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Box 11

PML-344
S.T.
4/19/39

GENERAL ASBESTOS & RUBBER DIVISION

OF

RAYBESTOS-MANHATTAN, INC.

No. Charleston, S. C.

* * *

This survey was conducted on April 20, 21, and 22, 1936 and is supplementary to the survey made in July, 1934.

This survey was made to determine the extent of dust removal accomplished by the installation of new exhaust equipment and the redesigning of old exhaust equipment.

* *

Exhibit I

COMPARATIVE DATA

Preparation Room

The average count in this room at the time of the 1934 survey was 3.6 million particles per cubic foot of air. The average count at the time of the 1936 survey was 2.7 million particles per cubic foot of air.

Card Rooms

The average count in this department at the time of the 1934 survey was 3.5 million particles per cubic foot of air. The average count at the time of the 1936 survey was 1.2 million particles per cubic foot of air.

Spinning Department

The average count in this department at the time of the 1934 survey was 2.68 million particles per cubic foot of air. Samples 14 to 19 inclusive were averaged. The average count at the time of the 1936 survey was 4.4 million particles per cubic foot of air.

Reave Room

The average count in this room at the time of the 1934 survey was 3.5 million particles per cubic foot of air. The average count at the time of the 1936 survey was 2.3 million particles per cubic foot of air.

Comparison of Dust Counts of Surveys

July, 1934 Sample No.	Millions of Dust Particles per cu. ft. air sampled	April, 1936 Sample No.	Millions of Dust Particles per cu. ft. air sampled
PREPARATION ROOM			
1	1.9	1A	1.2
2	8.2	2A	1.3
4	1.2	4A	2.2
5	1.5	5A	2.1
6	0.87	6A	1.5
7	7.8	7A	6.6
8	8.1	8A	2.8
9	1.3	9A	5.0
10	1.9	10A	1.9
CARD ROOMS			
27	5.5	27A	1.0
28*	15.9	28A	1.2
29*	13.2	29A	1.3
30	2.7	30A	1.1
SPINNING DEPARTMENT			
11	1.6	11A	2.4
12	2.1	12A	1.4
13	1.1	13A	0.93
14	0.99	14A	4.9
15	2.3	15A	9.9
16	0.93	16A	6.0
17	8.1	17A	3.1
18	2.5	18A	1.1
19	1.3	19A	1.5
PACKING DEPARTMENT			
20	0.45	20A	0.82
23	1.4	23A	1.8

*Belt on blower broke while these samples were running in 1934.

Comparison of Dust Counts of Surveys

Sample No.	July, 1934 Millions of Dust Particles per cu. ft. air sampled	Sample No.	April, 1936 Millions of Dust Particles per cu. ft. air sampled
BEAVE ROOM			
22	6.3	22A	1.2
24	0.6	33*	1.4
26	5.5	34*	2.3
45	2.6	35*	6.6
46	2.7	36*	2.7
48	3.0	37*	1.2
49	5.1	38*	1.6
51	4.9	39*	1.3
52	0.9		

*Samples 33 to 39 in the 1936 survey do not compare as to location with samples in the 1934 survey.

The following tables show the results of analyses of samples taken in April, 1936. Methods of sampling and analysis are identical to those used in 1934.

GENERAL ASBESTOS & RUBBER CO.
No. Charleston, S.C.

Sample No.	Station	Date of Sampling	Cu. Ft. Air Sampled	Millions of Dust Particles per cu. ft. air sampled	Type of Dust	Remarks
PREPARATION ROOM						
1A	At #1 chaser	4/20/36	37.4	1.2	Asbestos	
2A	At #4 chaser	"	35.8	1.3	"	
3	Feeder end of #1 picker exhaust hood	"	44.6	1.1	Asbestos cotton	One man supplied with respirator
4A	Feeding end of Garnet machine	"	36.4	2.2	Asbestos	
5A	At fly shaker exhaust	"	49.8	2.1	"	
6A	Vertical fibre opener	"	44.0	1.5	"	Exhaust
7A	Floor mixing of cotton and asbestos - exhaust hoods	"	9.6	6.6	Asbestos cotton	2 men - supplied with respirators.
8A	At shaker screen - loading hand trucks with fibre	"	39.0	2.8	Asbestos	Exhaust
9A	At feeder end of cotton fibre opener	"	23.3	5.0	Cotton	Exhaust - one man
10A	At conveyor end of #2 picker	"	24.2	1.9	Asbestos	Exhaust on machine conveyor
SPINNING DEPARTMENT						
11A	General air - braiders Building #5	4/21/36	37.2	2.4	"	Large machines
12A	Between 2 ring presses Bldg. #5	"	34.5	1.4	Asbestos graphite	
13A	General air - small braiders - Bldg. #5	"	43.2	0.93	Asbestos graphite cotton	Making stock for ring presses
14A	General air - ring frame spinning	"	20.4	4.9	Cotton asbestos	
15A	General air - twister	"	38.5	9.9	Asbestos	
16A	General air - spoolers	"	33.5	6.0	"	Yarn from ring frame spinning, near windows, north side.
17A	General air - spoolers near partition wall, east side	"	33.1	3.1	"	Yarn from mule spinners four women.
18A	General air - mule spinning	"	39.5	1.1	"	Between machines #3, #4 #9 and #10
19A	General air - mule spinning	"	34.6	1.5	"	Between machine #9, #10 #15 and #16.
24	General air - 4 spooler machines	"	30.0	1.3	"	Exhaust system.

