EA02-025

TEXAS INSTRUMENTS, INC.'S 9/10/03 ATTACHMENT

REQUEST NO. 7

BOX 8

PART A-U

PART N

[999 3 12 11:17:48 AM MVC-FD91]

Digital Mavica images

14 mavica images 95 Kbytes free C01

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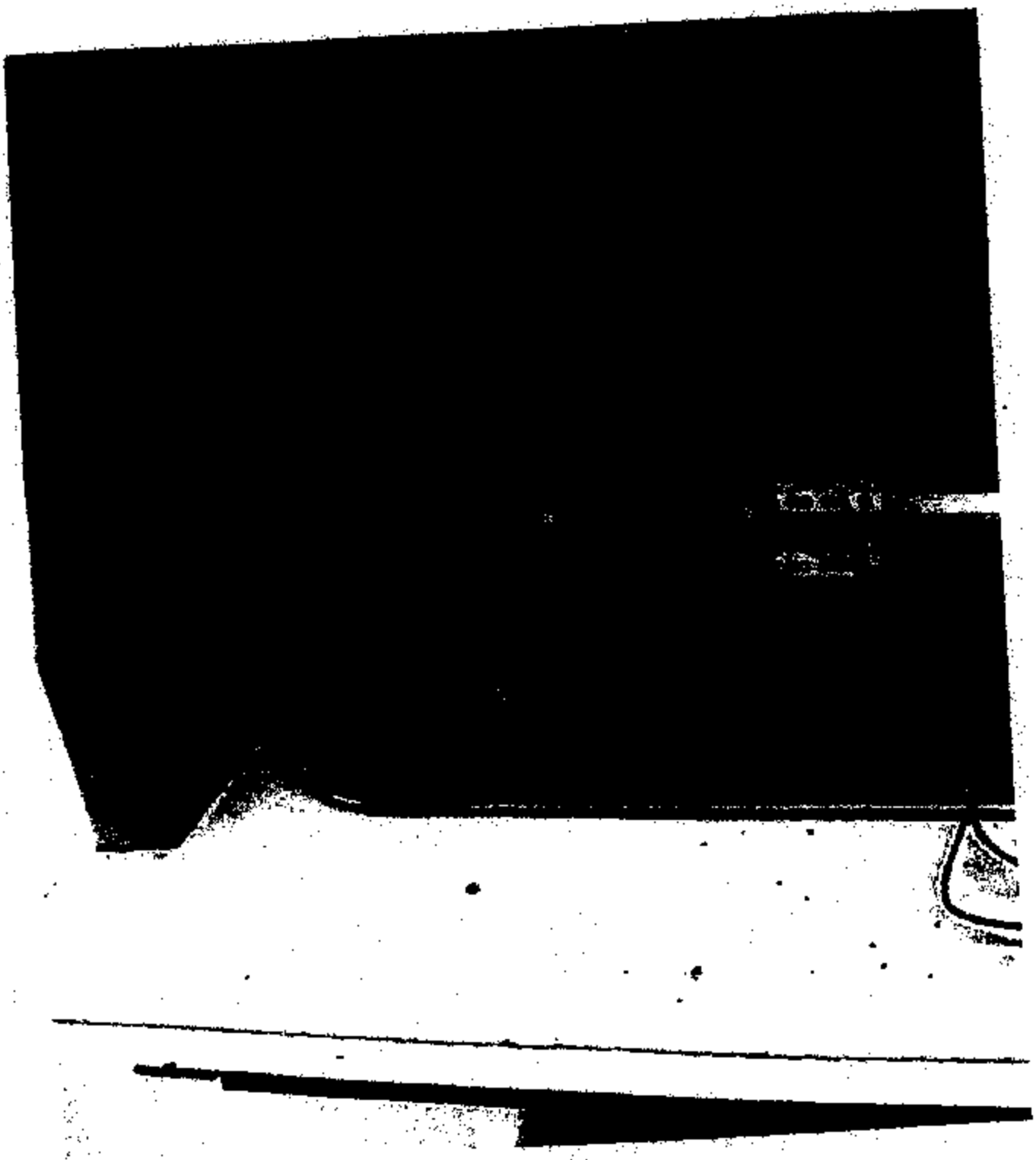

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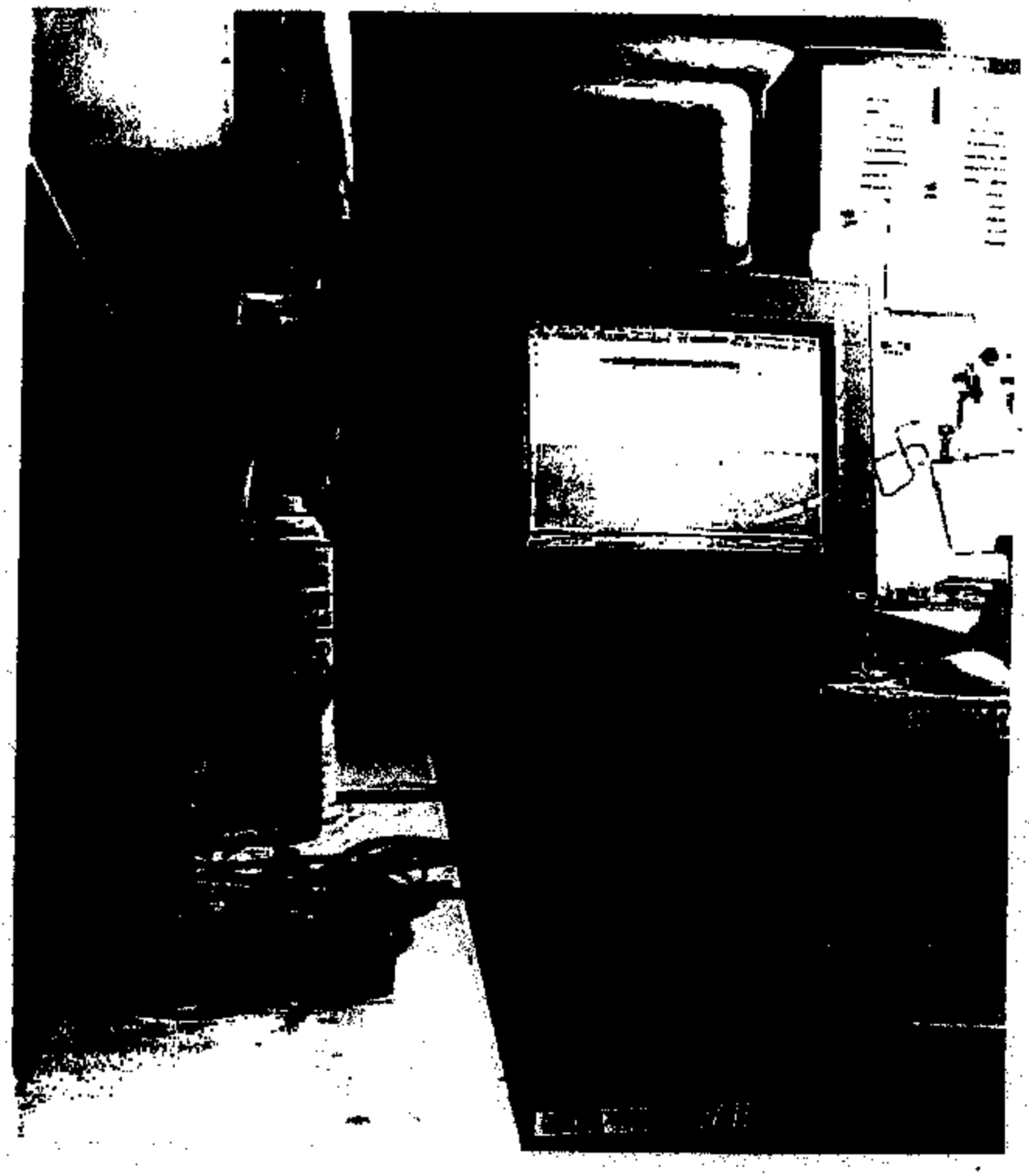
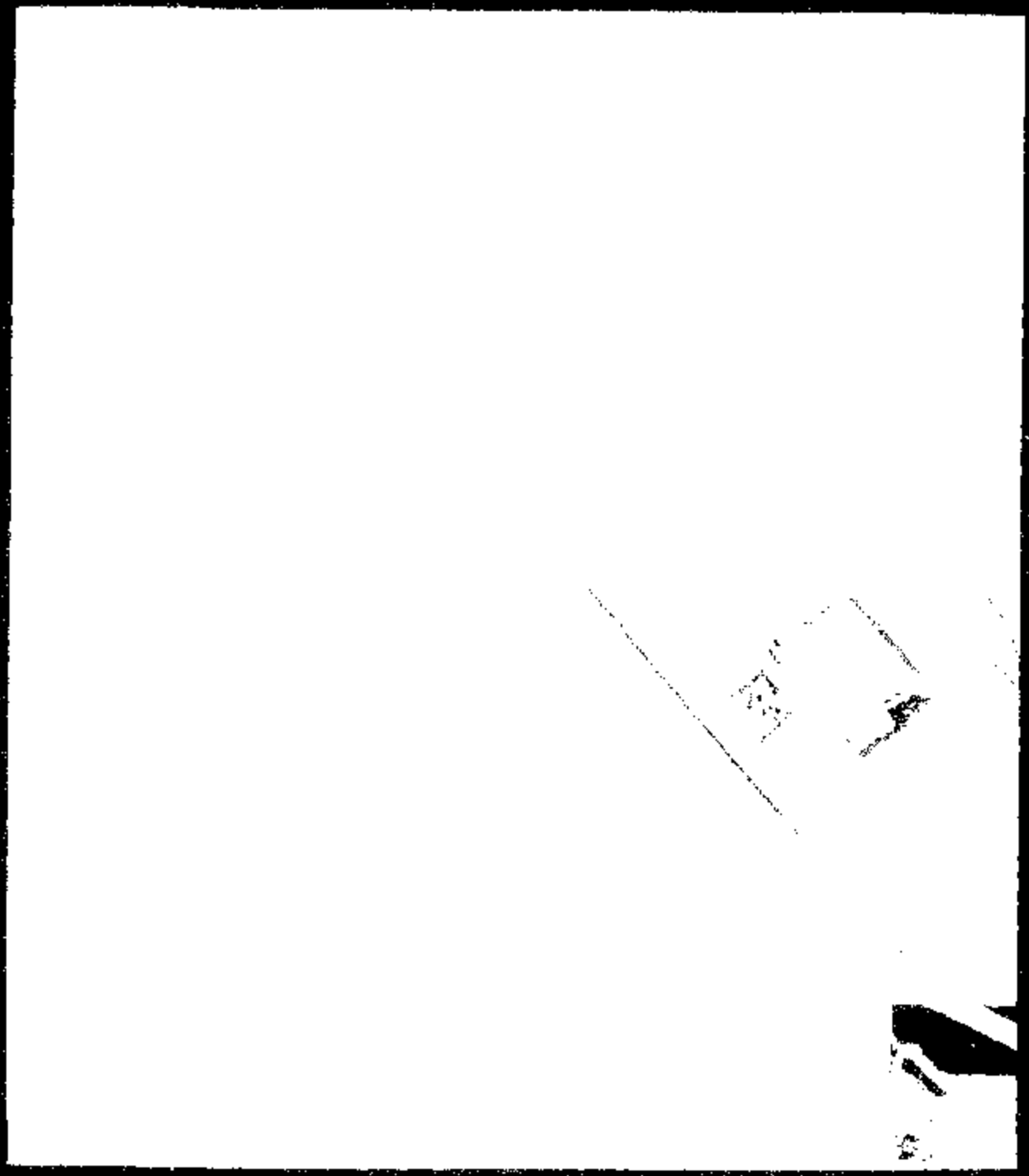
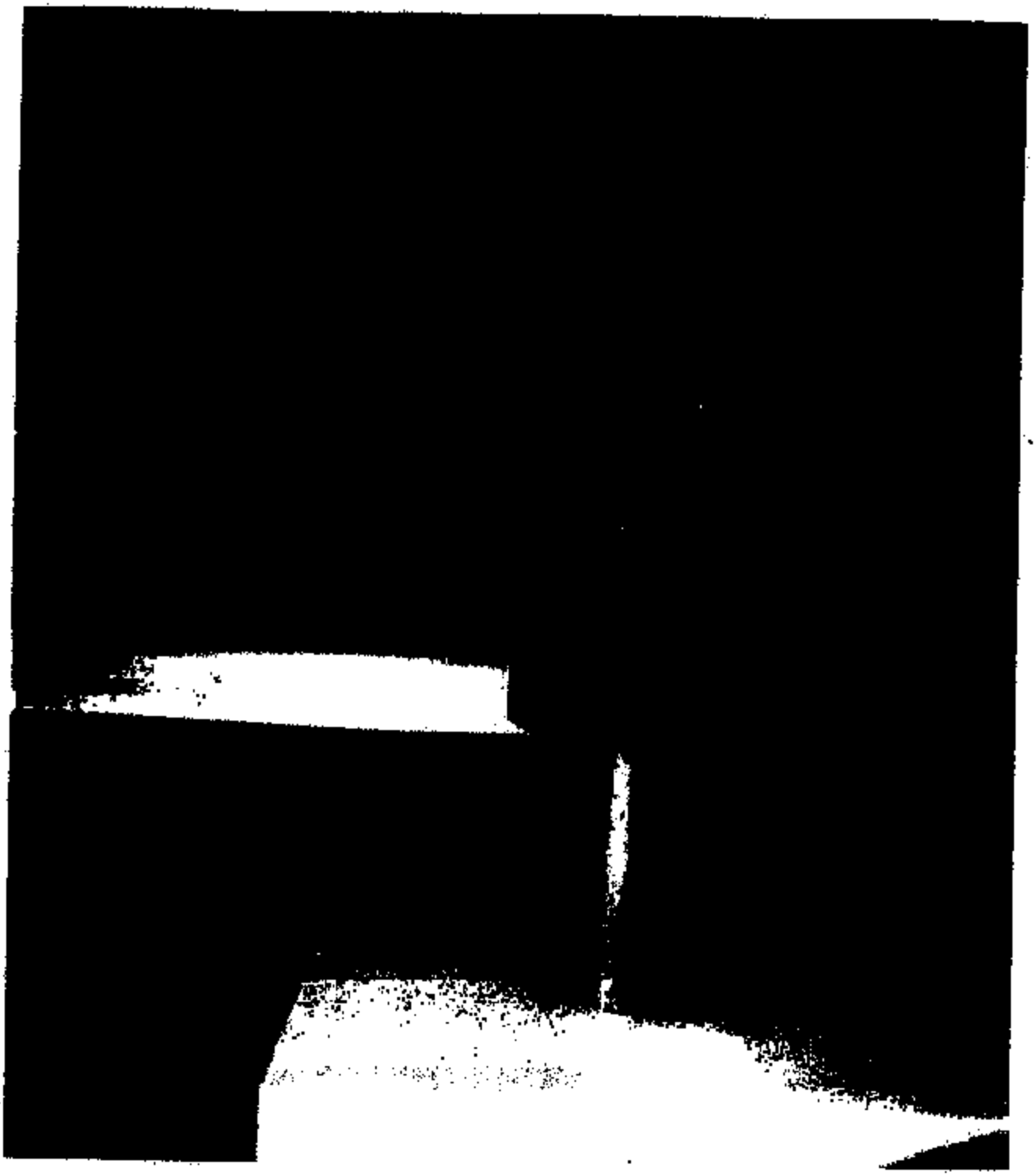
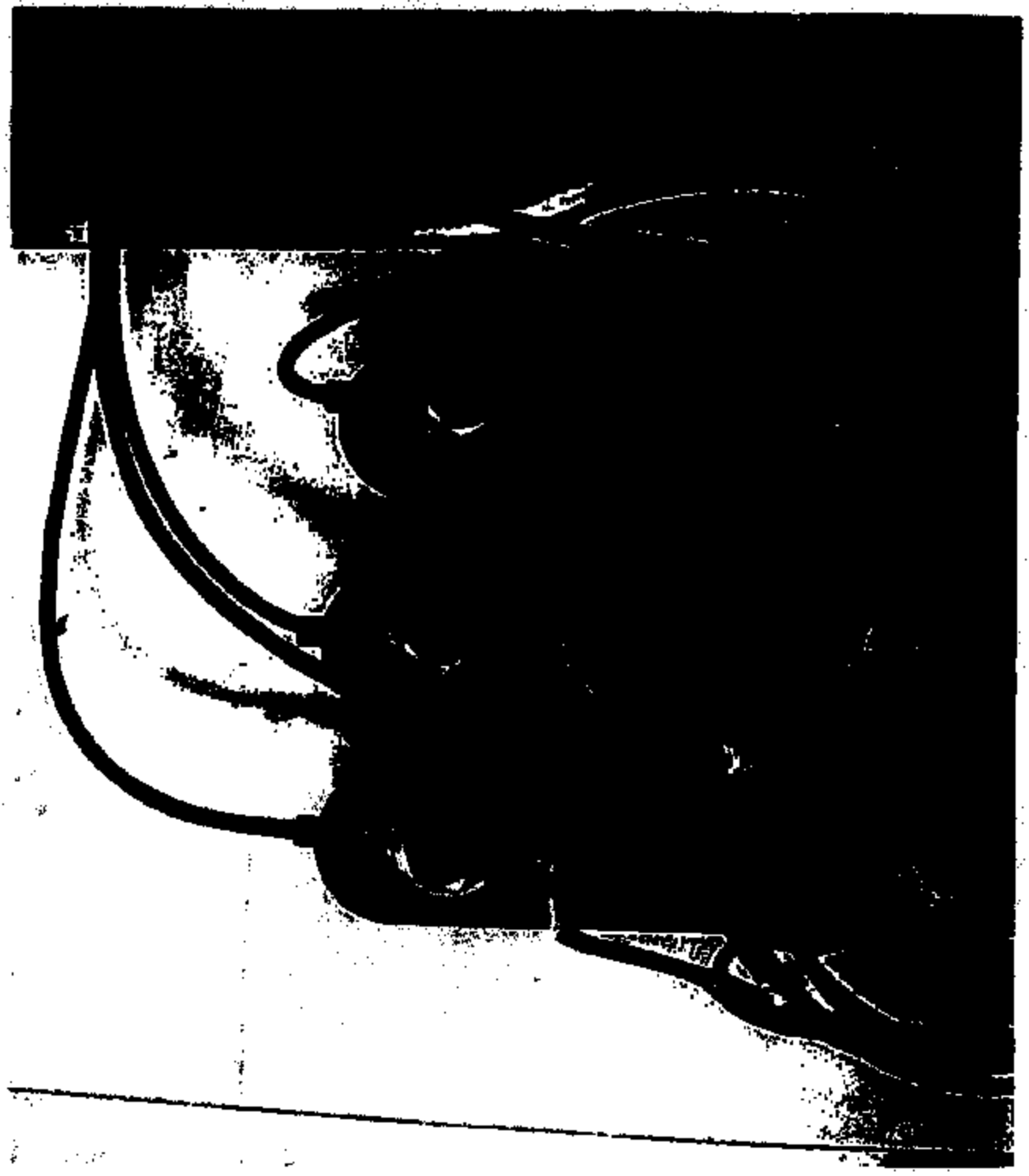
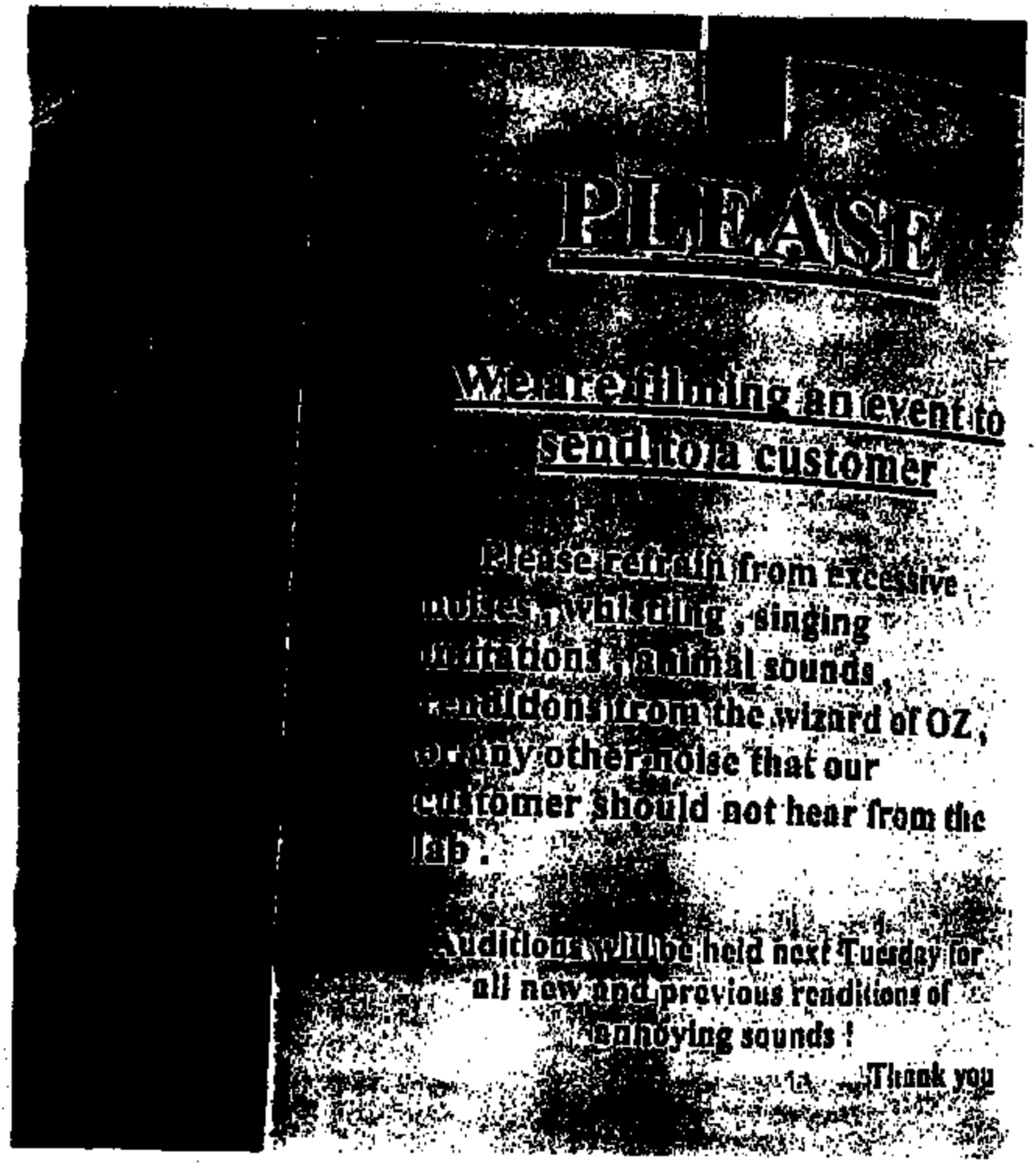


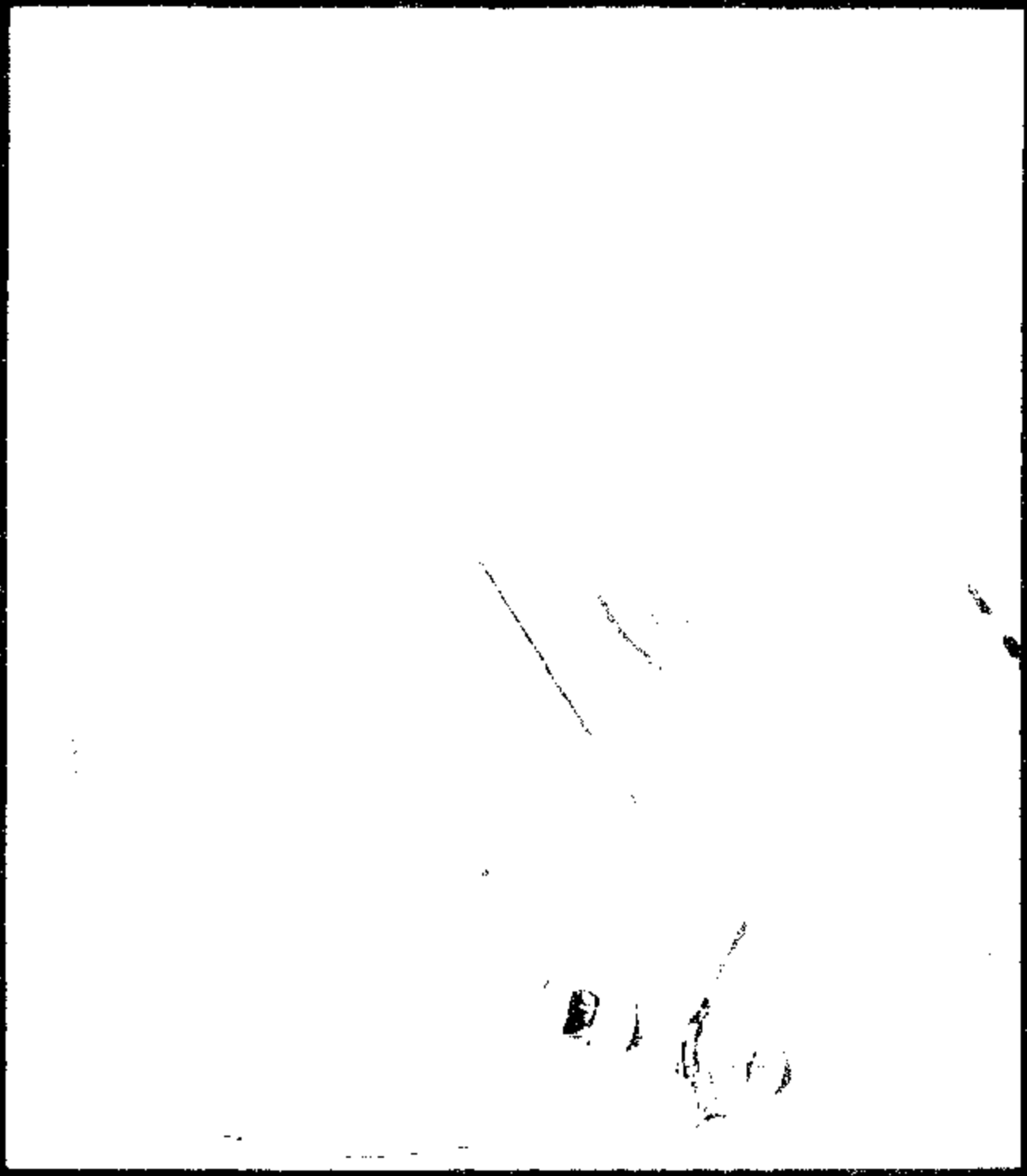







PLEAS


PLEASE
We are filming an event to
send to a customer
Please refrain from excessive
noises, whistling, singing
renditions, animal sounds,
renditions from the wizard of OZ,
or any other noise that our
customer should not hear from the
lab.
Auditions will be held next Tuesday for
all new and previous renditions of
annoying sounds!
Thank you



