Institute | Mill | Max. | Min. | Av. | Diff. | Institute | Mill | Max. | Min. | Av. | Diff. | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| August, 1961 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7-22-61 | W.F. | 2 | 43.2 | 42.2 | 42.5 | 43.1 | +0.6 | 12.1 | 11.5 | 11.8 | 11.8 | 0.0 | 133 | 101 | 115 | 116 | +1 | 344 | 240 | 287 ^a | 321 | -34 | 384 | 304 | 329 ^a | 355 | -26 | | |
| 7-24-61 | W.F. | 2 | 43.2 | 42.2 | 42.5 | 43.0 | +0.4 | 12.1 | 11.5 | 11.8 | 11.7 | -0.1 | 132 | 98 | 119 | 117 | -2 | 344 | 216 | 277 ^a | 313 | -36 | 352 | 312 | 333 ^a | 362 | -30 | | |
| 8-5-61 | W.F. | 2 | 44.0 | 42.0 | 43.1 | 43.3 | +0.2 | 12.4 | 11.4 | 11.9 | 11.9 | 0.0 | 136 | 93 | 116 | 115 | -1 | 384 | 280 | 315 ^a | 314 | -1 | 384 | 296 | 346 ^a | 360 | -14 | | |
| 8-9-61 | W.F. | 2 | 43.4 | 42.0 | 42.7 | 43.1 | -0.4 | 12.1 | 11.5 | 11.8 | 11.7 | -0.1 | 145 | 87 | 117 | 116 | -1 | 344 | 264 | 302 ^a | 308 | -6 | 392 | 336 | 347 ^a | 353 | -6 | | |
| 8-15-61 | W.F. | 2 | 42.8 | 41.6 | 42.0 | 42.4 | +0.4 | 12.9 | 12.0 | 12.3 | 12.0 | -0.3 | 128 | 100 | 113 | 112 | -1 | 328 | 256 | 295 ^a | 311 | -16 | 400 | 320 | 353 ^a | 377 | -24 | | |
| 8-15-61 | W.F. | 2 | 42.4 | 40.8 | 41.8 | 42.4 | +0.6 | 13.0 | 11.9 | 12.3 | 12.1 | -0.2 | 133 | 90 | 114 | 113 | -1 | 360 | 296 | 314 ^a | 314 | 0 | 448 | 336 | 373 ^a | 366 | -12 | | |
| September, 1961 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Current Mill Average: | | | 42.5 | 42.9 | +0.4 | | | 12.0 | 11.9 | -0.1 | | | 116 | 115 | -1 | | 298 | 314 | -16 | | | 347 | 365 | -18 | | | | | |
| Cumulative Mill Average: | | | 43.4 | | | | | 12.0 | | | | | 116 | | | | 321 | | | | | 363 | | | | | | | |
| Mill Factor, % | | | 97.9 | | | | | 100.0 | | | | | 100.0 | | | | 92.8 | | | | | 95.6 | | | | | | | |
| Mill Index, % | | | 97.9 | | | | | 95.2 | | | | | 105.5 | | | | 90.0 | | | | | 91.0 | | | | | | | |
| 8-30-61 | W.F. | 2 | 43.6 | 42.0 | 42.8 | 43.1 | +0.3 | 12.1 | 11.3 | 11.9 | 11.9 | 0.0 | 140 | 87 | 116 | 116 | 0 | 352 | 272 | 300 | 313 | -13 | 376 | 320 | 346 ^a | 371 | -25 | | |
| 8-30-61 | W.F. | 2 | 43.2 | 42.2 | 42.7 | 43.1 | +0.4 | 12.0 | 11.2 | 11.8 | 12.0 | -0.2 | 142 | 104 | 125 | 118 | -7 | 344 | 272 | 319 ^a | 312 | -7 | 368 | 304 | 333 ^a | 370 | -37 | | |
| Current Mill Average: | | | 42.7 | 43.1 | +0.4 | | | 11.8 | 12.0 | +0.2 | | | 120 | 117 | -3 | | 310 | 312 | -2 | | | 339 | 370 | -21 | | | | | |
| Cumulative Mill Average: | | | 43.3 | | | | | 12.1 | | | | | 116 | | | | 320 | | | | | 362 | | | | | | | |
| Mill Factor, % | | | 98.6 | | | | | 97.5 | | | | | 103.4 | | | | 96.9 | | | | | 97.6 | | | | | | | |
| Mill Index, % | | | 98.6 | | | | | 93.7 | | | | | 109.1 | | | | 93.9 | | | | | 91.1 | | | | | | | |

^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.

represents the average of the averages obtained on the individual sample lots of linerboard evaluated at the mills during a given month. In addition to the presentations of Institute and mill data described above, Tables IV through XXIII 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 Tables XXIV and XXV for the months of August and September, respectively. Shown in these tables 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 XXVI, the differences for each test between the current mill averages based on Institute data and those based on mill data shown in Tables XXIV and XXV for the months of August and September have been converted to per cent (based on Institute data as a reference).