CARD ROOM

25	South aisle - between cards #21 and 22	"	27.5	1.6	"	Hopper and finisher ends - exhaust west of bins.
26	North aisle - between cards #9 and 10	"	28.3	1.1	"	" "
27A	Center aisle - between cards #2 and #21	"	40.0	1.0	"	Camel-back ends of cards - exhaust west of bins.
28A	Center aisle - between cards #10 and #29	"	34.6	1.2	"	" " "
29A	Between cards - #16 and #35	"	32.2	1.3	"	East of bins - exhaust.
30A	General air - wick, rope, and twisted card room	"	32.1	1.3	"	

WEAVE ROOM

22A	General air - west end of weave room	4/22/36	39.0	1.2	"	
33	At inspection table - woven cloth	"	28.8	1.4	"	Two men - exhaust
34	At Broadloom #4 - west end of room	"	27.4	2.3	"	Exhaust on both warp and slay
35	At loom #17 - brake bands dry weaving	"	39.2	6.6	"	North east corner of weave room.
36	General air - east end of weave room	"	36.4	2.7	"	
37	At broadloom #10 - north west side of room	"	35.9	1.2	"	Exhaust only under warp, not on slay.
38	Between looms #15 and #16, broadlooms - #15 wet warp	"	32.3	1.6	"	#15 - exhaust on both warp and slay #16 - exhaust on warp north side of room.
39	At two tape looms #4 and #5, south side of room	"	34.7	1.3	"	Looms face each other - dry weaving.

PACKING DEPARTMENT

20A	General air - molded packing department	"	48.7	0.82	"	
23A	General air - rubber compounding room	"	41.7	1.8	Clay, talc lead, sulphur	
31	At Pratt & Whitney grinder	"	45.5	1.1	Asbestos	Brake lining - exhaust.
32	At drill press	"	47.1	1.1	"	" " "

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LEAD ANALYSES

Sample No.	Station	Date of Sampling	Cu. Ft. Air Sampled	Milligrams of Lead per Cubic Foot of Air Sampled	Milligrams of Lead per Cu. Meter Air Sampled	Lead Intake in 10-hr. day on basis of workman breathing 10 cubic meters air	Remarks
21A	Between two rubber compounding mills	4/22/36	36.0	0.000389	0.0137	0.137	Exhaust
23A	General air - rubber compounding room	"	41.7	000	000	000	
31	At Pratt & Whitney grinder	"	45.5	000	000	000	
32	At drill press	"	47.1	000	000	000	

CONCLUSIONS AND RECOMMENDATIONS

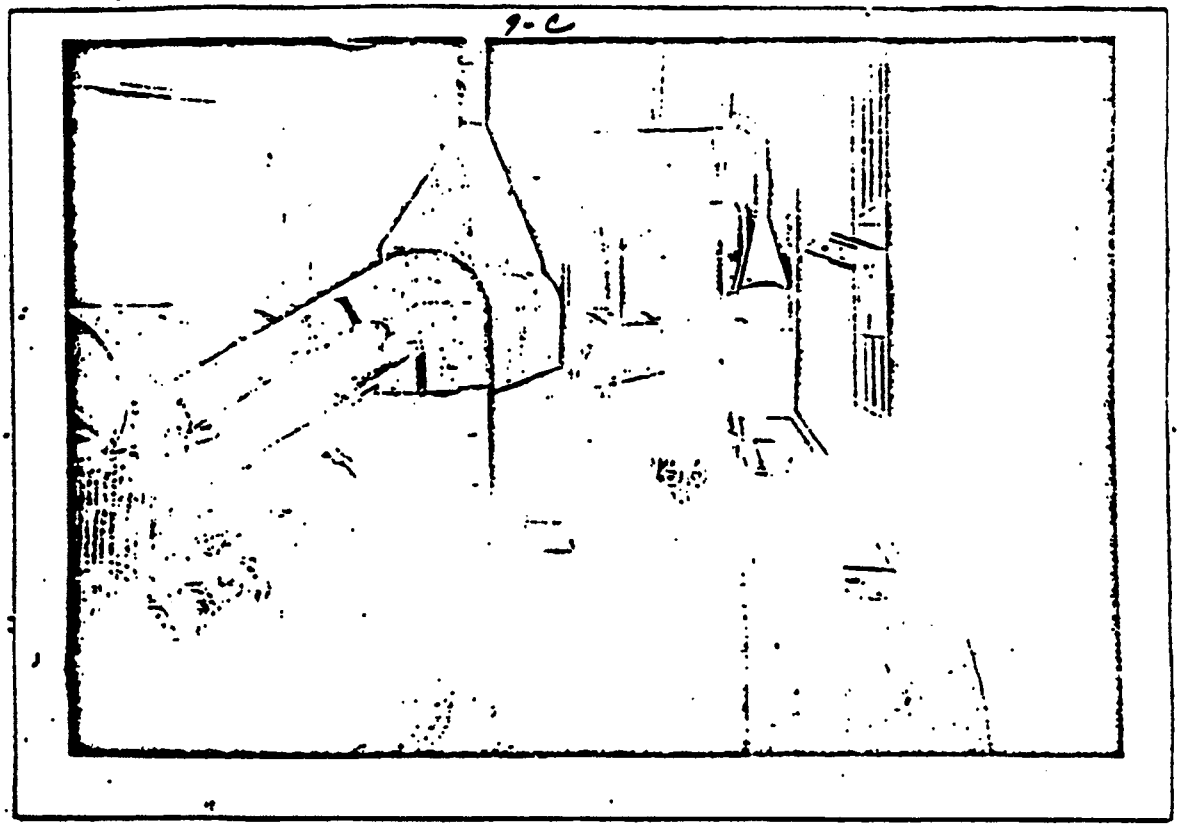
At the time of the 1936 survey the exhaust systems in the Card Room were completed, including exhaust on the storage bins. These exhaust systems were not completely finished in July, 1934.

The Spinning Department showed a slight increase over the 1934 survey. The rate of production at the time of the 1936 survey was much higher than at the time of the previous survey with more twisters in operation.

In other departments the variation is no greater than that encountered in the outside atmosphere.

It is evident from the results of this 1936 survey that the general air pollution of the Preparation Room has been decreased, but it is questionable if the exposure of the individual workmen at the floor mixing operations has been decreased.

