SURVEYS

OF

GENERAL ASBESTOS AND RUBBER DIVISION
Charleston, S.C.

OF

RAYBESTOS-MANHATTAN, INC.

1934 & 1936
July April

(TM) P. 10661 pl 5-12-77
R-M 260 D

THE GENERAL ASBESTOS AND RUBBER DIVISION

of

RAYBESTOS-MANHATTAN, INC.

North Charleston, S.C. 1934

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The dust survey included in this report is supplementary to the survey made in January, 1930 and was conducted to determine the extent of dust removal accomplished by the installation of new exhaust equipment and redesign of old exhaust equipment.

The number of buildings, the processes and arrangement of machinery are the same as at the time of the previous survey.

The exhaust systems of the cards have been redesigned to cover the machines more completely. In an experimental case one card was covered as completely as possible. This machine was enclosed in muslin and an air sample was taken inside the enclosure and two general air samples were taken in the card room proper at the same time. The first set of samples was taken before the conveyors from the preparation room began to bring the fibre to the bins in the card room. A second set of air samples was taken after the conveyors had been carrying fibre to the bins for more than an hour.

An exhaust system and revolving brush are in use for the inspection of woven cloth in the weave room. This work was formerly done by hand brushing. The loose fibre is brushed from the cloth in order that any flaws could be noticed and removed.

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PREPARATION ROOM

Sample No.	Station	Date	Cu. Ft. Air Sampled	Millions of Particles per cu. ft. air sampled	Millions of Particles less than 10 microns per cu.ft. air sampled		Type of Dust	Remarks
1	At chaser #1 near open doors	7/9/34	32.6	1.9	1.8		Asbestos	One man working at two chasers African C & G
2	At chaser #4	"	26.7	8.2	7.9	41	"	Man uses hands to put asbestos from bag into chaser and from chaser into truck
3	At end of fibre shaker screen	"	48.9	2.6	2.5	15	"	Separating long fibre from shor fibre
4	At feeding end of Garnet machine	"	34.2	1.2	1.1	7	"	Waste yarn put onto conveyor by one man
5	At fly shaker	7/10/34	29.1	1.5	1.4	8	"	One man
6	At vertical fibre opener	"	27.2	0.87	0.83	5	"	Hopper end, one man
7	Floor mixing of cotton and asbestos	"	39.5	7.8	7.6	1/5	Asbestos and cotton	Two men mixing; one forking mixture into picker #2
8	At shaker screen, loading hand trucks with asbestos from opener	"	31.3	8.1	7.7	46	Asbestos	One man; asbestos drops off end of shaker screen into truck.
9	At feeder end of cotton fibre opener	"	30.1	1.3	1.3	2	Cotton	One man
10	At conveyor end of picker #2	"	25.9	1.9	1.8	10	Cotton and asbestos	Material drops from one belt to another, oil mixed in

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The average dust count of the Preparation Room is 3.5 million particles, which is identical with the average found in January, 1930.

Sample No.	Station	Date	Cu. Ft. Air Sampled	Millions of Particles per cu. ft. air sampled	Millions of Particles less than 10 microns per cu. ft. air sampled	Type of Dust	Remarks
27	Card room - center aisle between cards #2 and 21	7/11/34	30.7	5.5	5.2	Asbestos	No humidifers
+ 28	General air - card room center aisle, west of bins	"	48.4	15.9	15.2	"	Between cards #10 and #29; belt broken on fan
+ 29	General air - card room, center aisle, east of bins	"	28.8	13.2	12.6	"	Between cards #35 and #16; belt broken on fan
30	General air - wick, rope and twisted card room	"	31.6	2.7	2.6	"	
37	General air - west of bins - card room; conveyors from preparation room not running	7/12/34	35.7	1.8	1.7	"	Same time as #38 and #39.
X 38	Inside muslin enclosure, one card	"	28.2	1.5	1.4	"	Windows closed; same time as #37 and #39, one man
39	General air - east of bins - card room	"	32.6	2.8	2.7	"	Same time as #37 and #38
40	General air - west of bins, card room; conveyors from preparation room running	"	30.6	4.5	4.3	"	Same time as #41 and #42
X 41	Inside enclosure - conveyors from preparation room running	"	28.2	5.0	4.6	"	One man, same time as #40 and #42
42	General air - east of bins, card room	"	30.4	4.1	3.9	"	Same time as #40 and #41

General air samples - average 3.5 on samples 27, 30, 37, 39, 40 and 42. The average for the survey of January 1930 was 2.6 million particles per cubic foot.

SPINNING DEPARTMENT

Sam. No.	Station	Date	Cu. Ft. Air Sampled	Millions of Particles per cu. ft. air sampled	Millions of Particles less than 10 microns per cu. ft. air sampled		Type of Dust	Remarks
13	Bldg. #5, general air, braiders	7/10/34	29.4	1.1	1.0		Asbestos and graphite	Two men making stock for ring presses; graphite and fish oil
14	General air, ring frame spinning	"	32.3	0.99	0.94	6	Asbestos	Two women - 4 men
15	General air - twisters	"	30.0	2.3	2.2	13	"	Twisting yarn and brass
16	General air - spoolers	"	27.9	0.93	0.89	✓	"	Four women, spooling yarn from ring frames near windows on north side
17	General air - spoolers	"	30.6	8.1	7.7	46	"	Ten women, spooling yarn from mule spinners at partition wall
18	General air - mule spinning	"	30.3	2.5	2.4	14	"	In aisle between #3 and #4 - #9 and #10 - mules
19	General air - mule spinning	"	30.4	1.3	1.3	7	"	In aisle between #9 and #10 - #15 and #16 - mules
11	General air Bldg. #5 braiders	"	33.5	1.6	1.6	10	"	Two women - two men
12	Bldg. #5 between two ring presses	"	23.4	2.1	2.0		Asbestos and graphite	Two men forming small-sized packing

Average general air samples #14 to 19 inclusive, spinning - 2.68 million particles per cubic foot air, which is higher than average of .6 million found in survey of January 1930. This is accounted for by fact that at time of previous survey more mule spinning and less frame spinning was done, i.e., ring frame spinning and twisting may be greater dust producers than mule spinning. The possibility of dust from the collectors on top of the machine shop and adjacent to this department being blown into the mule spinning should not be overlooked.

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SLAVE #

Sample No.	Station	Date	Cu. Ft. Air Sampled	Millions of Particles per cu. ft. air sampled	Millions of Particles less than 10 microns per cu. ft. air sampled		Type of Dust	Remarks
22	General air - west end of weave room	7/10/34	32.6	6.3	6.1	31	Asbestos	
24	Same as #22	7/11/34	35.7	0.6	0.5	3	"	
25	At inspection table woven cloth	"	27.3	2.6	2.5	15	"	Revolving brush - exhaust hood - two men
26	General air - east end of weave room	"	27.9	5.5	5.3	37	"	
31	Inspection table enclosed in beaver board two men - sample taken inside enclosure	"	20.2	3.2	3.0	18	"	Taken with revolving brush and exhaust running, Manhattan cloth 0815 and 160
32	Taken just outside enclosure	"	19.0	9.5	9.3	55	"	Same time as #31
33	Taken inside enclosure	"	20.2	23.2	21.9	107	"	Revolving brush - no exhaust two men
34	Taken outside enclosure	"	18.8	1.5	1.5	9	"	Same time as #33
35	Taken inside enclosure	"	20.2	1.5	1.4	7	"	Hand brushing - three men
36	Taken outside enclosure	"	19.0	2.1	2.0	11	"	Same time as #35
43	General air - west end of weave room	7/13/34	18.8	9.3	9.2		"	Before work started in morning, shut down from midnight
44	General air - east end of weave room	"	18.6	6.0	5.9		"	" " "

The dust counts of samples #43 and 44 were taken before work started in the morning. These counts are considerably higher than samples taken during operating periods. This may be due to closing of windows, shutting off of humidifiers and floor sweeping.

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WEAVE ROOM (Continued)

Sample No.	Station	Date	Cu. Ft. Air Sampled	Millions of Particles per cu. ft. air sampled	Millions of Particles less than 10 microns per cu. ft. air sampled	Type of Dust	Remarks
45	General air - east end of weave room	7/13/34	27.0	2.6	2.6 11	Asbestos	Same time as #46 and 47; weave room started at 7 o'clock
46	General air - west end of weave room	"	27.9	2.7	2.7 17	"	Same time as #45 and 47
47	At inspection table for woven cloth, dry woven cloth 10P225	"	30.3	0.8	0.8 4	"	Revolving brush and exhaust; two men, same time as #45 and 46
48	Same location as #45	"	27.0	3.0	2.9 17	"	Same time as #49 and 50
49	Same location as #46	"	27.9	5.1	5.0 31	"	Same time as #48 and 50
50	Inspection table - hand brushing	"	30.3	0.8	0.8 5	"	Three men - at same time as #48 and 49
51	Same location as #45	"	18.9	4.9	4.8 28	"	At same time as #52 and 53
52	Same location as #46	"	20.5	0.9	0.9 5	"	Same time as #51 and 53
53	Table inspection woven cloth, revolving brush, no exhaust	"	21.2	1.8	1.7 10	"	Same time as #51 and 52; two men

General air samples, #22, 24 and 26, 45, 46, 48, 49, 51 and 52, averaged

3.5 million particles per cubic foor air, as compared with .6 found in survey of January 1930.

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PACKING DEPARTMENT

Sample No.	Station	Date	Cu. Ft. Air Sampled	Millions of Particles per cu. ft. air sampled	Millions of Particles less than 10 microns per cu. ft. air sampled	Type of Dust	Remarks
20	General air - molded packing department	7/10/34	62.3	0.45	0.43	Asbestos	
23	General air - rubber compounding room	"	28.2	1.4	1.3	Clay lead talc sulphur	

LEAD ANALYSES

Sample No.	Station	Date	Cu. Ft. Air Sampled	Milligrams of lead per cu. ft. air sampled	Type of dust	Remarks
21	Between two rubber compounding mills	7/10/34	33.8	Negative for lead	Clay lead talc sulphur	Exhaust hoods with cloth curtains
23	General air - rubber compounding room	"	28.2	Negative for lead	"	

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CLOTH INSPECTION (WEAVE ROOM)

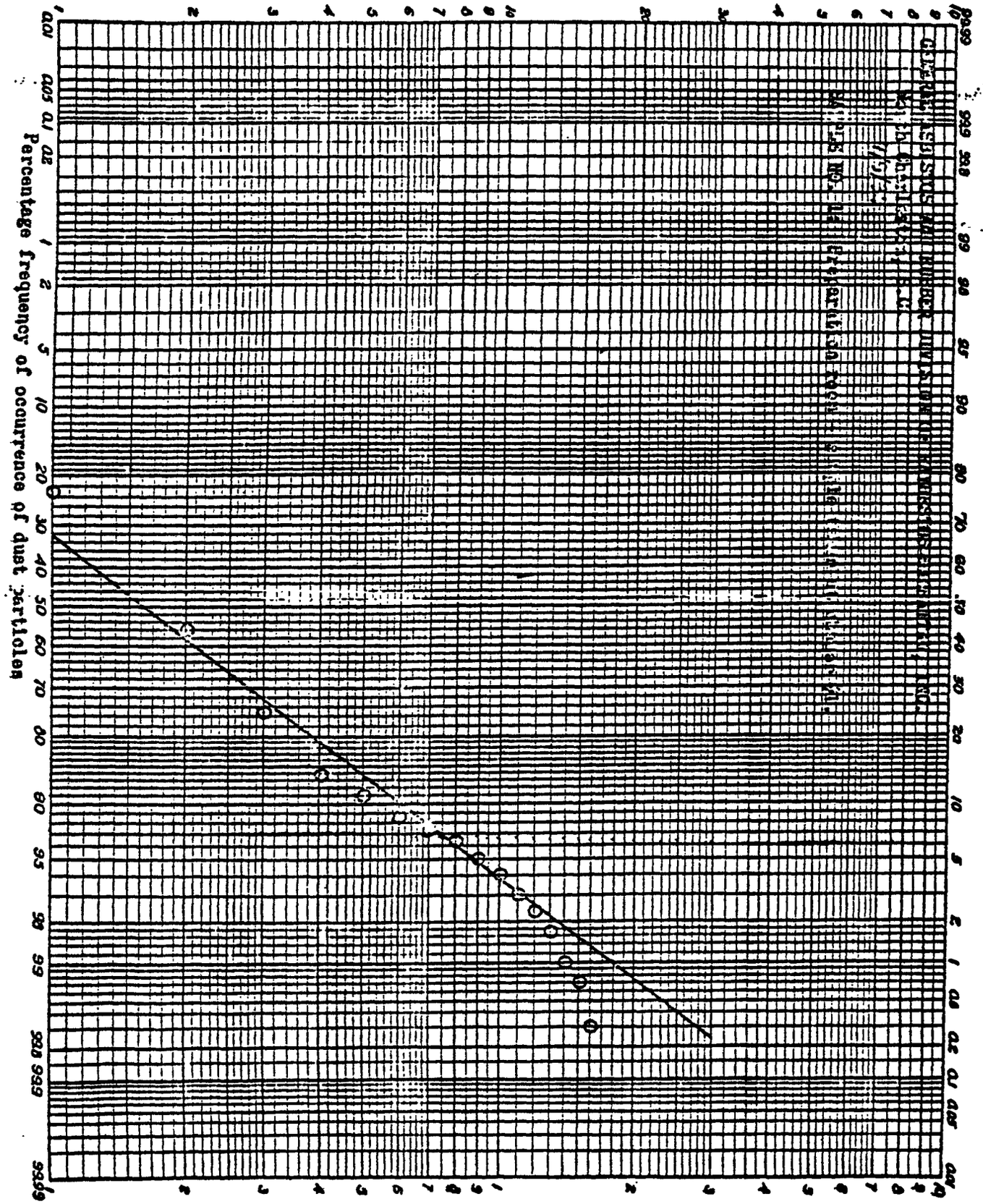
Table showing the results of special tests run at the cloth inspection table

	Millions of Dust Particles per cu. ft. air sampled	
	Inside enclosure (doors closed)	Normal conditions enclosure removed
Average general air - weave room during tests	3.5	3.8
Cloth inspection table - exhaust and revolving brush	3.2	0.8
Cloth inspection table - no exhaust but with revolving brush	23.2	1.8
Cloth inspection table - hand brushing, no exhaust	1.5	0.8

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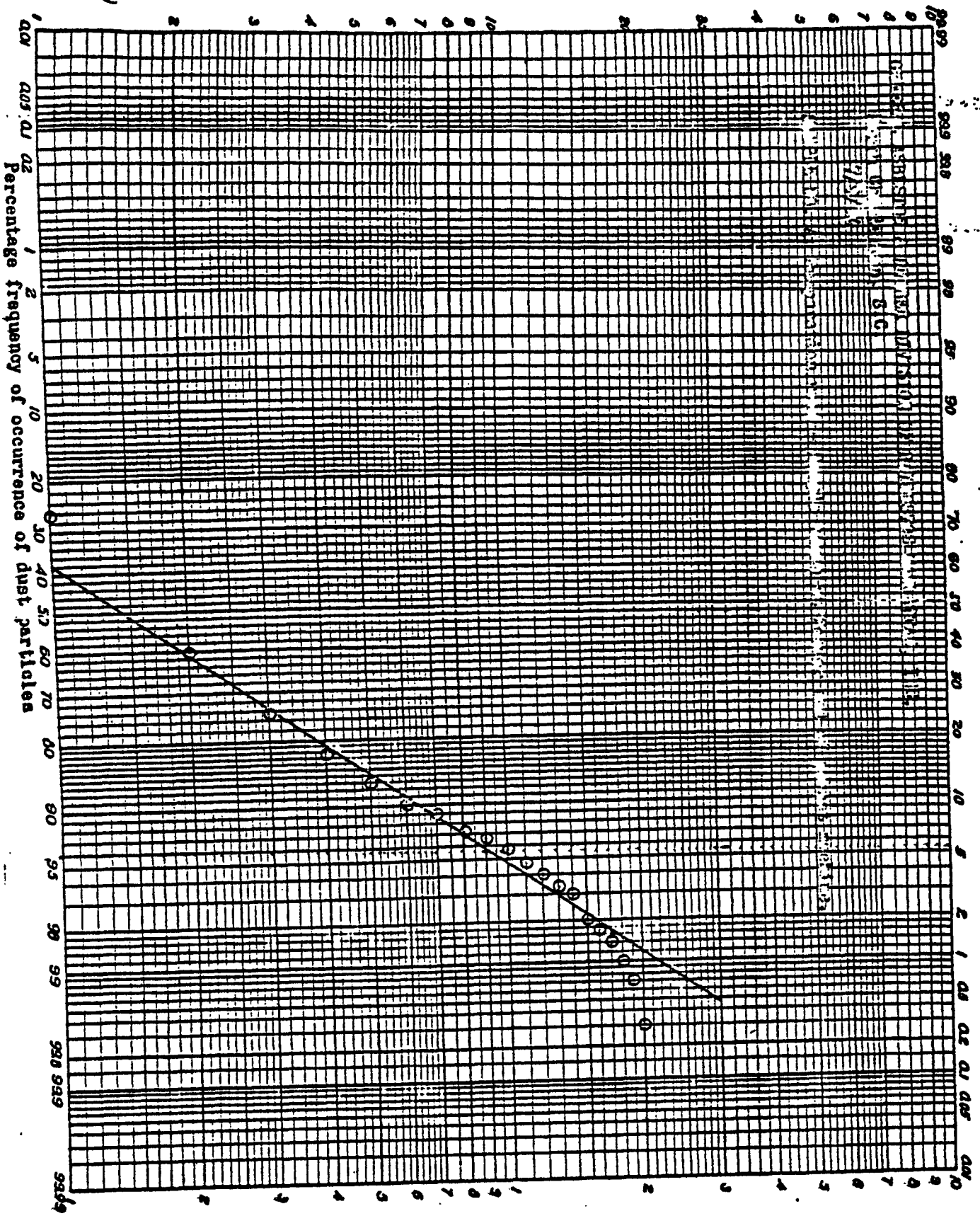
Dust particle sizes in microns