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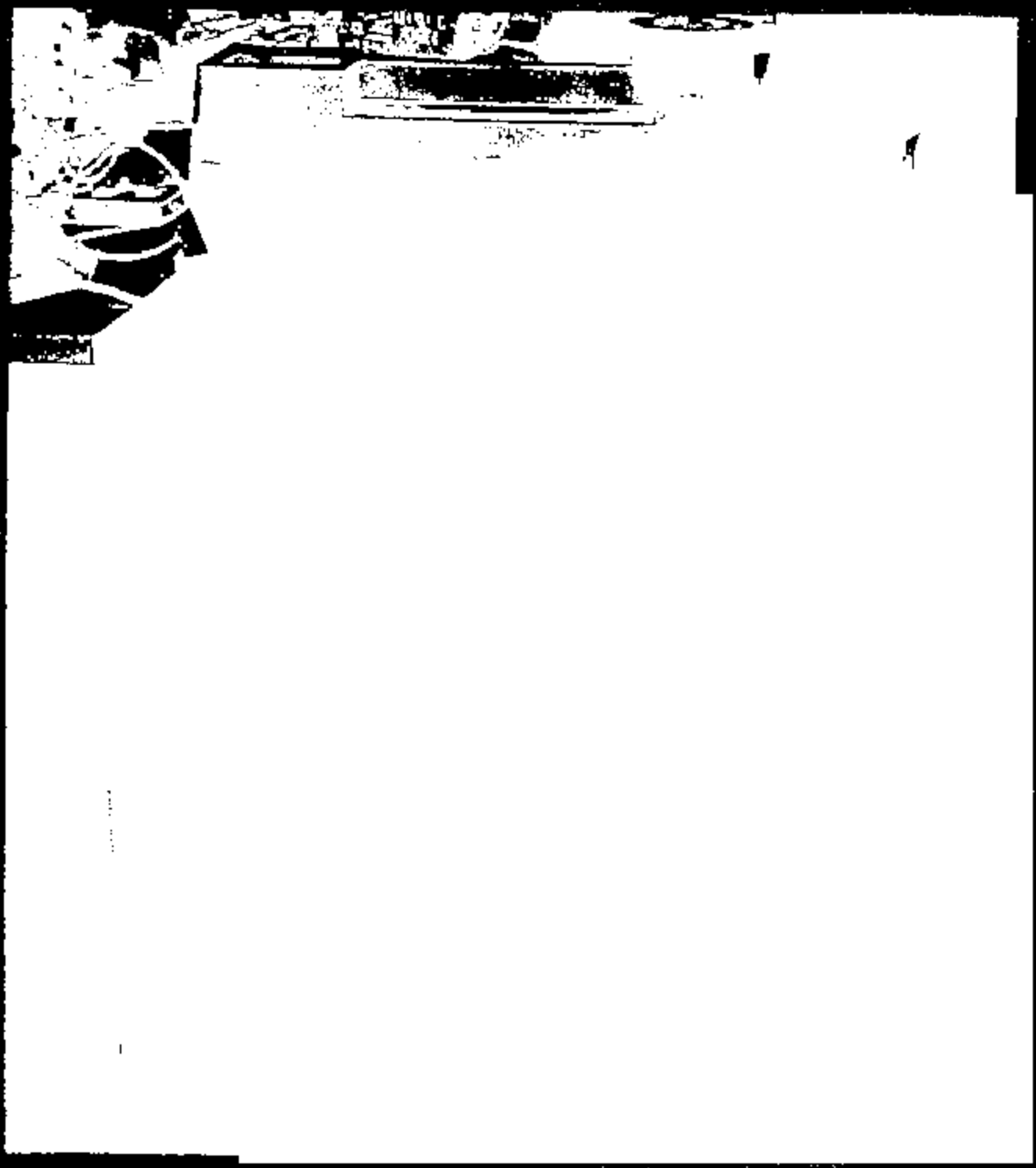

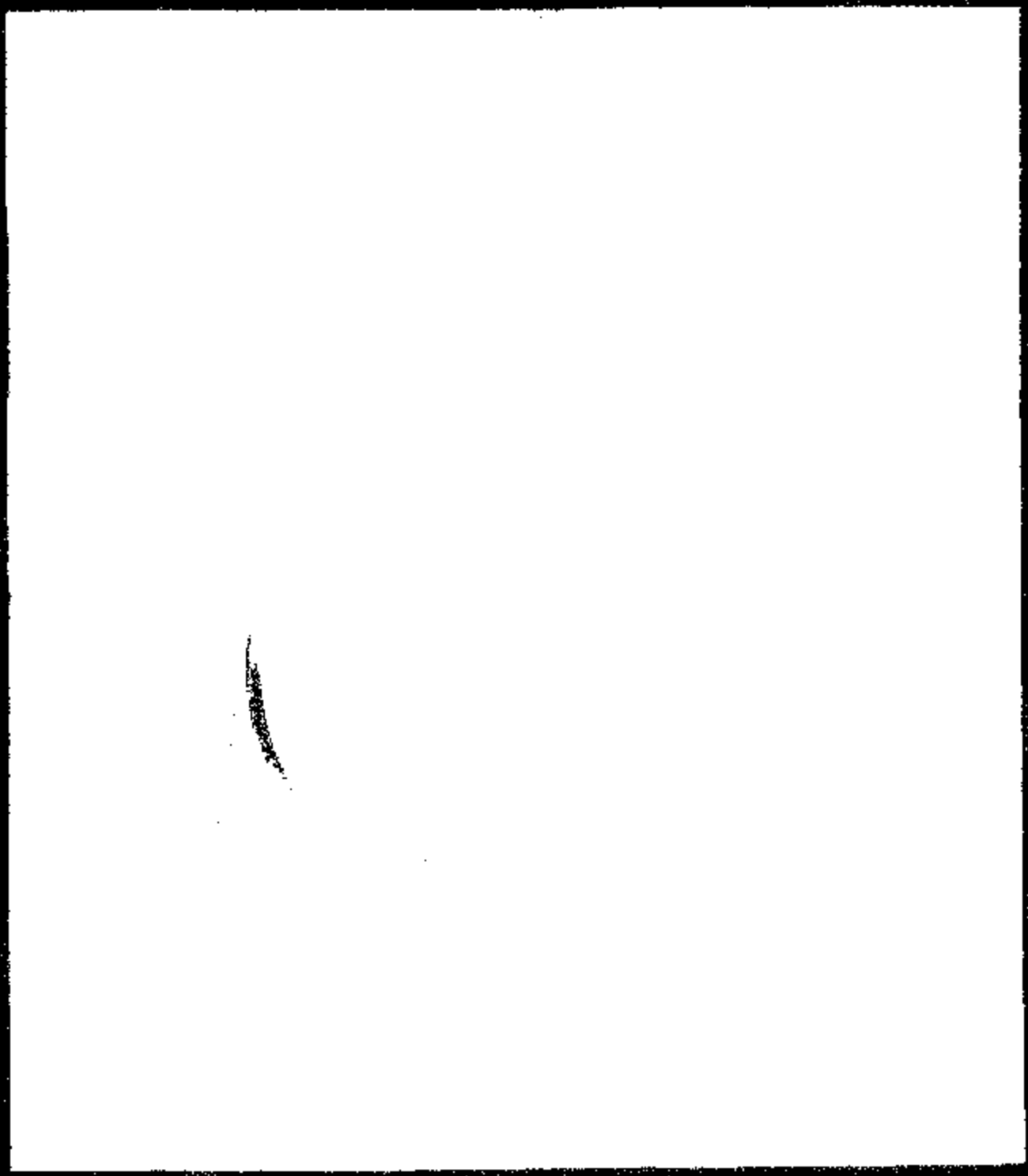

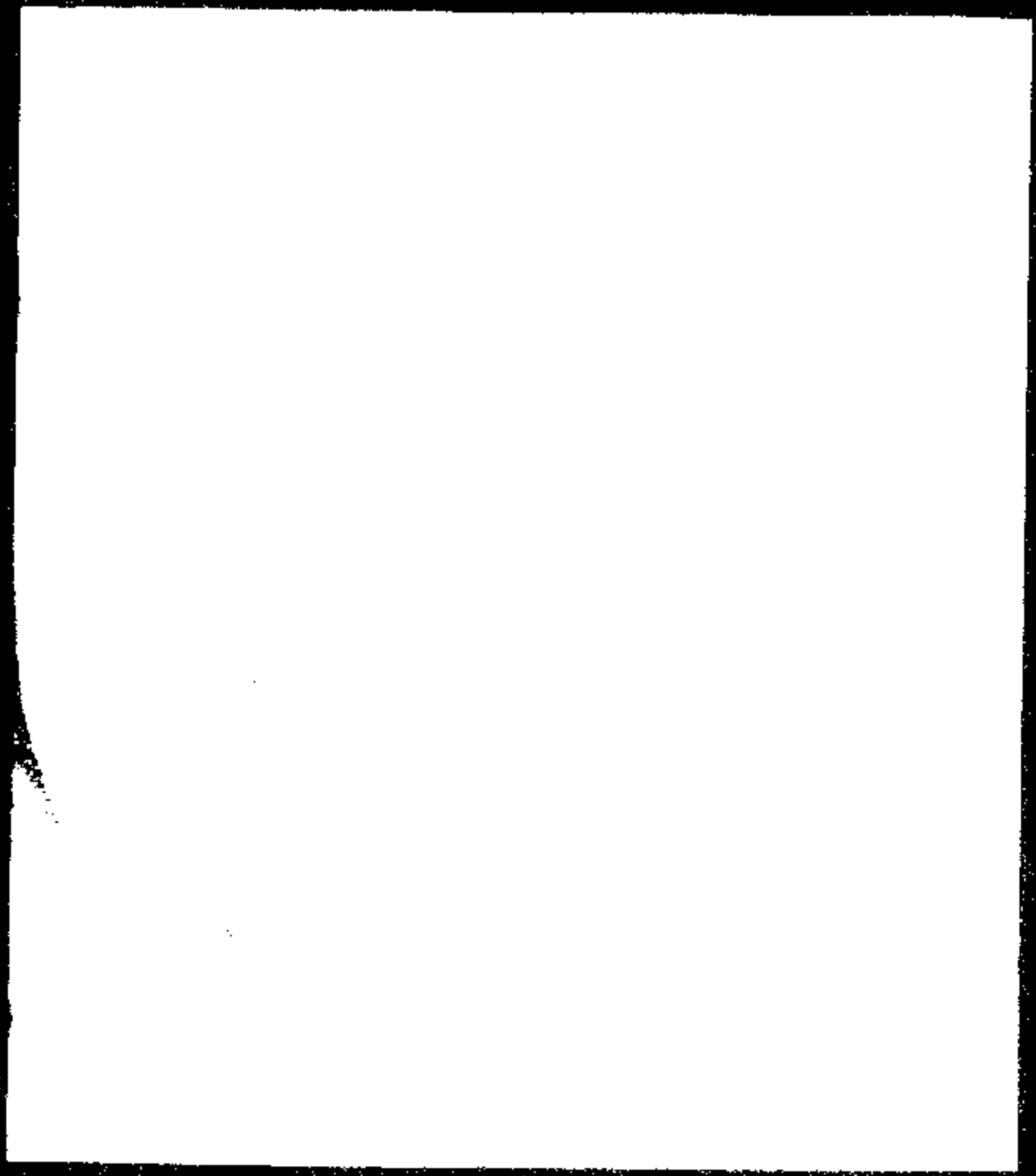

1999 3 12 12:52:36 PM MVC-FD91

Digital Mavica images

17 mavica images 75 Kbytes free

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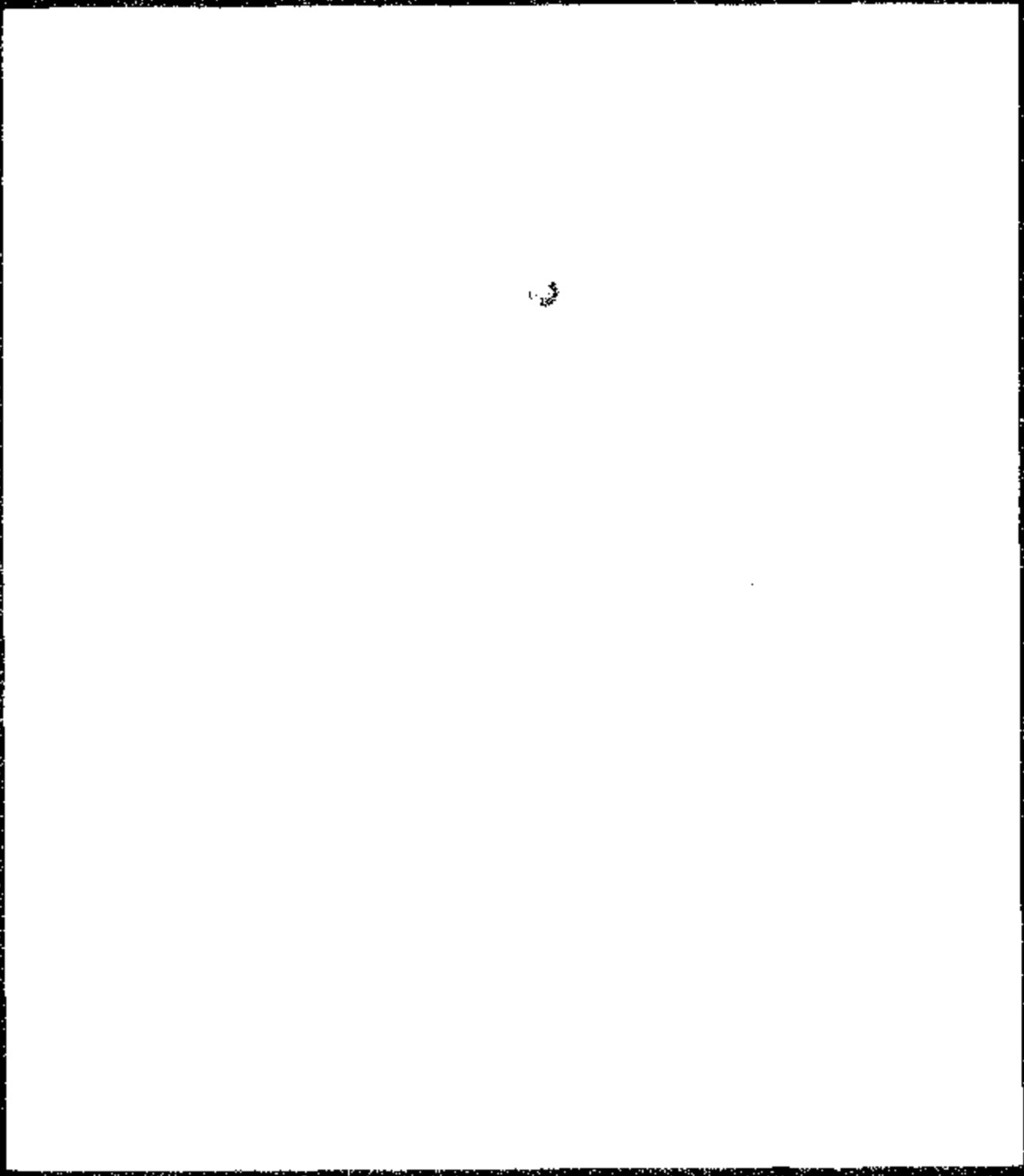