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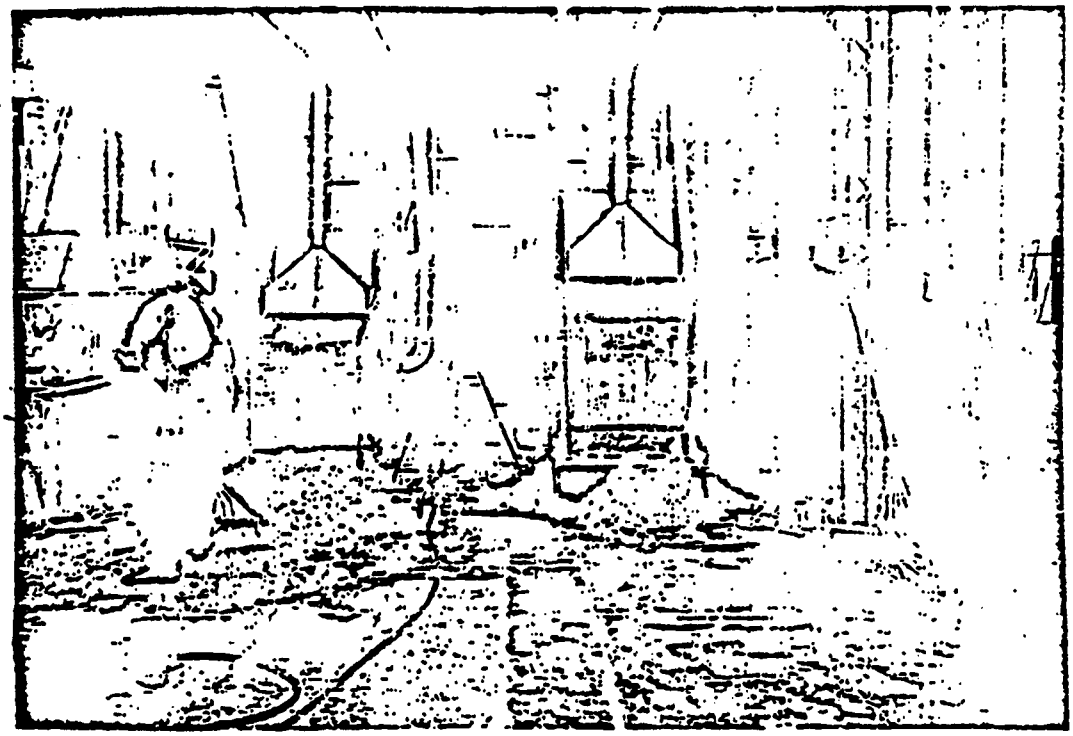
Preparation Department

View showing exhaust arrangement on discharge ends of picker machines

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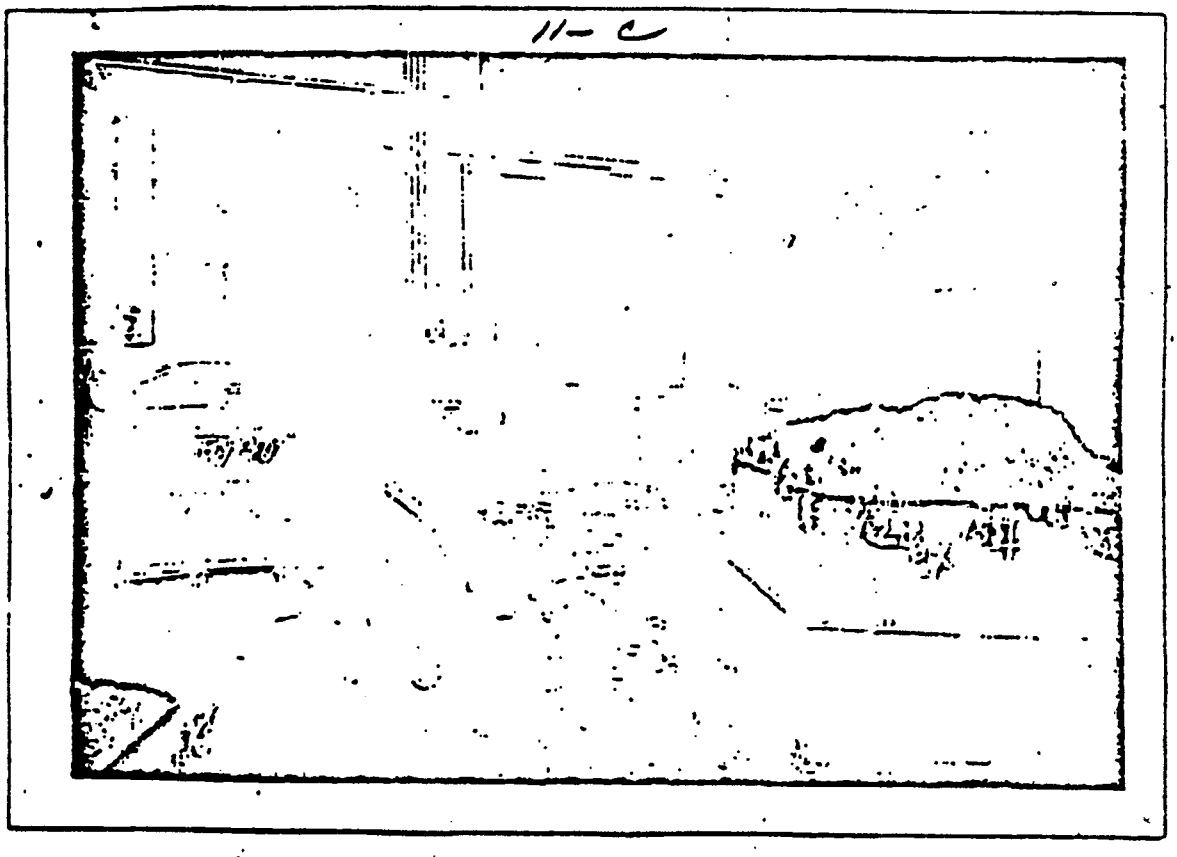
Preparation Department