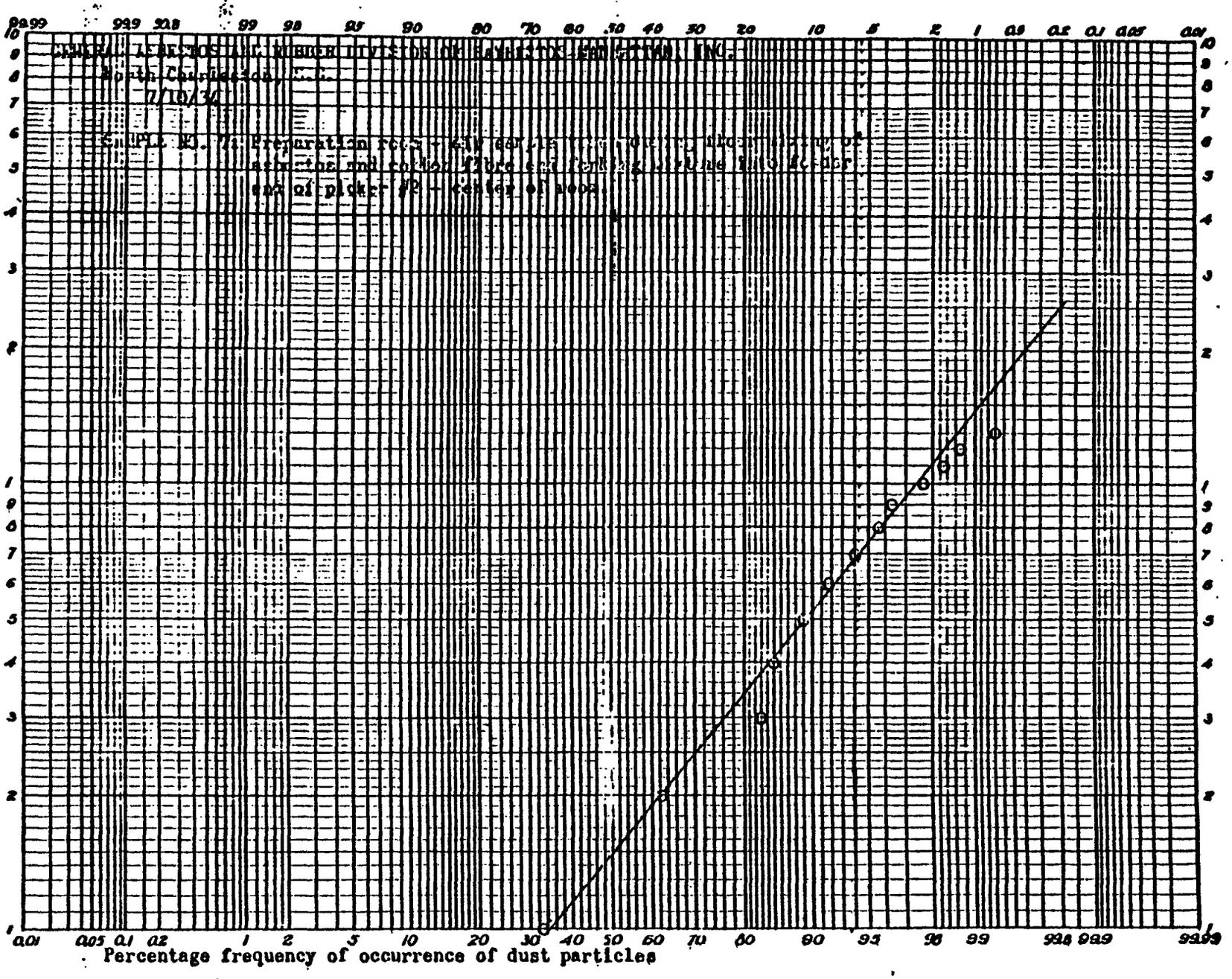
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R-M3601
1976 Pilot (TIM)

Dust particle sizes in microns



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GENERAL ASBESTOS & RUBBER DIVISION OF RAYBESTOS-MANHATTAN, INC.
North Charleston, ...
7/10/34

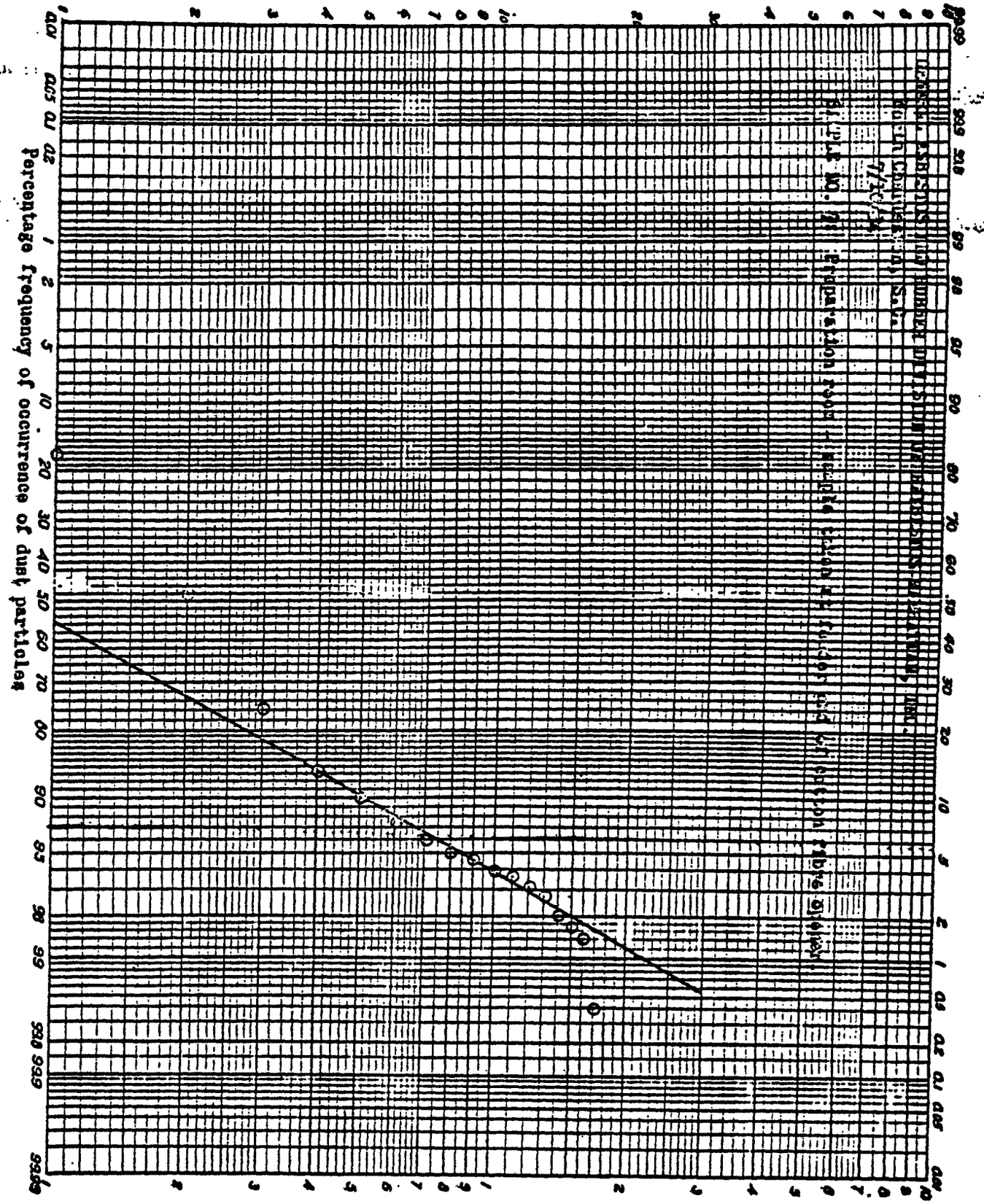
SAMPLE NO. 7: Preparation room - 4th floor in front of the centering of asbestos and cotton fibre over feeding cylinder to picker end of picker #2 - center of room.

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(TLV) p. 13 of 61

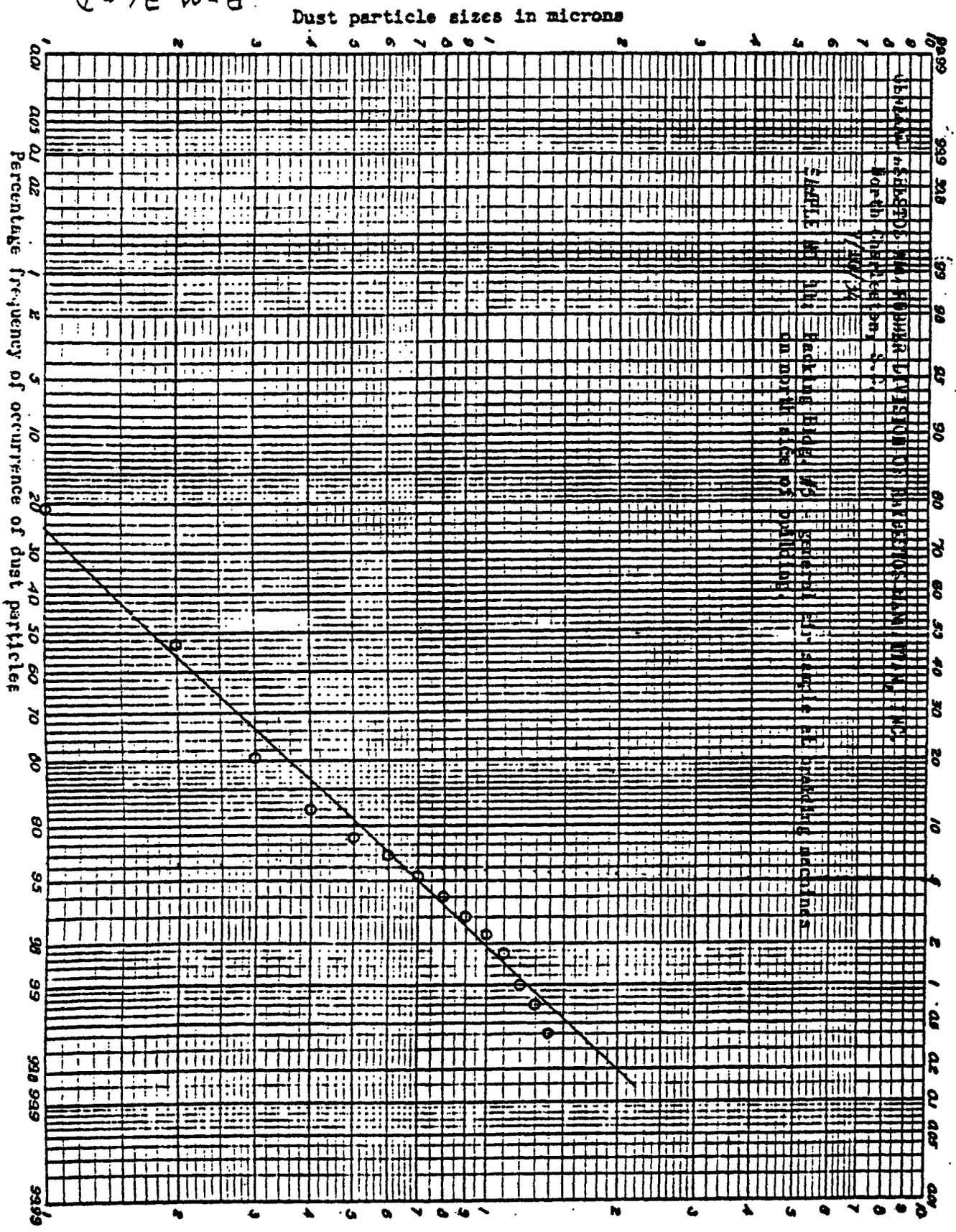
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Dust particle sizes in microns



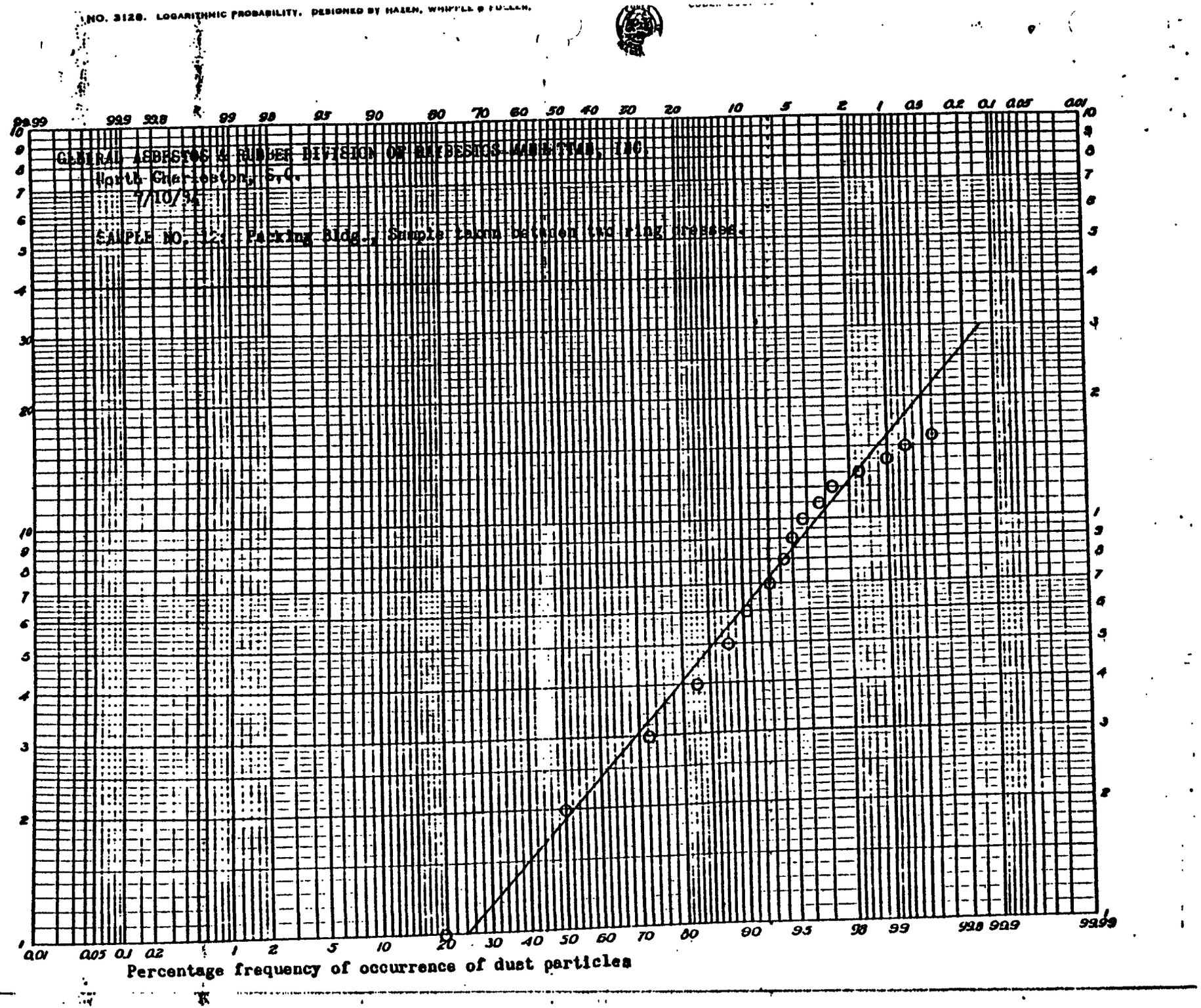
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(TLH) p.1 of 2



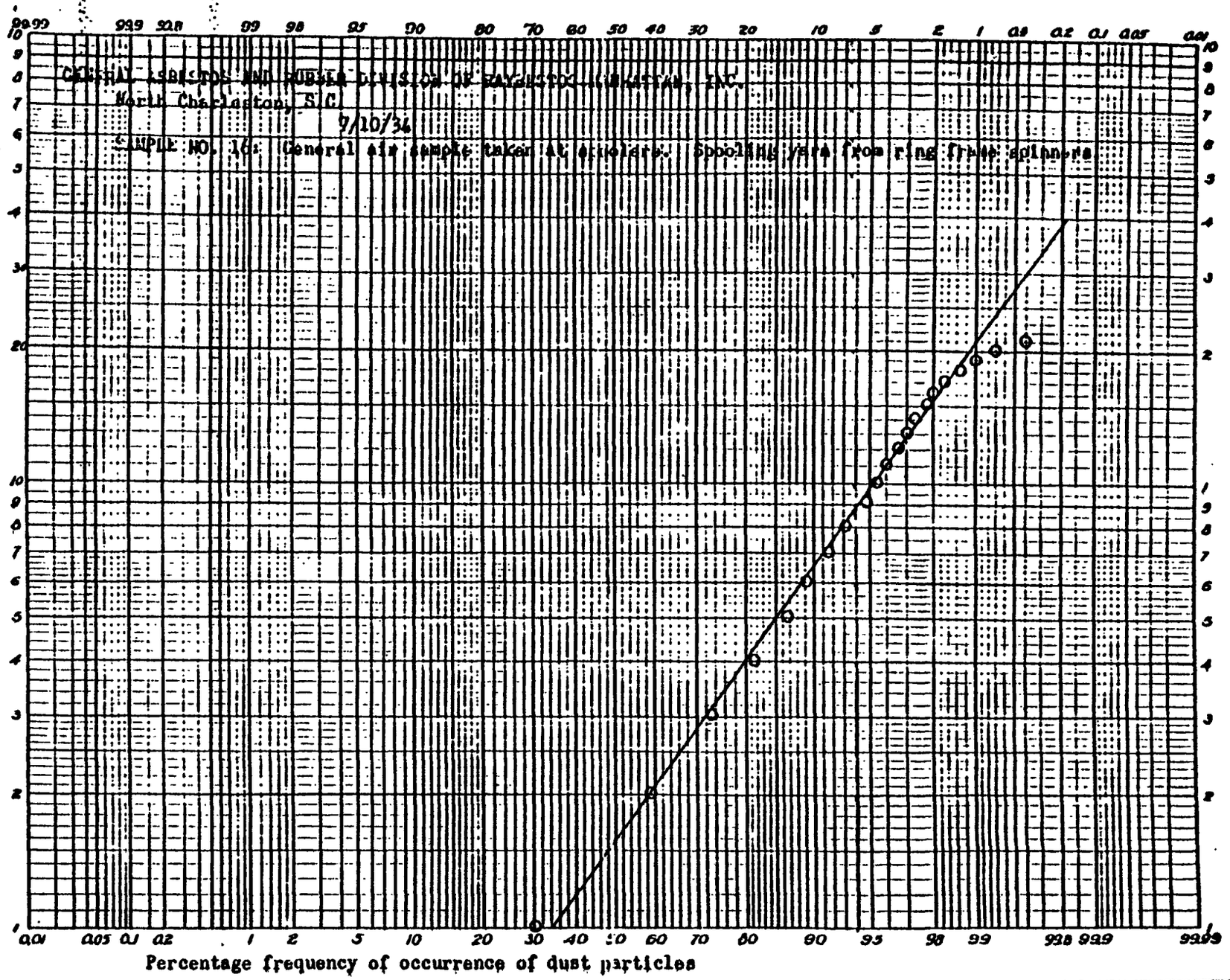
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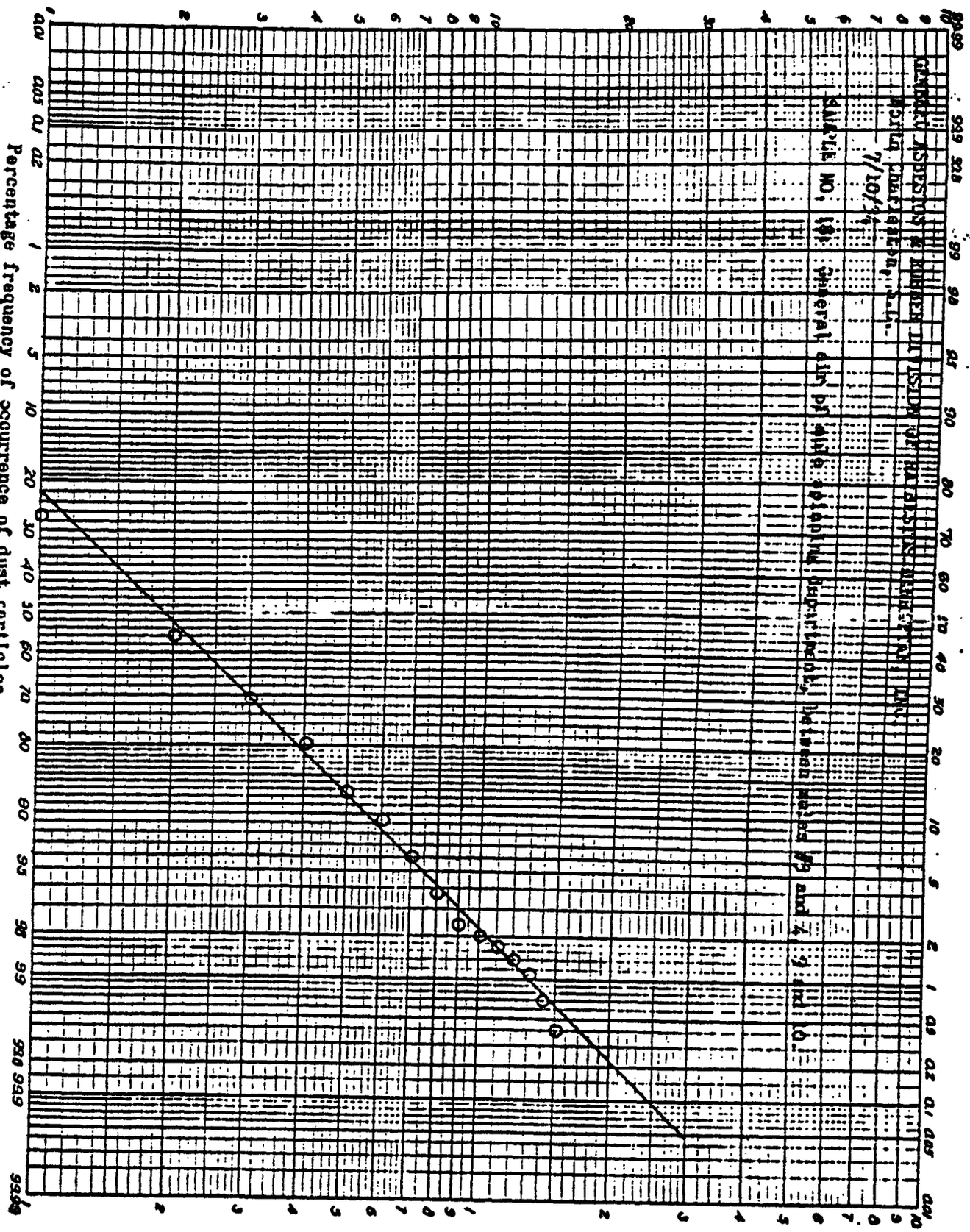
1920's (?) R-M 3600 (?)