A summary of the agreement obtained in the comparisons of Institute and mill test data for the months of August and September is shown in Table XXVII. This summary is based on the results given in Table XXVI. The tabulated data show the number of mills, and the percentage of all mills which this number represents, whose average test results for the months of August and September fall within designated percentages from the average test results obtained at the Institute. It may be noted from this summary that

TABLE XXIV
SUMMARY OF TEST RESULT COMPARISONS (Average Mill and Institute Results) FOR AUGUST, 1961

| Mills* | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | S | T | U |
|-------------------------|---------------------------------|------|------|------|---|------|------|---|------|------|------|------|------|------|------|------|------|------|---|------|
| No. of Samples Compared | 6 | 12 | 4 | 4 | 0 | 6 | 8 | 0 | 8 | 2 | 4 | 1 | 1 | 6 | 8 | 7 | 8 | 7 | 0 | 6 |
| | <u>Basis Weight</u> | | | | | | | | | | | | | | | | | | | |
| Institute | 43.3 | 43.5 | 43.2 | 42.7 | | 43.8 | 42.6 | | 43.0 | 42.5 | 43.2 | 42.6 | 41.8 | 42.1 | 43.9 | 42.8 | 42.2 | 42.8 | | 42.5 |
| Mill | 43.2 | 43.5 | 43.0 | 42.9 | | 43.9 | 42.9 | | 43.3 | 42.8 | 43.1 | 43.5 | 42.1 | 42.0 | 43.3 | 42.4 | 42.7 | 42.5 | | 42.9 |
| Av. Diff.** | -0.1 | 0.0 | -0.2 | +0.2 | | +0.1 | +0.3 | | +0.3 | +0.3 | -0.1 | +0.9 | +0.3 | -0.1 | -0.6 | -0.4 | +0.5 | -0.3 | | +0.4 |
| Max. Diff.*** | -0.4 | -0.6 | -0.9 | +0.9 | | +0.8 | +1.1 | | +0.7 | +0.6 | -0.3 | +0.9 | +0.3 | -0.6 | -1.0 | -0.7 | +1.1 | -0.4 | | +0.6 |
| | <u>Caliper</u> | | | | | | | | | | | | | | | | | | | |
| Institute | 12.4 | 12.9 | 13.4 | 12.4 | | 11.9 | 12.7 | | 12.2 | 12.7 | 13.1 | 13.1 | 11.7 | 12.2 | 12.5 | 12.1 | 13.3 | 12.4 | | 12.0 |
| Mill | 12.1 | 12.4 | 13.0 | 12.4 | | 11.6 | 12.4 | | 12.1 | 12.3 | 12.5 | 13.1 | 11.8 | 12.0 | 12.1 | 11.8 | 13.1 | 11.9 | | 11.9 |
| Av. Diff.** | -0.3 | -0.5 | -0.4 | 0.0 | | -0.3 | -0.3 | | -0.1 | -0.4 | -0.6 | 0.0 | +0.1 | -0.2 | -0.4 | -0.3 | -0.2 | -0.5 | | -0.1 |
| Max. Diff.*** | -0.5 | -1.0 | -0.7 | -0.3 | | -0.5 | -0.6 | | -0.2 | -0.9 | -0.6 | 0.0 | +0.1 | -0.9 | -0.6 | -0.4 | -0.4 | -0.8 | | -0.3 |
| | <u>Bursting Strength</u> | | | | | | | | | | | | | | | | | | | |
| Institute | 112 | 109 | 113 | 114 | | 113 | 114 | | 111 | 114 | 111 | 121 | 112 | 115 | 113 | 109 | 113 | 107 | | 116 |
| Mill | 111 | 108 | 109 | 109 | | 113 | 112 | | 111 | 114 | 109 | 129 | 113 | 116 | 112 | 107 | 112 | 109 | | 115 |
| Av. Diff.** | -1 | -1 | -4 | -5 | | 0 | -2 | | 0 | 0 | -2 | +8 | +1 | +1 | -1 | -2 | -1 | +2 | | -1 |
| Max. Diff.*** | +5 | +4 | -7 | -8 | | +3 | -7 | | -3 | +6 | -5 | +8 | +1 | +2 | +3 | -5 | -10 | +5 | | -2 |
| | <u>Tearing Strength, in</u> | | | | | | | | | | | | | | | | | | | |
| Institute | 373 | 317 | 319 | 349 | | 348 | 339 | | 298 | 317 | 299 | 303 | 332 | 278 | 332 | 377 | 313 | 346 | | 298 |
| Mill | 385 | 295 | 336 | 332 | | 344 | 359 | | 315 | 288 | 280 | 325 | 327 | 240 | 339 | 356 | 312 | -- | | 314 |
| Av. Diff.** | +12 | -22 | +17 | -17 | | -4 | +20 | | +17 | -29 | -19 | +22 | -5 | -38 | +7 | -21 | -1 | -- | | +16 |
| Max. Diff.*** | +20 | -33 | +63 | -32 | | -19 | +37 | | +62 | -45 | -38 | +22 | -5 | -51 | +17 | -36 | -21 | -- | | +36 |
| | <u>Tearing Strength, across</u> | | | | | | | | | | | | | | | | | | | |
| Institute | 407 | 357 | 359 | 363 | | 393 | 365 | | 361 | 357 | 348 | 333 | 383 | 329 | 400 | 425 | 349 | 400 | | 347 |
| Mill | 418 | 361 | 380 | 365 | | 400 | 398 | | 402 | 327 | 352 | 395 | 389 | 325 | 419 | 417 | 379 | -- | | 365 |
| Av. Diff.** | +11 | +4 | +21 | +2 | | +7 | +33 | | +41 | -30 | +4 | +62 | +6 | -4 | +19 | -8 | +30 | -- | | +18 |
| Max. Diff.*** | +38 | +32 | +81 | -23 | | +16 | +62 | | +56 | -58 | +15 | +62 | +6 | -28 | +42 | -34 | +45 | -- | | +30 |