View showing exhaust hoods on fibre opener machines

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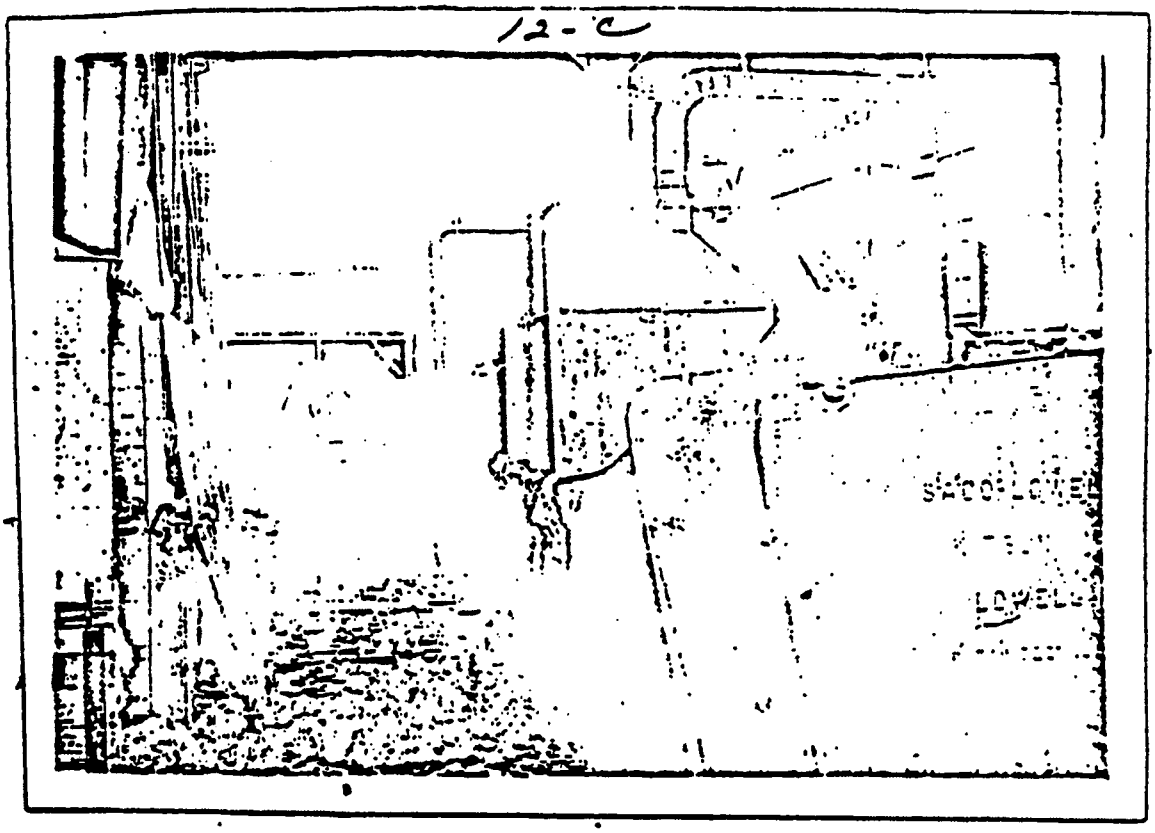
Preparation Department

View showing exhaust hoods over mixing bins

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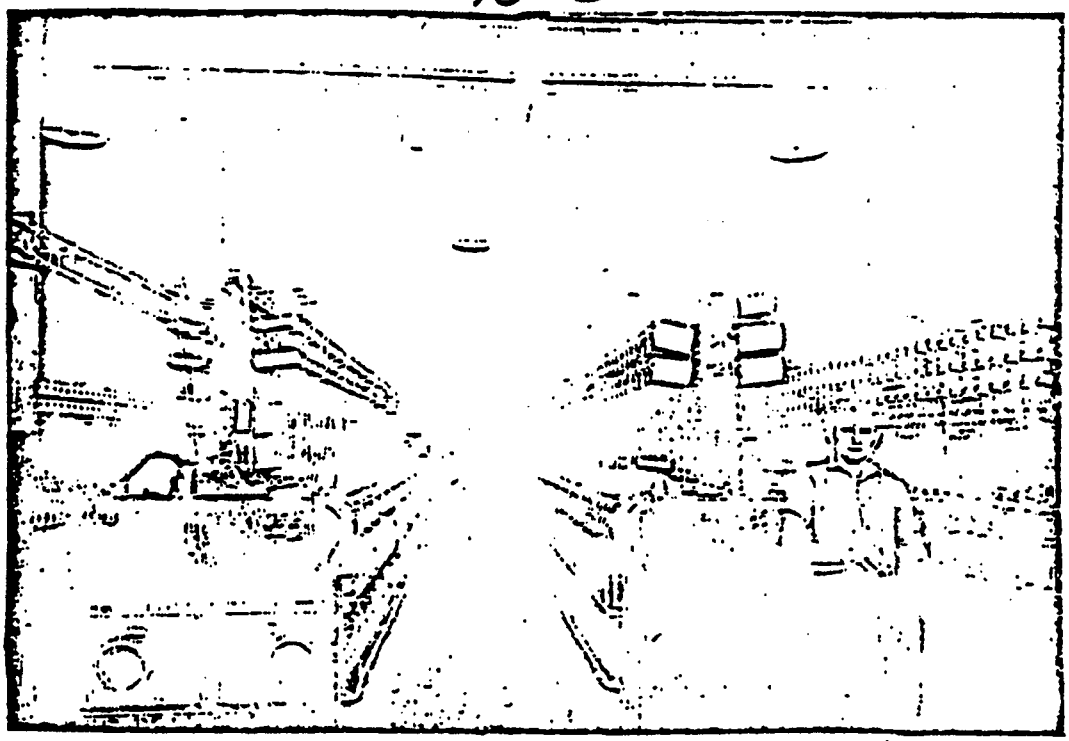
Preparation Department