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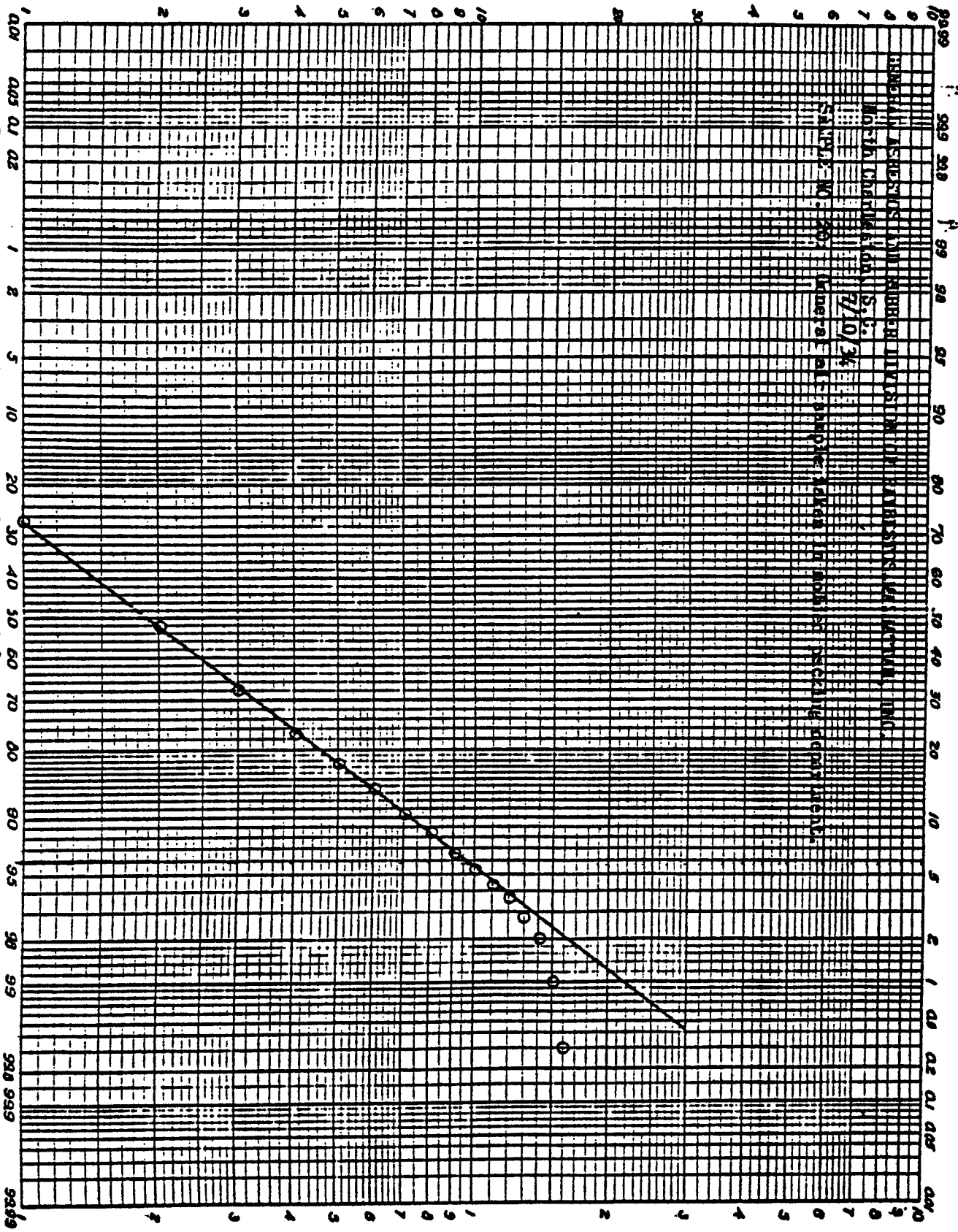
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R-M 2602
(TIH) P 17 1961



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Dust particle sizes in microns



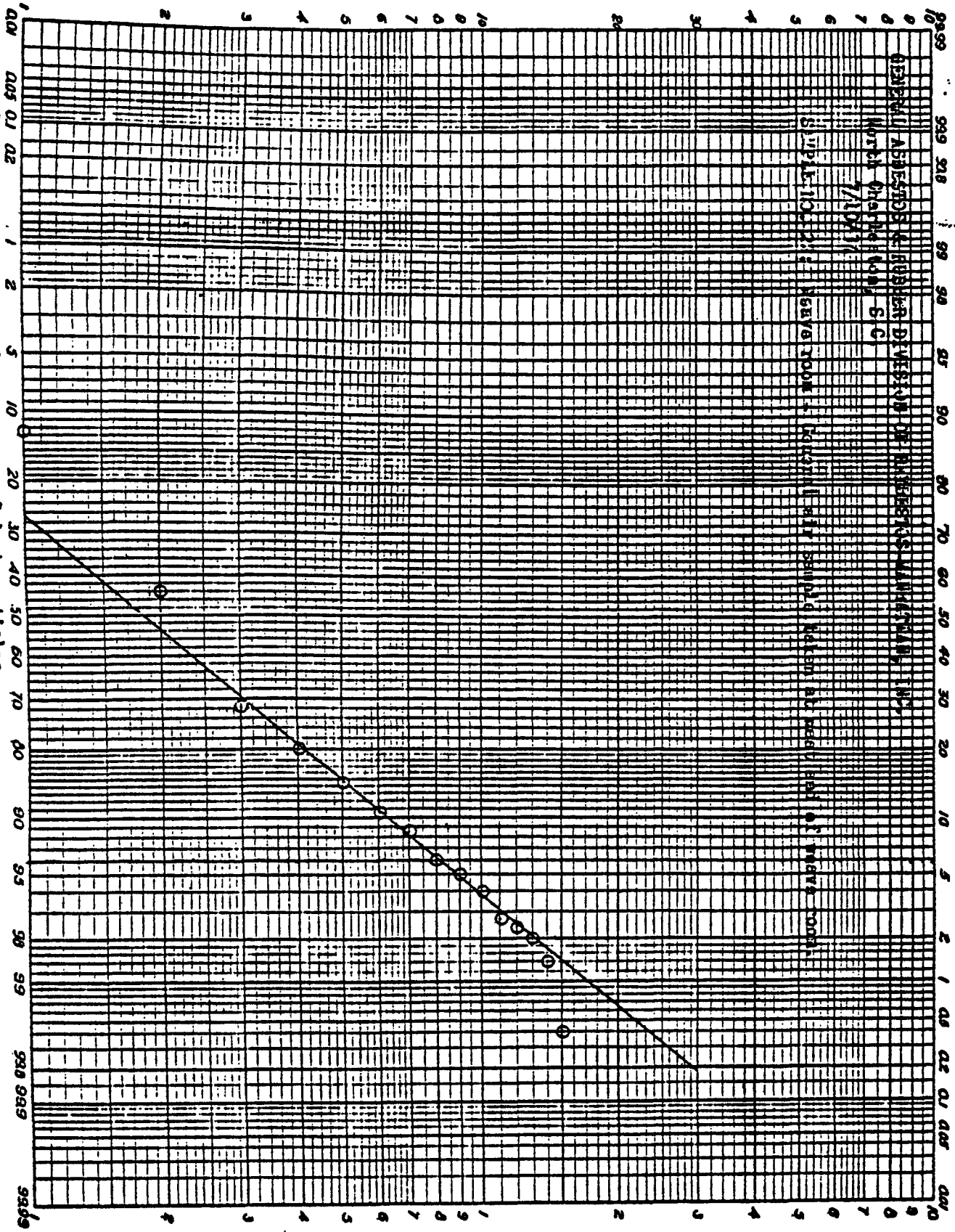
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Dust particle sizes in microns

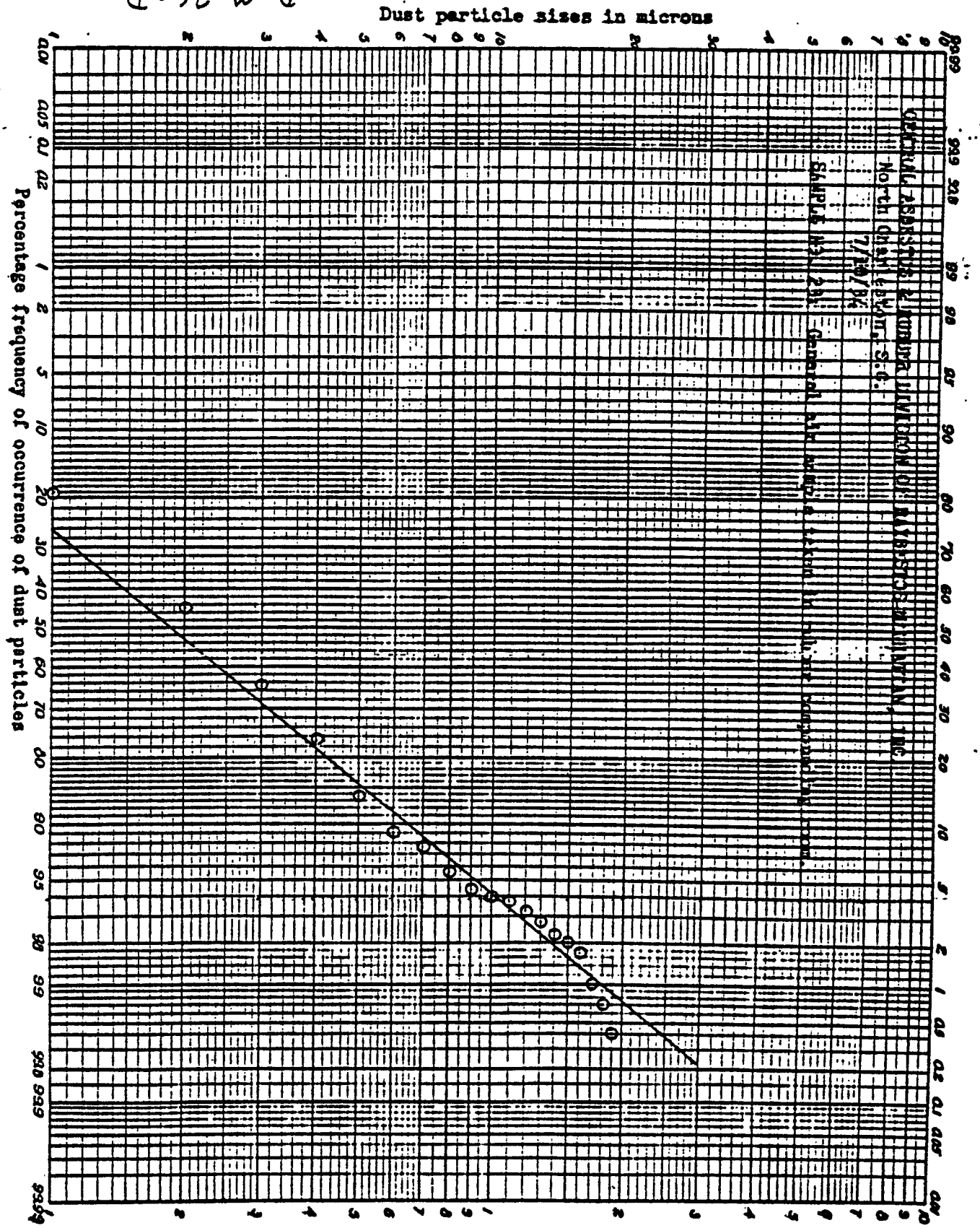
Percentage frequency of occurrence of dust particles



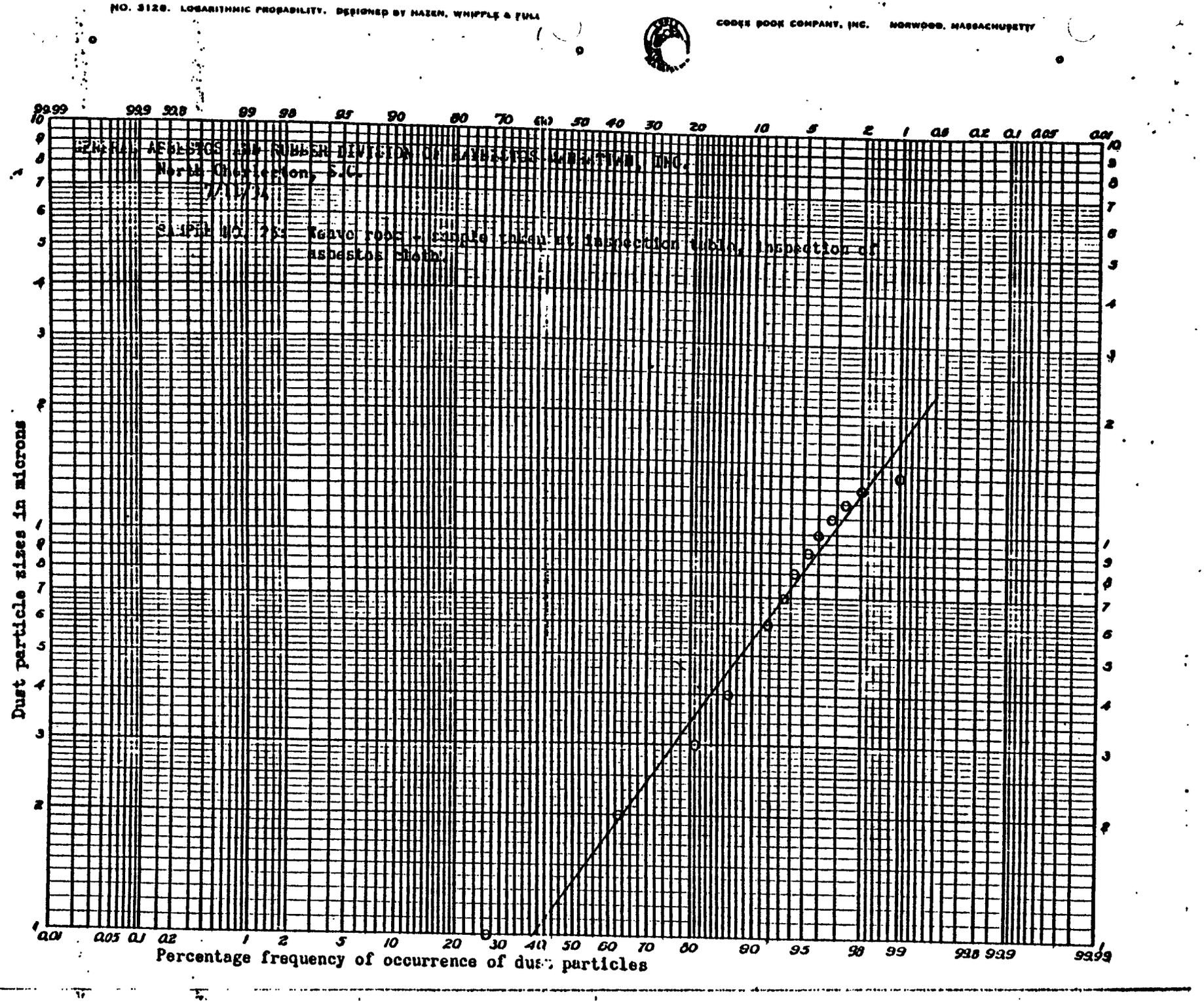
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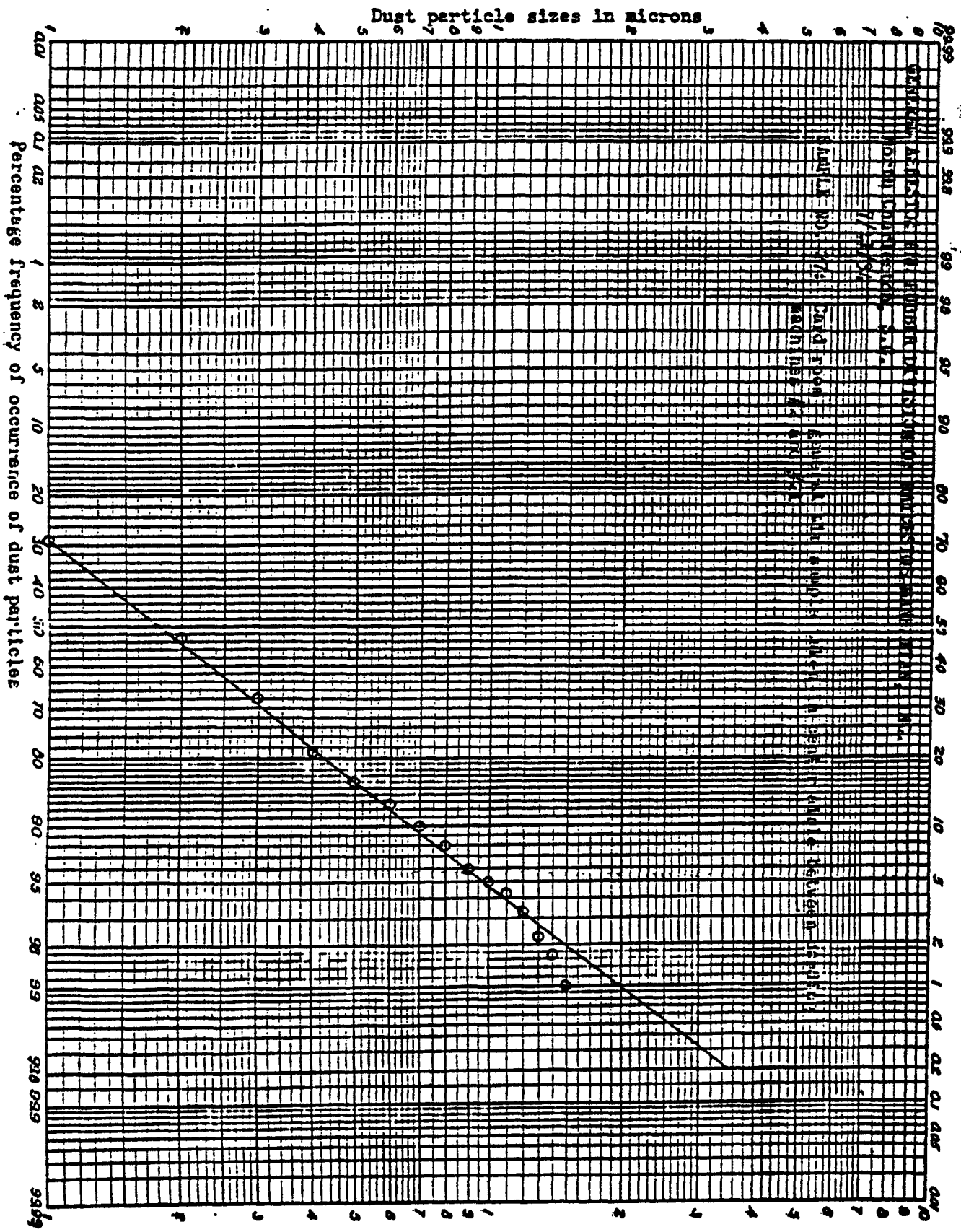
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(14) p. 2171