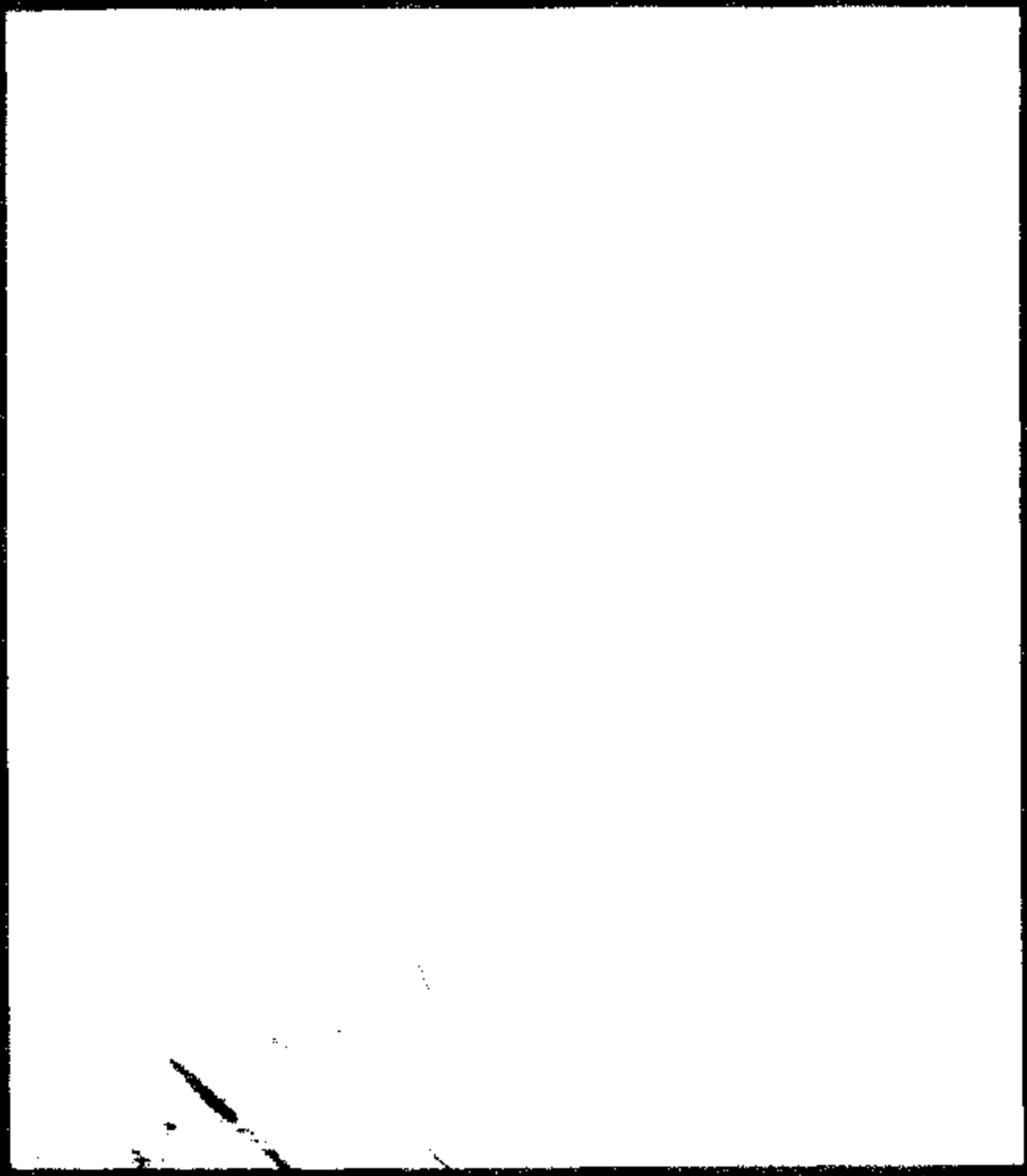

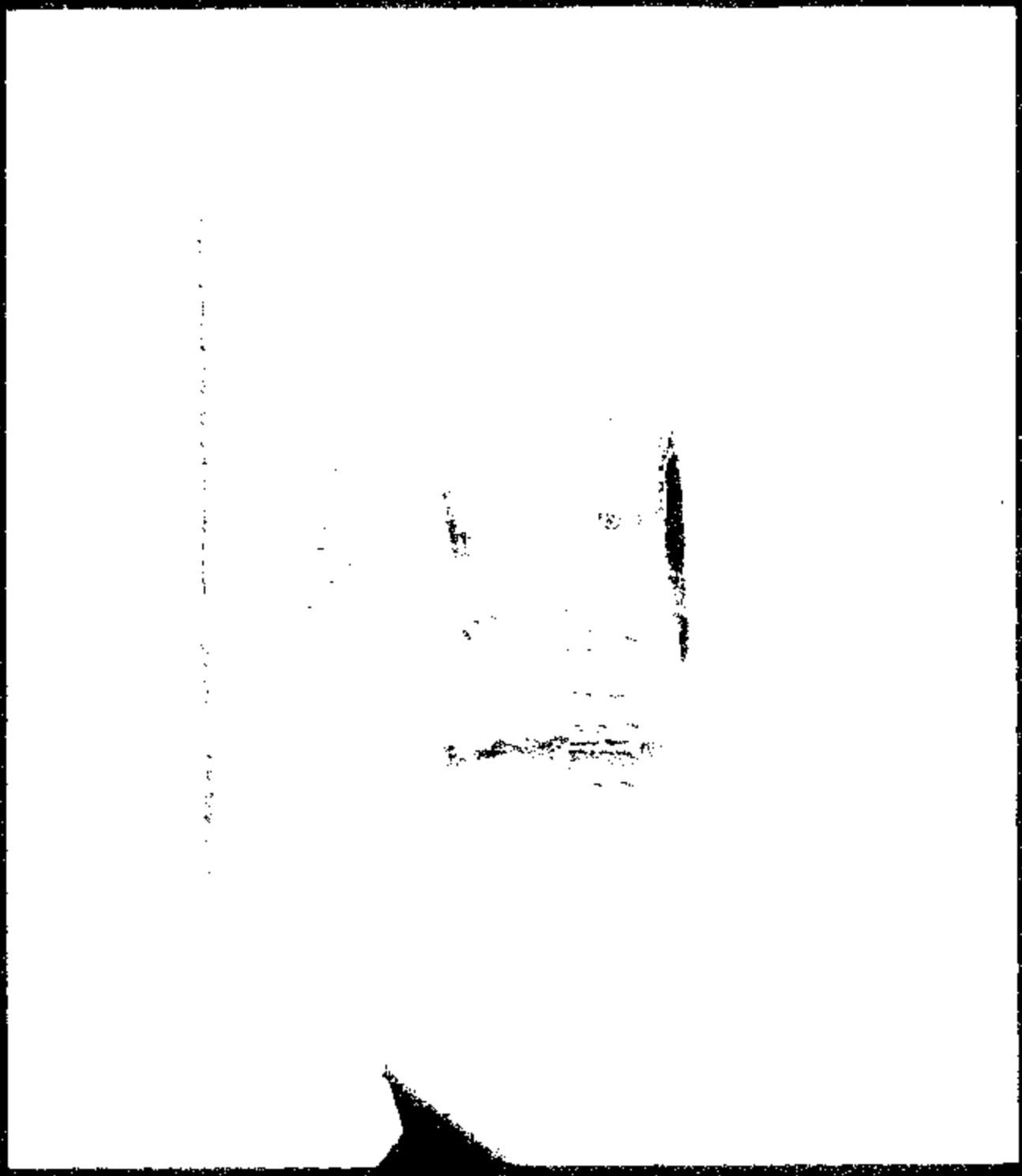

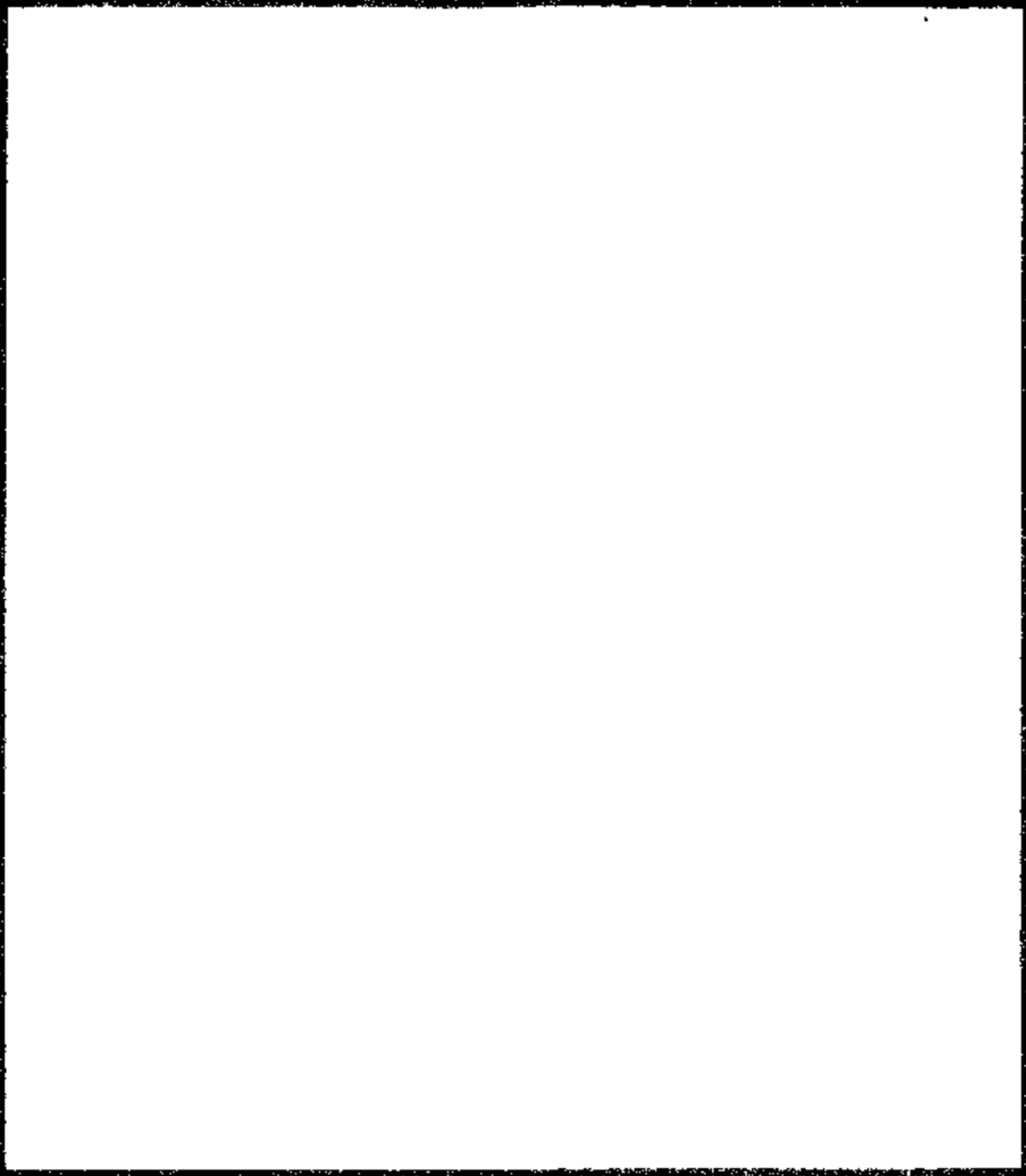

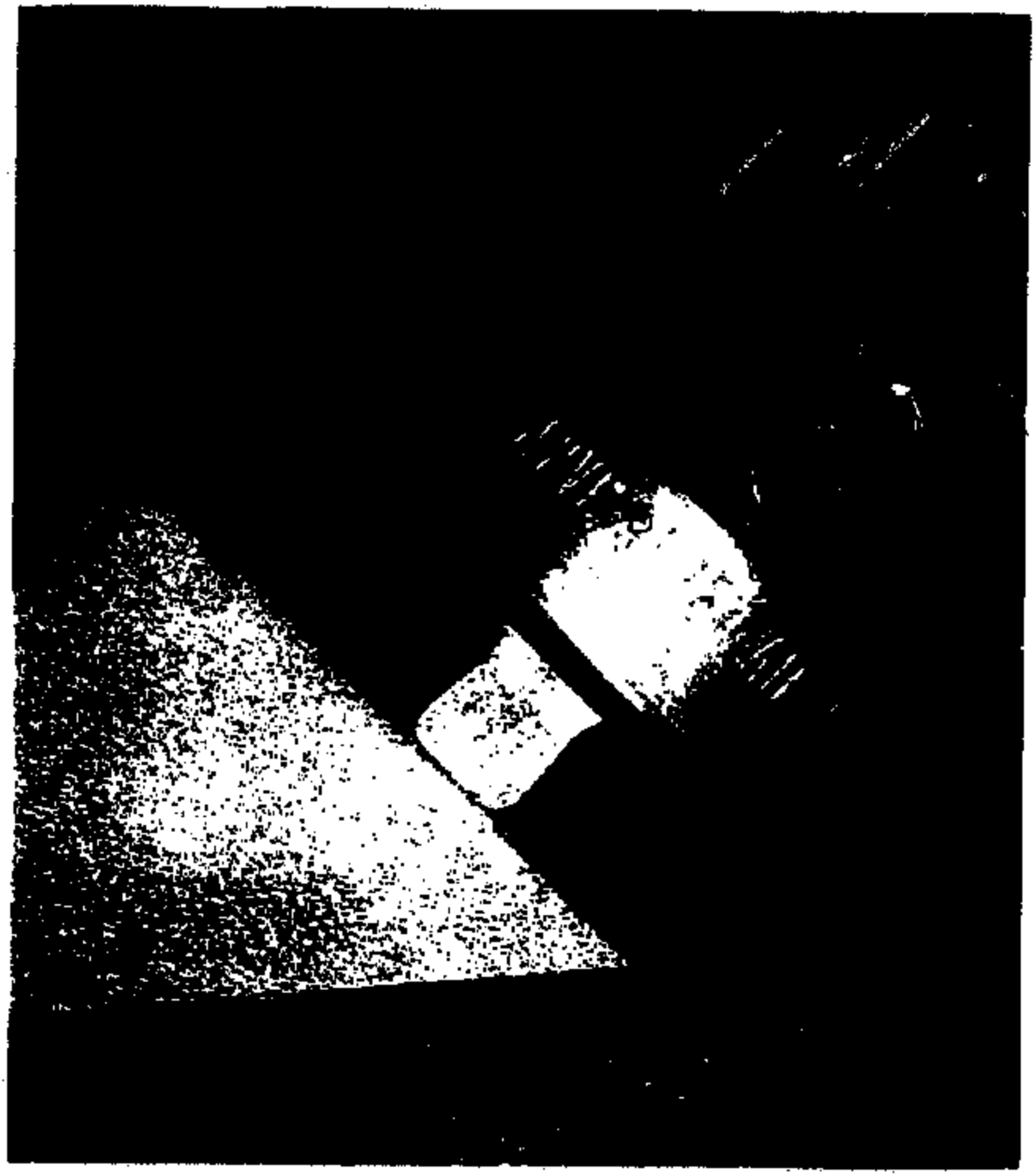

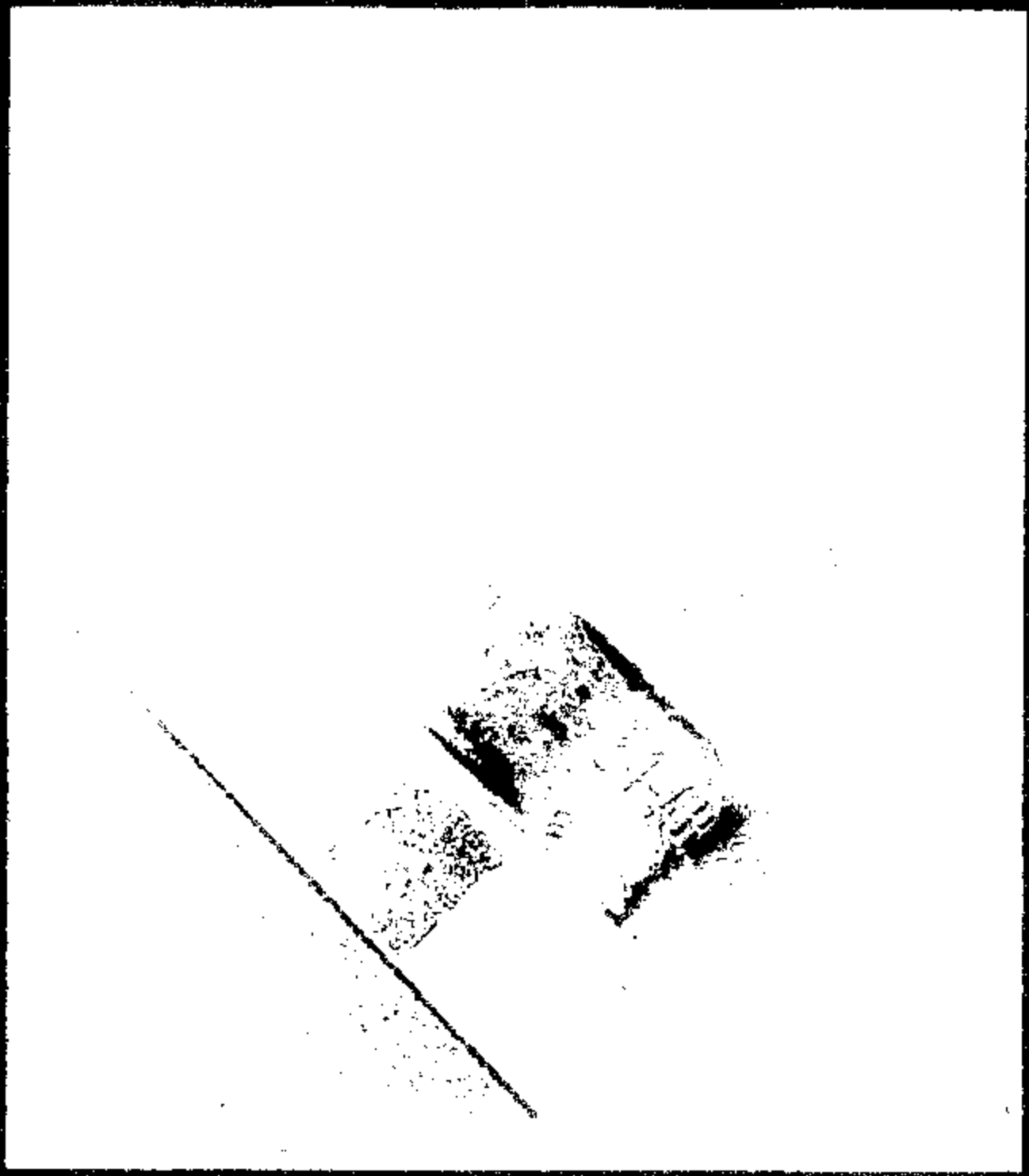

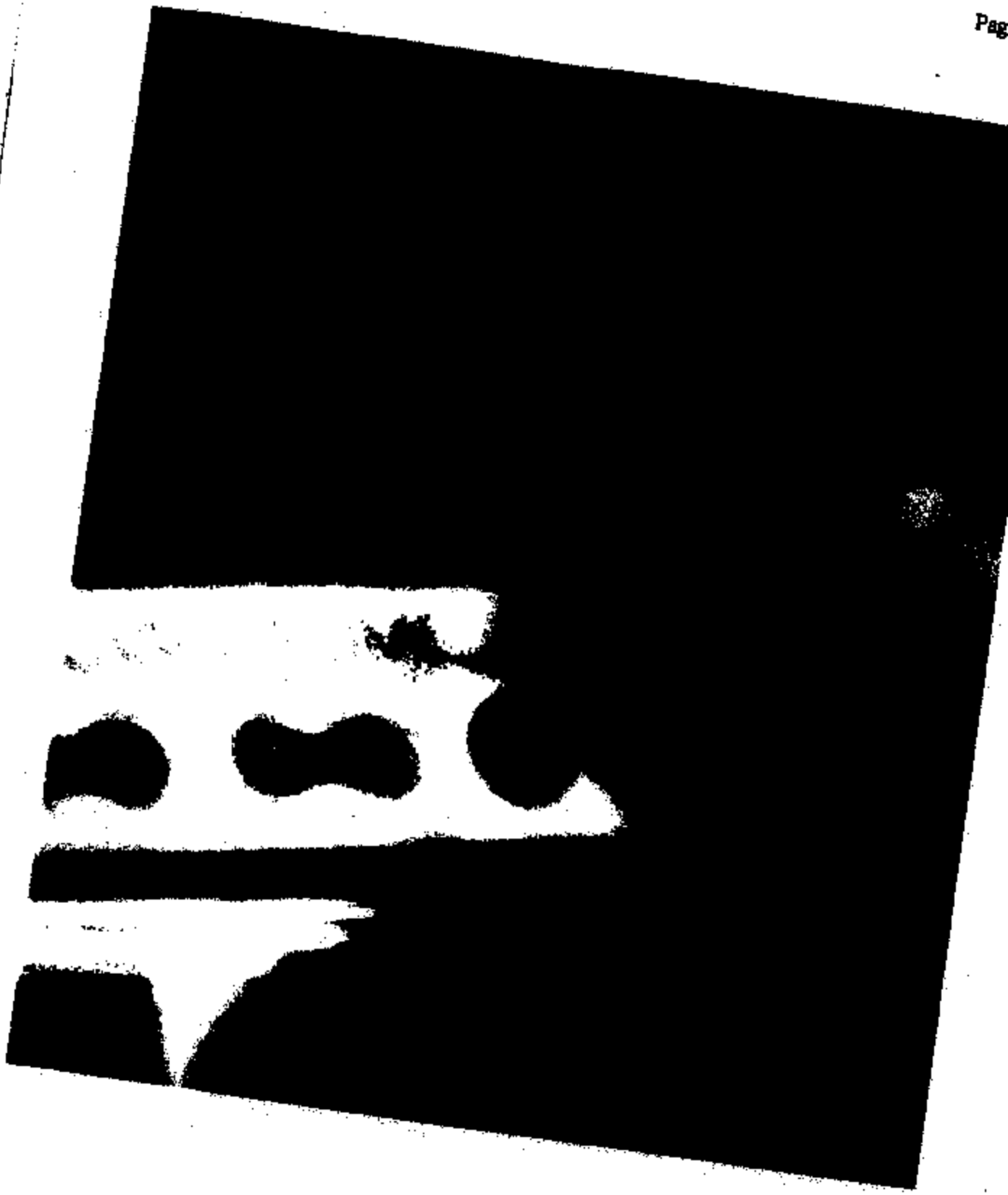


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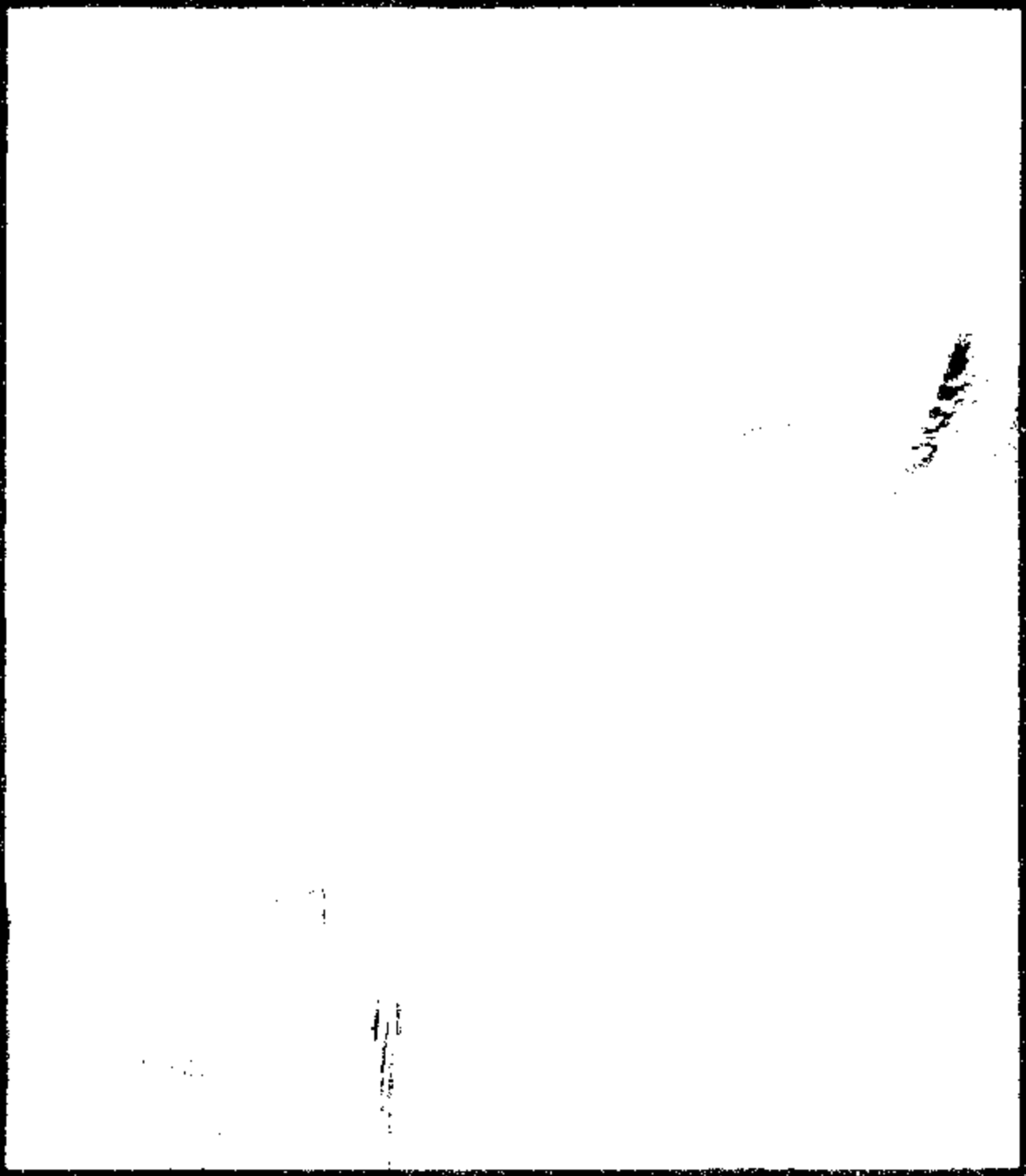

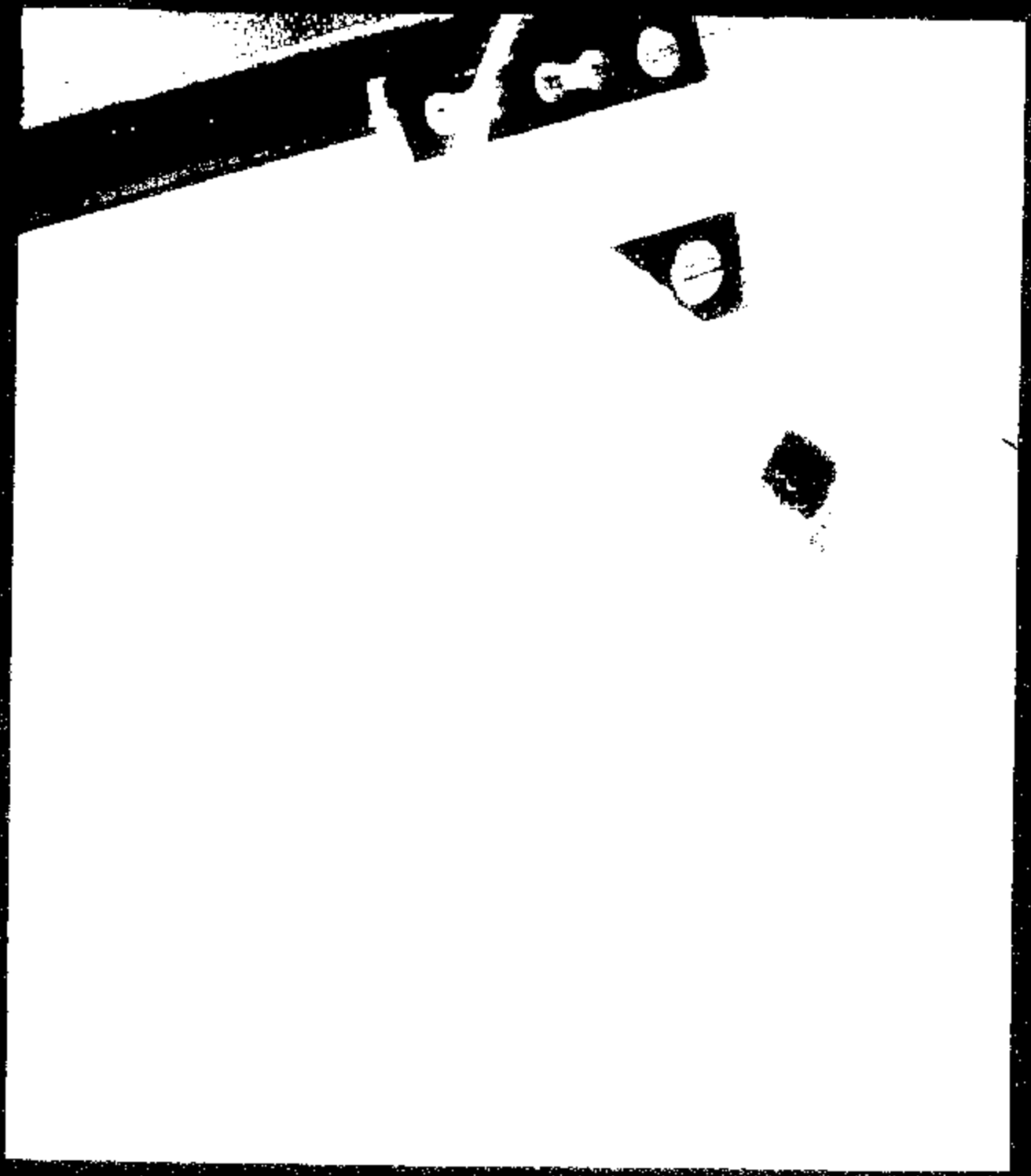

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20 mavica images 519 Kbytes free

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TI-NHTSA 012812

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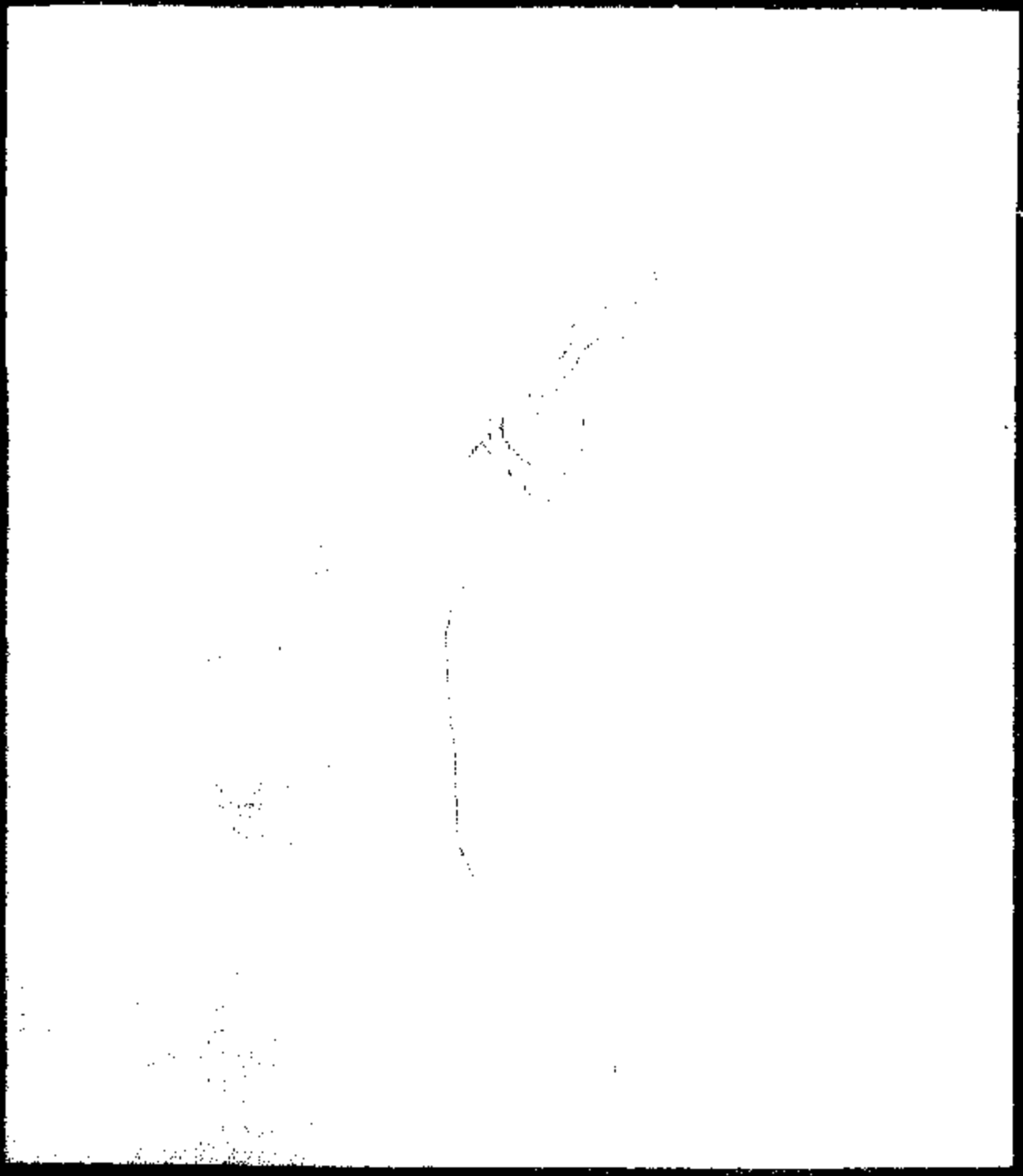