View showing exhaust hood on hopper of picker machine

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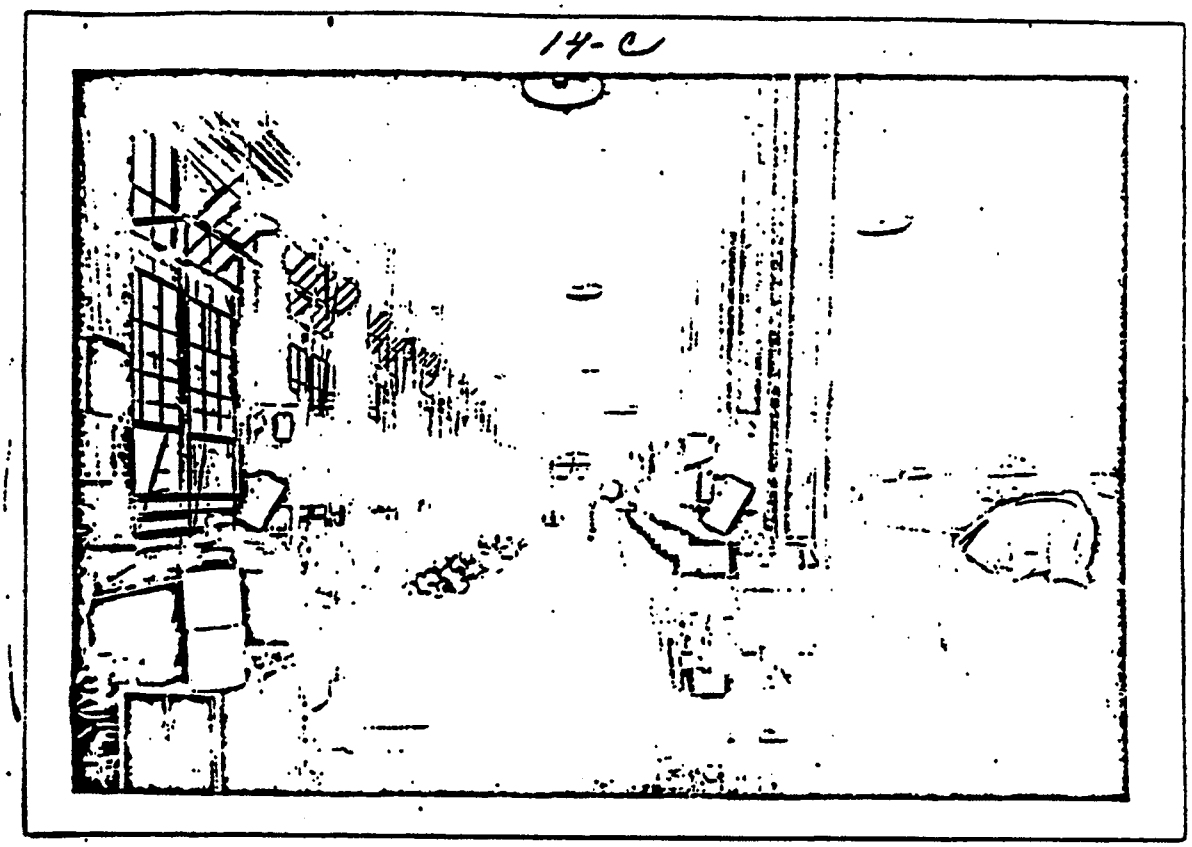
Spinning Department