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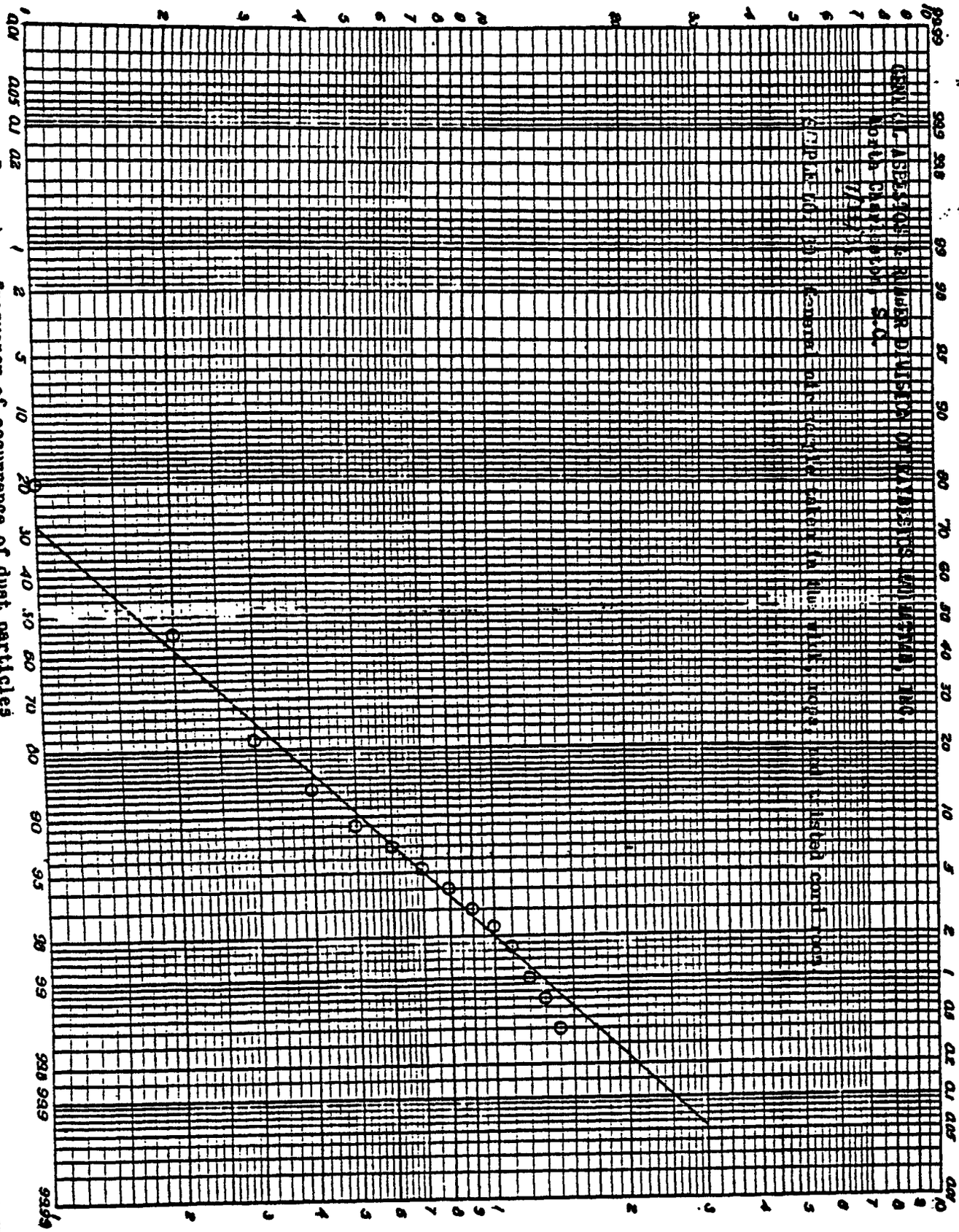
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R-M.360.2
(T14) p. 23 of 61

Dust particle sizes in microns

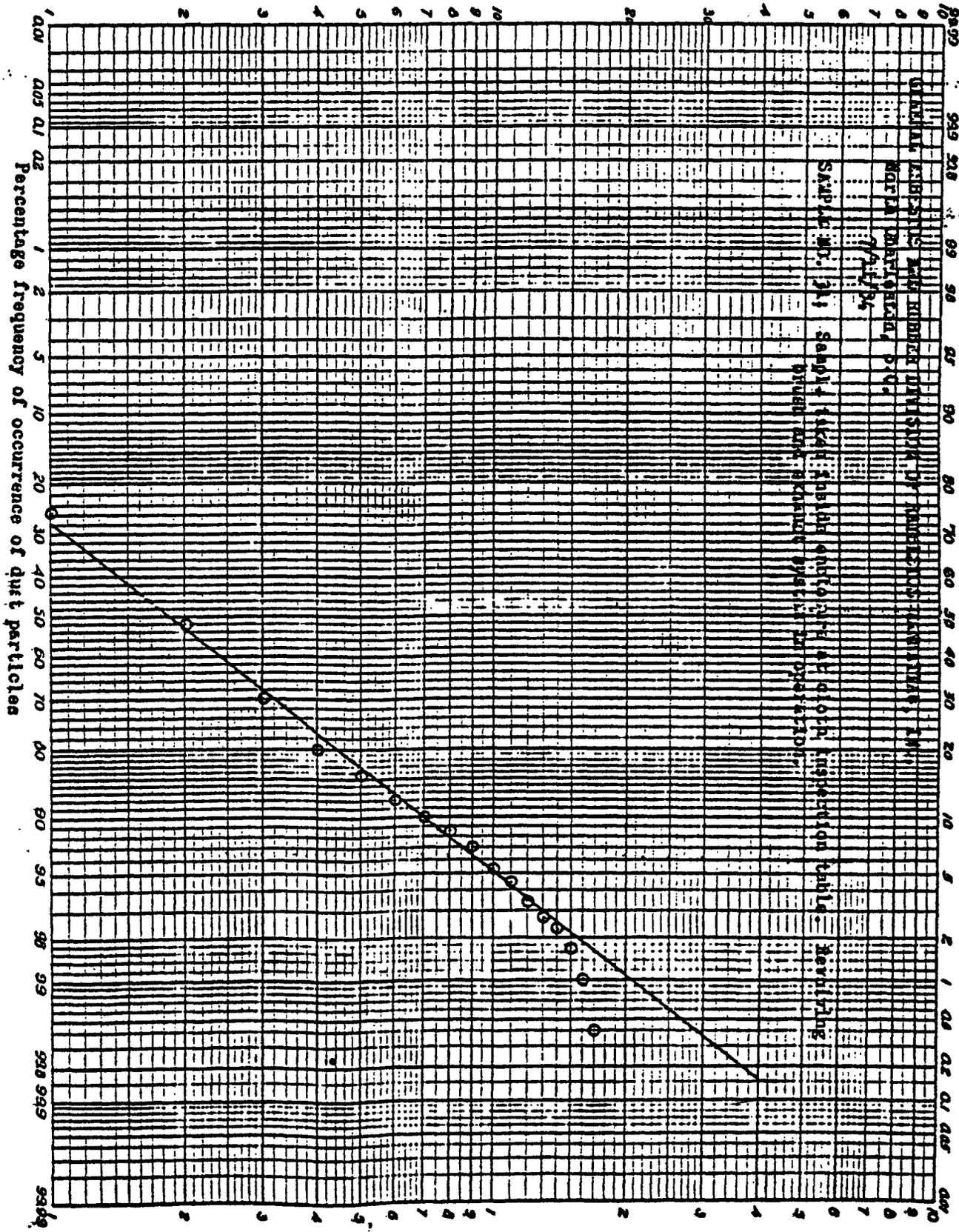


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R-M3607

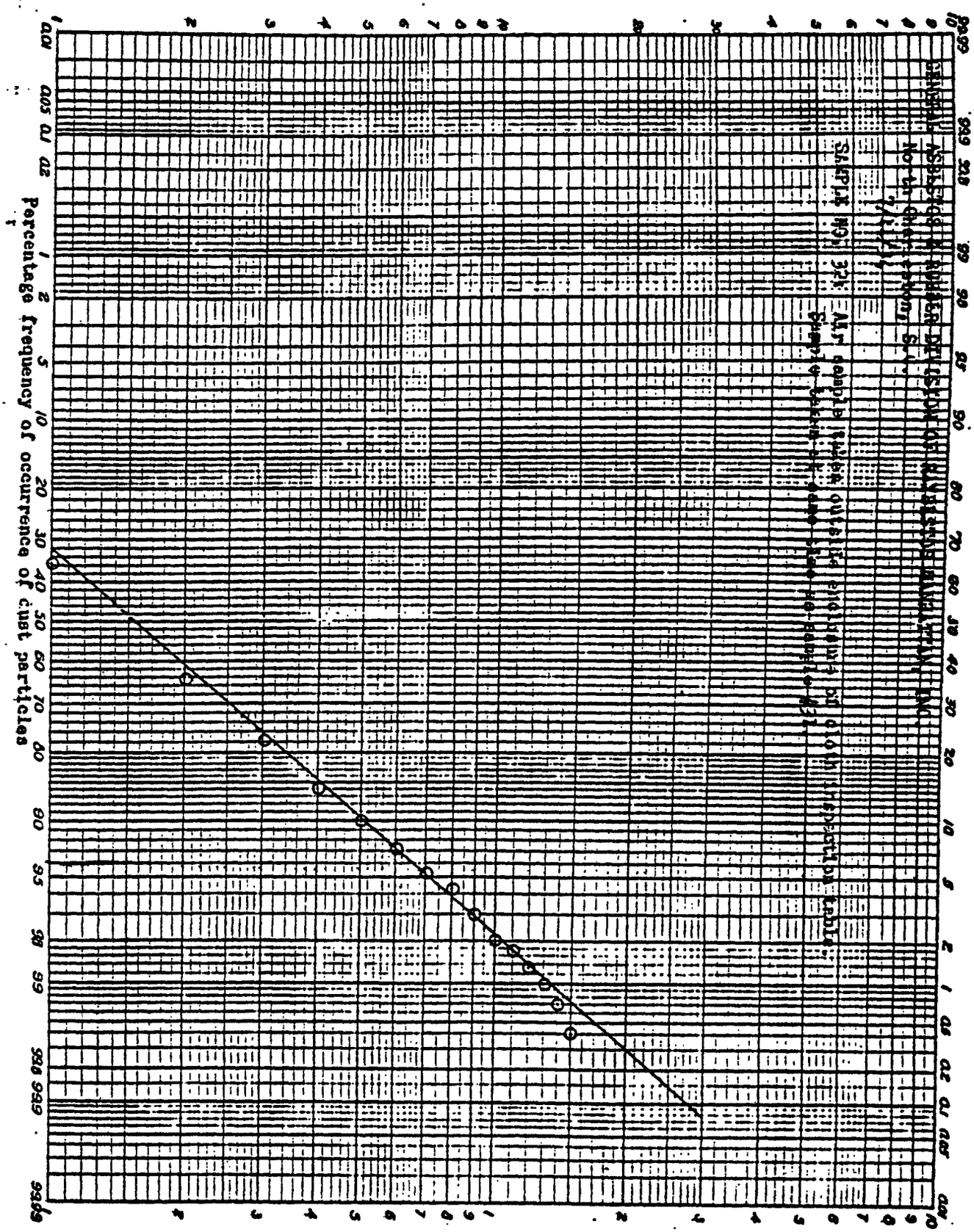
Dust particle sizes in microns



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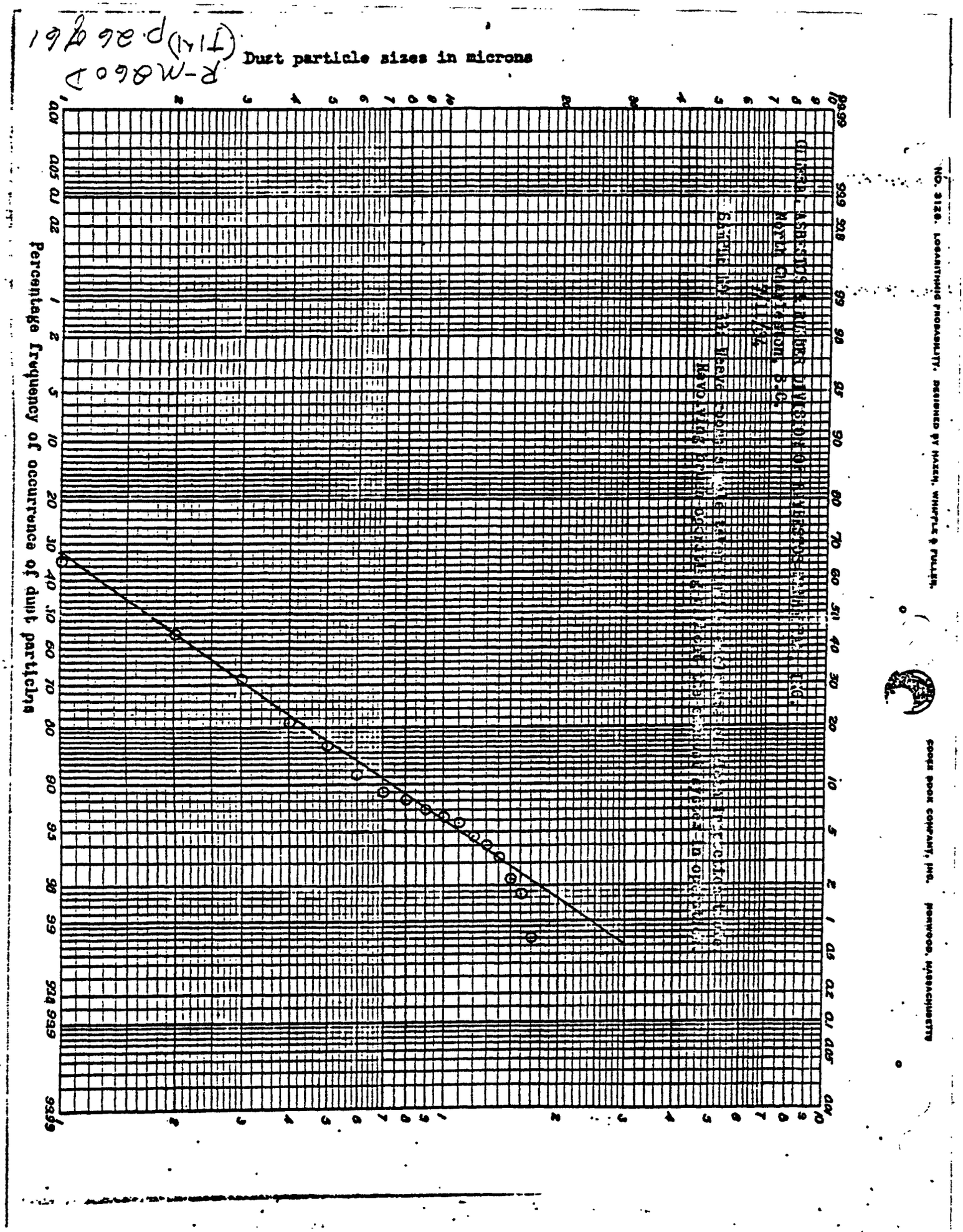
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R-3600