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

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

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

TABLE XXV
SUMMARY OF TEST¹ RESULT COMPARISONS (Average Mill and Institute Results) FOR SEPTEMBER, 1961

| Mills* | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | S | T | U |
|-------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---|---|---|
| No. of Samples Compared | 4 | 2 | 2 | 2 | 2 | 4 | 4 | 0 | 4 | 4 | 5 | 4 | 0 | 0 | 4 | 2 | 4 | 6 | 0 | 2 |
| Institute | 43.3 | 43.2 | 42.6 | 42.5 | 43.6 | 42.9 | 43.0 | 42.8 | 42.9 | 42.9 | 42.6 | 43.0 | 43.6 | 42.2 | 42.3 | 43.1 | 42.7 | | | |
| Mill | 43.2 | 43.4 | 43.2 | 42.6 | 43.6 | 43.1 | 42.1 | 43.6 | 43.5 | 42.8 | 43.4 | 43.4 | 43.9 | 41.9 | 43.1 | 43.6 | 43.1 | | | |
| Av. Diff.** | -0.1 | +0.2 | +0.6 | +0.1 | 0.0 | +0.2 | +0.1 | +0.8 | +0.6 | +0.2 | +0.4 | +0.4 | +0.3 | -0.3 | +0.8 | +0.5 | +0.4 | | | |
| Max. Diff.*** | -0.2 | +0.4 | +0.6 | +0.4 | +0.3 | +0.4 | -0.5 | +1.0 | +0.9 | +0.6 | +0.7 | +0.7 | +0.8 | -0.6 | +1.2 | +1.4 | +0.4 | | | |
| | | | | | | | | | | | | | | | | | | | | |
| Institute | 12.6 | 14.1 | 13.8 | 12.2 | 12.8 | 11.9 | 13.2 | 12.2 | 12.9 | 13.3 | 13.4 | 12.4 | 12.4 | 12.1 | 12.9 | 12.6 | 11.8 | | | |
| Mill | 12.3 | 13.5 | 13.2 | 12.2 | 12.8 | 11.5 | 12.8 | 12.4 | 12.6 | 12.7 | 13.3 | 12.4 | 12.2 | 11.8 | 12.6 | 12.1 | 12.0 | | | |
| Av. Diff.** | -0.3 | -0.6 | -0.6 | 0.0 | 0.0 | -0.4 | -0.4 | +0.2 | -0.3 | -0.6 | -0.1 | -0.2 | -0.2 | -0.3 | -0.3 | -0.5 | +0.2 | | | |
| Max. Diff.*** | -0.4 | -0.9 | -0.7 | -0.1 | +0.3 | -0.5 | -0.4 | +0.3 | -0.3 | -0.7 | -0.2 | -0.2 | -0.2 | -0.3 | -0.1 | -0.7 | +0.2 | | | |
| | | | | | | | | | | | | | | | | | | | | |
| Institute | 113 | 104 | 118 | 114 | 110 | 114 | 116 | 113 | 118 | 112 | 121 | 113 | 120 | 116 | 121 | 103 | 120 | | | |
| Mill | 108 | 103 | 108 | 104 | 102 | 112 | 113 | 110 | 114 | 109 | 126 | 113 | 113 | 112 | 116 | 103 | 117 | | | |
| Av. Diff.** | -5 | -1 | -10 | -10 | -8 | -2 | -3 | -3 | -4 | -3 | +5 | -7 | -7 | -4 | -5 | 0 | -3 | | | |
| Max. Diff.*** | -6 | -1 | -11 | -10 | -8 | -5 | -6 | -10 | -9 | -7 | +10 | -11 | -11 | -5 | -9 | +7 | -7 | | | |
| | | | | | | | | | | | | | | | | | | | | |
| Institute | 371 | 303 | 306 | 335 | 322 | 340 | 342 | 300 | 322 | 301 | 305 | 339 | 339 | 356 | 323 | 346 | 310 | | | |
| Mill | 394 | 274 | 349 | 323 | 354 | 332 | 345 | 332 | 291 | 276 | 318 | 342 | 342 | 338 | 311 | -- | 312 | | | |
| Av. Diff.** | +23 | -29 | +43 | -12 | +32 | -8 | +3 | +33 | -31 | -25 | +13 | +3 | +3 | -18 | -12 | -- | +2 | | | |
| Max. Diff.*** | +39 | -36 | +45 | -13 | +40 | -27 | +20 | +39 | -38 | -36 | -56 | +22 | +22 | -19 | -17 | -- | +13 | | | |
| | | | | | | | | | | | | | | | | | | | | |
| Institute | 403 | 360 | 346 | 350 | 367 | 385 | 398 | 357 | 358 | 357 | 360 | 398 | 398 | 410 | 351 | 389 | 339 | | | |
| Mill | 403 | 370 | 389 | 348 | 424 | 387 | 428 | 419 | 341 | 346 | 378 | 421 | 421 | 419 | 368 | -- | 370 | | | |
| Av. Diff.** | 0 | +10 | +43 | -2 | +57 | +2 | +30 | +62 | -17 | -11 | +18 | +23 | +23 | +9 | +17 | -- | +31 | | | |
| Max. Diff.*** | +26 | +29 | +45 | -13 | +58 | +27 | +44 | +75 | -27 | -21 | +38 | +41 | +41 | +21 | +24 | -- | +37 | | | |

* Comparison based on averages involved only those samples on which mill test data were submitted.
 ** Average difference is the difference between the Institute mill average and the mill average based on mill test data.
 *** Maximum difference encountered in comparing the Institute average and the mill averages for any sample submitted by that particular mill.