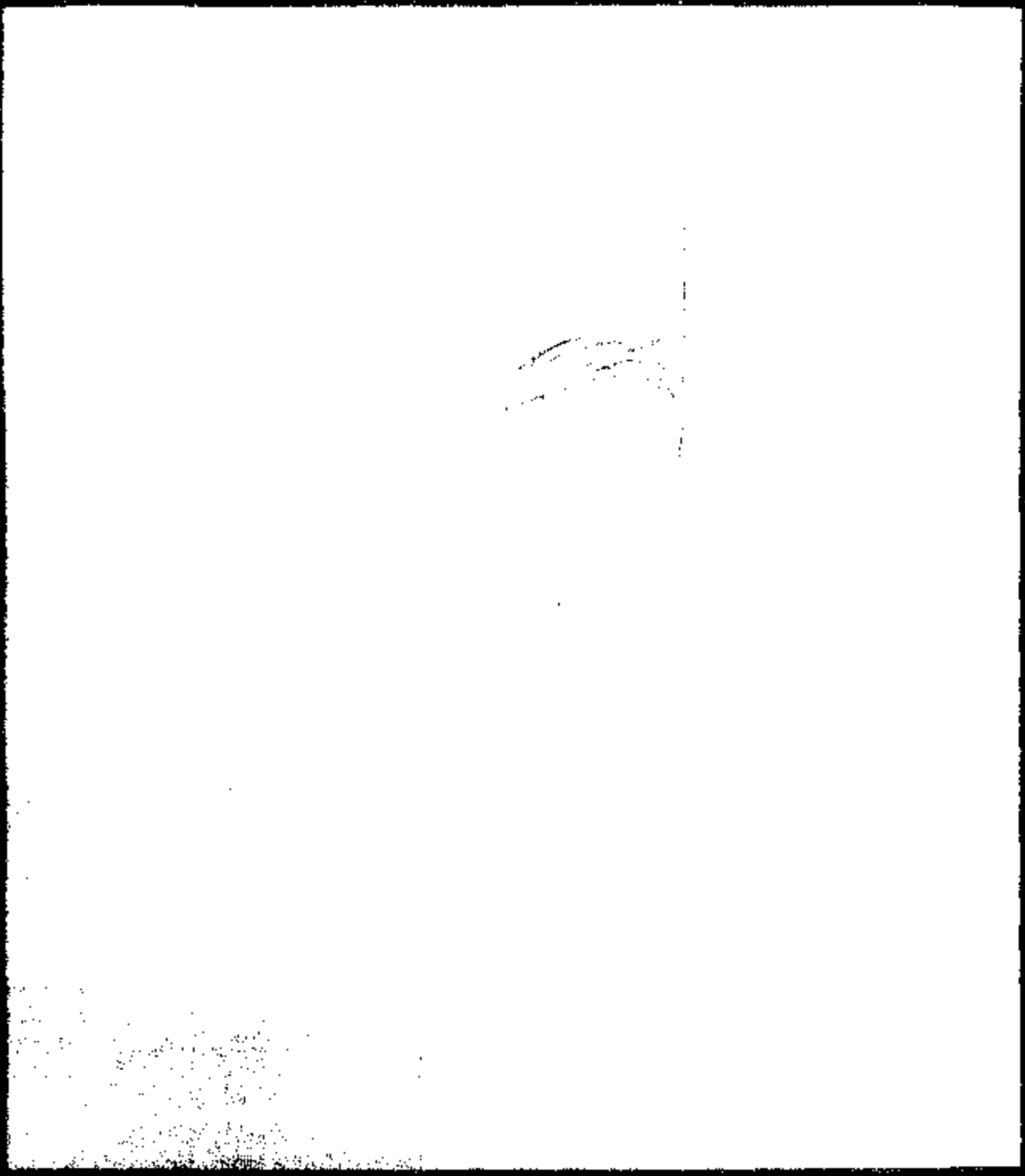

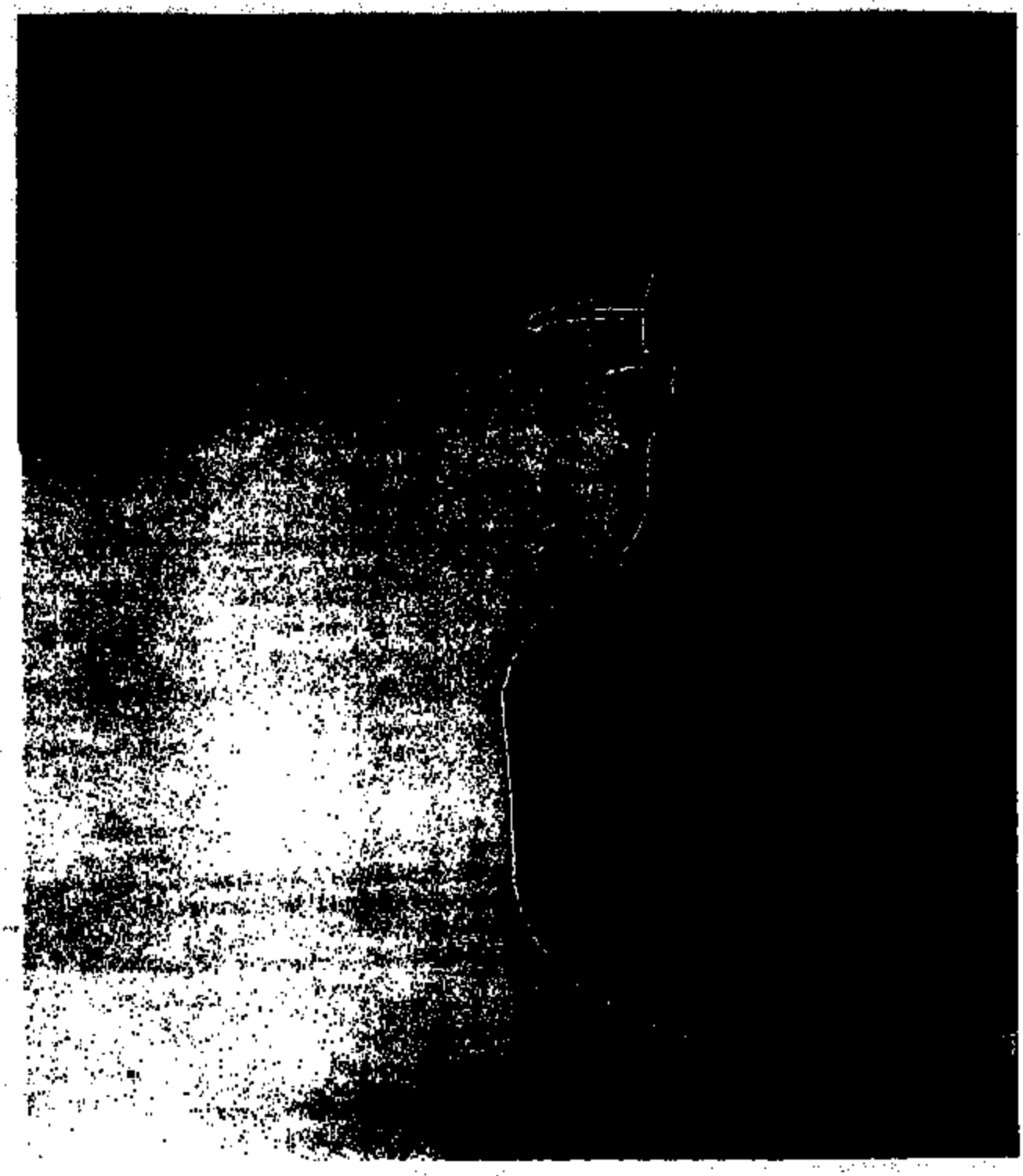

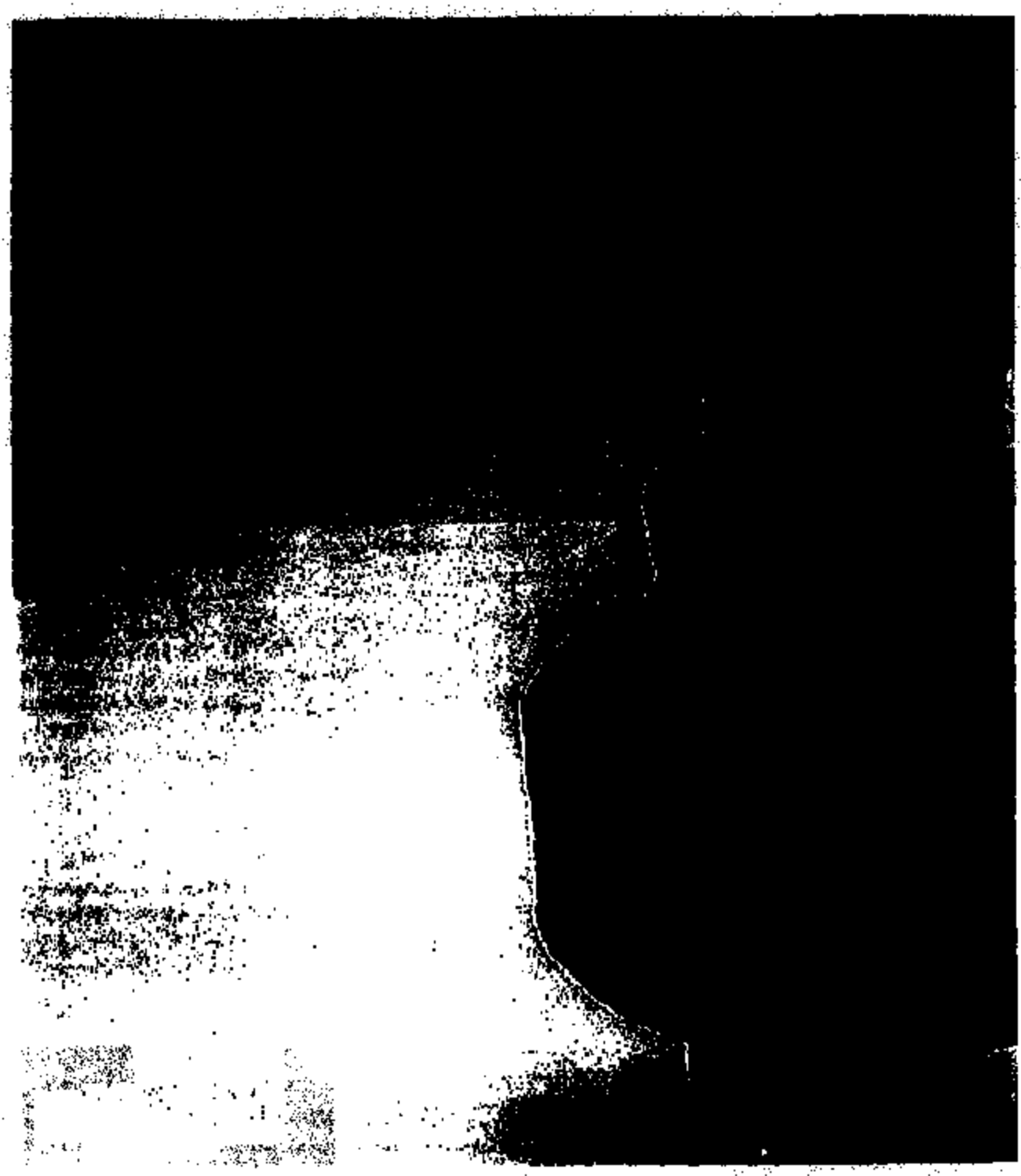

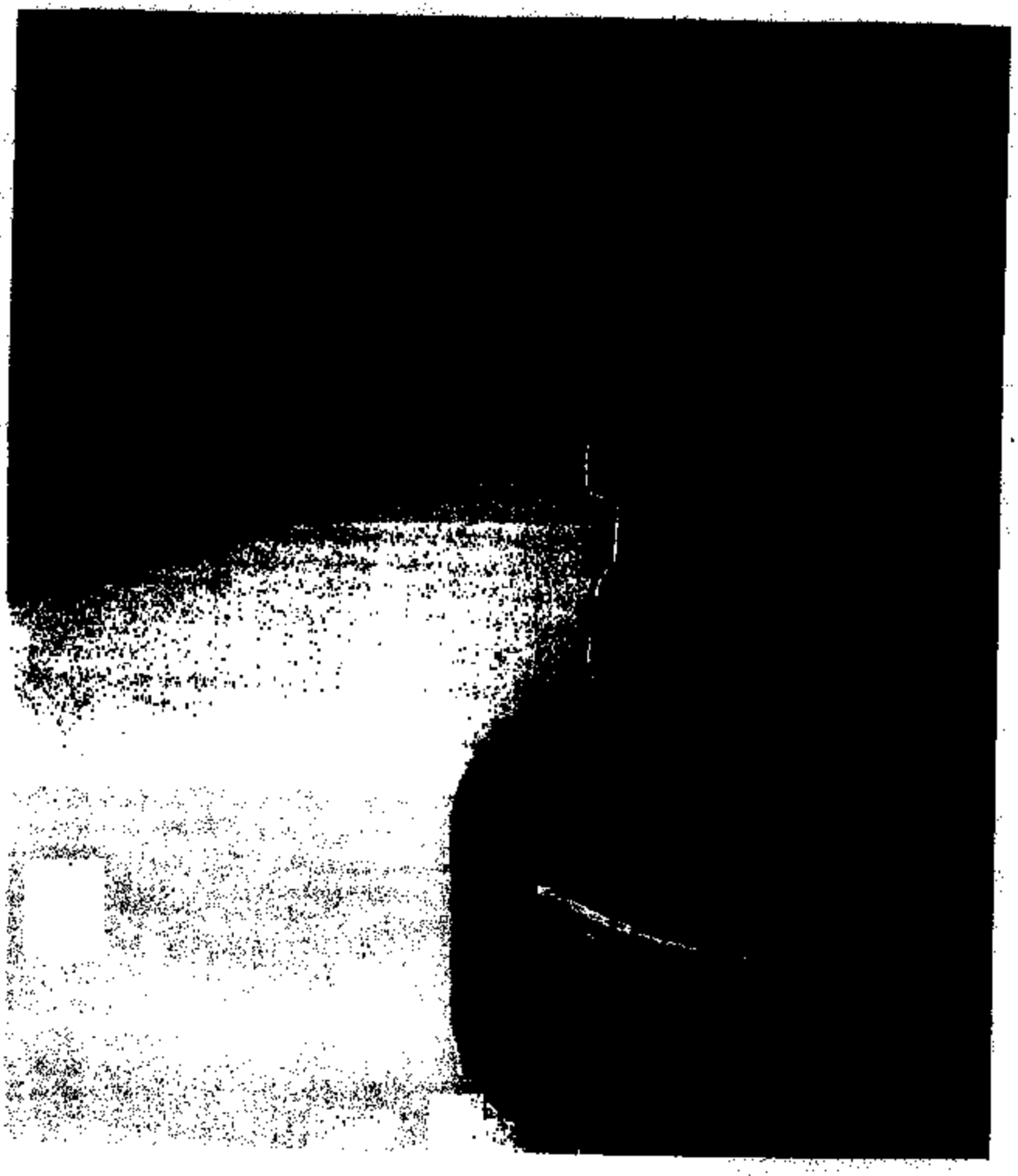

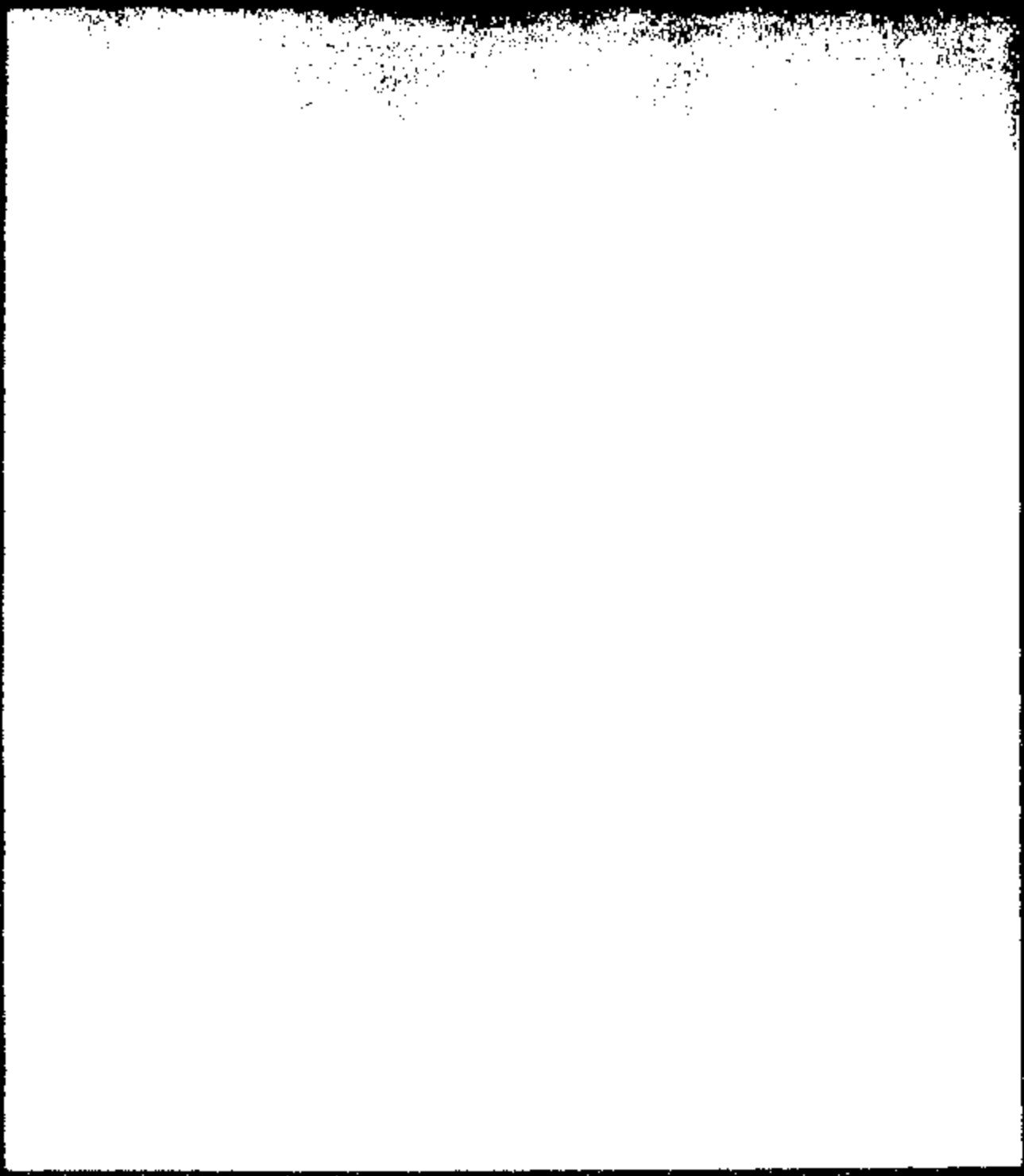

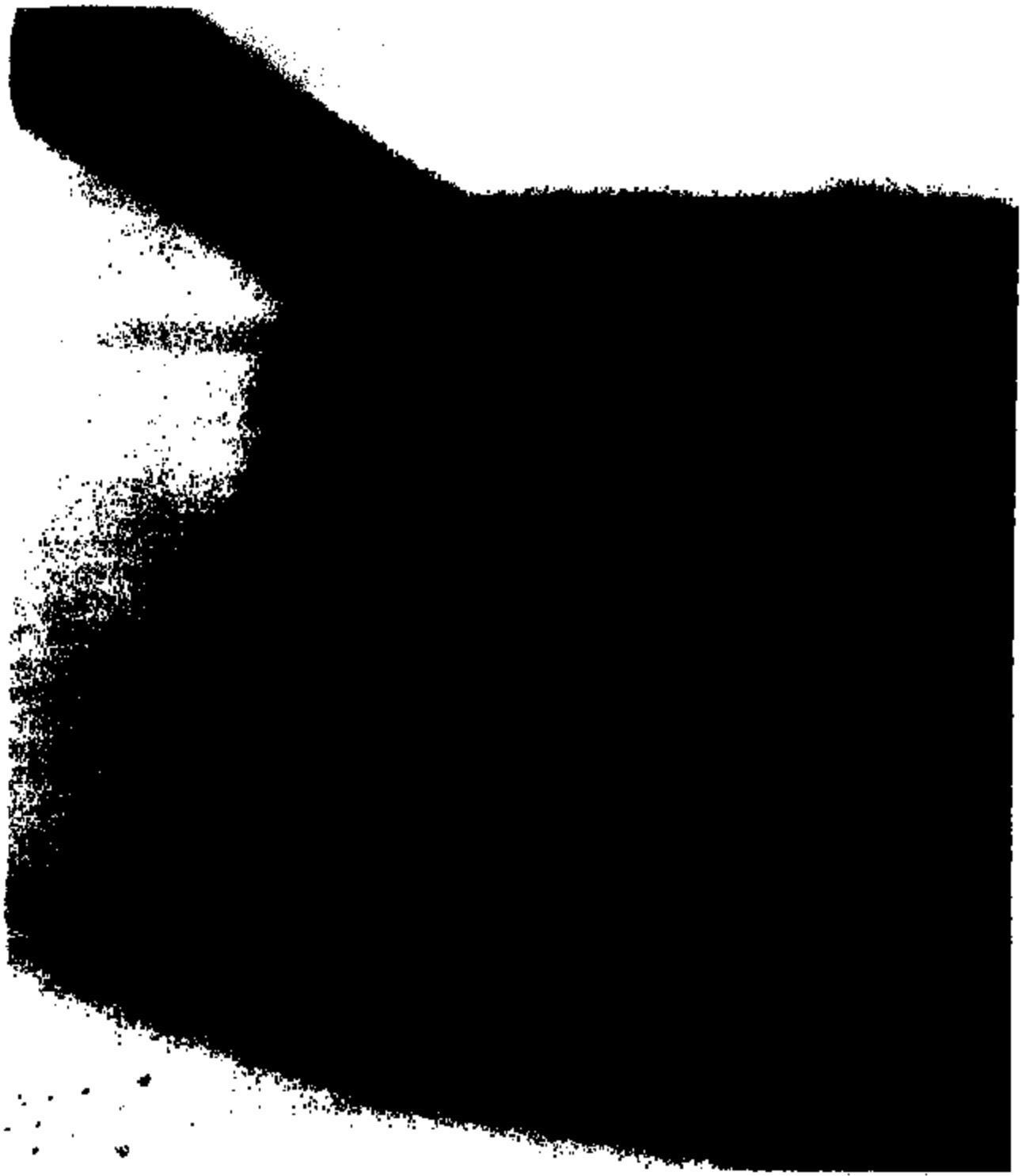

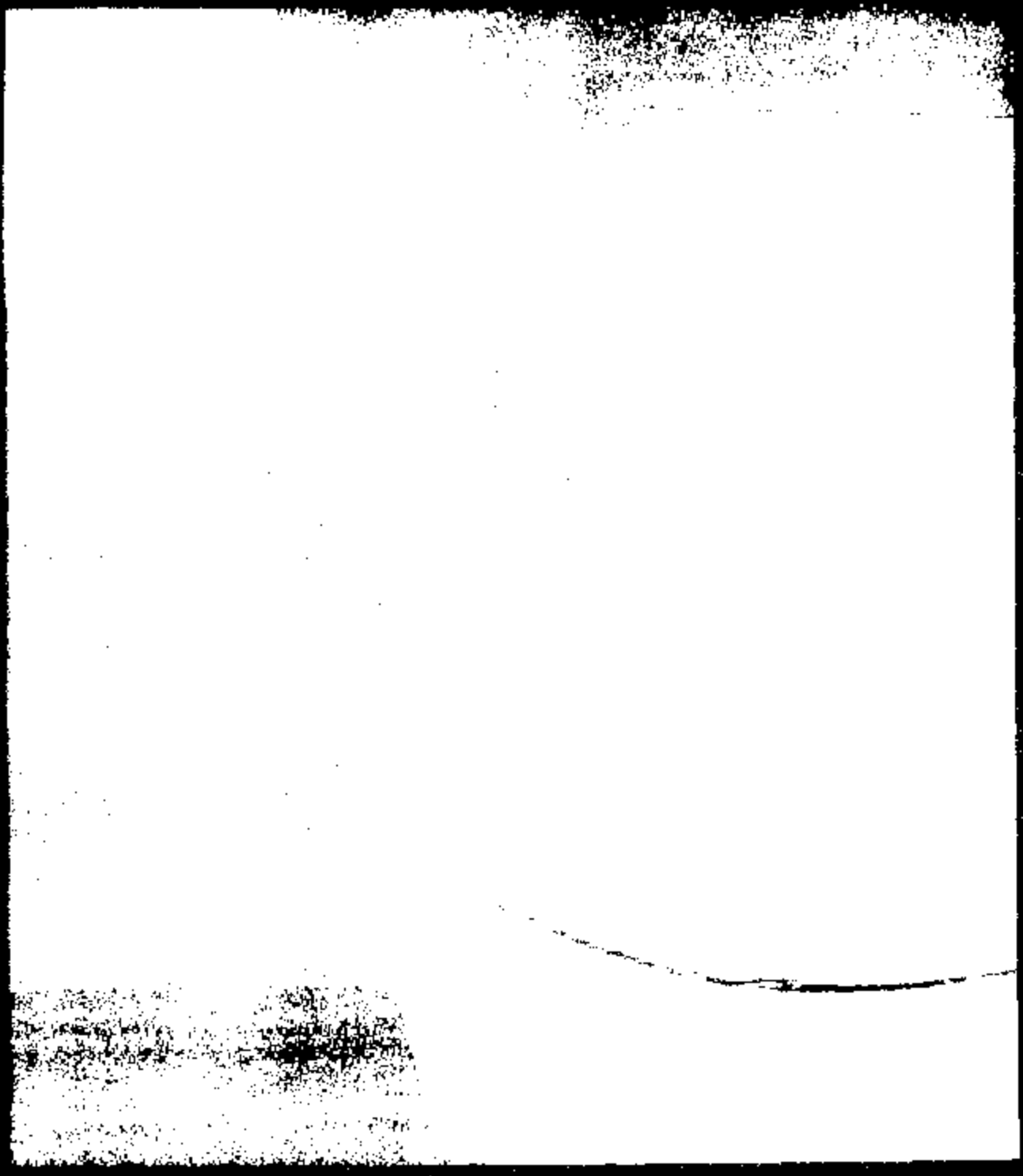

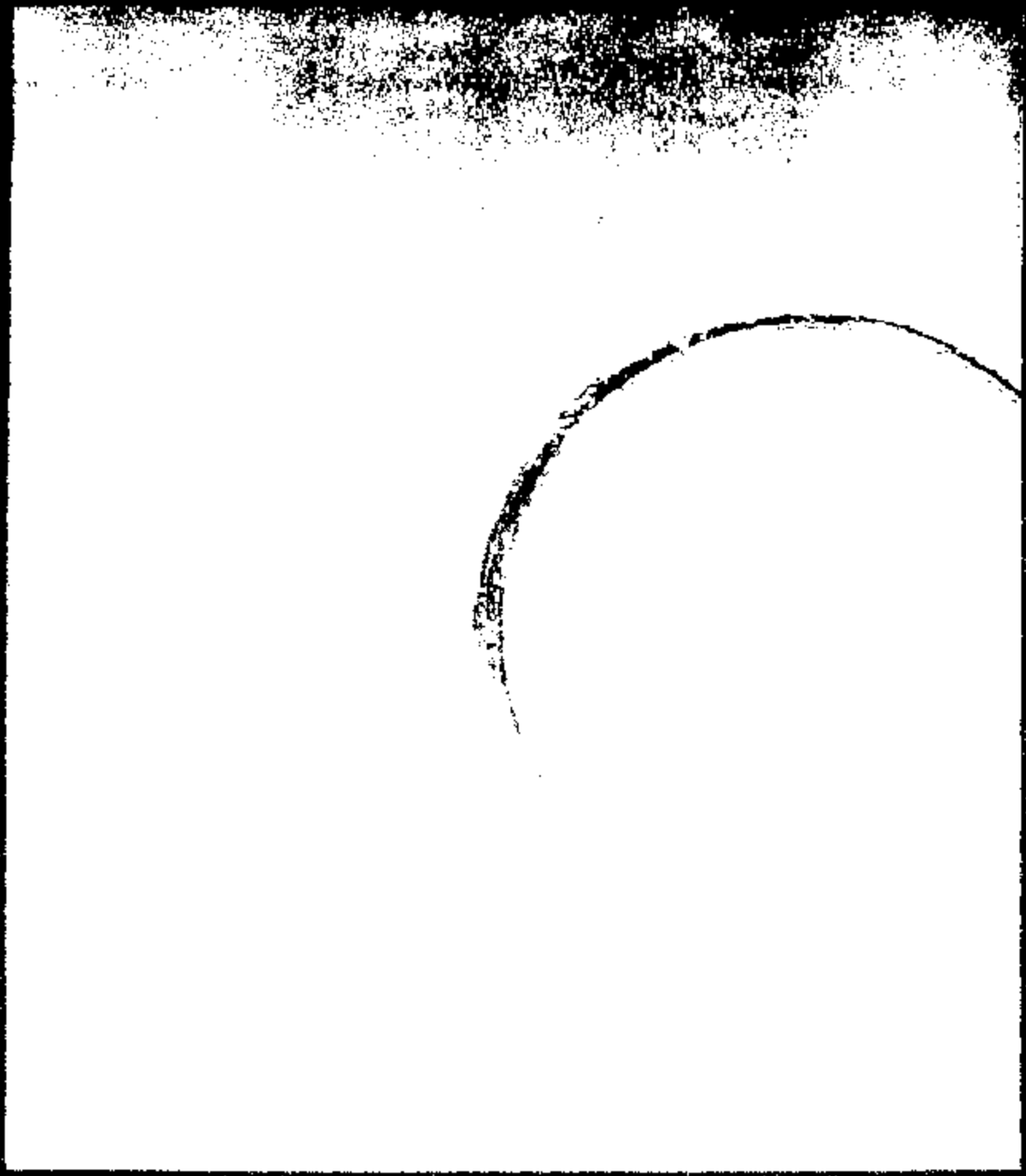

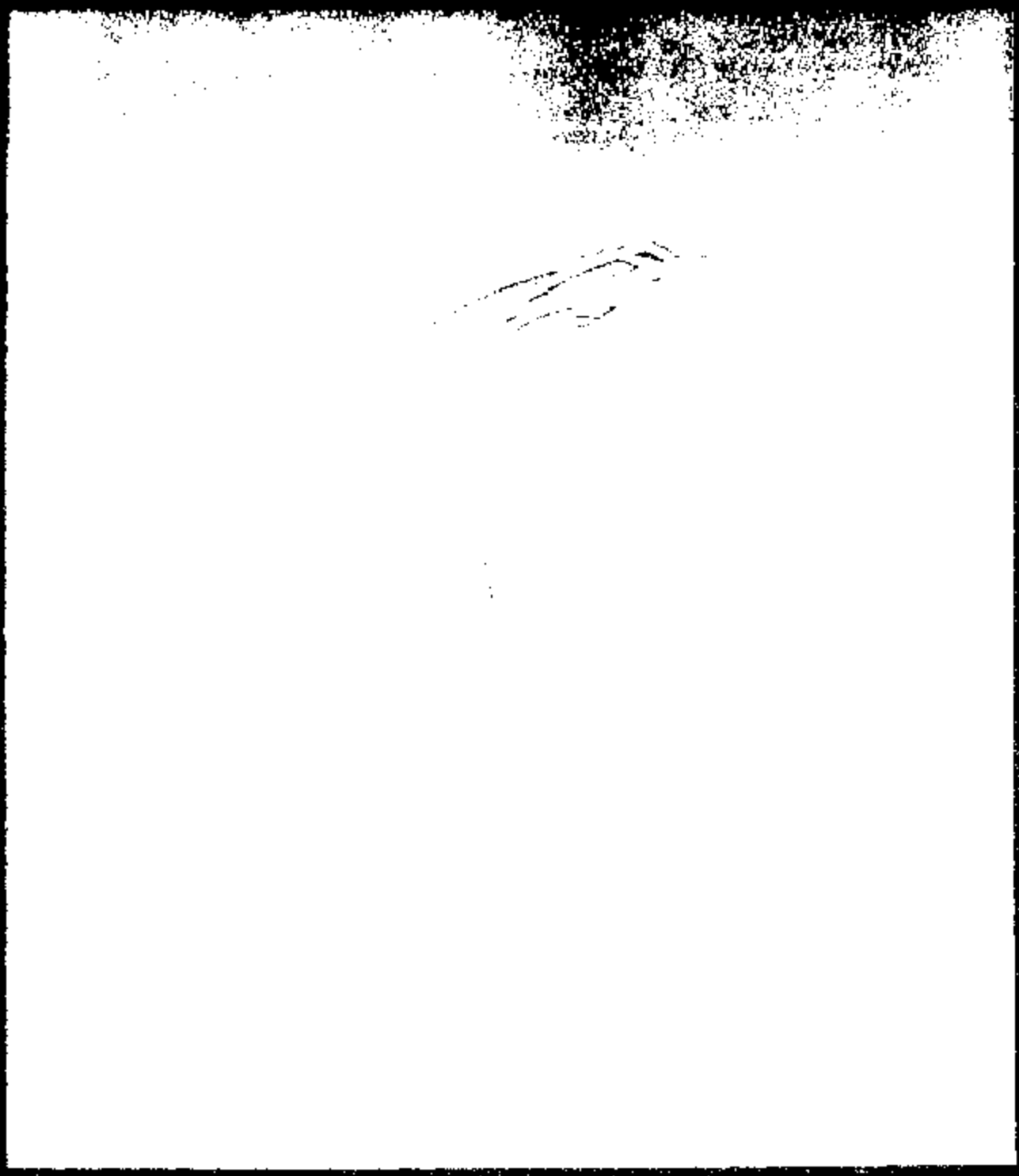