Dust particle sizes in microns



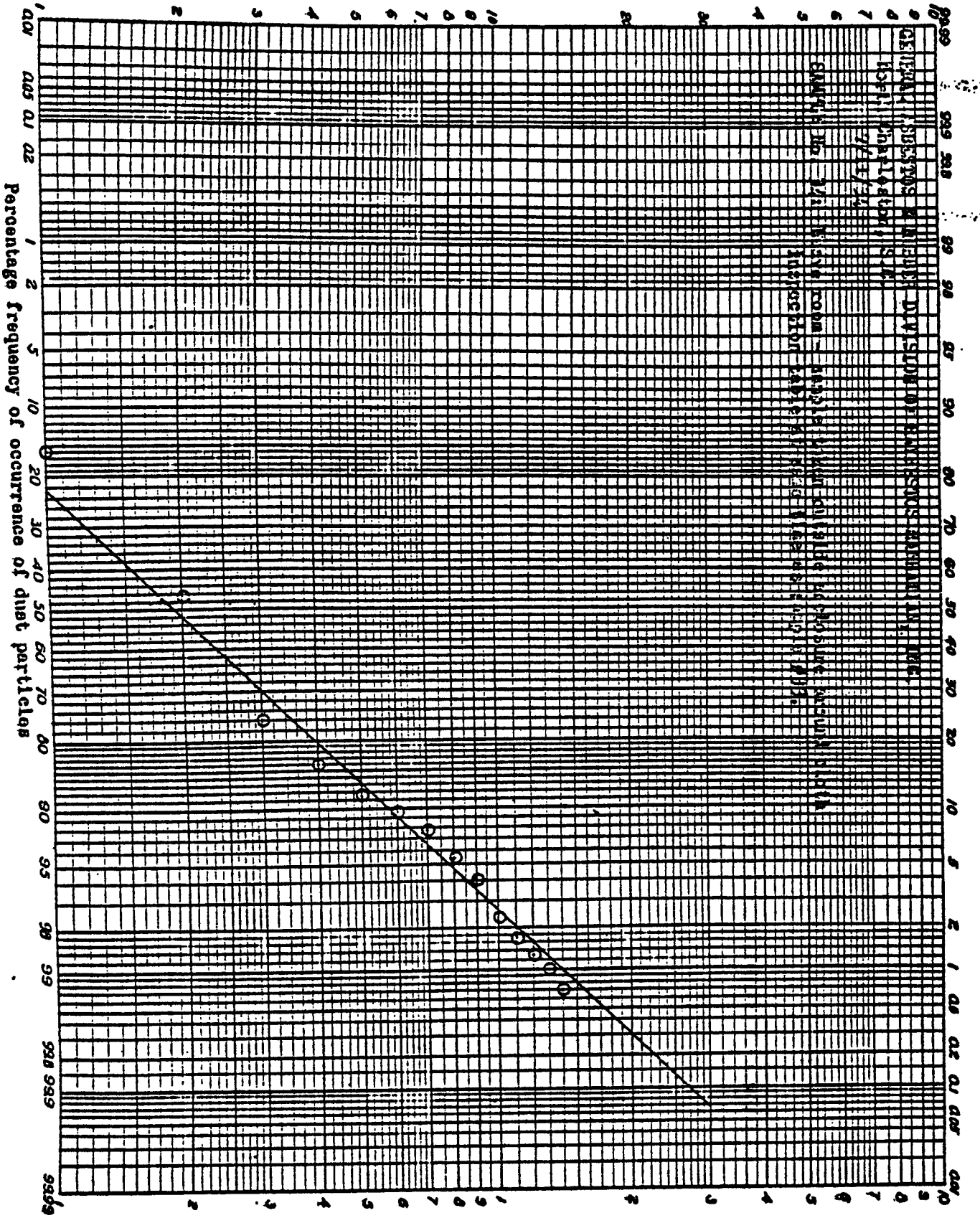
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Dust particle sizes in microns
Percentage frequency of occurrence of dust particles
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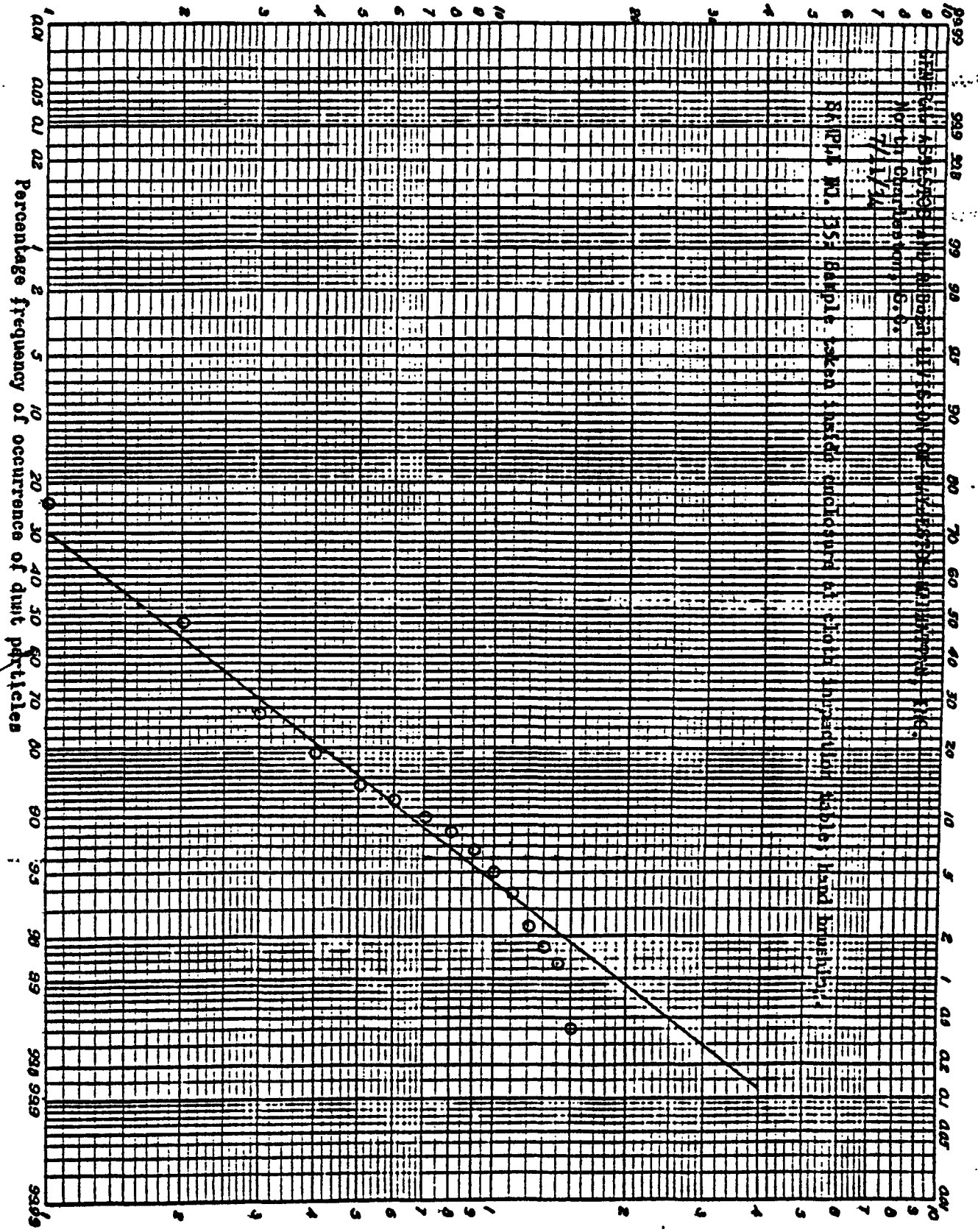
Dust particle sizes in microns



Metropolitan Life Insurance Company, Recheck Dust Survey of Raybestos-Manhattan's North Charleston Plant, wi…
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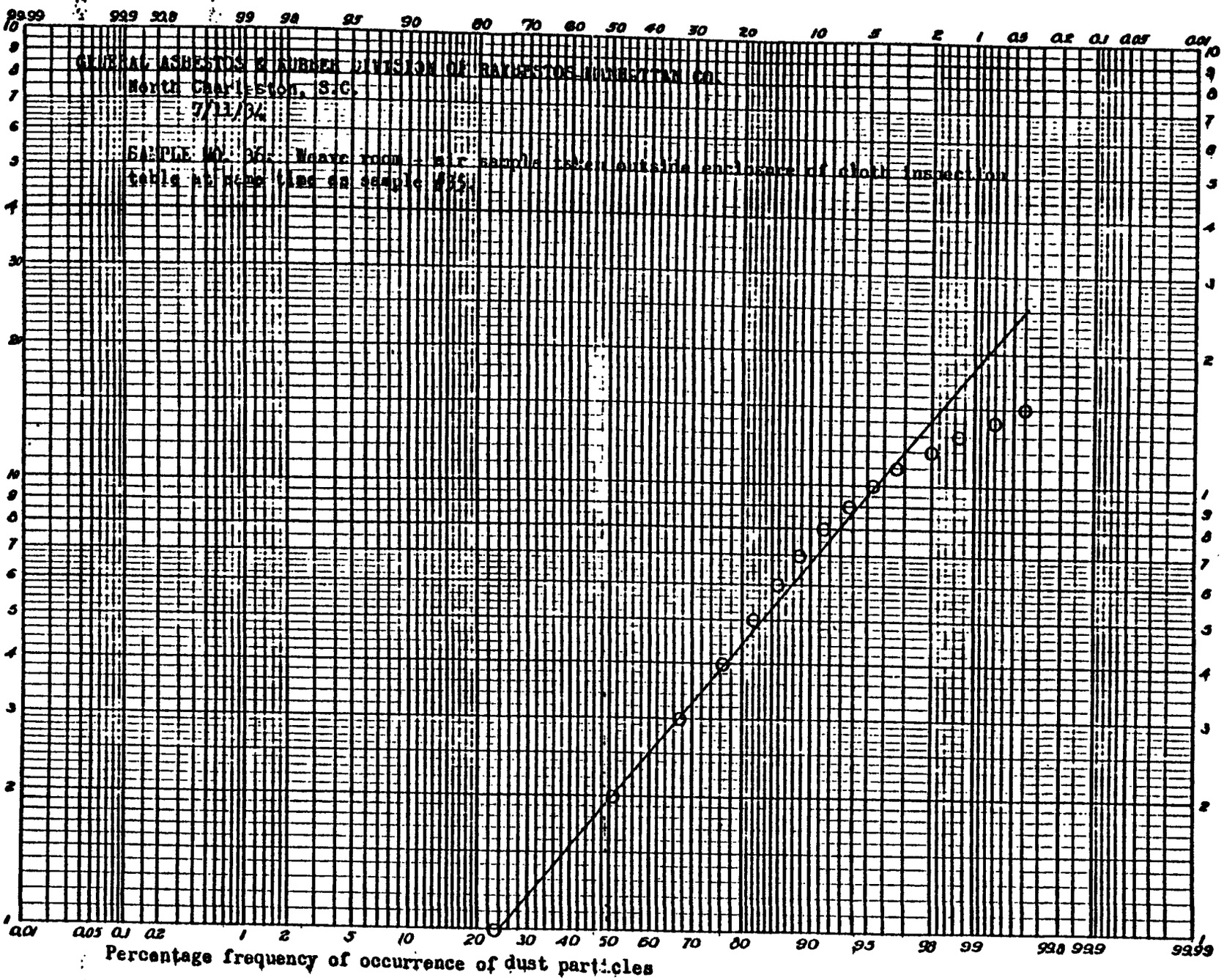
Dust particle sizes in microns



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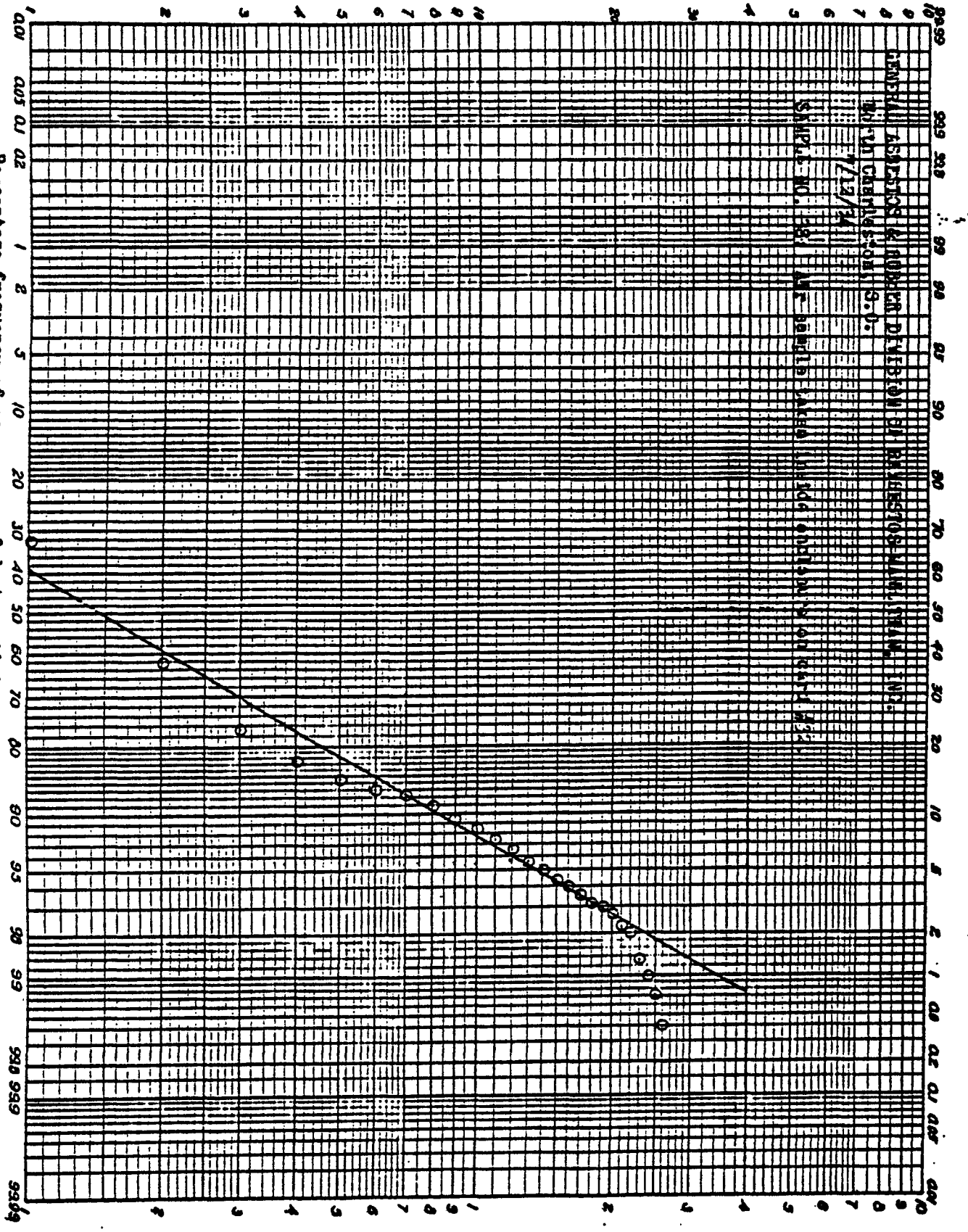


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Dust particle sizes in microns

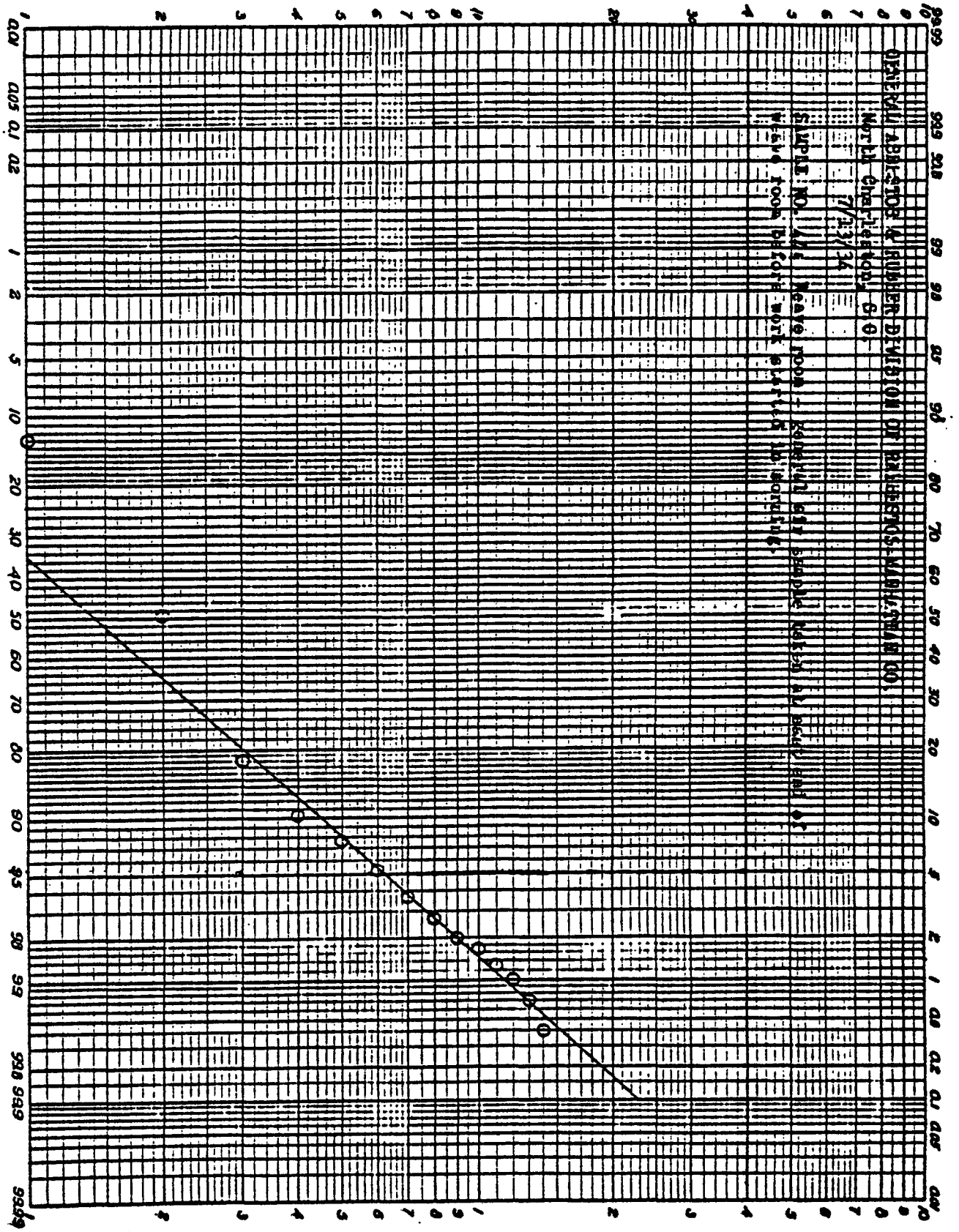
Percentage frequency of occurrence of dust particles



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Dust particle sizes in microns