TABLE XXVI
COMPARISON OF INSTITUTE MILL DIFFERENCES FOR AUGUST AND SEPTEMBER, 1961

| Mill | Period | Basis Weight | Caliper | Bursting Strength | Tear, in | Tear, across | Mill | Period | Basis Weight | Caliper | Bursting Strength | Tear, in | Tear, across |
|------|---------------------|--------------|------------|-------------------|------------|--------------|------|---------------------|--------------|------------|-------------------|------------|--------------|
| A | August September | -0.2 -0.2 | -2 -2 | -0.9 -4 | +3 +6 | +3 0 | K | August September | -0.2 +0.5 | -5 -5 | -2 -3 | -6 -8 | +1 -3 |
| B | August September | 0 +0.5 | -4 -4 | -0.9 -1 | -7 -10 | +1 +3 | L | August September | +2 +0.9 | 0 -0.7 | +7 +4 | +7 +4 | +19 +5 |
| C | August September | -0.5 +1 | -3 -4 | -4 -8 | +5 +14 | +6 +12 | M | August September | +0.7 -- | +0.9 -- | +0.9 -- | -2 -- | +2 -- |
| D | August September | +0.5 +0.2 | 0 0 | -4 -9 | -5 -4 | +0.6 -0.6 | N | August September | -0.2 -- | -2 -- | +0.9 -- | -14 -- | -1 -- |
| E | August September | -- 0 | -- 0 | -- -7 | -- +10 | -- +16 | O | August September | -1 +0.7 | -3 -2 | -0.9 -6 | +2 +0.9 | +5 +6 |
| F | August September | +0.2 +0.5 | -3 -3 | 0 -2 | -1 -2 | +2 +0.5 | P | August September | -0.9 -0.7 | -2 -2 | -2 -3 | -6 -5 | -2 +2 |
| G | August September | +0.7 +0.2 | -2 -3 | -2 -3 | +6 +0.9 | +9 +8 | Q | August September | +1 +2 | -2 -2 | -0.9 -4 | -0.3 -4 | +9 +5 |
| H | August September | -- -- | -- -- | -- -- | -- -- | -- -- | S | August September | -0.7 +1 | -4 -4 | +2 0 | -- -- | -- -- |
| I | August September | +0.7 +2 | -0.8 +2 | 0 -3 | +6 +11 | +11 +17 | T | August September | -- -- | -- -- | -- -- | -- -- | -- -- |
| J | August September | +0.7 +1 | -3 -2 | 0 -3 | -9 -10 | -8 -5 | U | August September | +0.9 +0.9 | -0.8 +2 | -0.9 -2 | +5 +0.6 | +5 +9 |

TABLE XXVII

SUMMARY OF AGREEMENT BETWEEN INSTITUTE AND MILL RESULTS

| Average Percentage Difference Between Institute and Mill Test Results | | | | | | | | | | | | |
|--|--|------|------|-------|------|------|-------|-------|-------|-------|--|--|
| | | +0.5 | +1 | +2 | +3 | +4 | +5 | +7.5 | +10 | +19 | | |