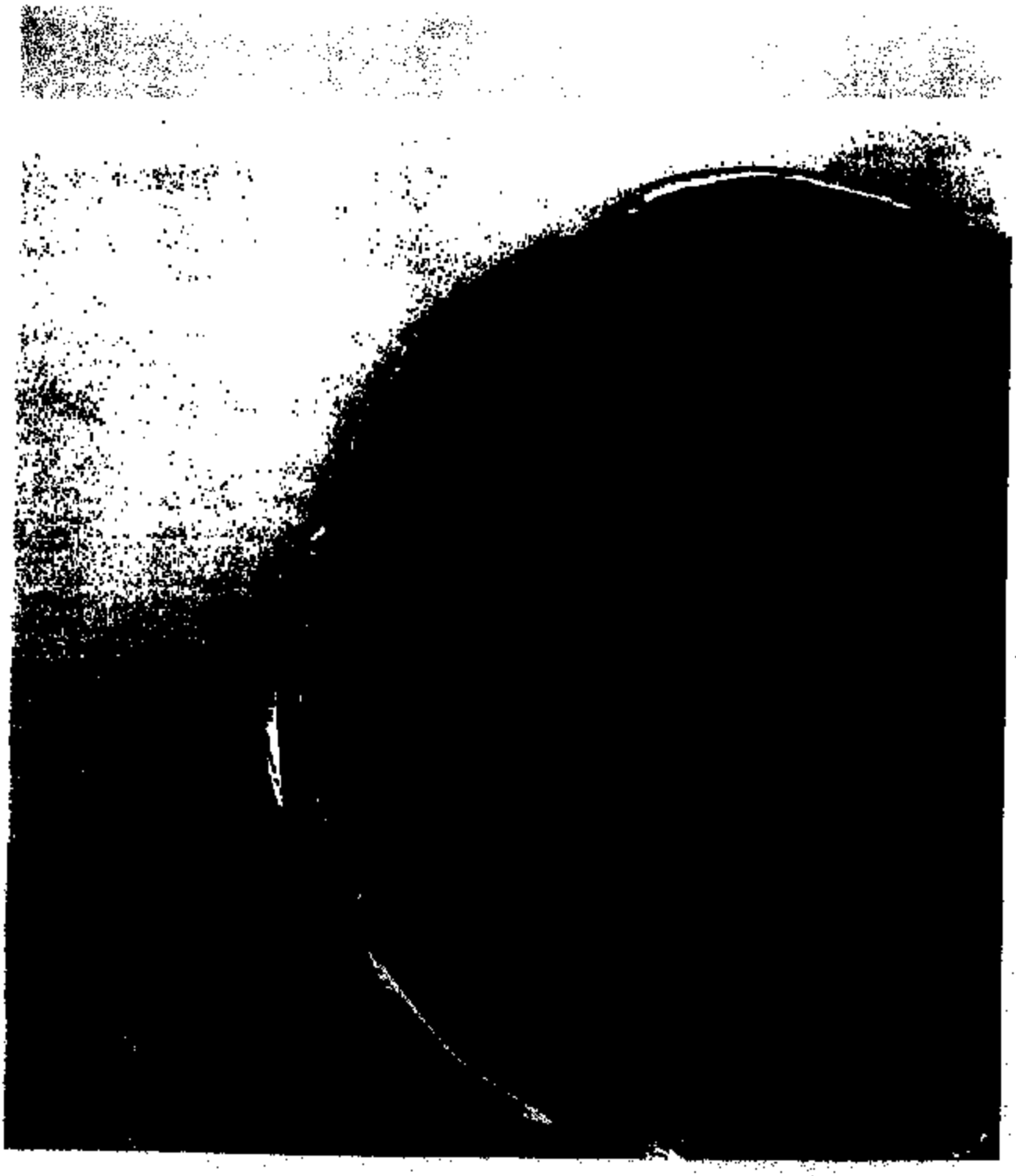

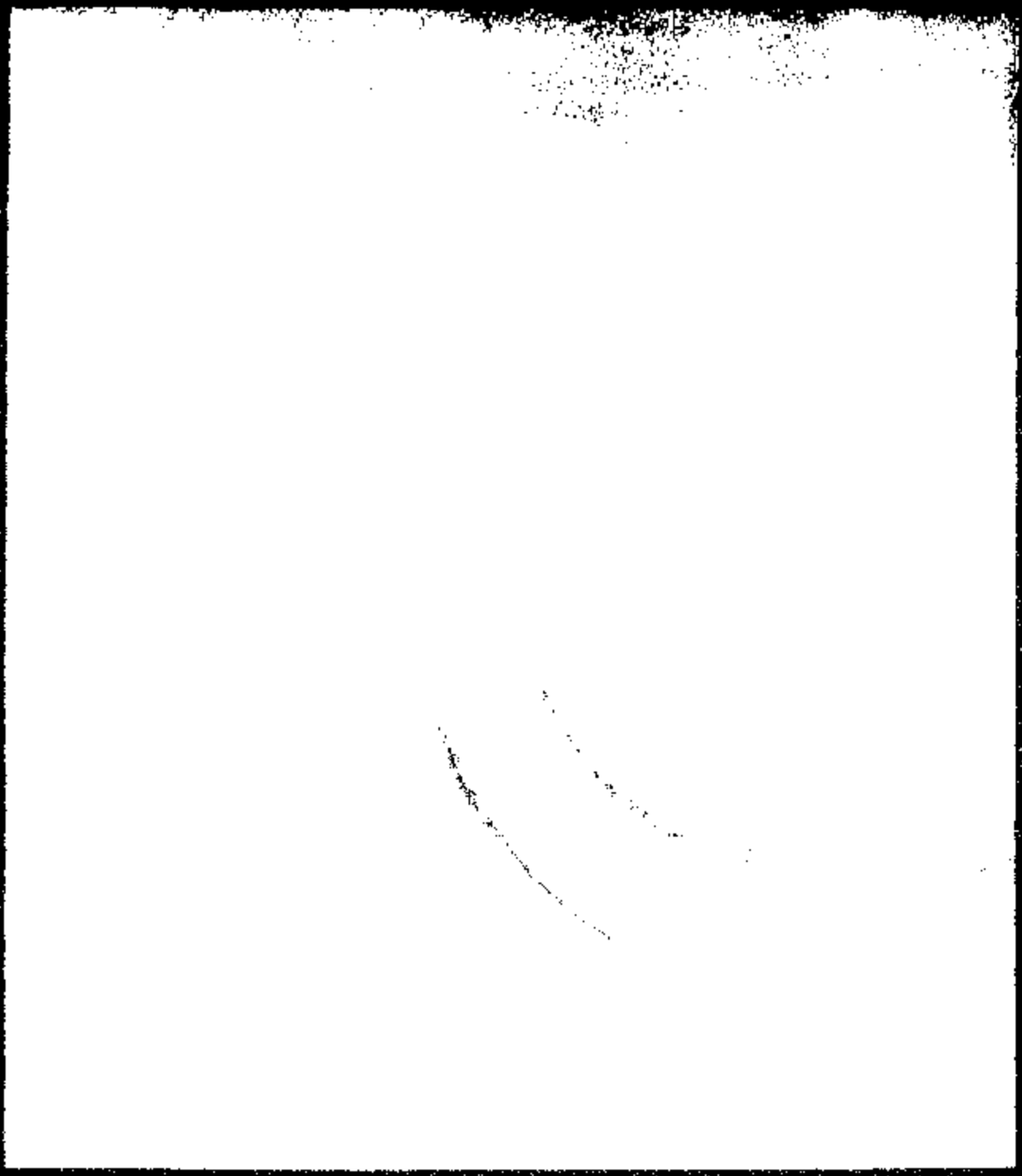

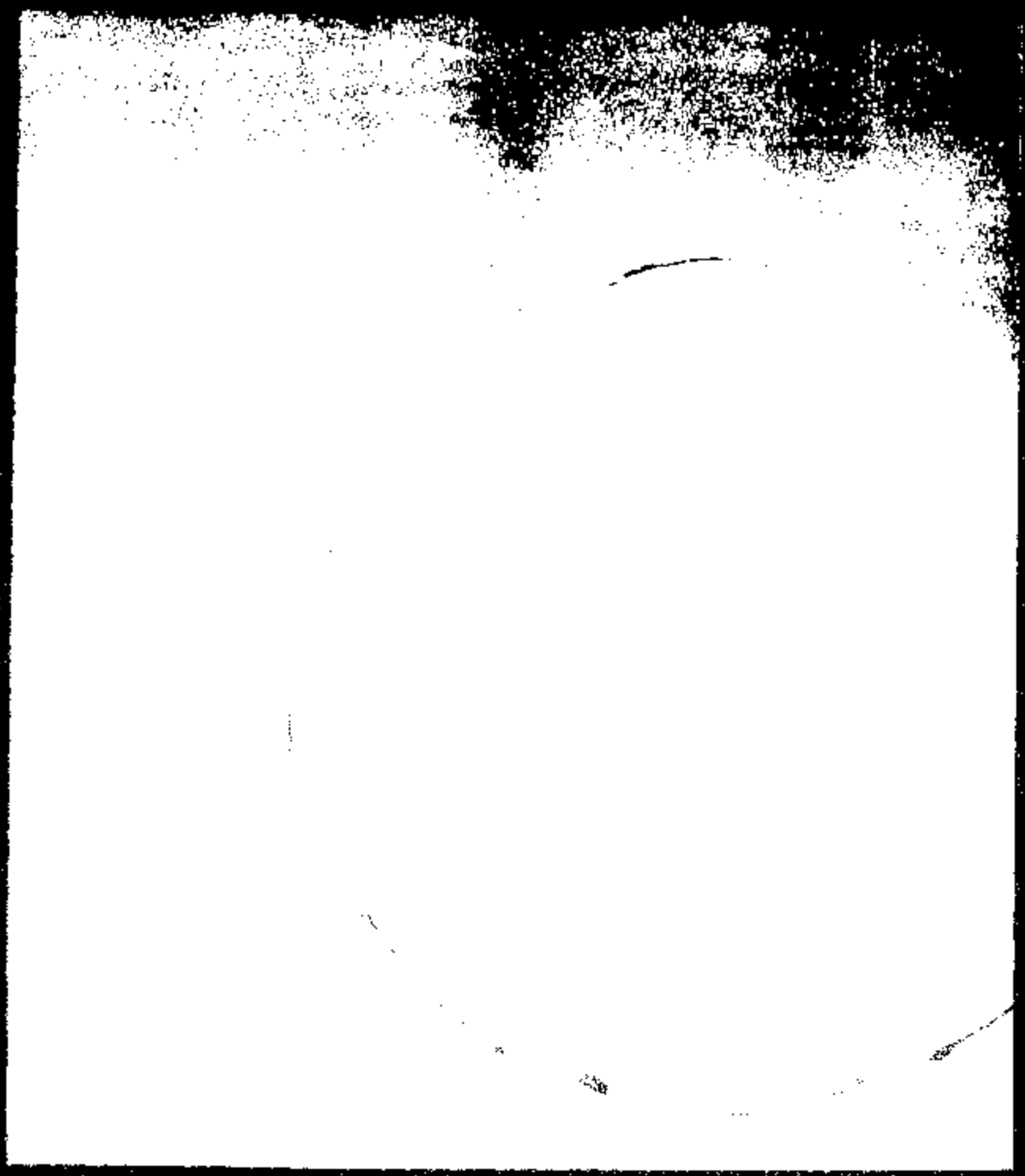

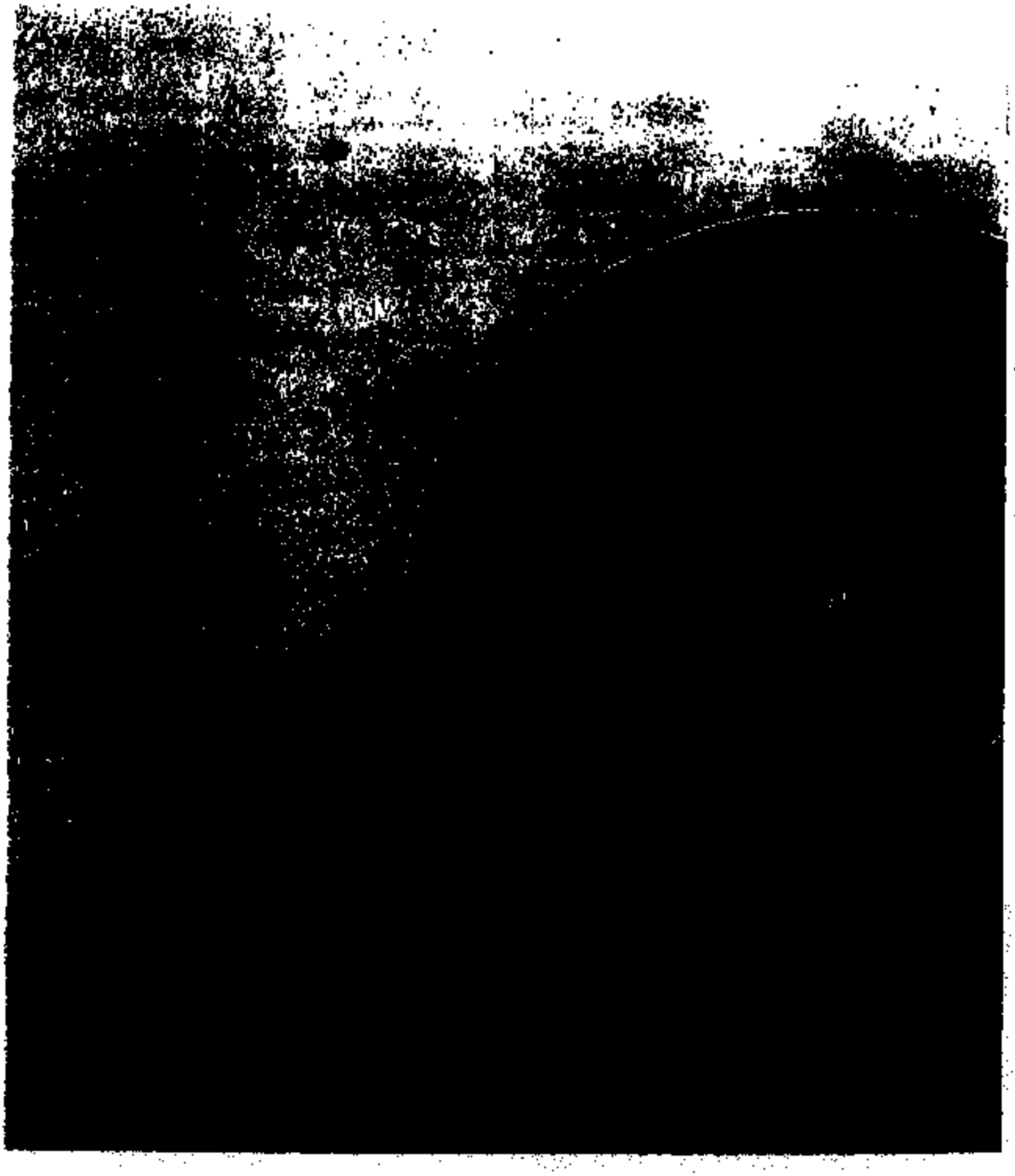

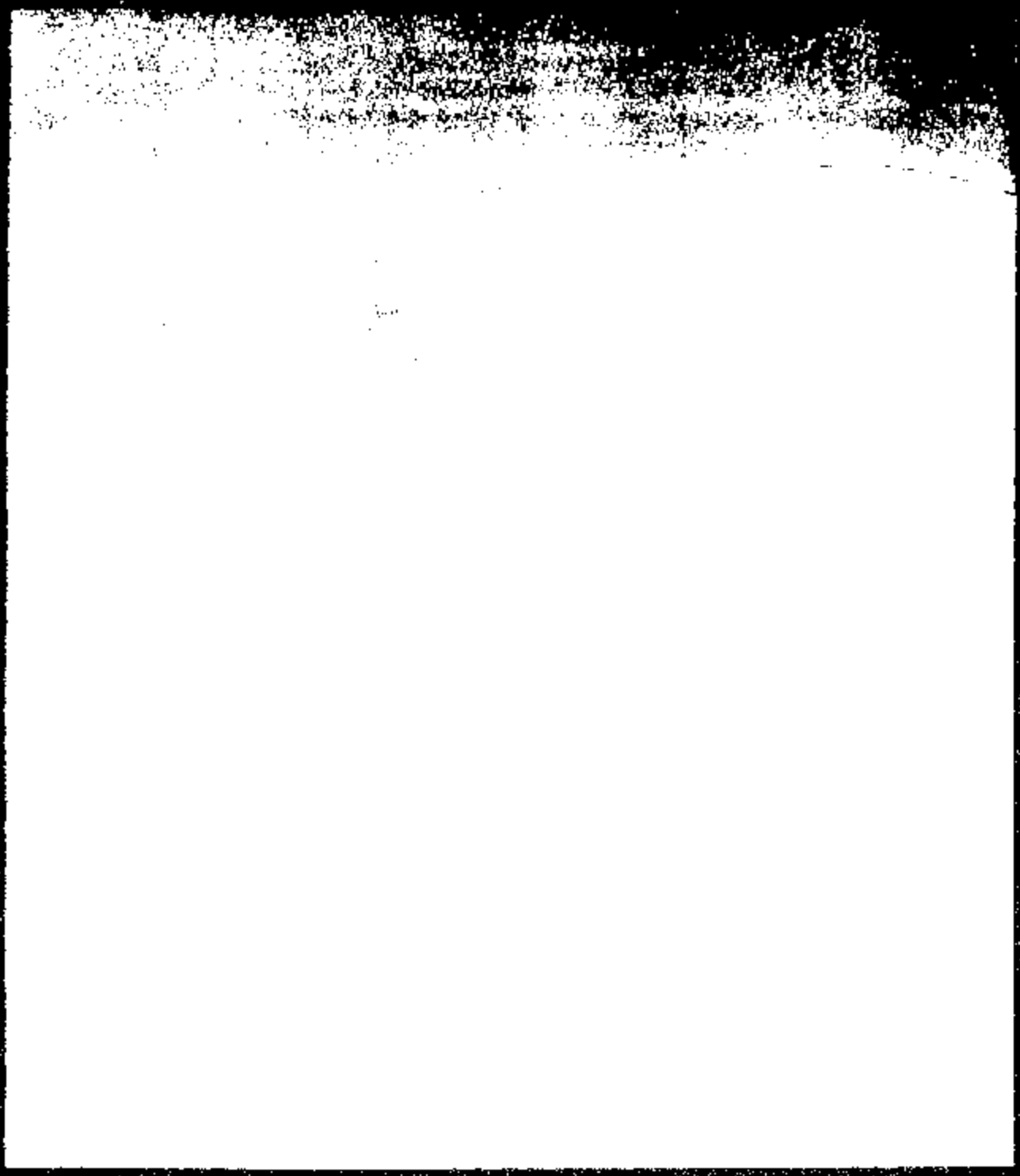

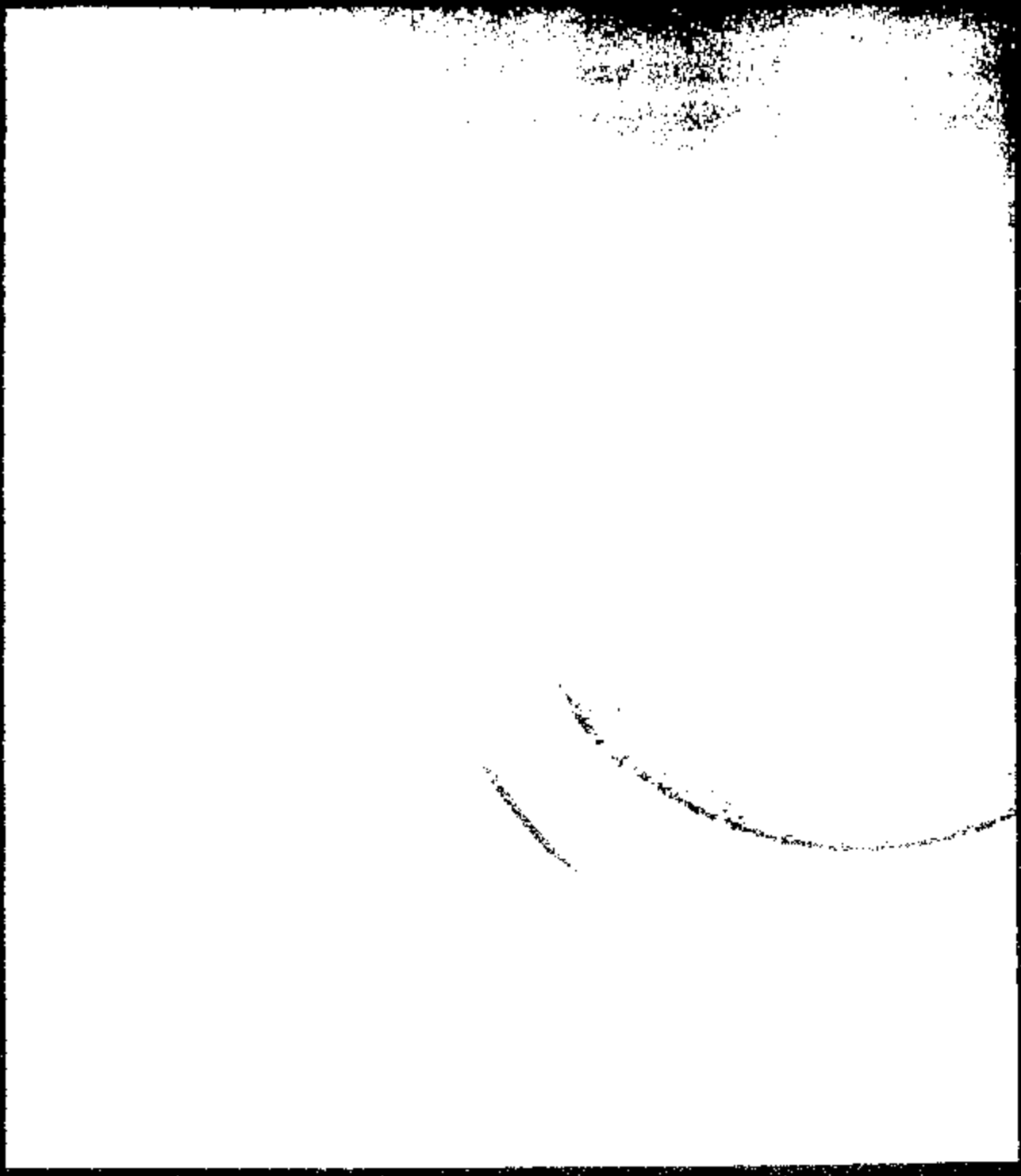

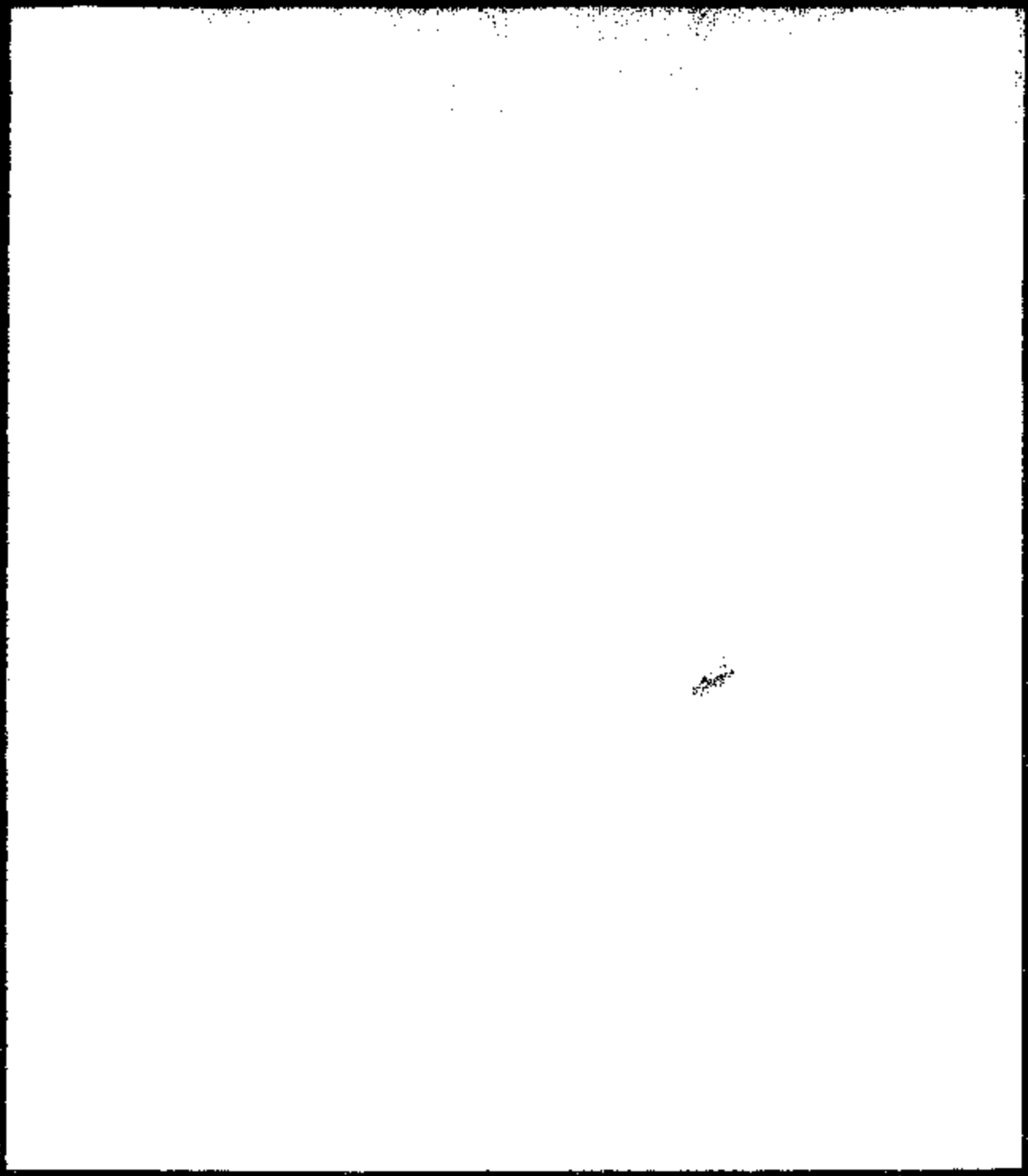

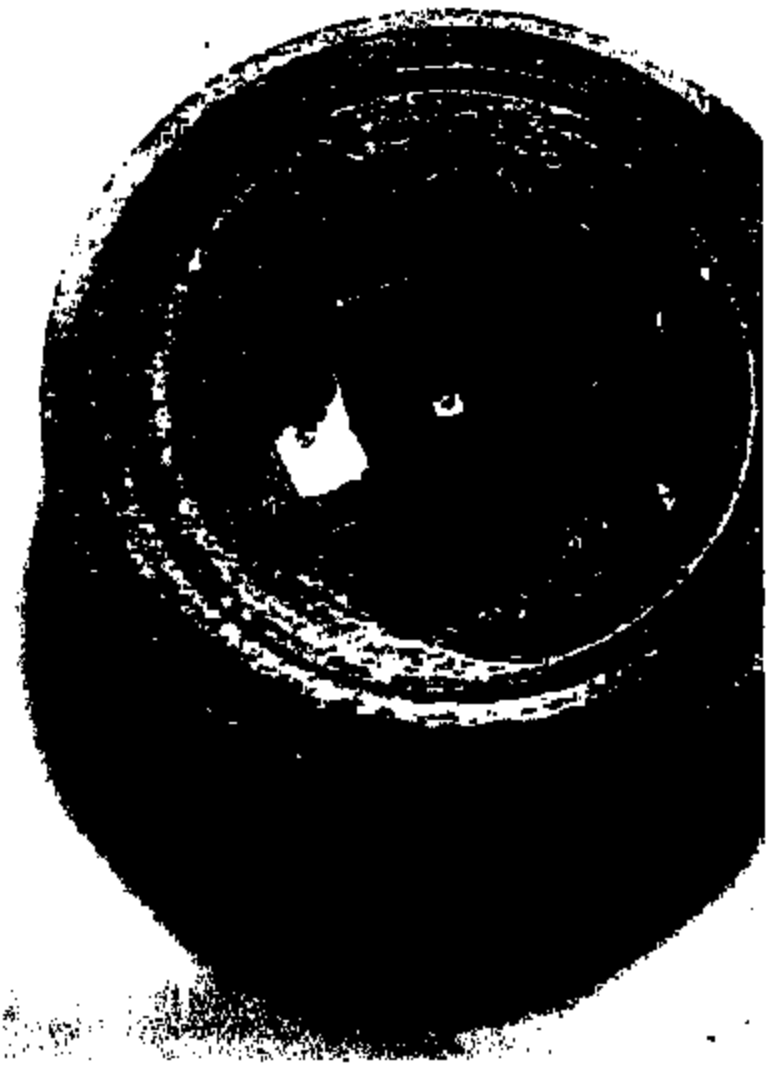