Sample 15A

General air sample taken in center of twisting machines

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Spinning Department

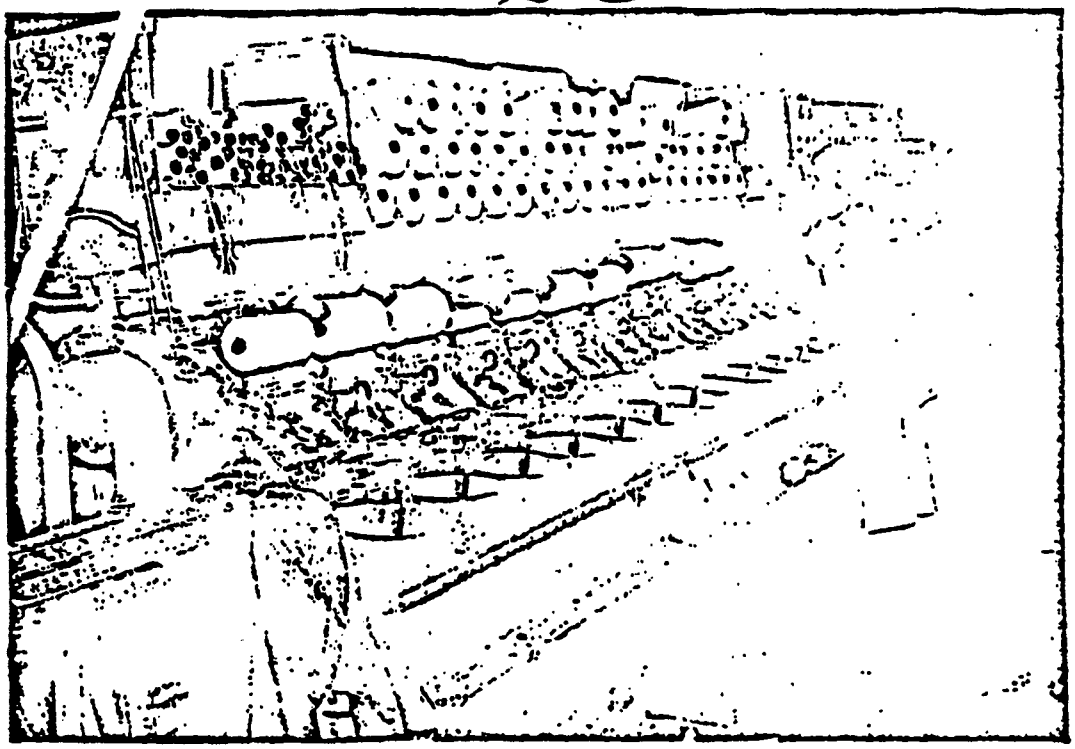
Sample #164

General air sample taken at spoolers on north side of room

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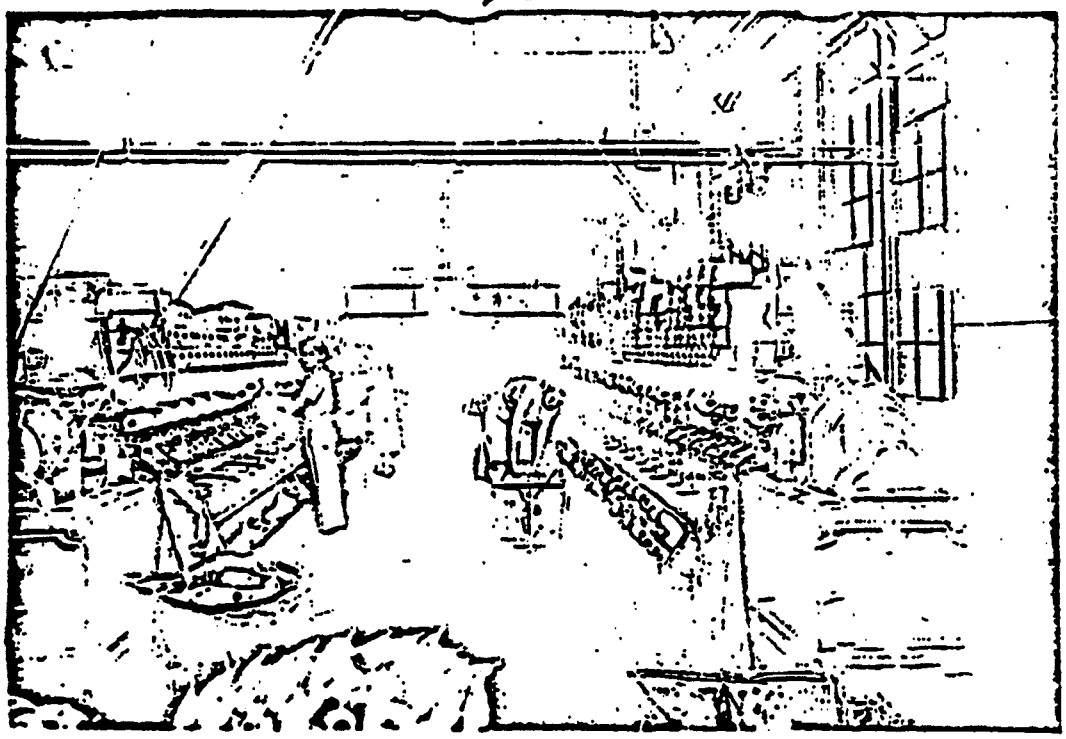
Spinning Department