| <u>August</u> | | | | | | | | | | | | |
| Basis weight | | | | | | | | | | | | |
| Number of mills | | 7 | 16 | 17 | | | | | | | | |
| Percentage of all mills | | 41.2 | 94.1 | 100.0 | | | | | | | | |
| Caliper | | | | | | | | | | | | |
| Number of mills | | 2 | 5 | 10 | 14 | 16 | 17 | | | | | |
| Percentage of all mills | | 11.8 | 29.4 | 58.8 | 82.4 | 94.1 | 100.0 | | | | | |
| Bursting strength | | | | | | | | | | | | |
| Number of mills | | 3 | 10 | 14 | 14 | 16 | 16 | 17 | | | | |
| Percentage of all mills | | 17.6 | 58.8 | 82.4 | 82.4 | 94.1 | 94.1 | 100.0 | | | | |
| Tearing strength, in | | | | | | | | | | | | |
| Number of mills | | 1 | 2 | 4 | 5 | 5 | 8 | 14 | 15 | 16 | | |
| Percentage of all mills | | 6.2 | 12.5 | 25.0 | 31.2 | 31.2 | 50.0 | 87.5 | 93.8 | 100.0 | | |
| Tearing strength, across | | | | | | | | | | | | |
| Number of mills | | 0 | 4 | 7 | 8 | 8 | 10 | 11 | 14 | 16 | | |
| Percentage of all mills | | 0.0 | 25.0 | 43.8 | 50.0 | 50.0 | 62.5 | 68.8 | 87.5 | 100.0 | | |
| <u>September</u> | | | | | | | | | | | | |
| Basis weight | | | | | | | | | | | | |
| Number of mills | | 7 | 14 | 16 | | | | | | | | |
| Percentage of all mills | | 43.8 | 87.5 | 100.0 | | | | | | | | |
| Caliper | | | | | | | | | | | | |
| Number of mills | | 2 | 3 | 10 | 12 | 15 | 16 | | | | | |
| Percentage of all mills | | 12.5 | 18.8 | 62.5 | 75.0 | 93.8 | 100.0 | | | | | |
| Bursting strength | | | | | | | | | | | | |
| Number of mills | | 1 | 2 | 4 | 9 | 12 | 12 | 14 | 16 | | | |
| Percentage of all mills | | 6.2 | 12.5 | 25.0 | 56.2 | 75.0 | 75.0 | 87.5 | 100.0 | | | |
| Tearing strength, in | | | | | | | | | | | | |
| Number of mills | | 0 | 3 | 4 | 4 | 7 | 8 | 9 | 13 | 15 | | |
| Percentage of all mills | | 0.0 | 20.0 | 26.7 | 26.7 | 46.7 | 53.3 | 60.0 | 86.7 | 100.0 | | |
| Tearing strength, across | | | | | | | | | | | | |
| Number of mills | | 2 | 3 | 4 | 6 | 6 | 9 | 10 | 12 | 15 | | |
| Percentage of all mills | | 13.3 | 20.0 | 26.7 | 40.0 | 40.0 | 60.0 | 66.7 | 80.0 | 100.0 | | |

agreement between the results obtained at the Institute and those obtained at the mills was generally very good.