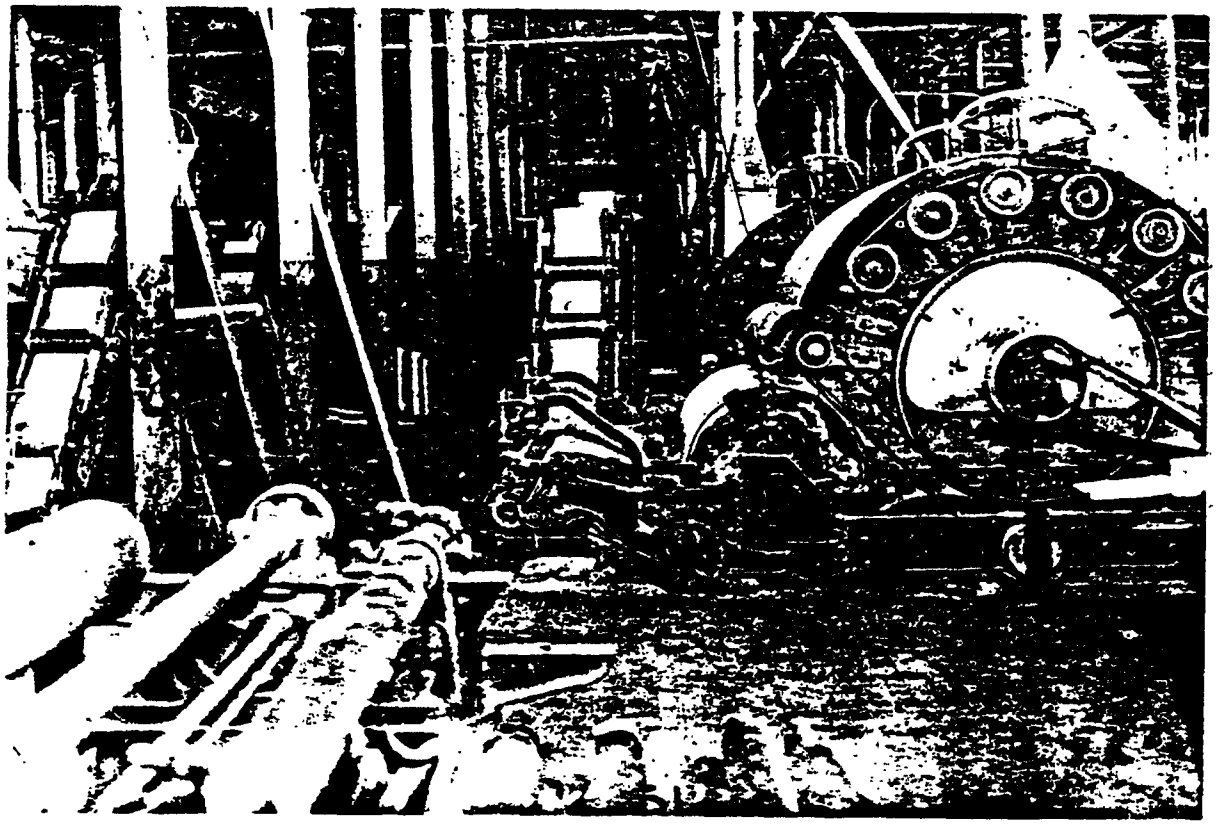
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12-B



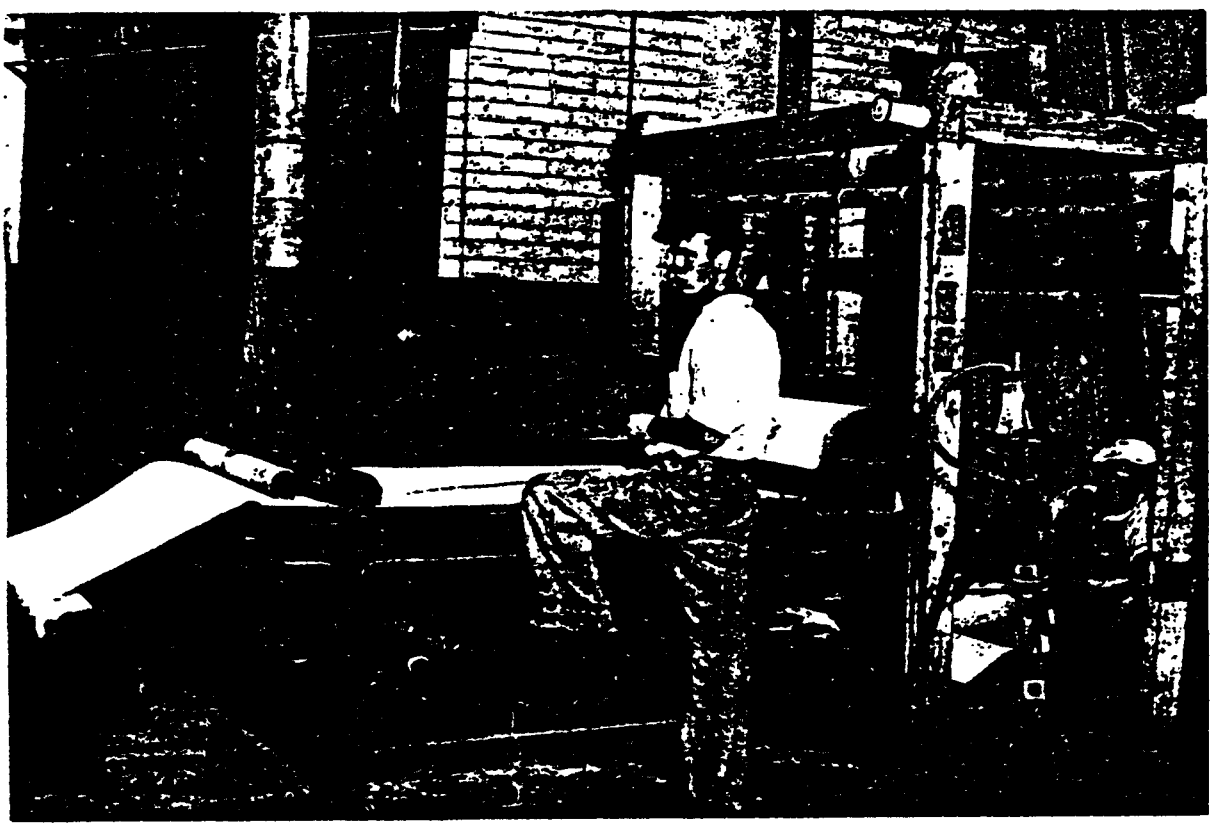
Card Room.

General Asbestos & Rubber Division
Raybestos-Manhattan, Inc.
Charleston, S.C.

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Metropolitan Life Insurance Company, Recheck Dust Survey of Raybestos-Manhattan's North Charleston Plant, wi...
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13-B



SAMPLES NO. 25, 47, 50 and 53

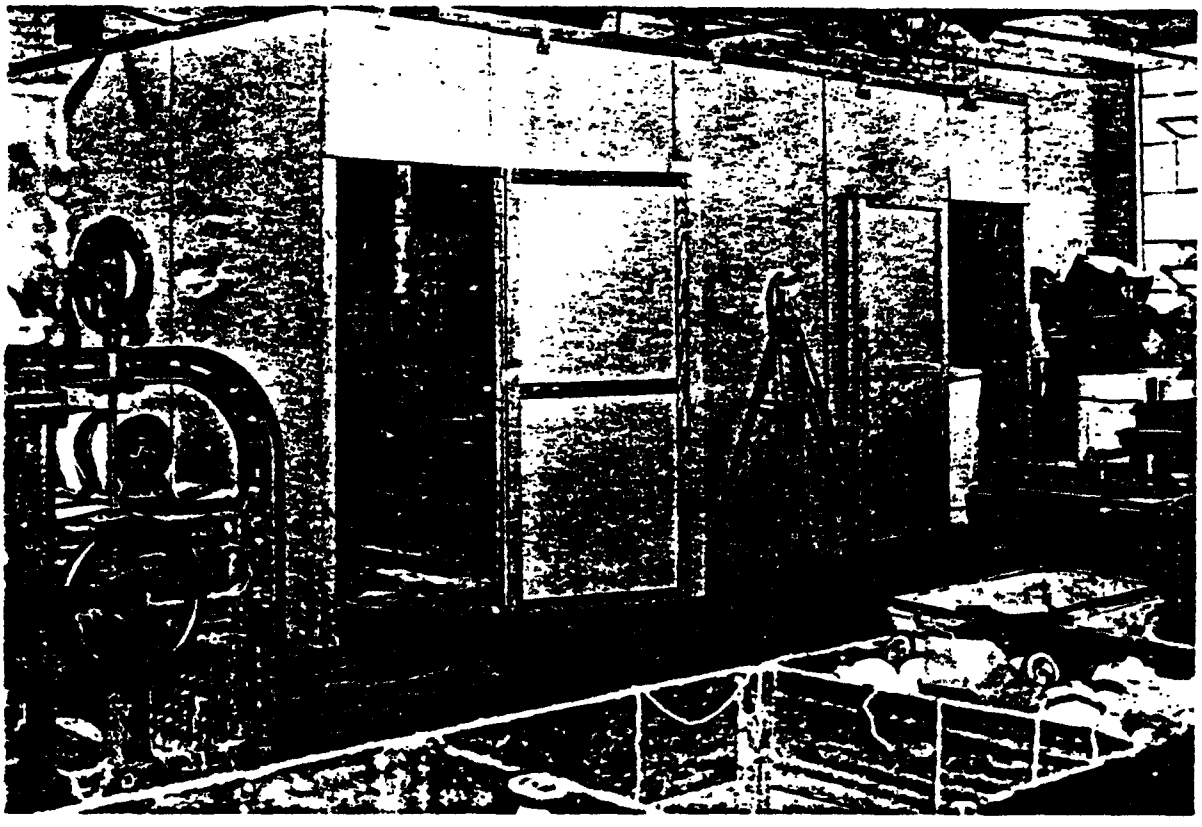
At inspection table – woven cloth

General Asbestos & Rubber Division
Raybestos-Manhattan, Inc.
Charleston, S.C.

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Metropolitan Life Insurance Company, Rechek Dust Survey of Raybestos-Manhattan's North Charleston Plant, wi...
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14 - 13



SAMPLES NO. 31, 32, 33, 34, 35 and 36

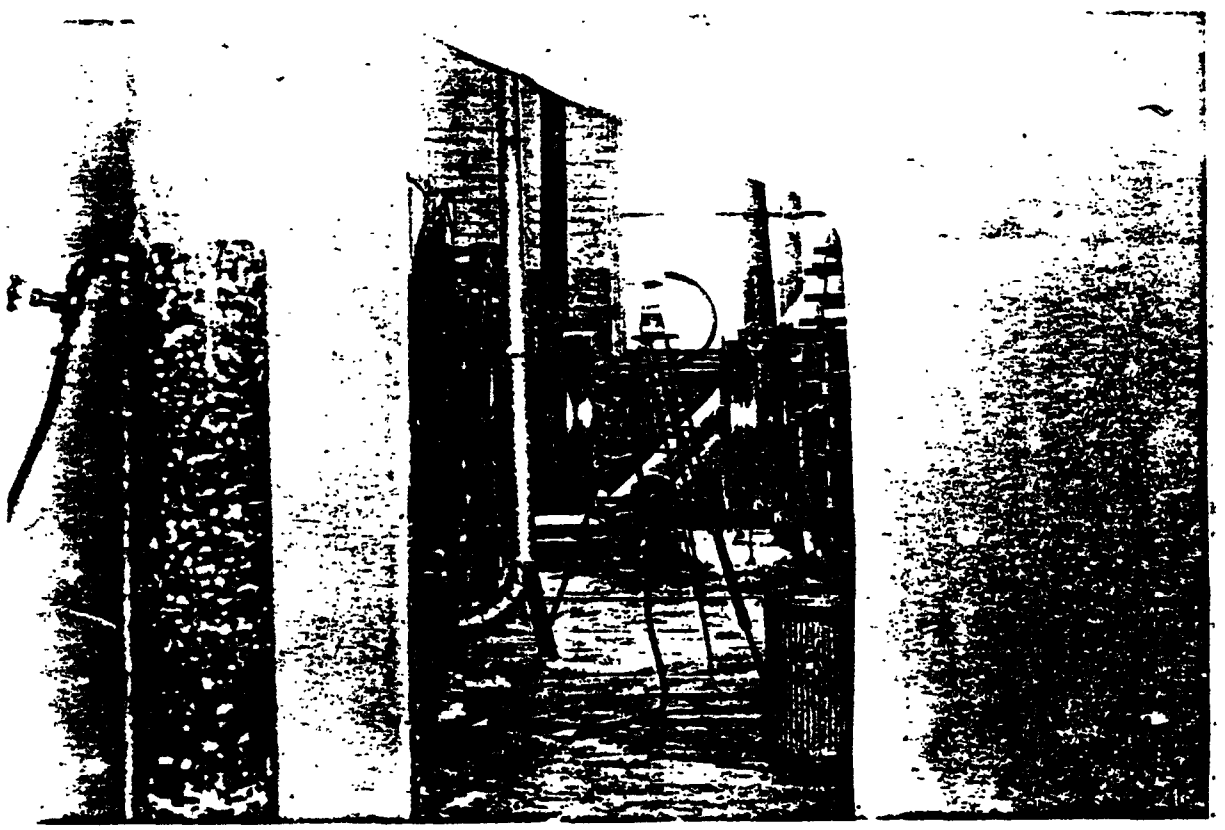
Enclosure built around table inspection of woven cloth in weave room

General Asbestos & Rubber Division
Raybestos-Manhattan, Inc.
Charleston, S.C.

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15-B



SAMPLE NO. 38

One card inside muslin enclosure

General Asbestos & Rubber Division
Raybestos-Manhattan, Inc.
Charleston, S.C.

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(T14) p. 35061

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.

* *

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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.

Weave 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.

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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 - 5e	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 - 39
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 - 95	28A	1.2
29*	13.2	29A	1.3 - 7
30	2.7	30A	1.3
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 - 59
16	0.93	16A	6.0
17	8.1 - 49	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.

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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
WAVE 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.

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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.

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

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	7	Asbestos	
2A	At #4 chaser	"	35.8	1.3	8	"	
3	Feeder end of #1 picker exhaust hood	"	44.6	1.1	7	Asbestos-cotton	One man supplied with respirator
4A	Feeding end of Garnet machine	"	36.4	2.2	13	Asbestos	
5A	At fly shaker exhaust	"	49.8	2.1	13	"	
6A	Vertical fibre opener	"	44.0	1.5	9	"	Exhaust
7A	Floor mixing of cotton and asbestos - exhaust hoods	"	9.6	6.6	59	Asbestos-cotton	2 men - supplied with respirators.
8A	At shaker screen - Loading hand trucks with fibre	"	39.0	2.8	16	Asbestos	Exhaust
9A	At feeder end of cotton fibre opener	"	23.3	5.0	30	Cotton	Exhaust - one man
	At conveyor end of #2 picker	"	24.2	1.9	11	Asbestos	Exhaust on machine conveyor
PINNING DEPARTMENT							
11A	General air - braiders Building #5	4/21/36	37.2	2.4	14	"	Large machines
12A	Between 2 ring presses Bldg. #5	"	34.5	1.4	8	Asbestos graphite	
13A	General air - small braiders - Bldg. #5	"	43.2	0.93	5	Asbestos graphite cotton	Making stock for ring presses
14A	General air - ring frame spinning	"	20.4	4.9	29	Cotton asbestos	
15A	General air - twister	"	38.5	9.9	59	Asbestos	
16A	General air - spoolers	"	33.3	6.0	36	"	Yarn from ring frame spinning, near window north side.
17A	General air - spoolers near partition wall, east side	"	33.1	3.1	19	"	Yarn from mule spin four women.
18A	General air - mule spinning	"	39.5	1.1	7	"	Between machines #3 #9 and #10
19A	General air - mule spinning	"	34.6	1.5	9	"	Between machine #9, #15 and #16.
24	General air - 4 spooler machines	"	30.0	1.3	8	"	Exhaust system.

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

ple	Station	Date of Sampling	Cu. Ft. Air Sampled	Millions of Dust Particles per cu. ft. air sampled		Type of Dust	Remarks
CARD ROOM							
25	South aisle - between cards #21 and 22	"	27.5	1.6	10	"	Hopper and finisher ends - exhaust west of bins.
26	North aisle - between cards #9 and 10	"	28.3	1.1	7	"	" "
27A	Center aisle - between cards #2 and #21	"	40.0	1.0		"	Camel-back ends of cards - exhaust west of bins.
29A	Center aisle - between cards #10 and #29	"	34.6	1.2	7	"	" " "
29A	Between cards - #16 and #35	"	32.2	1.3	7	"	East of bins - exhaı
30A	General air - wick, rope, and twisted card room	"	32.1	1.3	7	"	
WEAVE ROOM							
22A	General air - west end of weave room	4/22/36	39.0	1.2	7	"	
33	At inspection table - woven cloth	"	28.8	1.4	9	"	Two men - exhaust
	At Broadloom #4 - west end of room	"	27.4	2.3	13	"	Exhaust on both warp and slay
35	At loom #17 - brake bands dry weaving	"	33.2	6.6	41	"	North east corner of weave room.
36	General air - east end of weave room	"	36.4	2.7	17	"	
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	9	"	#15 - exhaust on bo warp and slay #16 - exhaust on wa north side of room.
39	At two tape looms #4 and #5, south side of room	"	34.7	1.3	7	"	Looms face each oth dry weaving.
PACKING DEPARTMENT							
20A	General air - molded packing department	"	48.7	0.82	1	"	
23A	General air - rubber compounding room	"	41.7	1.8	12	Clay, talc lead, sulphur	
31	At Pratt & Whitney grinder	"	45.5	1.1	7	Asbestos	Brake lining - exha
	At drill press	"	47.1	1.1	7	"	" " "

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GENERAL ASBESTOS & RUBBER CO.

No. Charleston, S.C.

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	36.9	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	

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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.