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Digital Mavica images

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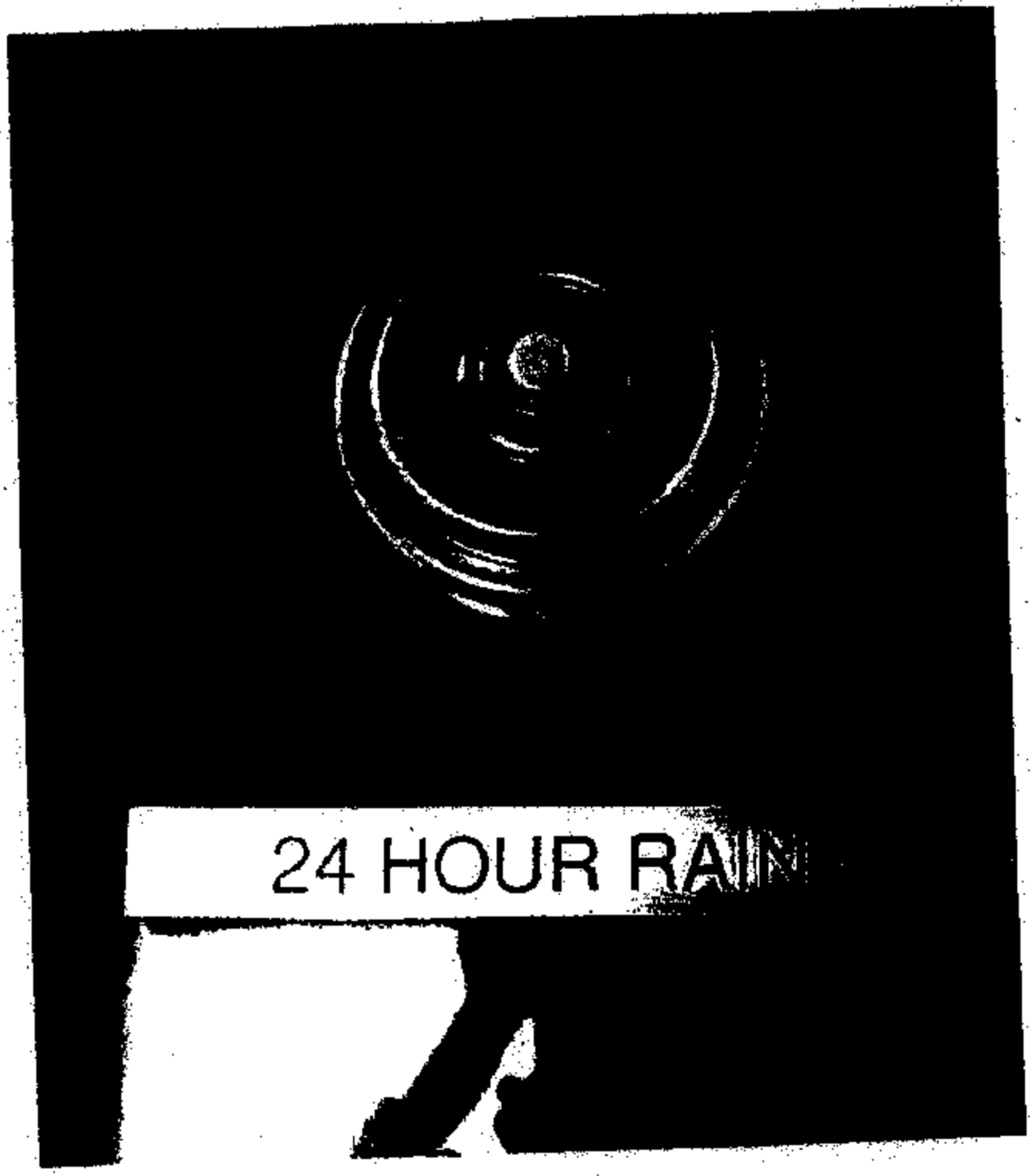
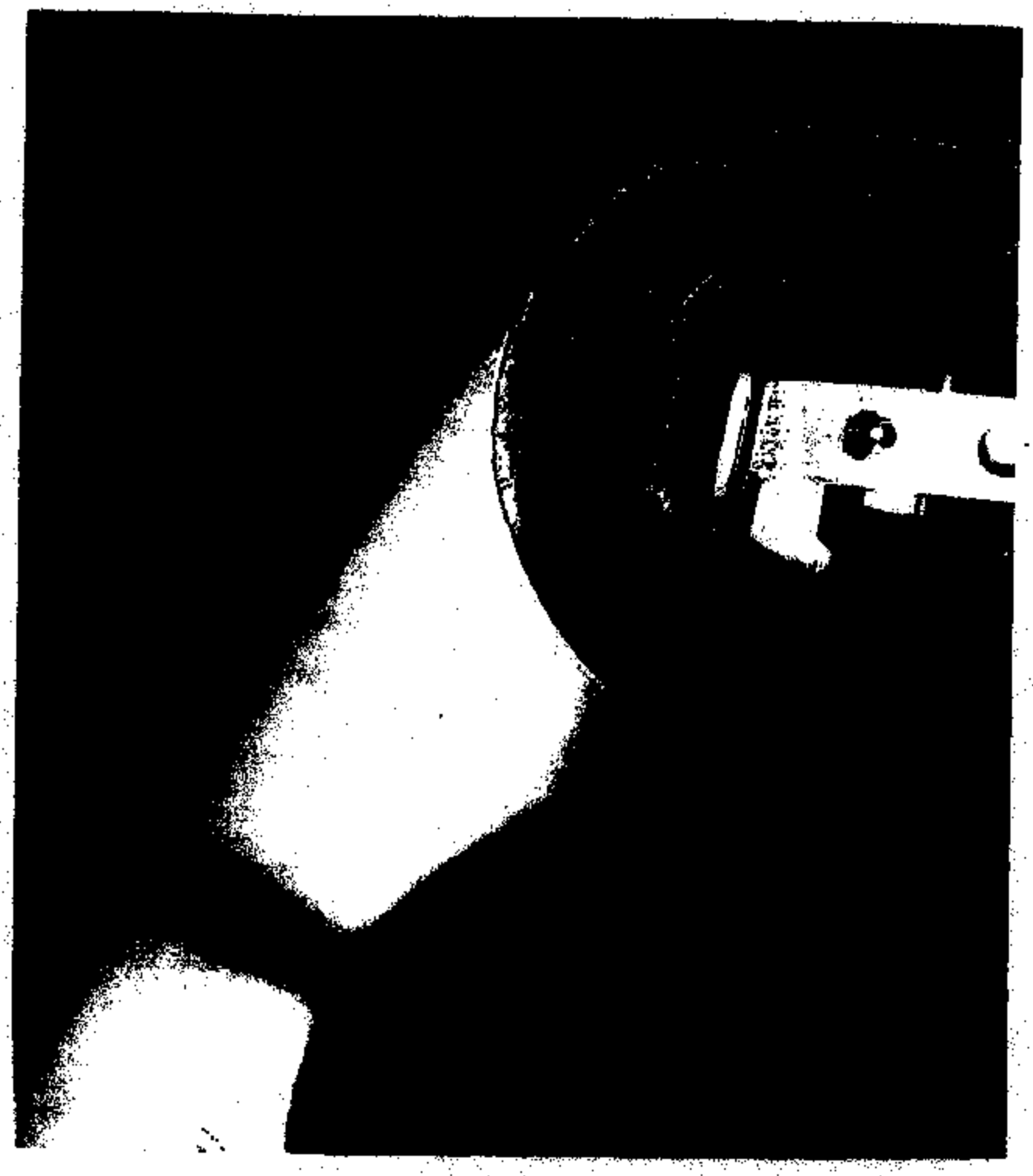
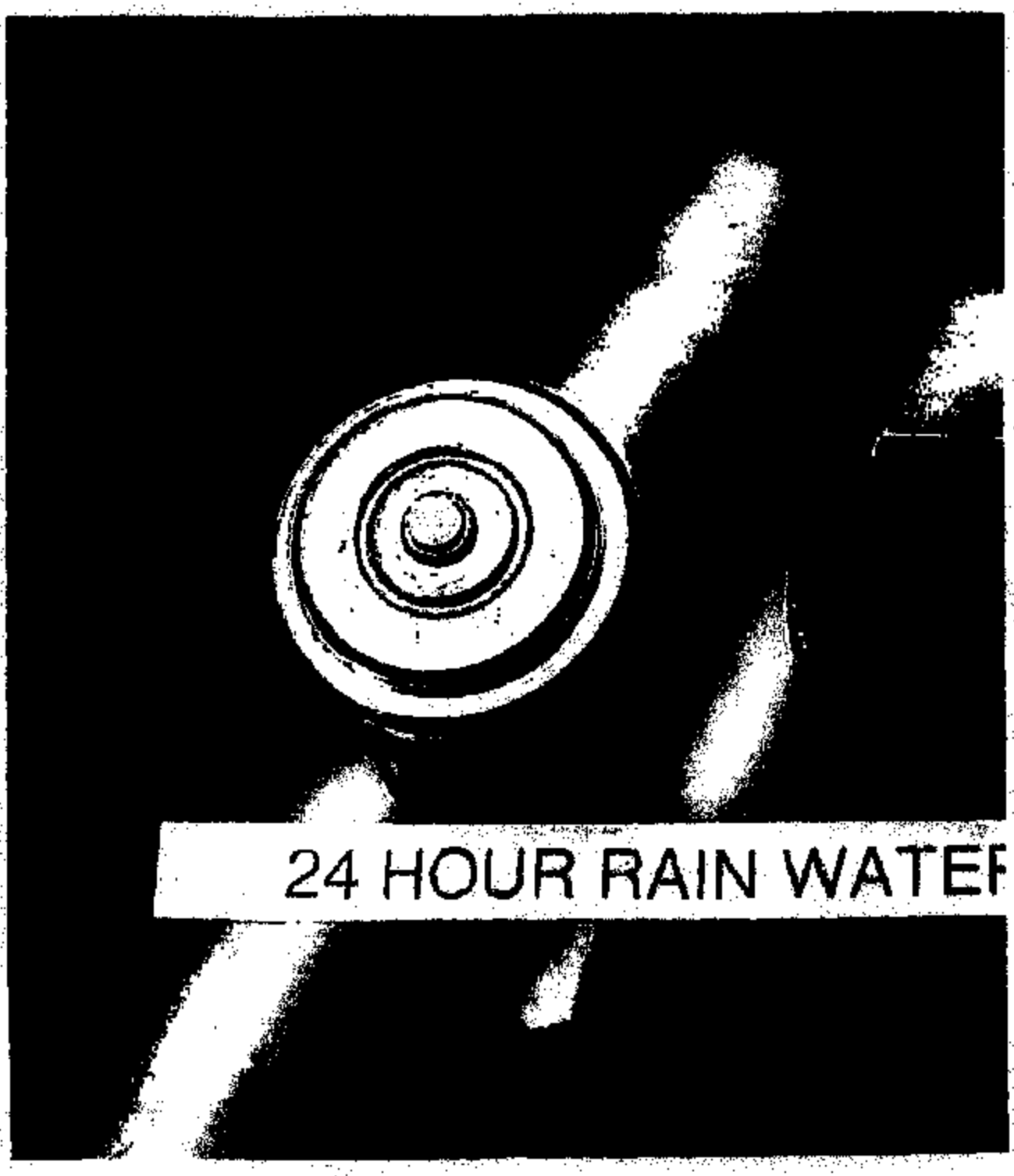
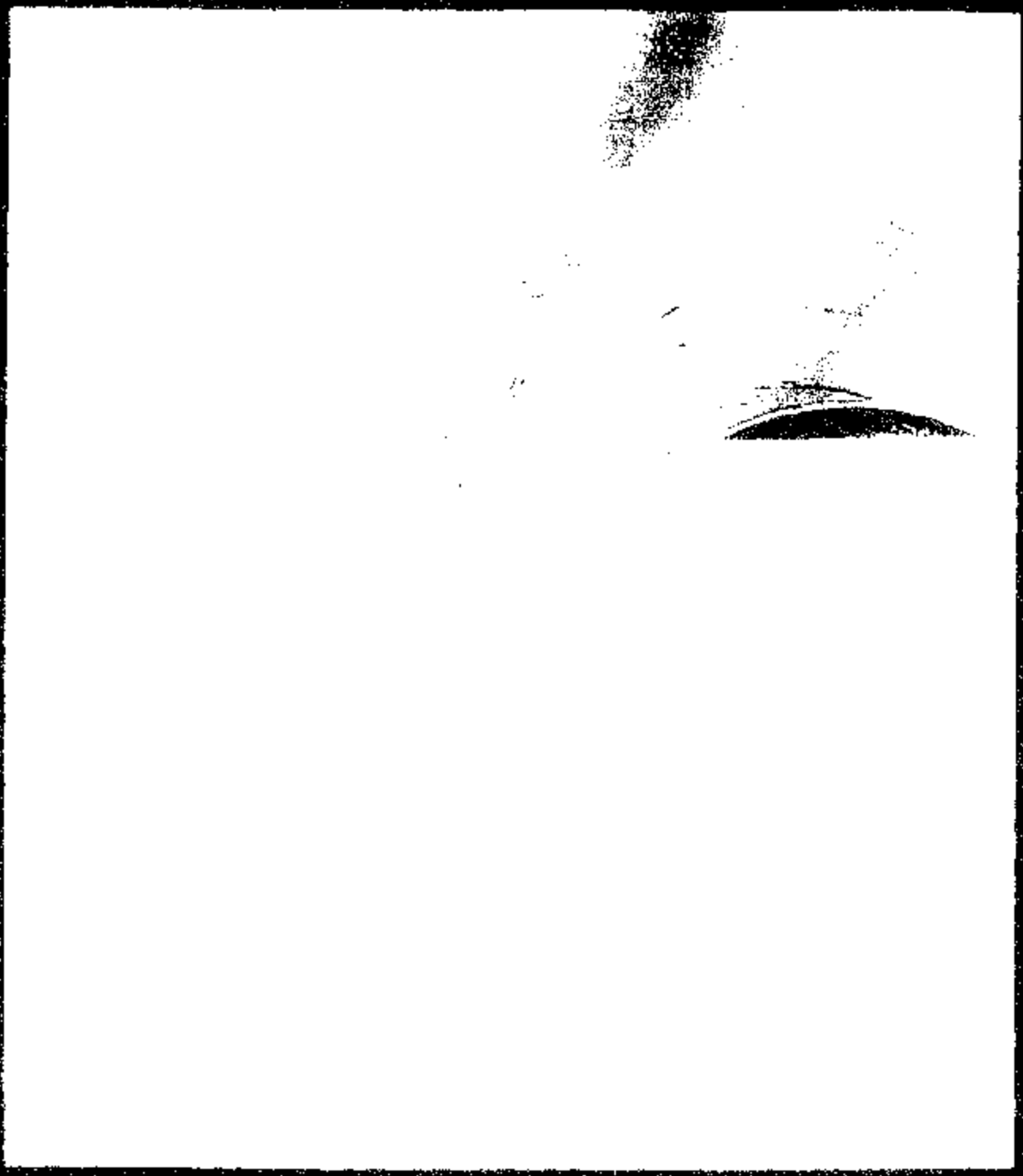
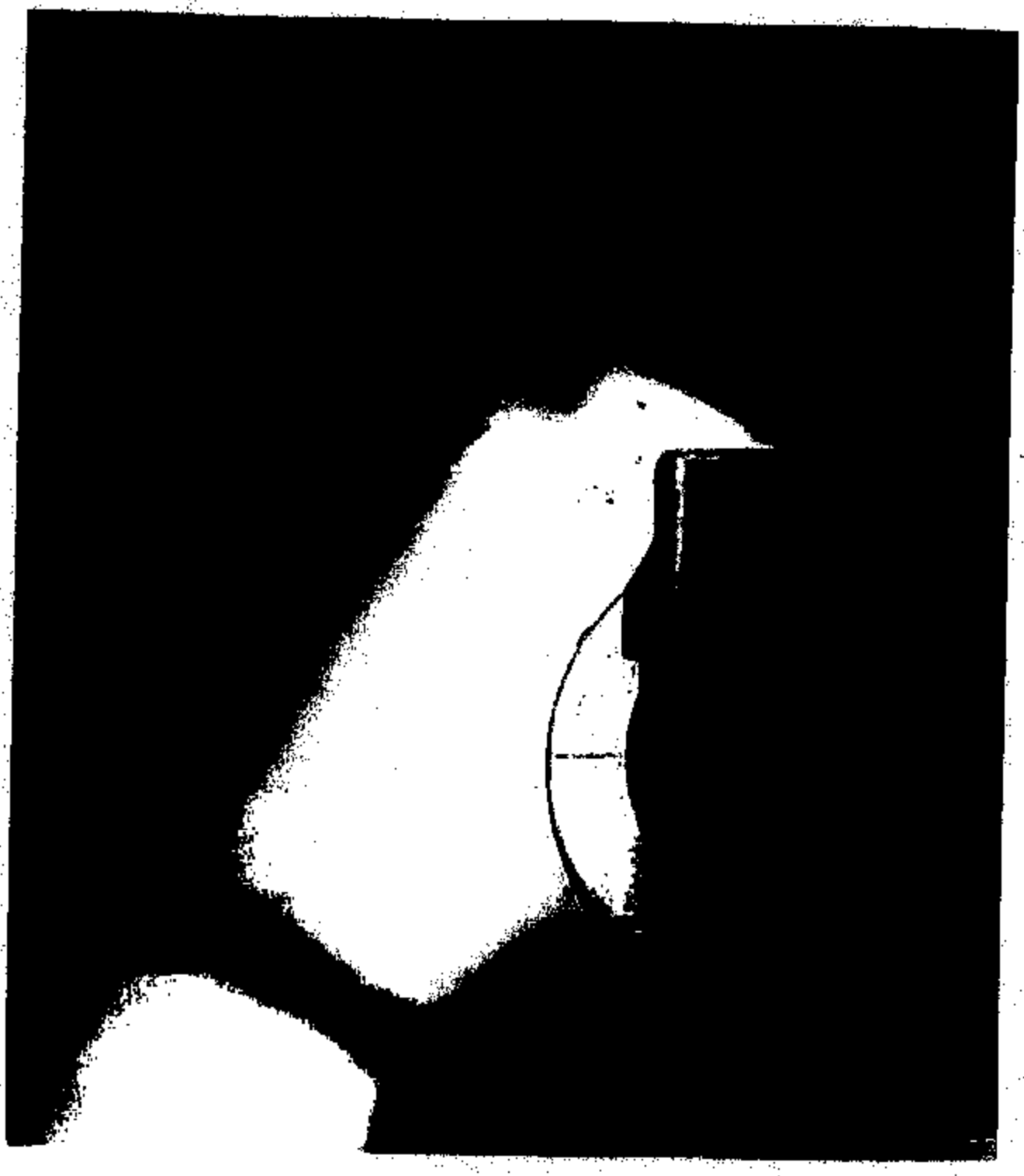
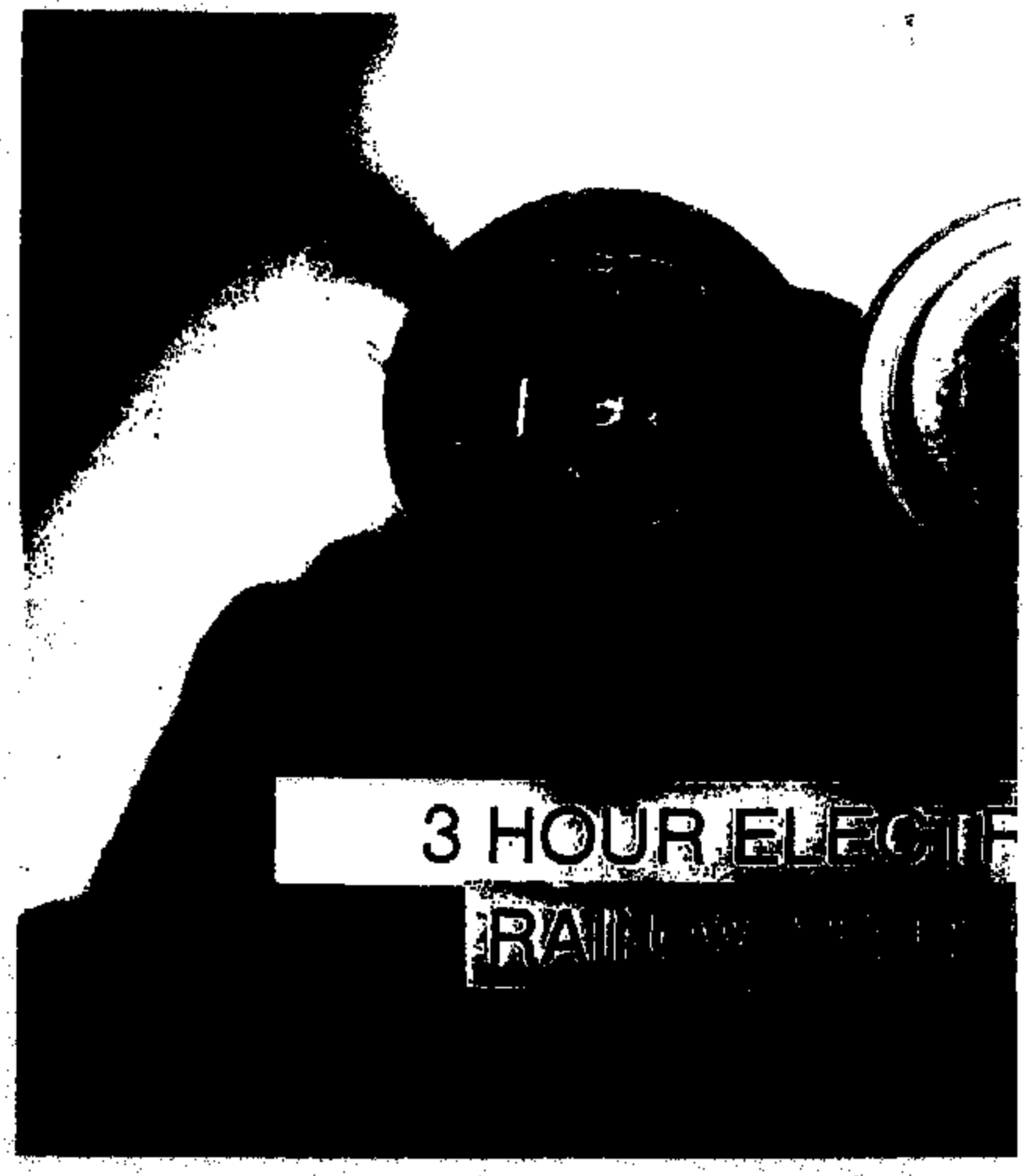