Preconditioning and conditioning data pertinent to the test results obtained at the mills during August and September are given in Table XXVIII.

TABLE XXVIII

PRECONDITIONING AND CONDITIONING DATA FOR MILL TESTS

| Mill Code | Preconditioning | | | Conditioning | | |
|--------------|----------------------------|--------------------------|--------------|----------------------------|--------------------------|--------------|
| | Relative Humidity, % | Tempera- ture, °F. | Time, hr. | Relative Humidity, % | Tempera- ture, °F. | Time, hr. |
| | | | August | | | |
| A | 50-51 | 73-74 | 48 | 50 | 73 | -- |
| B | 50 | 70-73 | 48 | 50 | 70-73 | 3 |
| C | 50 | 70 | 24 | No conditioning | | |
| D | 50 | 73 | 24 | 50 | 73 | 24 |
| E | No samples submitted. | | | | | |
| F | No preconditioning | | | 50 | 73 | 24 |
| G | 50 | 70-72 | 120 | 50 | 70-72 | 120-240 |
| H | No samples submitted. | | | | | |
| I | 50 | 73 | 24-48 | 50 | 73 | 24-48 |
| J | 34-35 | 78 | 8 | 48-52 | 72-73 | 16 |
| K | 38-58 | 79-88 | 0.5 | 50 | 73 | 24-48 |
| L | 54 | 73 | 48 | 54 | 73 | 48 |
| M | 50 | 72 | 24 | No conditioning. | | |
| N | No preconditioning. | | | 60-70 | 87-90 | -- |
| O | 50 | 73 | 24 | 50 | 73 | 24 |
| P | No preconditioning | | | 45-52 | 74-75 | 48 |
| Q | 50 | 72 | 24 | No conditioning. | | |
| S | No preconditioning | | | 50 | 70-73 | 24-72 |
| T | No samples submitted. | | | | | |
| U | No preconditioning | | | 50 | 73 | 24 |
| | | | September | | | |
| A | 50 | 74-75 | 48 | 50 | 73 | -- |
| B | 50 | 73 | 48 | 50 | 73 | 3 |
| C | 60 | 72 | 24 | No conditioning. | | |
| D | No preconditioning | | | 50 | 73 | 23-24 |

(Continued on the following page)

TABLE XXVIII--Continued

PRECONDITIONING AND CONDITIONING DATA FOR MILL TESTS

| Mill Code | Preconditioning | | | Conditioning | | |
|--------------|----------------------------|--------------------------|--------------|----------------------------|--------------------------|--------------|
| | Relative Humidity, % | Tempera- ture, °F. | Time, hr. | Relative Humidity, % | Tempera- ture, °F. | Time, hr. |
| E | No preconditioning. | | | 56-57 | 70-72 | -- |
| F | No preconditioning. | | | 50 | 73 | 24 |
| G | 50 | 70 | 120 | 50 | 70 | 120-168 |
| H | No samples submitted. | | | | | |
| I | 50 | 73 | 48 | 50 | 73 | 48 |
| J | 34-35 | 77-78 | 8 | 48-52 | 72-73 | 16 |
| K | 43-68 | 87-90 | 0.5 | 50 | 73 | 24 |
| L | 50-54 | 73 | 48-96 | 50-54 | 73 | 48-96 |
| M | No samples submitted. | | | | | |
| N | No samples submitted. | | | | | |
| O | 50 | 73 | 24 | 50 | 73 | 24 |
| P | No preconditioning. | | | 50-51 | 73-74 | 48 |
| Q | 50 | 72 | 24 | No conditioning. | | |
| S | No preconditioning | | | 50. | 73 | 24 |
| T | No samples submitted. | | | | | |
| U | No preconditioning | | | 50 | 73 | 24 |

THE INSTITUTE OF PAPER CHEMISTRY



W. N. Hubert, Research Aide
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