View of spooler machine with exhaust equipment

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Spinning Department

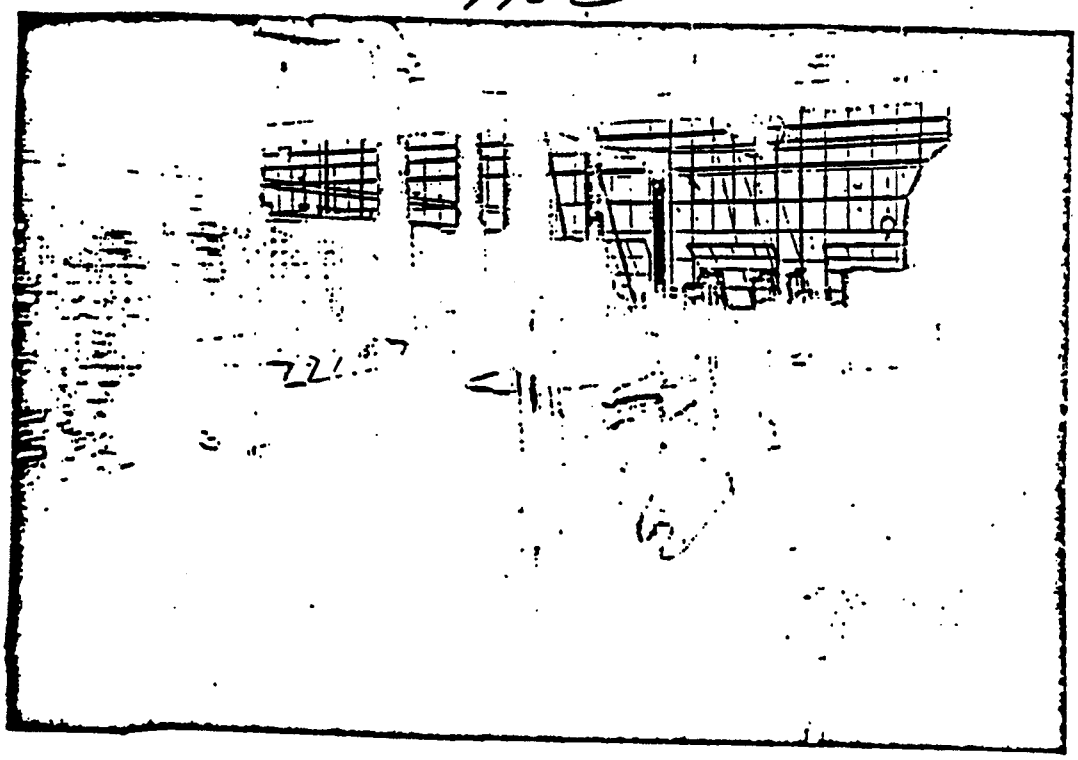
Sample #24

General air sample taken between four spooler machines with exhaust equipment

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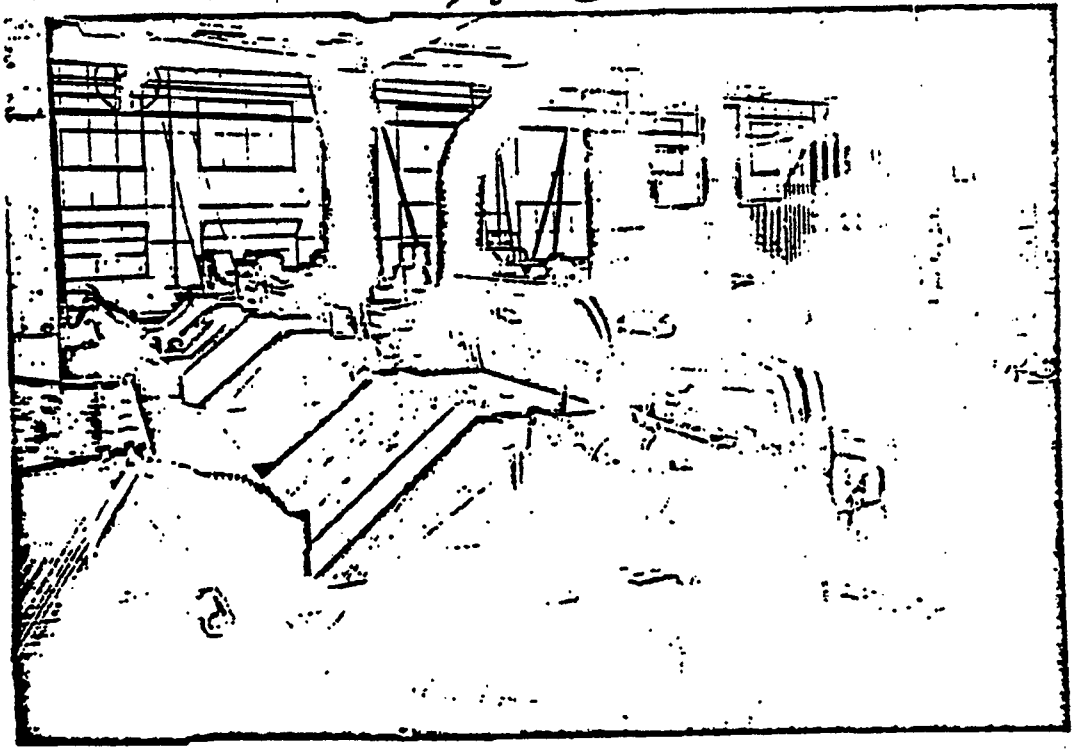
Yarn Room

View of broadloom showing exhaust equipment on slay

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So. Charleston, S.C.

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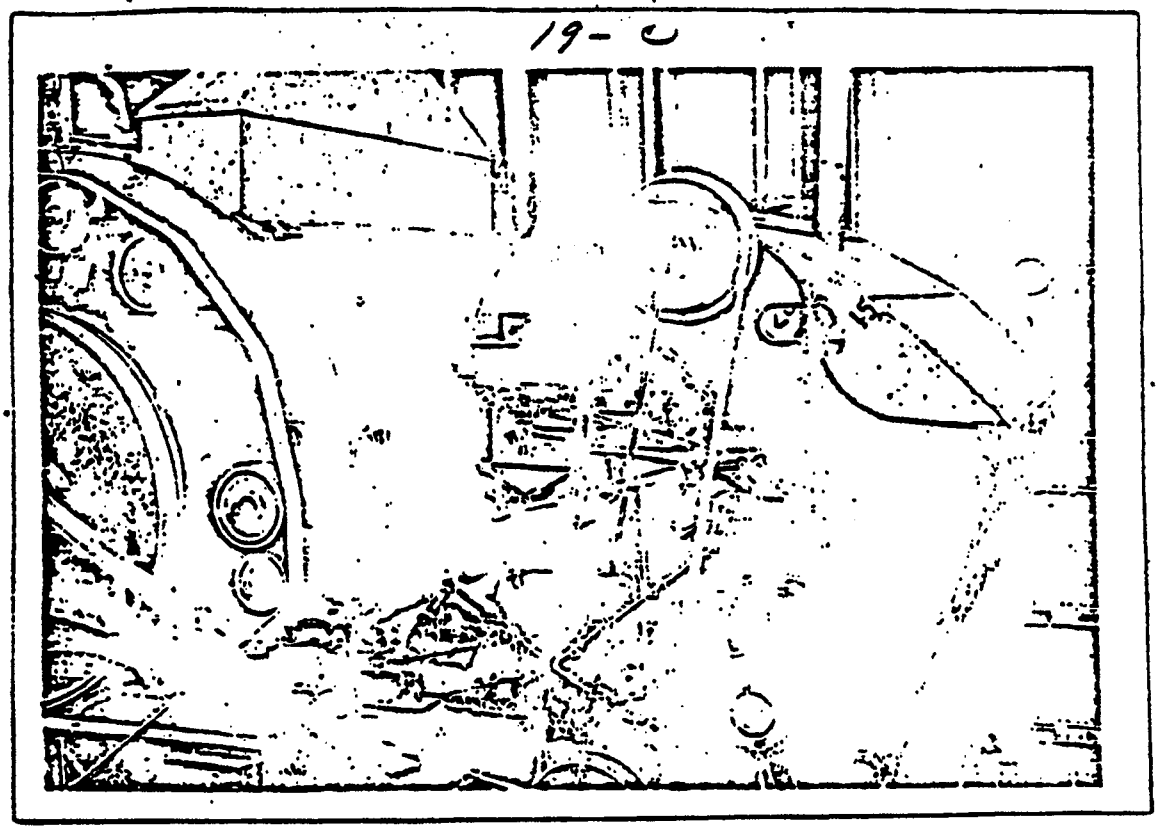
Loom Room