24 HOUR RAI



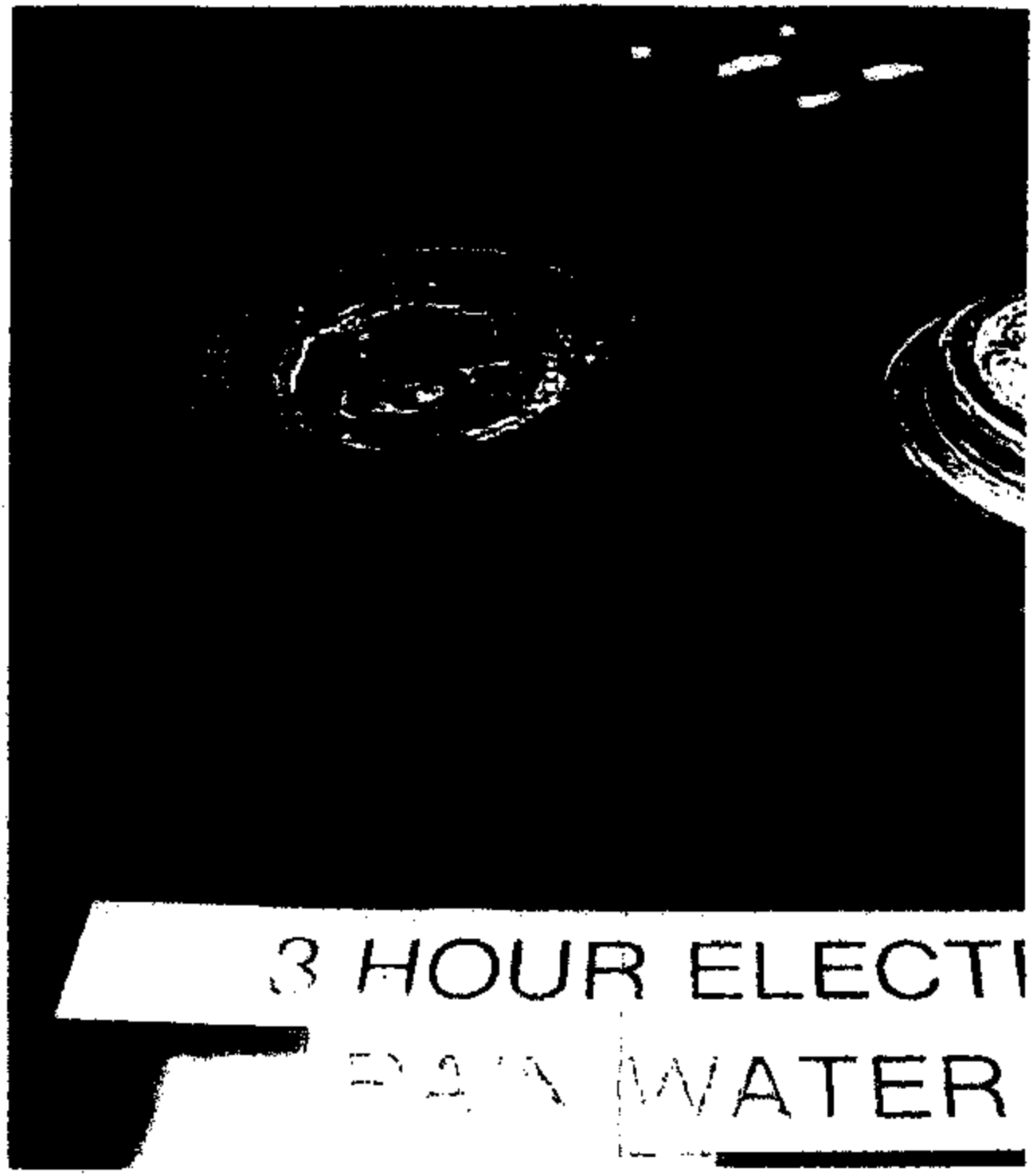

24 HOUR RAIN WATEF

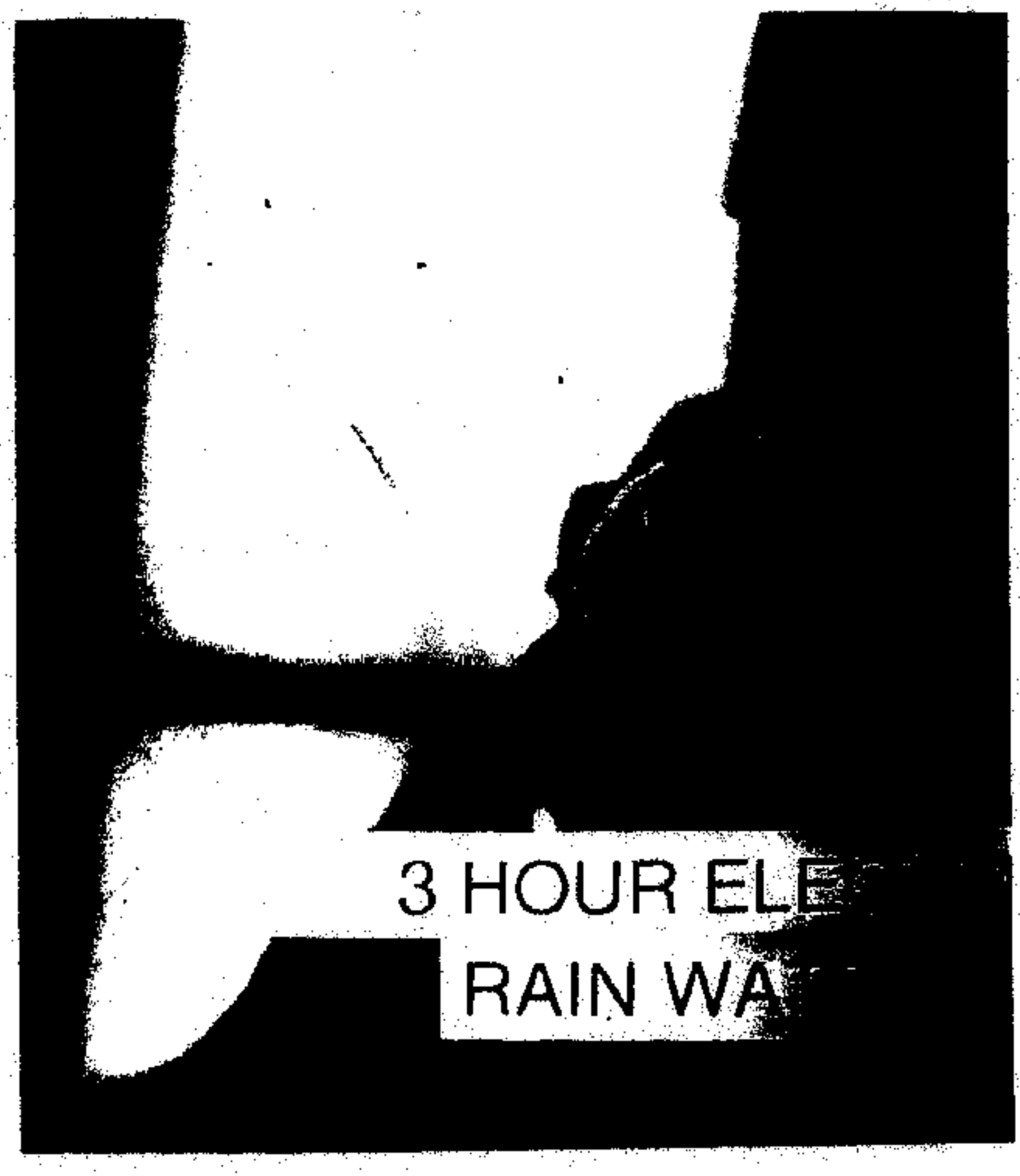


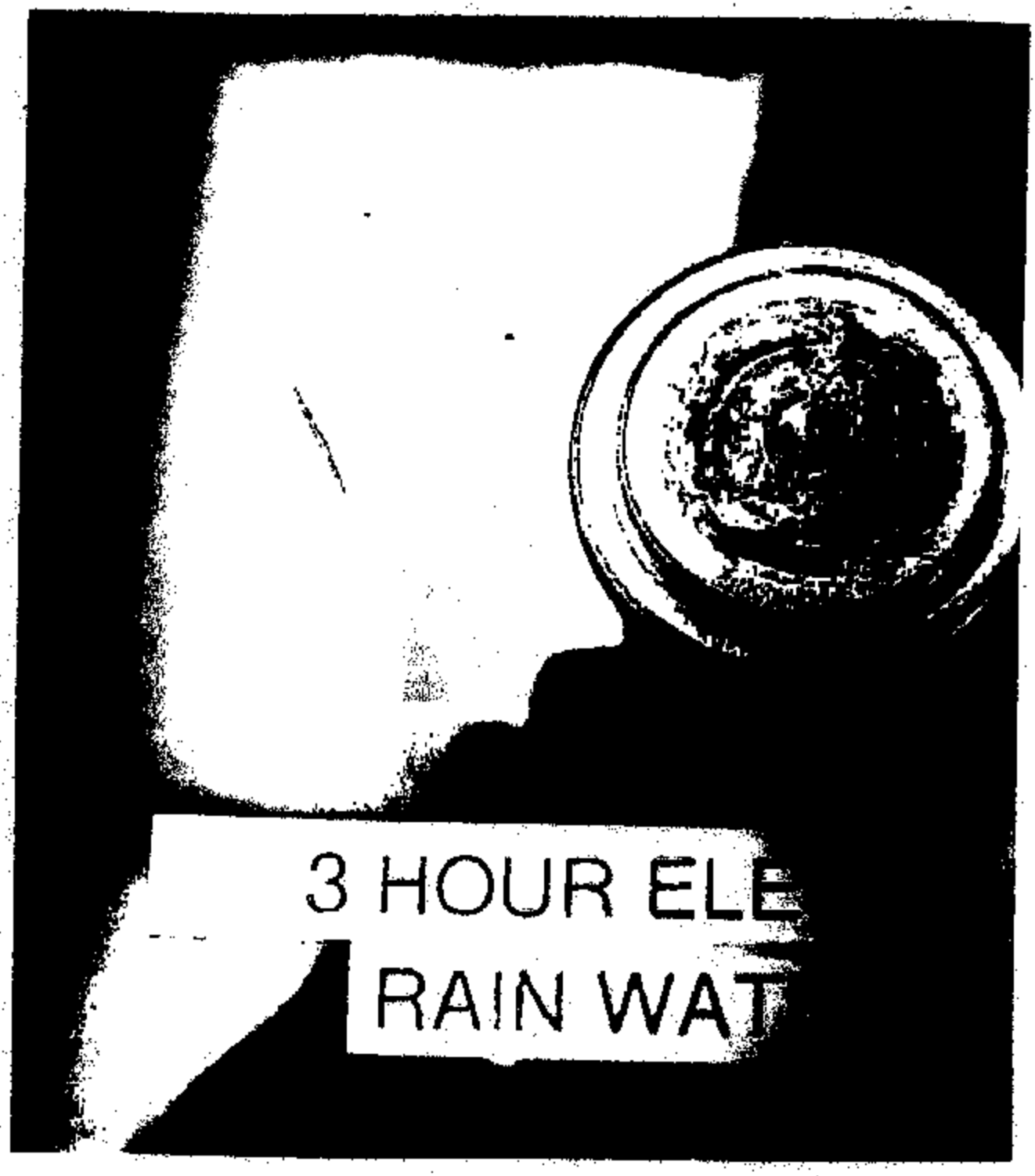




TI-NHTSA 012839


3 HOUR ELECTI
WATER


3 HOUR ELE
RAIN WA


3 HOUR ELE
RAIN WAT

101(Time stamp)	101(Seconds)	Input current	clutch current	ground current	input voltage	clutch voltage
10:23:21 AM	0.018	5.48E-04	5.42E-04	1.87E-06	1.50E+01	1.50E+01
10:33:21 AM	600.002	4.78E-04	4.74E-04	2.37E-06	1.44E+01	1.44E+01
10:43:21 AM	1200.002	4.63E-04	4.59E-04	2.37E-06	1.44E+01	1.44E+01
10:53:21 AM	1800.002	4.56E-04	4.52E-04	2.62E-06	1.44E+01	1.44E+01
11:03:21 AM	2400.002	4.53E-04	4.50E-04	2.37E-06	1.44E+01	1.44E+01
11:13:21 AM	3000.002	4.51E-04	4.47E-04	2.25E-06	1.44E+01	1.44E+01
11:23:21 AM	3600.002	4.49E-04	4.46E-04	1.25E-06	1.44E+01	1.44E+01
11:33:21 AM	4200.002	4.48E-04	4.45E-04	1.87E-06	1.44E+01	1.44E+01
11:43:21 AM	4800.002	2.00E-06	1.37E-06	1.62E-06	1.44E+01	1.04E-02
11:53:21 AM	5400.002	2.37E-06	1.25E-06	1.87E-06	1.44E+01	5.58E-03
12:03:21 PM	6000.002	1.75E-06	8.74E-07	1.50E-06	1.44E+01	4.14E-03
12:13:21 PM	6600.002	1.37E-06	5.00E-07	1.87E-06	1.44E+01	3.59E-03
12:23:21 PM	7200.002	2.00E-06	6.25E-07	1.50E-06	1.44E+01	3.19E-03
12:33:21 PM	7800.002	1.25E-06	1.12E-06	2.12E-06	1.44E+01	3.04E-03
12:43:21 PM	8400.002	1.25E-06	3.75E-07	7.49E-07	1.44E+01	2.92E-03
12:53:21 PM	9000.002	1.37E-06	8.74E-07	1.50E-06	1.44E+01	5.04E-03
1:03:21 PM	9600.002	1.50E-06	1.25E-06	1.25E-06	1.44E+01	4.38E-03
1:13:21 PM	10200.002	1.75E-06	8.74E-07	1.25E-06	1.44E+01	3.69E-03
1:23:21 PM	10800.002	1.25E-06	2.50E-07	1.62E-06	1.44E+01	3.34E-03
1:33:21 PM	11400.002	1.75E-06	1.12E-06	1.12E-06	1.44E+01	3.08E-03
1:43:21 PM	12000.002	5.11E-04	5.07E-04	2.00E-06	1.44E+01	1.44E+01
1:53:21 PM	12600.002	4.75E-04	4.73E-04	2.37E-06	1.44E+01	1.44E+01
2:03:21 PM	13200.002	4.61E-04	4.57E-04	2.75E-06	1.44E+01	1.44E+01
2:13:21 PM	13800.002	4.54E-04	4.51E-04	1.75E-06	1.44E+01	1.44E+01
2:23:21 PM	14400.002	4.51E-04	4.48E-04	1.62E-06	1.44E+01	1.44E+01
2:33:21 PM	15000.002	4.49E-04	4.46E-04	9.99E-07	1.44E+01	1.44E+01
2:43:21 PM	15600.002	4.48E-04	4.46E-04	1.75E-06	1.44E+01	1.44E+01
2:53:21 PM	16200.002	4.47E-04	4.44E-04	1.37E-06	1.44E+01	1.44E+01
3:03:21 PM	16800.002	4.47E-04	4.44E-04	2.25E-06	1.44E+01	1.44E+01
3:13:21 PM	17400.002	4.46E-04	4.44E-04	9.99E-07	1.44E+01	1.44E+01
3:23:21 PM	18000.002	4.46E-04	4.43E-04	1.62E-06	1.44E+01	1.44E+01
3:33:21 PM	18600.002	4.45E-04	4.42E-04	1.37E-06	1.44E+01	1.44E+01
3:43:21 PM	19200.002	4.45E-04	4.43E-04	1.50E-06	1.44E+01	1.44E+01
3:53:21 PM	19800.002	4.44E-04	4.41E-04	1.75E-06	1.44E+01	1.43E+01
4:03:21 PM	20400.002	4.44E-04	4.41E-04	1.25E-06	1.44E+01	1.44E+01
4:13:21 PM	21000.002	4.44E-04	4.41E-04	8.74E-07	1.44E+01	1.44E+01
4:23:21 PM	21600.002	4.44E-04	4.41E-04	1.50E-06	1.44E+01	1.44E+01
4:33:21 PM	22200.002	4.43E-04	4.40E-04	9.99E-07	1.44E+01	1.44E+01
4:43:21 PM	22800.002	4.43E-04	4.40E-04	9.99E-07	1.44E+01	1.44E+01
4:53:21 PM	23400.002	4.43E-04	4.41E-04	1.75E-06	1.44E+01	1.44E+01
5:03:21 PM	24000.002	4.43E-04	4.41E-04	8.74E-07	1.44E+01	1.44E+01
5:13:21 PM	24600.002	4.43E-04	4.40E-04	6.25E-07	1.44E+01	1.44E+01
5:23:21 PM	25200.002	4.43E-04	4.40E-04	1.12E-06	1.44E+01	1.44E+01
5:33:21 PM	25800.002	4.42E-04	4.40E-04	1.37E-06	1.44E+01	1.44E+01
5:43:21 PM	26400.002	4.43E-04	4.41E-04	1.12E-06	1.44E+01	1.44E+01
5:53:21 PM	27000.002	4.43E-04	4.41E-04	1.37E-06	1.44E+01	1.44E+01
6:03:21 PM	27600.002	4.43E-04	4.41E-04	6.25E-07	1.44E+01	1.44E+01
6:13:21 PM	28200.002	4.43E-04	4.41E-04	9.99E-07	1.44E+01	1.44E+01

6:23:21 PM	28800.002	4.44E-04	4.41E-04	8.74E-07	1.44E+01	1.44E+01
6:33:21 PM	29400.002	4.44E-04	4.42E-04	1.50E-06	1.44E+01	1.44E+01
6:43:21 PM	30000.002	4.44E-04	4.41E-04	8.74E-07	1.44E+01	1.44E+01
6:53:21 PM	30600.002	4.45E-04	4.41E-04	7.49E-07	1.44E+01	1.44E+01
7:03:21 PM	31200.002	4.44E-04	4.42E-04	8.74E-07	1.44E+01	1.44E+01
7:13:21 PM	31800.002	4.44E-04	4.42E-04	9.99E-07	1.44E+01	1.44E+01
7:23:21 PM	32400.002	4.44E-04	4.42E-04	8.25E-07	1.44E+01	1.44E+01
7:33:21 PM	33000.002	4.44E-04	4.41E-04	8.74E-07	1.44E+01	1.44E+01
7:43:21 PM	33600.002	4.44E-04	4.42E-04	1.25E-06	1.44E+01	1.43E+01
7:53:21 PM	34200.002	4.45E-04	4.42E-04	1.25E-06	1.44E+01	1.44E+01
8:03:21 PM	34800.002	4.45E-04	4.42E-04	9.99E-07	1.44E+01	1.44E+01
8:13:21 PM	35400.002	4.44E-04	4.41E-04	7.49E-07	1.44E+01	1.44E+01
8:23:21 PM	36000.002	4.44E-04	4.42E-04	1.62E-06	1.44E+01	1.44E+01
8:33:21 PM	36600.002	4.44E-04	4.41E-04	9.99E-07	1.44E+01	1.44E+01
8:43:21 PM	37200.002	4.44E-04	4.42E-04	8.74E-07	1.44E+01	1.44E+01
8:53:21 PM	37800.002	4.45E-04	4.42E-04	1.75E-06	1.44E+01	1.44E+01
9:03:21 PM	38400.002	4.44E-04	4.42E-04	5.00E-07	1.44E+01	1.44E+01
9:13:21 PM	39000.002	4.43E-04	4.42E-04	9.99E-07	1.44E+01	1.44E+01
9:23:21 PM	39600.002	4.44E-04	4.42E-04	1.25E-06	1.44E+01	1.44E+01
9:33:21 PM	40200.002	4.44E-04	4.41E-04	8.74E-07	1.44E+01	1.44E+01
9:43:21 PM	40800.002	4.44E-04	4.41E-04	8.74E-07	1.44E+01	1.44E+01
9:53:21 PM	41400.002	4.44E-04	4.42E-04	1.25E-06	1.44E+01	1.44E+01
10:03:21 PM	42000.002	4.45E-04	4.41E-04	1.62E-06	1.44E+01	1.44E+01
10:13:21 PM	42600.002	4.44E-04	4.41E-04	9.99E-07	1.44E+01	1.44E+01
10:23:21 PM	43200.002	4.43E-04	4.41E-04	8.25E-07	1.44E+01	1.44E+01
10:33:21 PM	43800.002	4.44E-04	4.42E-04	1.37E-06	1.44E+01	1.44E+01
10:43:21 PM	44400.002	4.45E-04	4.42E-04	2.00E-06	1.44E+01	1.44E+01
10:53:21 PM	45000.002	4.45E-04	4.42E-04	1.37E-06	1.44E+01	1.44E+01
11:03:21 PM	45600.002	4.44E-04	4.42E-04	1.12E-06	1.44E+01	1.44E+01
11:13:21 PM	46200.002	4.44E-04	4.42E-04	1.37E-06	1.44E+01	1.44E+01
11:23:21 PM	46800.002	4.44E-04	4.42E-04	5.00E-07	1.44E+01	1.44E+01
11:33:21 PM	47400.002	4.44E-04	4.41E-04	2.00E-06	1.44E+01	1.44E+01
11:43:21 PM	48000.002	4.45E-04	4.42E-04	7.49E-07	1.44E+01	1.44E+01
11:53:21 PM	48600.002	4.44E-04	4.42E-04	1.50E-06	1.44E+01	1.44E+01
12:03:21 AM	49200.002	4.44E-04	4.42E-04	7.49E-07	1.44E+01	1.44E+01
12:13:21 AM	49800.002	4.44E-04	4.41E-04	8.74E-07	1.44E+01	1.44E+01
12:23:21 AM	50400.002	4.45E-04	4.42E-04	1.12E-06	1.44E+01	1.44E+01
12:33:21 AM	51000.002	4.44E-04	4.42E-04	1.50E-06	1.44E+01	1.44E+01
12:43:21 AM	51600.002	4.44E-04	4.42E-04	8.74E-07	1.44E+01	1.44E+01
12:53:21 AM	52200.002	4.44E-04	4.42E-04	1.62E-06	1.44E+01	1.44E+01
1:03:21 AM	52800.002	4.44E-04	4.42E-04	1.62E-06	1.44E+01	1.44E+01
1:13:21 AM	53400.002	4.44E-04	4.42E-04	1.37E-06	1.44E+01	1.44E+01
1:23:21 AM	54000.002	4.45E-04	4.42E-04	8.74E-07	1.44E+01	1.44E+01
1:33:21 AM	54600.002	4.44E-04	4.42E-04	1.25E-06	1.44E+01	1.44E+01
1:43:21 AM	55200.002	4.45E-04	4.42E-04	1.25E-06	1.44E+01	1.44E+01
1:53:21 AM	55800.002	4.45E-04	4.42E-04	3.75E-07	1.44E+01	1.44E+01
2:03:21 AM	56400.002	4.45E-04	4.42E-04	5.00E-07	1.44E+01	1.44E+01
2:13:21 AM	57000.002	4.45E-04	4.42E-04	2.50E-07	1.44E+01	1.44E+01
2:23:21 AM	57600.002	4.44E-04	4.42E-04	8.74E-07	1.44E+01	1.44E+01

2:33:21 AM	58200.002	4.44E-04	4.42E-04	1.25E-06	1.44E+01	1.44E+01
2:43:21 AM	58800.002	4.44E-04	4.42E-04	7.49E-07	1.44E+01	1.44E+01
2:53:21 AM	59400.002	4.44E-04	4.42E-04	6.25E-07	1.44E+01	1.44E+01
3:03:21 AM	60000.002	4.45E-04	4.43E-04	7.49E-07	1.44E+01	1.44E+01
3:13:21 AM	60600.002	4.44E-04	4.42E-04	-1.25E-07	1.44E+01	1.44E+01
3:23:21 AM	61200.002	4.43E-04	4.41E-04	1.12E-06	1.44E+01	1.44E+01
3:33:21 AM	61800.002	4.44E-04	4.42E-04	8.74E-07	1.44E+01	1.44E+01
3:43:21 AM	62400.002	4.44E-04	4.42E-04	1.12E-06	1.44E+01	1.44E+01
3:53:21 AM	63000.002	4.44E-04	4.42E-04	1.62E-06	1.44E+01	1.44E+01
4:03:21 AM	63600.002	4.44E-04	4.42E-04	1.37E-06	1.44E+01	1.44E+01
4:13:21 AM	64200.002	4.44E-04	4.42E-04	6.25E-07	1.44E+01	1.44E+01
4:23:21 AM	64800.002	4.43E-04	4.41E-04	1.12E-06	1.44E+01	1.44E+01
4:33:21 AM	65400.002	4.45E-04	4.42E-04	1.12E-06	1.44E+01	1.44E+01
4:43:21 AM	66000.002	4.44E-04	4.42E-04	1.12E-06	1.44E+01	1.44E+01
4:53:21 AM	66600.002	4.45E-04	4.41E-04	8.74E-07	1.44E+01	1.44E+01
5:03:21 AM	67200.002	4.46E-04	4.42E-04	1.75E-06	1.44E+01	1.43E+01
5:13:21 AM	67800.002	4.45E-04	4.42E-04	1.25E-06	1.44E+01	1.44E+01
5:23:21 AM	68400.002	4.45E-04	4.42E-04	7.49E-07	1.44E+01	1.44E+01
5:33:21 AM	69000.002	4.44E-04	4.41E-04	1.12E-06	1.44E+01	1.44E+01
5:43:21 AM	69600.002	4.44E-04	4.42E-04	9.99E-07	1.44E+01	1.44E+01
5:53:21 AM	70200.002	4.44E-04	4.42E-04	1.12E-06	1.44E+01	1.44E+01
6:03:21 AM	70800.002	4.44E-04	4.42E-04	1.12E-06	1.44E+01	1.44E+01
6:13:21 AM	71400.002	4.44E-04	4.42E-04	9.99E-07	1.44E+01	1.44E+01
6:23:21 AM	72000.002	4.45E-04	4.42E-04	7.49E-07	1.44E+01	1.44E+01
6:33:21 AM	72600.002	4.44E-04	4.42E-04	1.37E-06	1.44E+01	1.44E+01
6:43:21 AM	73200.002	4.45E-04	4.42E-04	1.50E-06	1.44E+01	1.44E+01
6:53:21 AM	73800.002	4.45E-04	4.42E-04	1.12E-06	1.44E+01	1.44E+01
7:03:21 AM	74400.002	4.45E-04	4.43E-04	1.25E-06	1.44E+01	1.44E+01
7:13:21 AM	75000.002	4.45E-04	4.42E-04	1.25E-06	1.44E+01	1.44E+01
7:23:21 AM	75600.002	4.45E-04	4.42E-04	5.00E-07	1.44E+01	1.44E+01
7:33:21 AM	76200.002	4.45E-04	4.41E-04	6.25E-07	1.44E+01	1.44E+01
7:43:21 AM	76800.002	4.44E-04	4.42E-04	9.99E-07	1.44E+01	1.44E+01
7:53:21 AM	77400.002	4.47E-04	4.44E-04	1.25E-06	1.44E+01	1.44E+01
8:03:21 AM	78000.002	4.45E-04	4.43E-04	1.37E-06	1.44E+01	1.44E+01
8:13:21 AM	78600.002	4.46E-04	4.43E-04	1.62E-06	1.44E+01	1.44E+01
8:23:21 AM	79200.002	4.45E-04	4.42E-04	7.49E-07	1.44E+01	1.44E+01
8:33:21 AM	79800.002	4.45E-04	4.42E-04	1.37E-06	1.44E+01	1.44E+01
8:43:21 AM	80400.002	4.46E-04	4.43E-04	9.99E-07	1.44E+01	1.43E+01
8:53:21 AM	81000.002	4.45E-04	4.42E-04	1.37E-06	1.44E+01	1.44E+01
9:03:21 AM	81600.002	4.46E-04	4.43E-04	1.25E-06	1.44E+01	1.44E+01
9:13:21 AM	82200.002	4.46E-04	4.43E-04	6.25E-07	1.44E+01	1.44E+01
9:23:21 AM	82800.002	4.45E-04	4.42E-04	1.50E-06	1.44E+01	1.44E+01
9:33:21 AM	83400.002	4.45E-04	4.43E-04	1.25E-06	1.44E+01	1.44E+01
9:43:21 AM	84000.002	4.46E-04	4.44E-04	1.62E-06	1.44E+01	1.44E+01
9:53:21 AM	84600.002	4.46E-04	4.43E-04	1.12E-06	1.44E+01	1.44E+01
10:03:21 AM	85200.002	4.45E-04	4.43E-04	7.49E-07	1.44E+01	1.44E+01
10:13:21 AM	85800.002	4.45E-04	4.42E-04	1.87E-06	1.44E+01	1.44E+01
10:23:21 AM	86400.002	4.46E-04	4.43E-04	1.12E-06	1.44E+01	1.44E+01

ground voltage	top temp.	bottom temp	clutch temp
2.38E-04	2.69E+01	2.69E+01	3.28E+01
2.08E-04	2.69E+01	2.68E+01	5.56E+01
2.01E-04	2.70E+01	2.69E+01	6.84E+01
1.98E-04	2.70E+01	2.69E+01	7.20E+01
1.97E-04	2.70E+01	2.69E+01	7.44E+01
1.98E-04	2.71E+01	2.70E+01	7.58E+01
1.94E-04	2.70E+01	2.70E+01	7.67E+01
1.93E-04	2.71E+01	2.70E+01	7.72E+01
4.00E-06	2.73E+01	2.72E+01	7.48E+01
3.75E-06	2.71E+01	2.70E+01	5.50E+01
3.37E-06	2.71E+01	2.70E+01	4.37E+01
2.75E-06	2.70E+01	2.69E+01	3.74E+01
2.87E-06	2.70E+01	2.69E+01	3.35E+01
2.12E-06	2.70E+01	2.69E+01	3.12E+01
3.50E-06	2.70E+01	2.69E+01	2.97E+01
2.00E-06	2.71E+01	2.70E+01	2.89E+01
1.87E-06	2.71E+01	2.71E+01	2.84E+01
2.87E-06	2.72E+01	2.71E+01	2.81E+01
2.62E-06	2.71E+01	2.70E+01	2.78E+01
2.00E-06	2.71E+01	2.71E+01	2.78E+01
2.19E-04	2.76E+01	2.74E+01	3.76E+01
2.05E-04	2.75E+01	2.74E+01	5.06E+01
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1.95E-04	2.73E+01	2.73E+01	7.52E+01
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1.92E-04	2.74E+01	2.73E+01	7.90E+01
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1.91E-04	2.78E+01	2.75E+01	8.07E+01
1.90E-04	2.78E+01	2.77E+01	8.10E+01
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1.90E-04	2.81E+01	2.80E+01	8.25E+01
1.90E-04	2.82E+01	2.81E+01	8.29E+01
1.89E-04	2.82E+01	2.81E+01	8.30E+01
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1.89E-04	2.82E+01	2.81E+01	8.36E+01
1.90E-04	2.82E+01	2.82E+01	8.38E+01
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1.88E-04	2.82E+01	2.80E+01	8.44E+01
1.89E-04	2.82E+01	2.81E+01	8.45E+01
1.89E-04	2.82E+01	2.81E+01	8.39E+01
1.88E-04	2.82E+01	2.82E+01	8.38E+01
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1.89E-04	2.81E+01	2.81E+01	8.30E+01