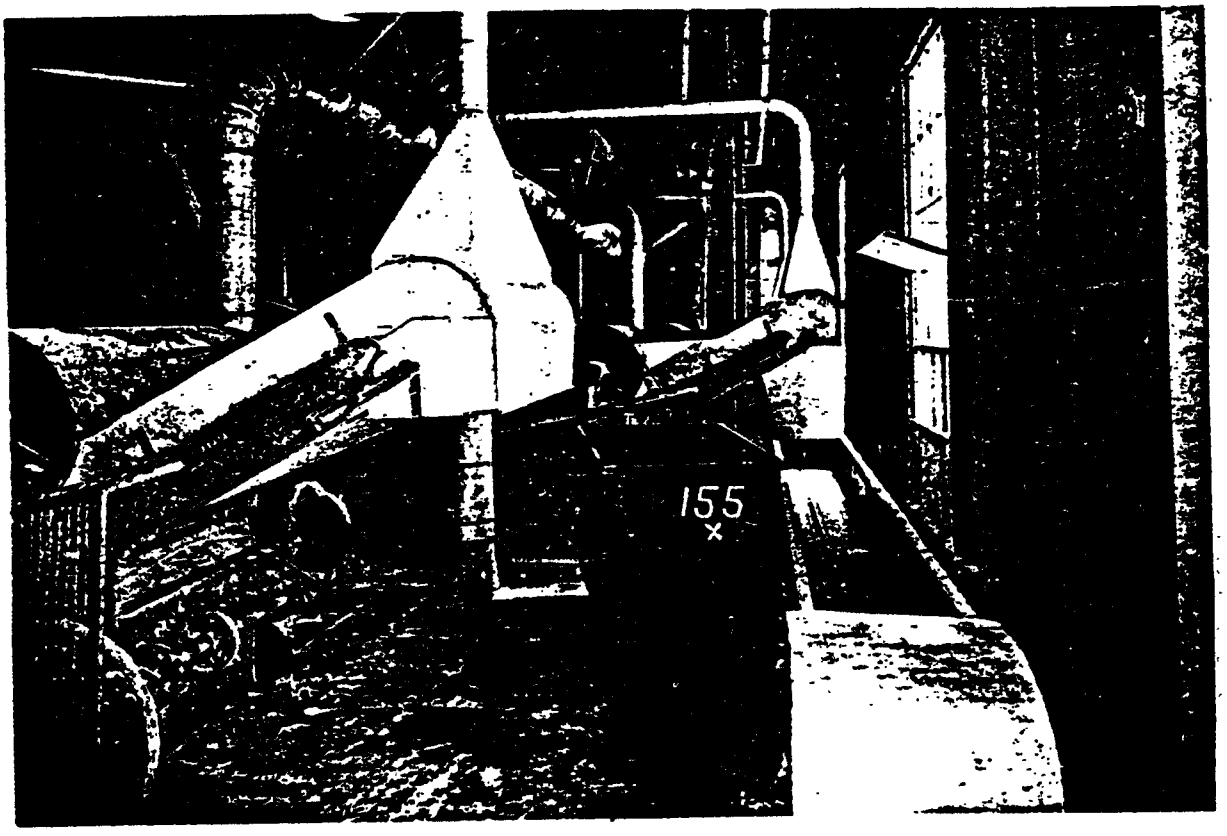
The Spinning Department showed a slight increase over the 1934 survey. The rate of production at the time of the 1936 survey was much higher than at the time of the previous survey with more twisters in operation.

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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9-C



Preparation Department

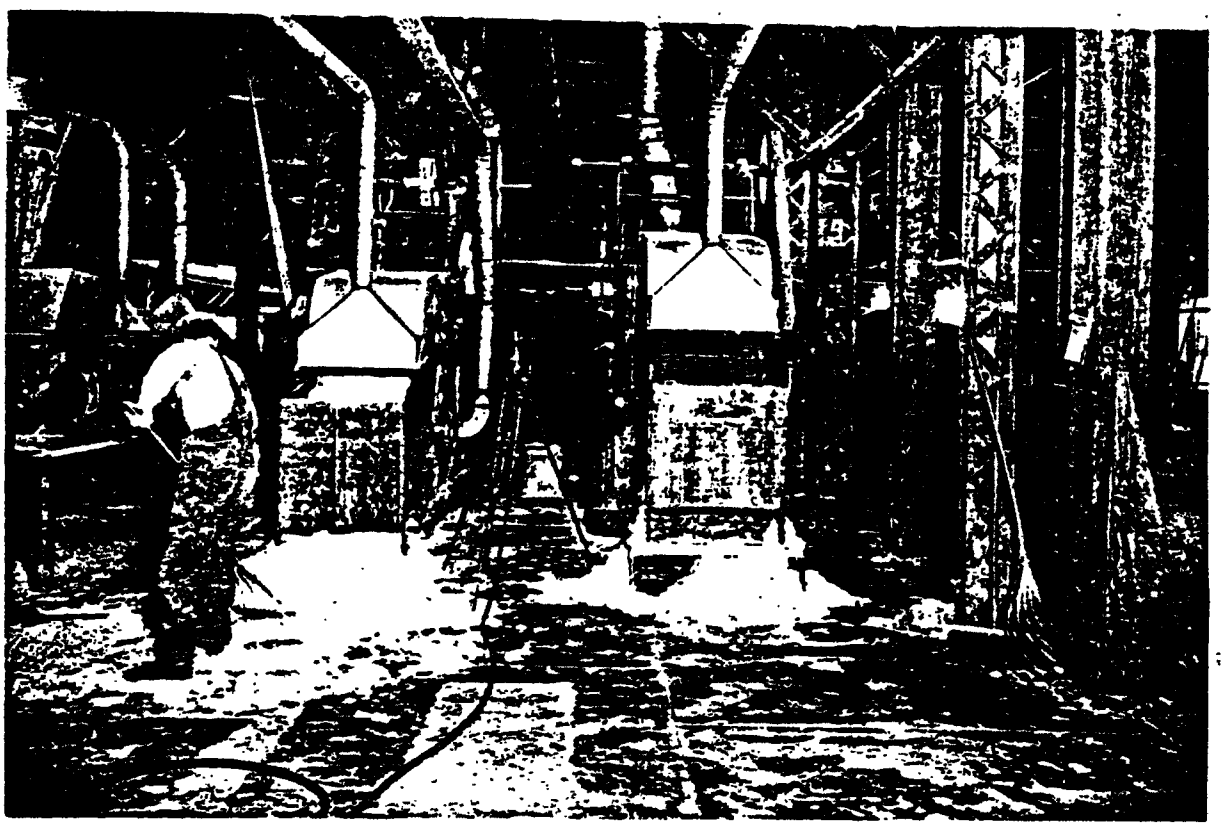
View showing exhaust arrangement on discharge ends of picker machines

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10-C



Preparation Department

View showing exhaust hoods on fibre opener machines

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11-C



Preparation Department

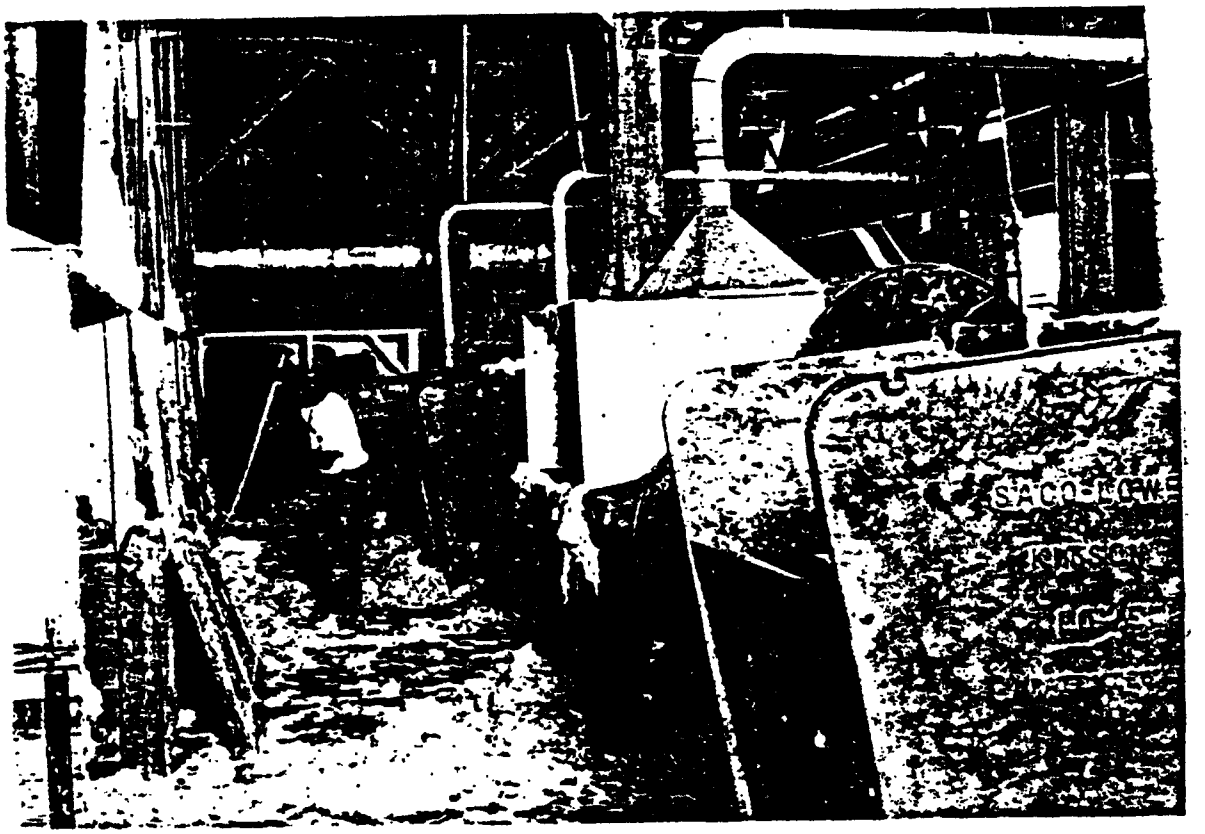
View showing exhaust hoods over mixing bins

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12-C



Preparation Department

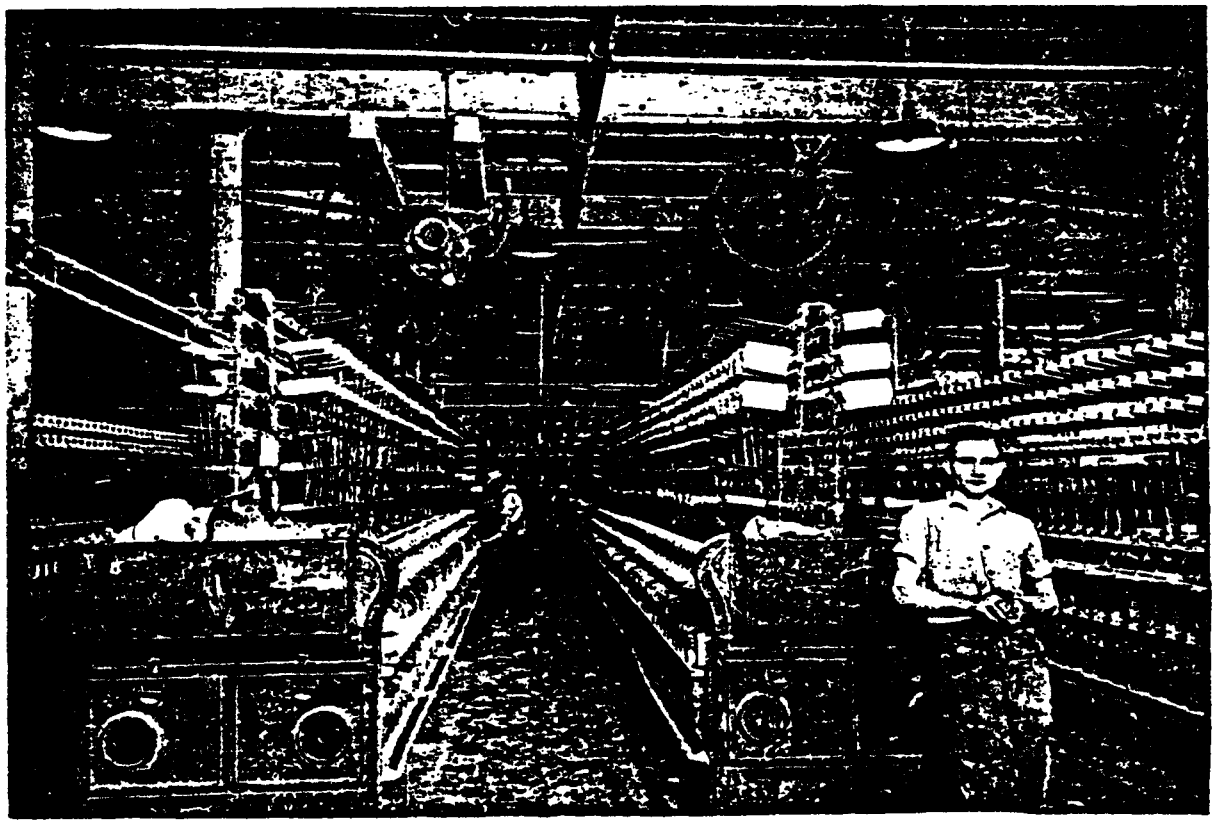
View showing exhaust hood on hopper of picker machine

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Spinning Department

Sample 154

General air sample taken in center of twisting machines.

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14-C



Spinning Department

Sample #16A

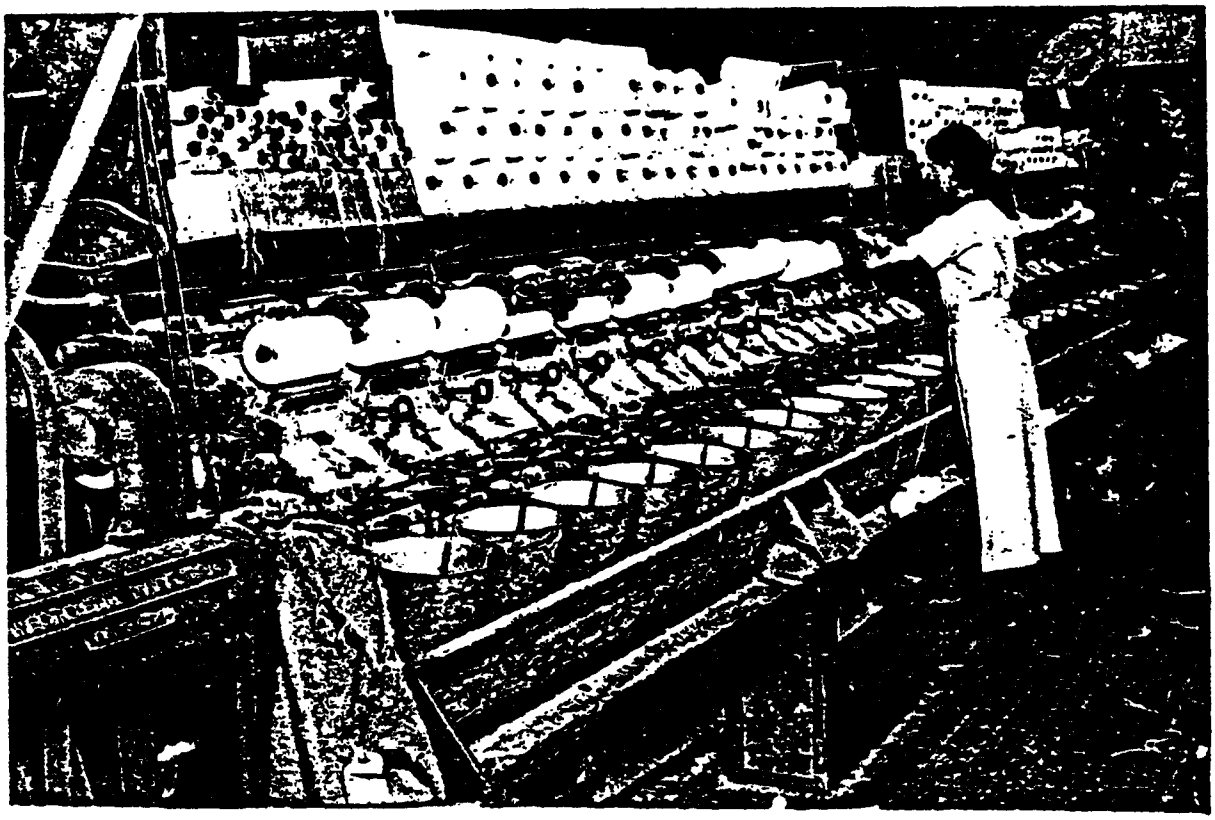
General air sample taken at spoolers on north side of room

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Spinning Department

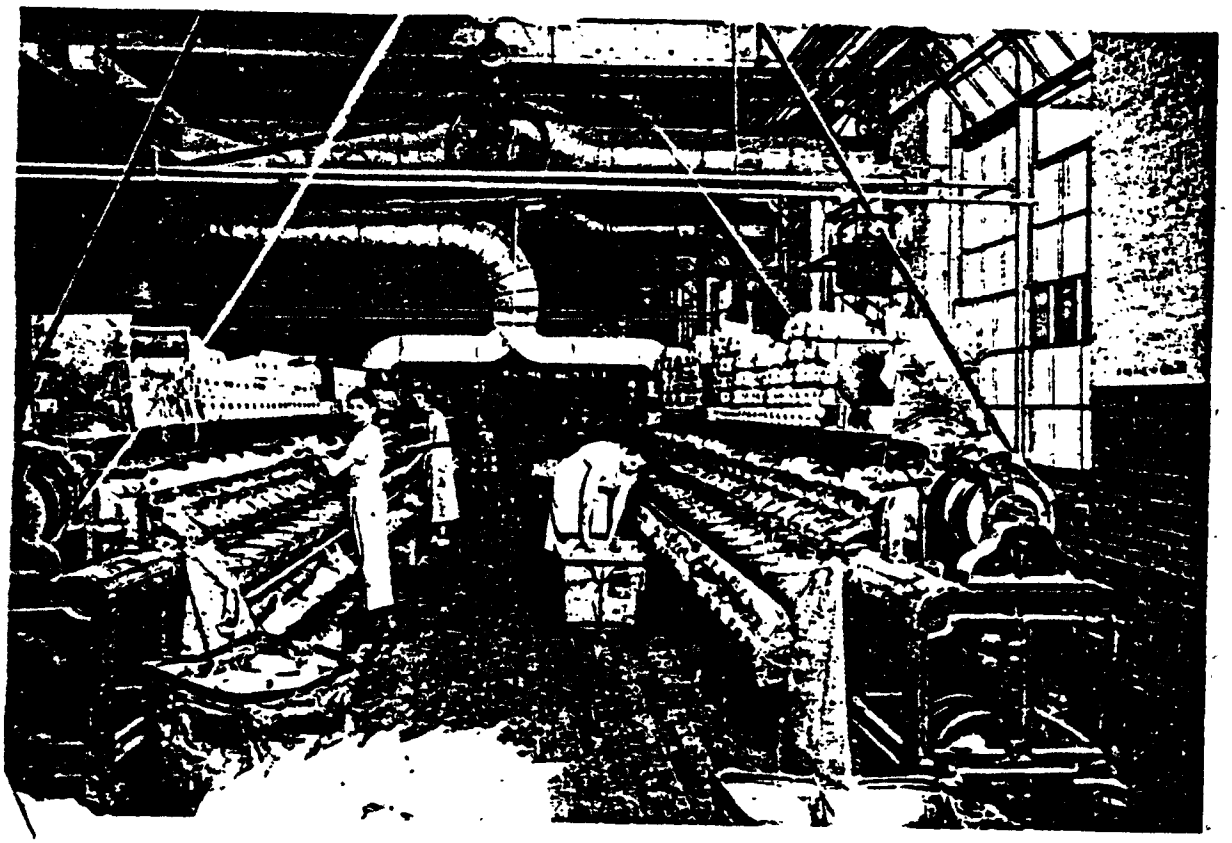
View of spooler machine with exhaust equipment