View of broadloom showing exhaust equipment under warp and on slay

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Card Room

Close-up view of card showing part of exhaust enclosure

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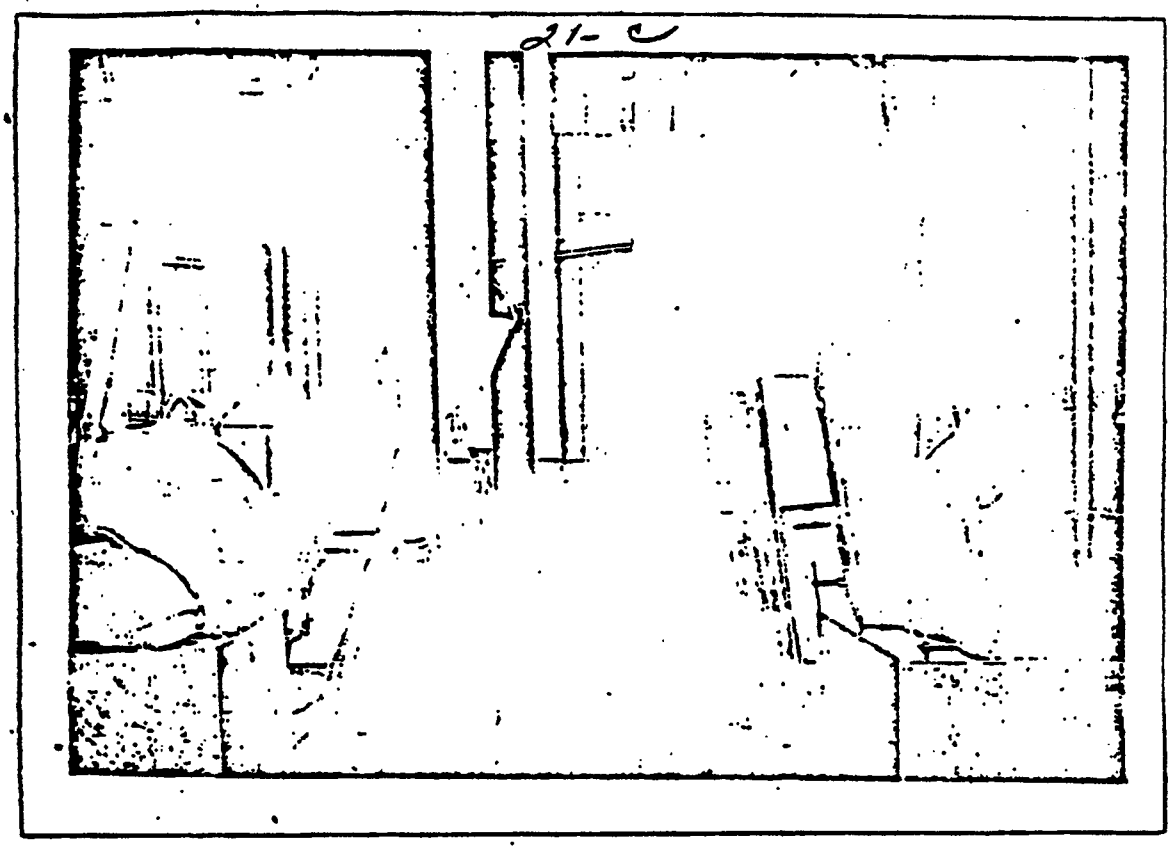
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Card Room

Close-up view of card showing part of exhaust enclosure

General Asbestos & Rubber Division
No. Charleston, S.C.

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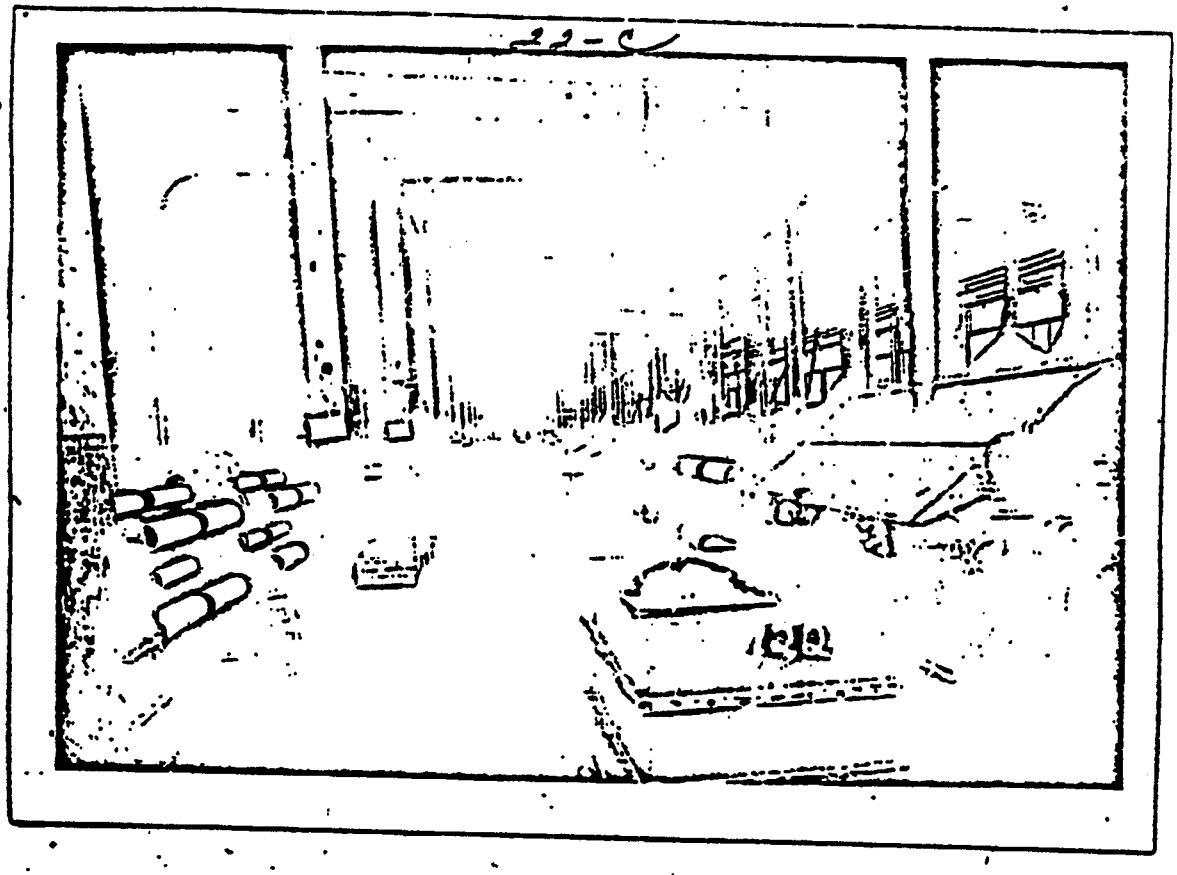


Card Room

General view - center aisle - card room - camel back ends of cards

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Card Room

General view - south aisle - card room - hopper and finisher ends of cards

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