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16-C



Spinning Department

Sample #1

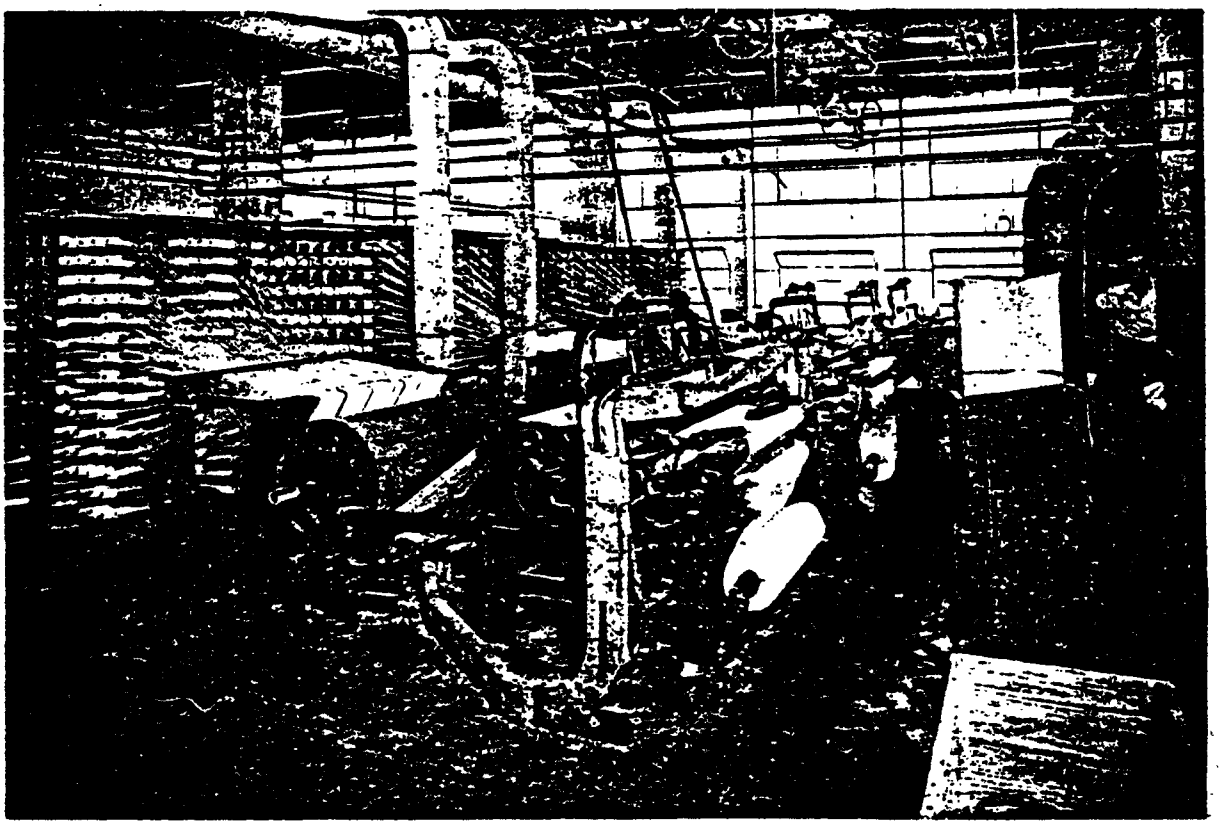
General air sample taken between four spooler machines with exhaust equipment

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17-c



Reverse Front

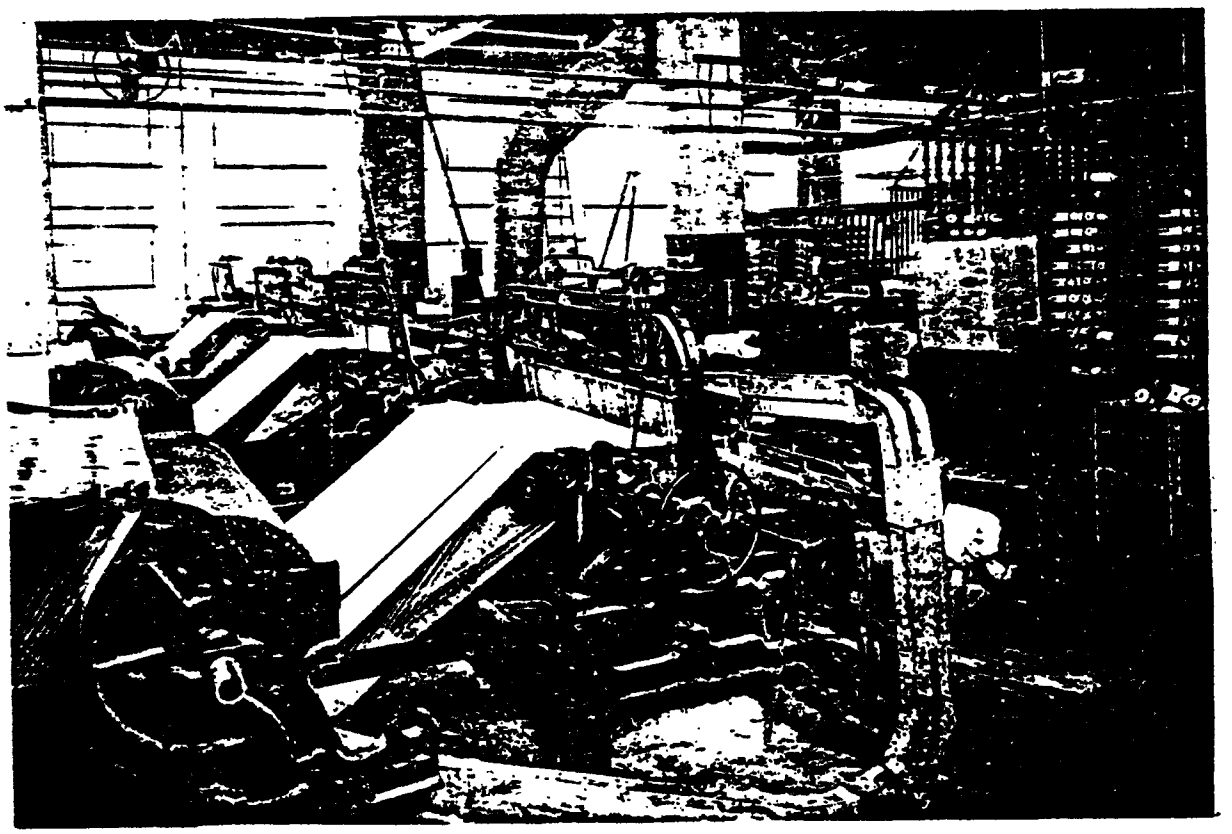
View of broadloom showing exhaust equipment on slay

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18-C



Weave Room

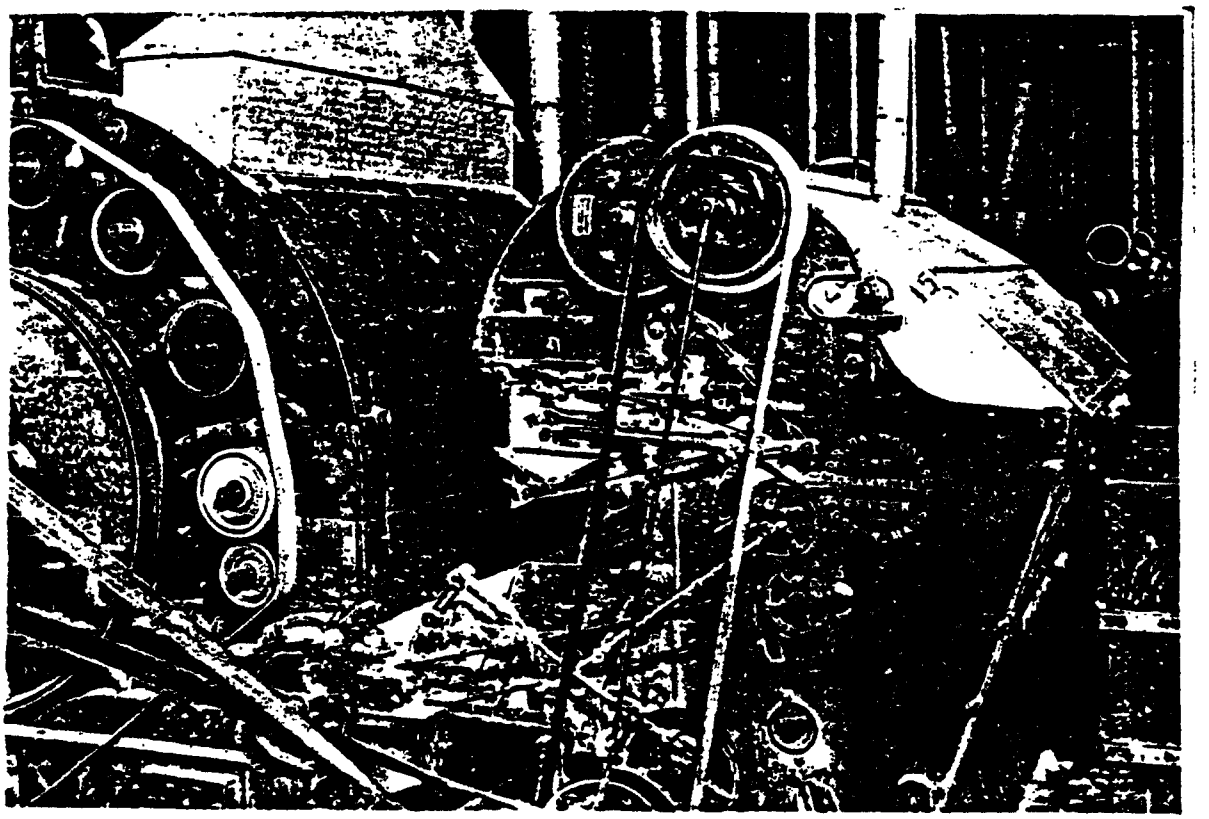
View of broadloom showing exhaust equipment under warp and on slay

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19-c



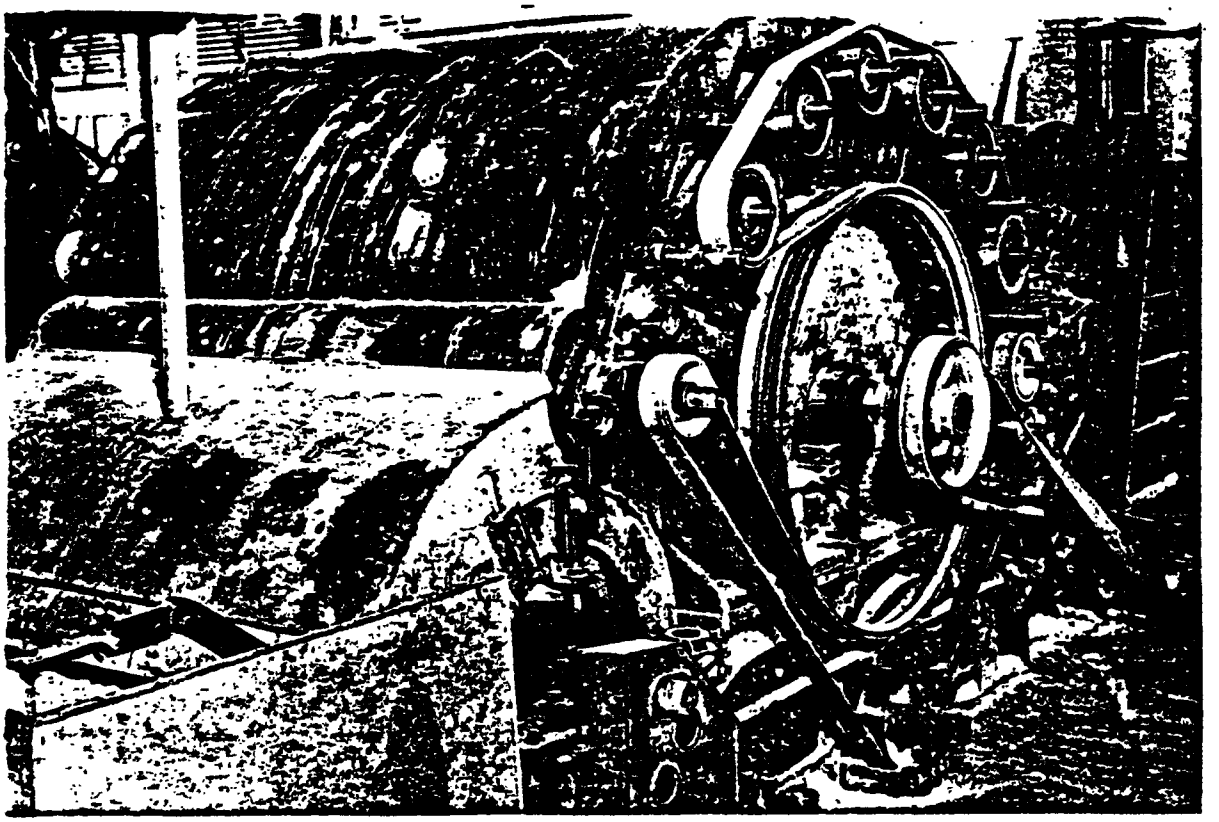
Card Room

Close-up view of card showing part of exhaust enclosure

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20-C



Card Room

Close-up view of card showing part of exhaust enclosure

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21-C



Card Room

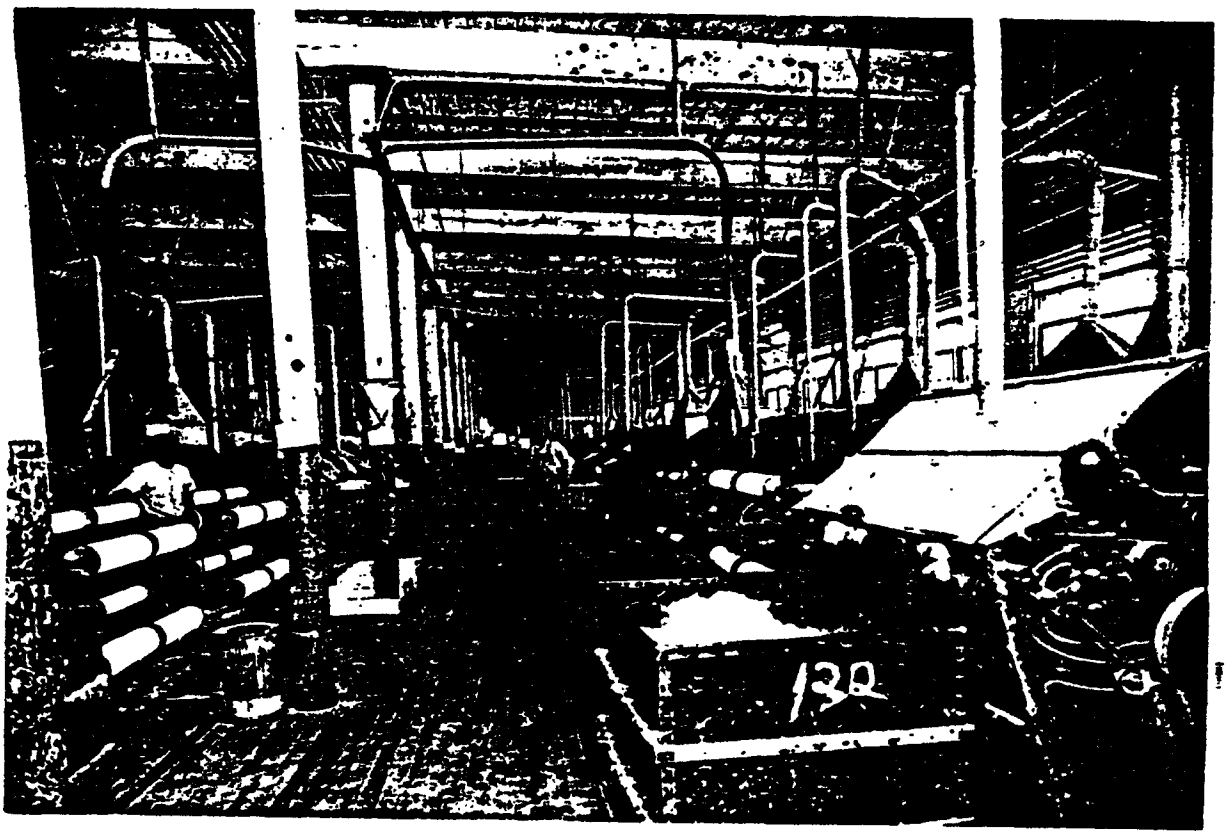
General view - center aisle - card room - camel back ends of cards

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No. Charleston, S.C.

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A2-C



Card Room

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

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No. Charleston, S.C.

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An air sample was taken at the table and two general air samples were taken in the weave room at the same time – one set was taken with both the revolving brush and exhaust fan running and one set with the revolving brush operating but without the exhaust fan. One set was taken with the workmen brushing the cloth by hand, the method used before the exhaust system and revolving brush were installed.

The inspection table was enclosed with beaver board and a series of samples was taken both inside the enclosure and outside.

The following tables indicate the analysis of air samples taken at representative points in the different departments. Attention is called to the fact that the previous survey was made in January and this survey in July.

Particle size measurements were made of the dust by a direct projection method. The results are tabulated and appear in the graphs attached at the rear of the report. It will be noted that from 92 to 98.5% of the particles are less than 10 microns in greatest diameter.

A detailed discussion of the disease asbestosis and a correlation of the X-ray findings are reserved for the general report.

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It was noted that only slight changes had been made in the preparation room since the survey in 1930. The method of oiling and conveying the fibre remains the same. As noted, the average dust count remained constant.

Extensive changes and increased methods of dust entrapping and removal in the card room were noted. The method of conveying the fibre from the preparation to the card room is the same and the fibre is carted from the storage bins to the feed hoppers on the cards in the same manner.

Natural ventilation is supplied by open windows which occupy approximately two thirds of the total wall space.

Samples No. 37 and 39 were taken before the fibre conveyors from the preparation room were running, while samples No. 40 and 42 were taken after the conveyors were put into operation. The increased count is evidently due to dust generated by the fibre conveyors and leakage from the storage bins in the card room.

In the test on the enclosed card, samples 37, 38, and 39 were taken before the fibre conveyors were operating and samples No. 40, 41 and 42 were taken after the conveyors were running. The muslin enclosure is not effective in keeping out the fine dust, as evidenced by the comparison of counts on samples taken simultaneously inside and outside the enclosure. The increased counts after the conveyor was operating should be noted.

The natural ventilation in the weave room is augmented by a forced air supply through the fan and distributing ducts used for heating in the winter months. The chance of dust pollution from this outside air supply is remote, as the dust collectors are located at a distance east of the weave room. Experimental work is in progress on entrapping and exhausting dust generated by the looms.

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Attention is called to the tests run on the cloth inspection table, with the mechanically operated brush, which show that the exhaust system is effective in keeping the dust concentration down to the same count as under the system of hand brushing without exhaust.

The lead pollution at the rubber compounding operations of the packing department has been corrected, as shown by the absence of lead in the air samples taken.

CONCLUSIONS AND RECOMMENDATIONS

An exhaust system is under construction in the card room and experimental work is in progress for entrapping and exhausting dust generated by the looms in the weave room, and until this work is completed and checks run on the efficiency of the exhaust system, no other recommendations can be made.

Tests conducted in the card room show that there is an increase in the general air dust content when the fibre conveyors are in operation. This is due to leakage of dust from the fibre storage bins in the card room and efforts should be made to seal this leakage.

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