1.89E-04	2.81E+01	2.80E+01	8.28E+01
1.89E-04	2.80E+01	2.80E+01	8.25E+01
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1.89E-04	2.80E+01	2.79E+01	8.17E+01
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1.90E-04	2.79E+01	2.78E+01	8.24E+01
1.89E-04	2.79E+01	2.79E+01	8.25E+01
1.89E-04	2.79E+01	2.78E+01	8.25E+01
1.89E-04	2.79E+01	2.79E+01	8.23E+01
1.89E-04	2.79E+01	2.78E+01	8.21E+01
1.89E-04	2.79E+01	2.78E+01	8.22E+01
1.89E-04	2.78E+01	2.78E+01	8.20E+01
1.89E-04	2.78E+01	2.78E+01	8.22E+01
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1.90E-04	2.73E+01	2.72E+01	8.22E+01
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1.89E-04	2.72E+01	2.71E+01	8.20E+01
1.89E-04	2.72E+01	2.71E+01	8.25E+01
1.89E-04	2.72E+01	2.71E+01	8.23E+01
1.89E-04	2.72E+01	2.71E+01	8.20E+01

1.89E-04	2.71E+01	2.71E+01	8.23E+01
1.89E-04	2.72E+01	2.71E+01	8.17E+01
1.89E-04	2.71E+01	2.70E+01	8.21E+01
1.89E-04	2.71E+01	2.70E+01	8.23E+01
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1.88E-04	2.73E+01	2.72E+01	8.21E+01
1.88E-04	2.72E+01	2.71E+01	8.23E+01
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1.88E-04	2.72E+01	2.71E+01	8.21E+01
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1.88E-04	2.73E+01	2.72E+01	8.16E+01
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1.89E-04	2.69E+01	2.69E+01	8.21E+01
1.89E-04	2.70E+01	2.69E+01	8.21E+01
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1.90E-04	2.72E+01	2.72E+01	8.20E+01
1.90E-04	2.72E+01	2.72E+01	8.24E+01
1.90E-04	2.72E+01	2.71E+01	8.25E+01
1.90E-04	2.72E+01	2.72E+01	8.22E+01
1.90E-04	2.72E+01	2.72E+01	8.25E+01

1999 3 18 11:21:38 AM MVC-FD91

Digital Mavica images

5 mavica images				1028 Kbytes free
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MVC-002L.JPG	1999	3	18	11:20:40 AM
MVC-003L.JPG	1999	3	18	11:21:08 AM
MVC-004L.JPG	1999	3	18	11:21:20 AM
MVC-005L.JPG	1999	3	18	11:21:38 AM

This document contains the following shortcuts:

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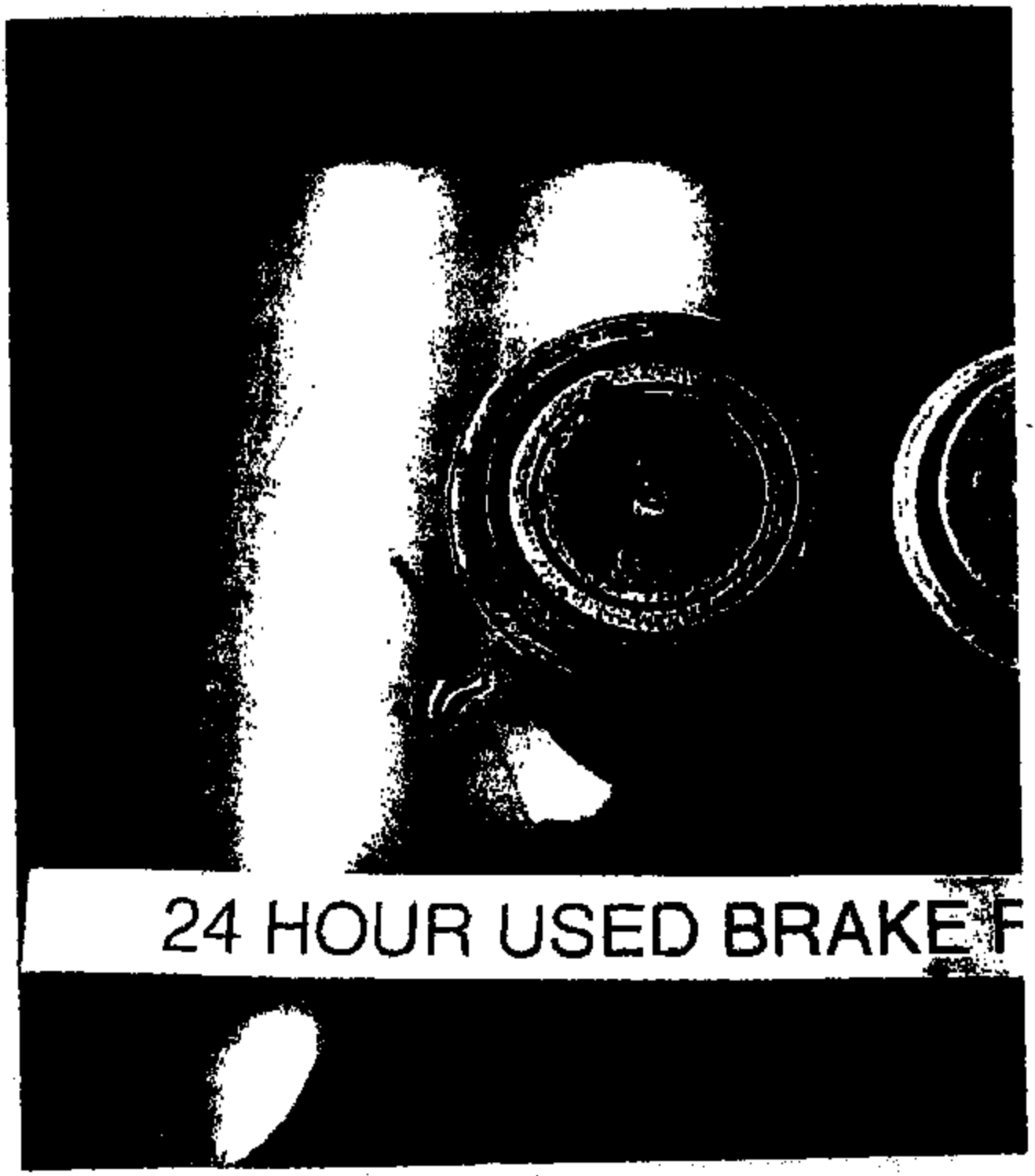
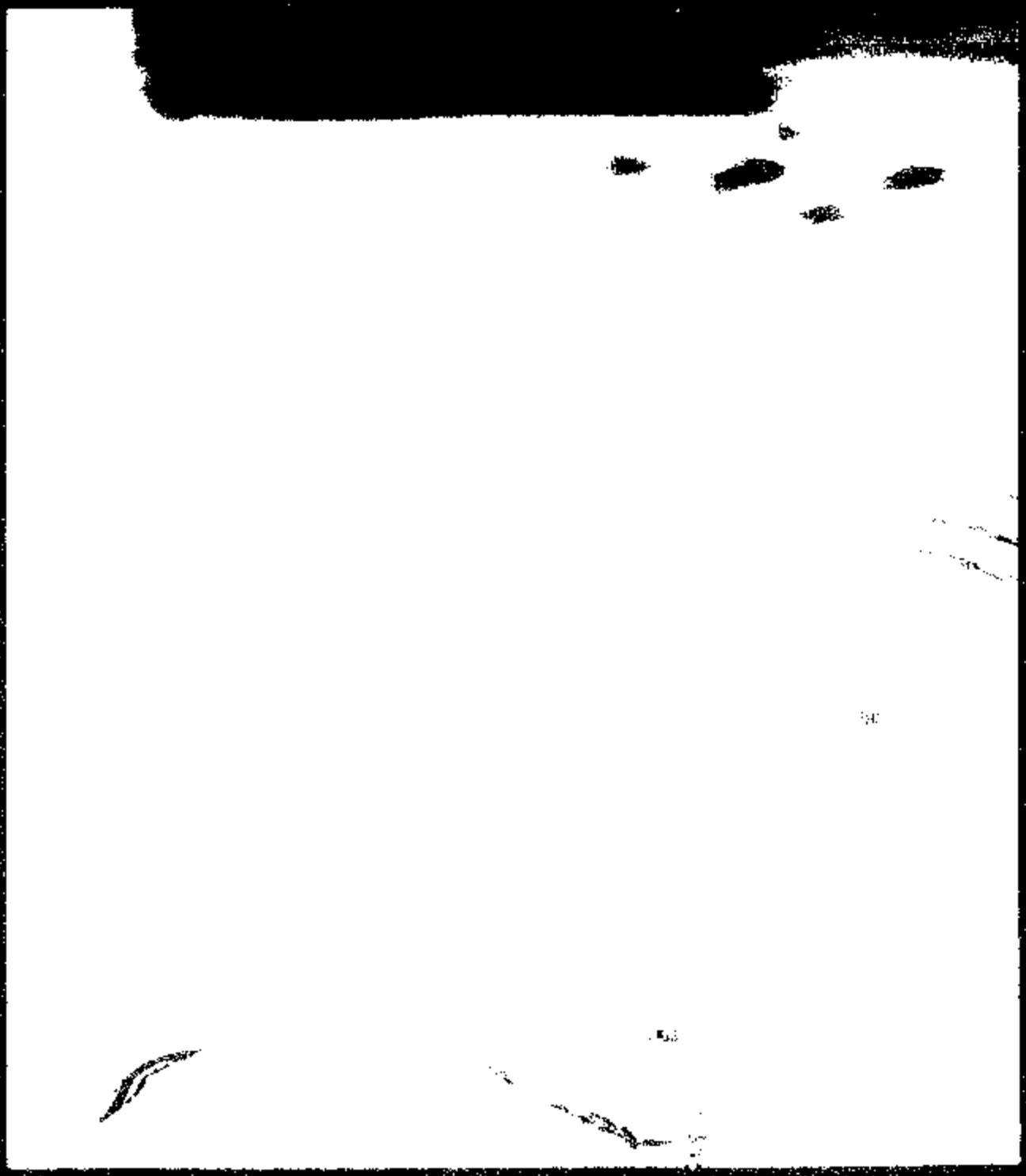
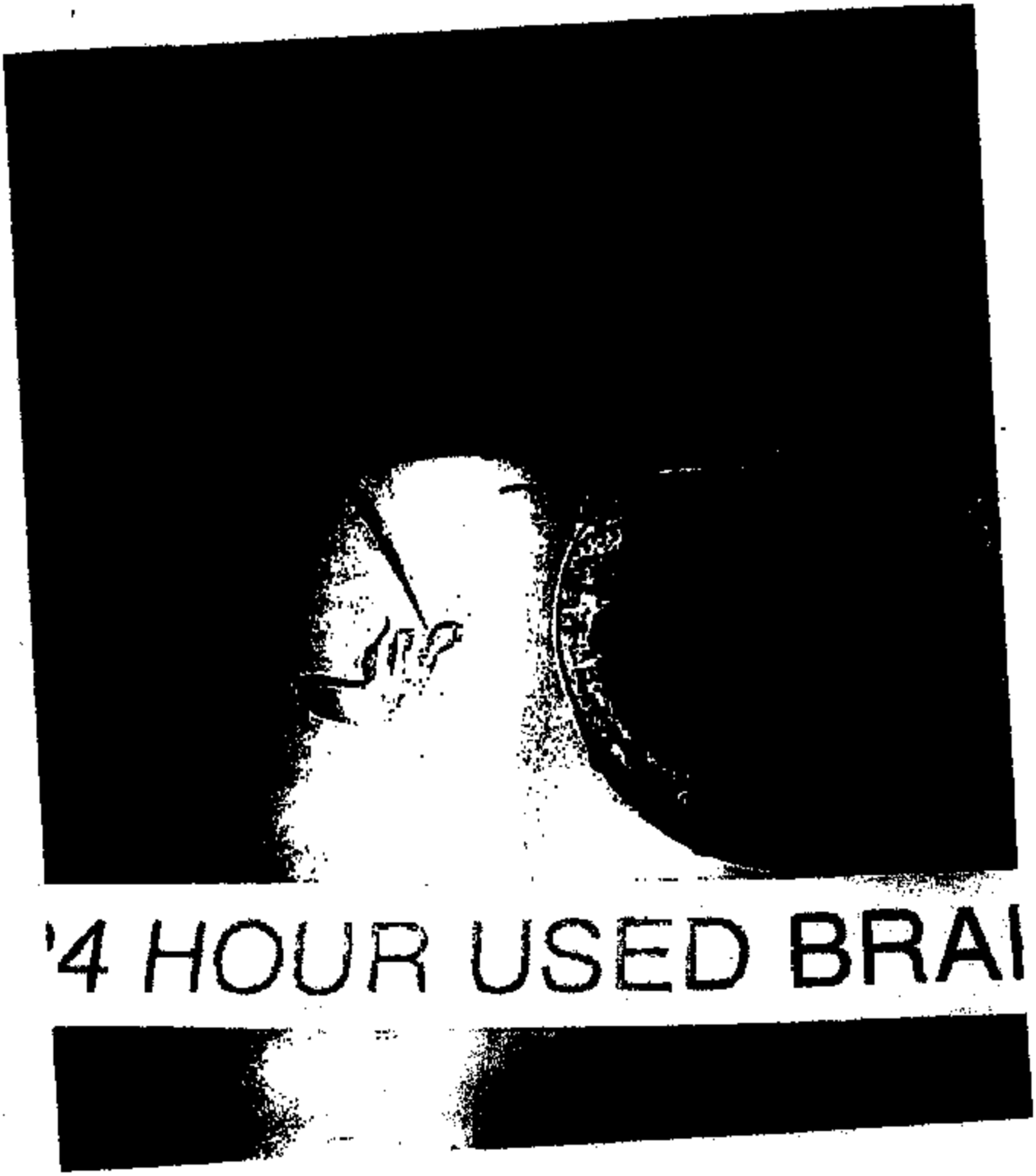
MVC-003L.JPG	file:///F:/Disc%205/MVC-003L.JPG
MVC-004L.JPG	file:///F:/Disc%205/MVC-004L.JPG
MVC-005L.JPG	file:///F:/Disc%205/MVC-005L.JPG


24 HOUR USED BRAKE F





2/3/00

Epstein, Sally

From: Dague, Bryan [bdague@email.mo.tl.com]
Sent: Friday, March 12, 1999 1:16 PM
To: Watt, Jim
Subject: FW: 77ps.ppt

Jim,

Here is the one I was talking about this AM. I will try to add to it.

Bry

From: Proia, Stephen
Sent: Wednesday, January 06, 1999 7:52 AM
To: Douglas, Charles; Hopkins, AL; McGuirk, Andy; Baker, Gary; Dague, Bryan; Baumann, Russ
Subject: 77ps.ppt

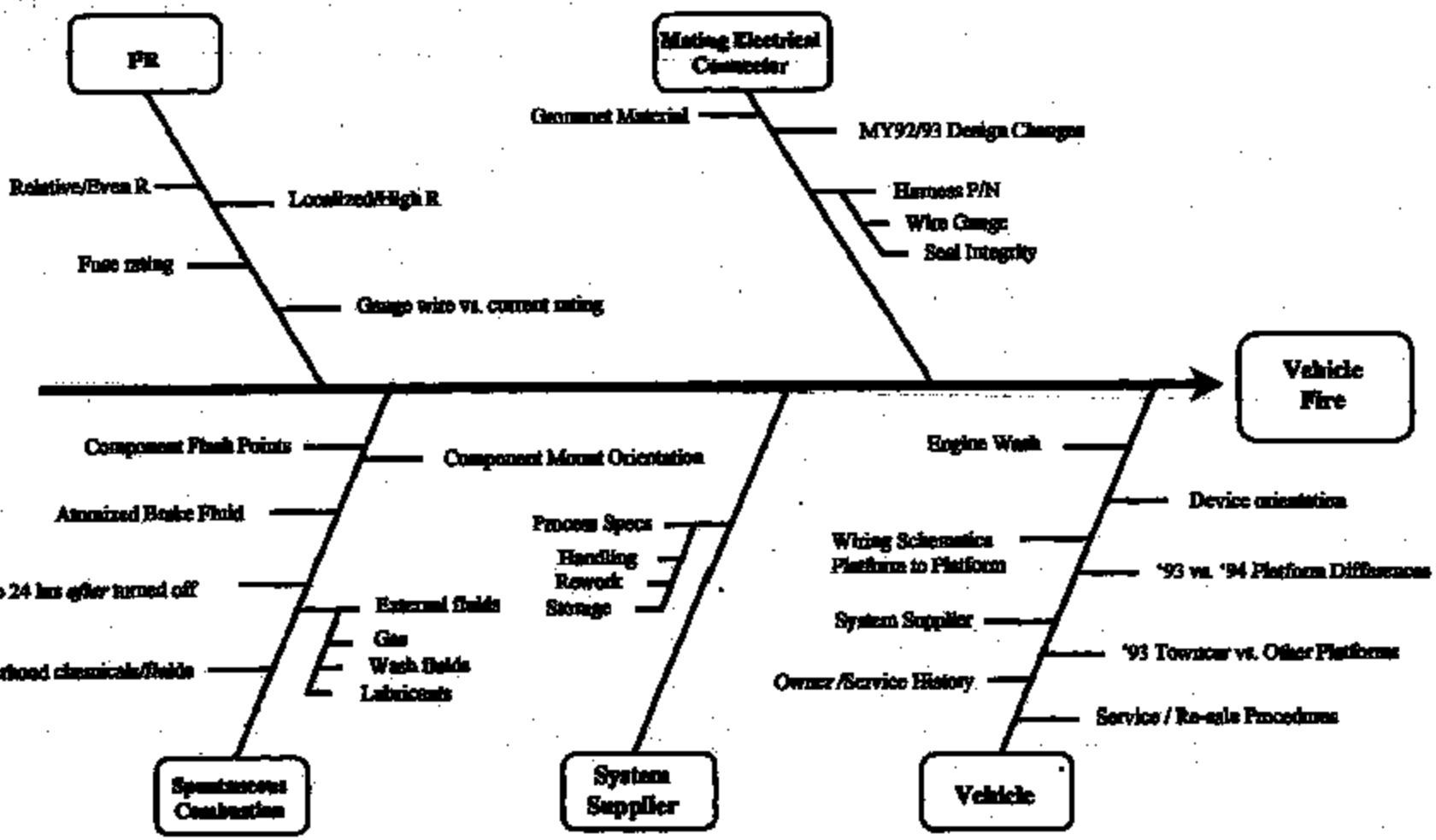
<<77ps.ppt>>
Here's the "Cause & Effect" diagram we discussed yesterday. Please review and comment. Thanks

Regards,

Steve

TEXAS INSTRUMENTS

Automotive Sensors & Controls
Ford Visit - January 7, 1998



TEXAS INSTRUMENTS

Automotive Sensors & Controls
Ford Visit - January 7, 1998

Hydraulic Pressure Switches
Line Mount Switches - Attleboro
77PS Product Line

TI-NHT8A 012697

Data Log
Brake Pressure Switch

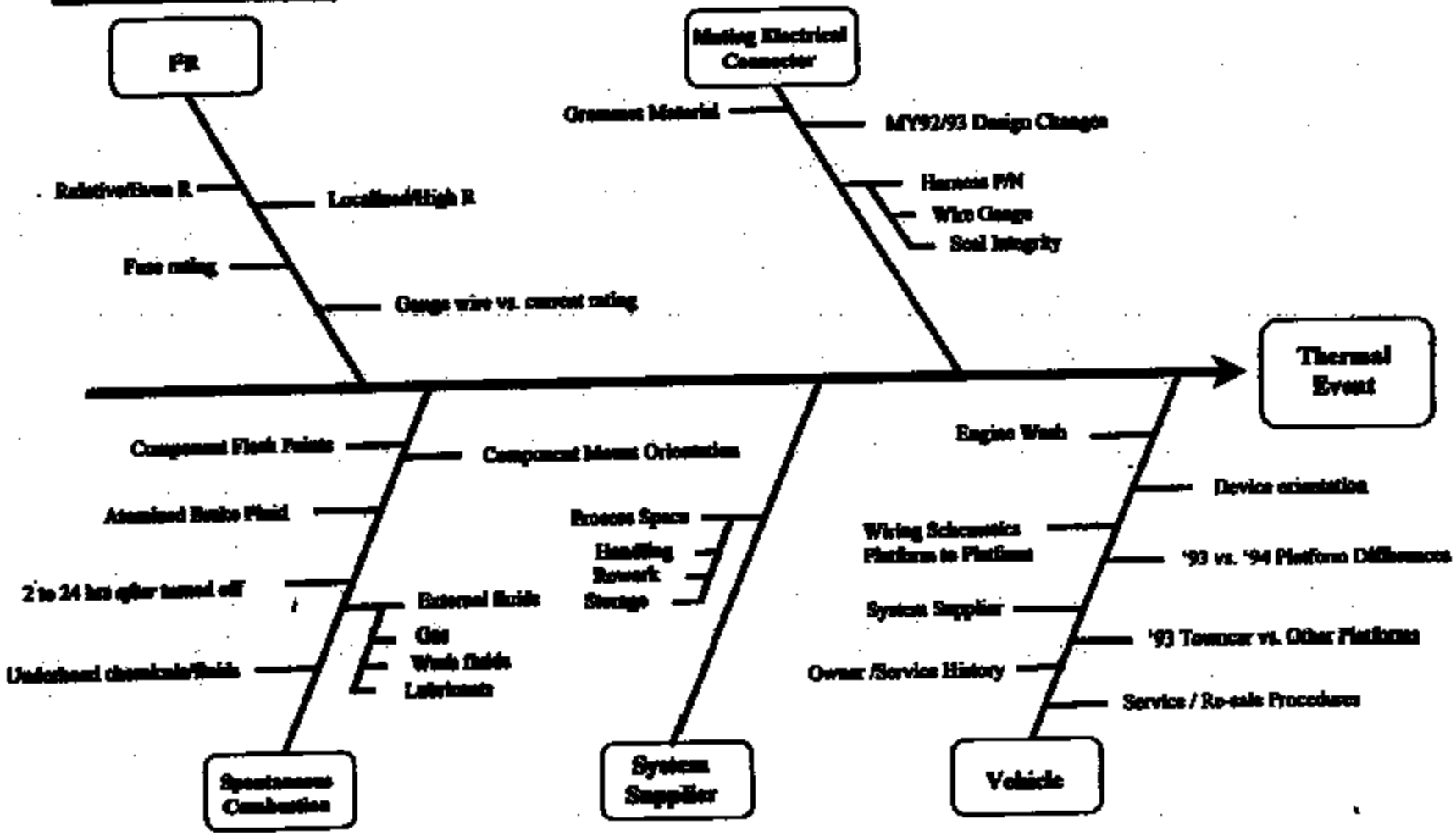
MY733191	Underhood Fire	108510
PY708158	Reference	??
PX151140	Reference	72814
MY757408	Reference	??
PY742858	Reference	??
PY7433413	Reference	105048

TI-NHT9A 012658

revised 2/18/99

TEXAS INSTRUMENTS

Ford Electronic Speed Control Deactivation Pressure Switch
TI P/N 77PSL Series
Thermal Event

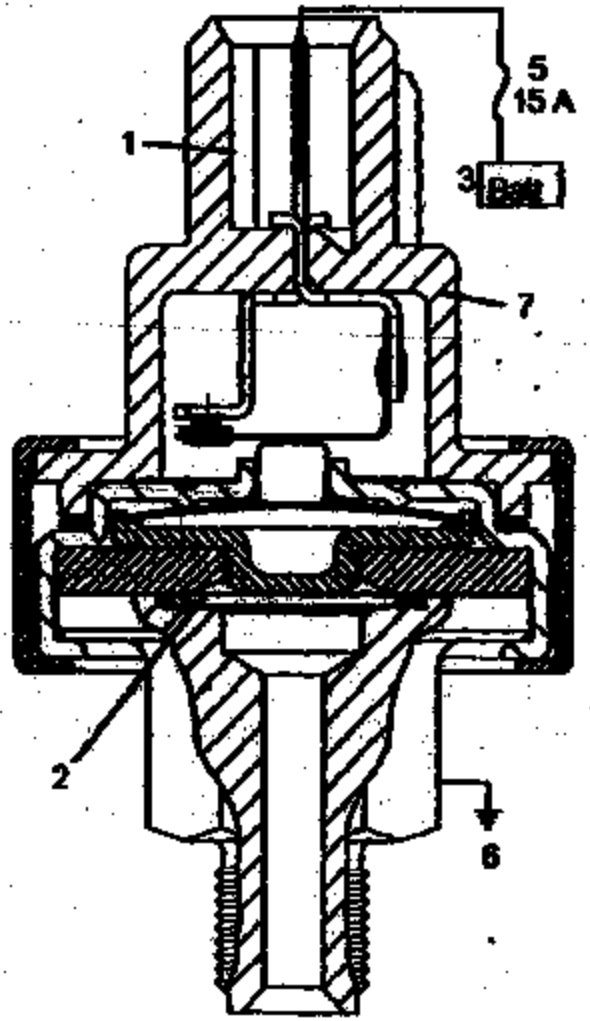


03/12/99/ B. Dagos

TI-NHTSA 012859

Discussed w/ Andy Ford on 3/11/99 by

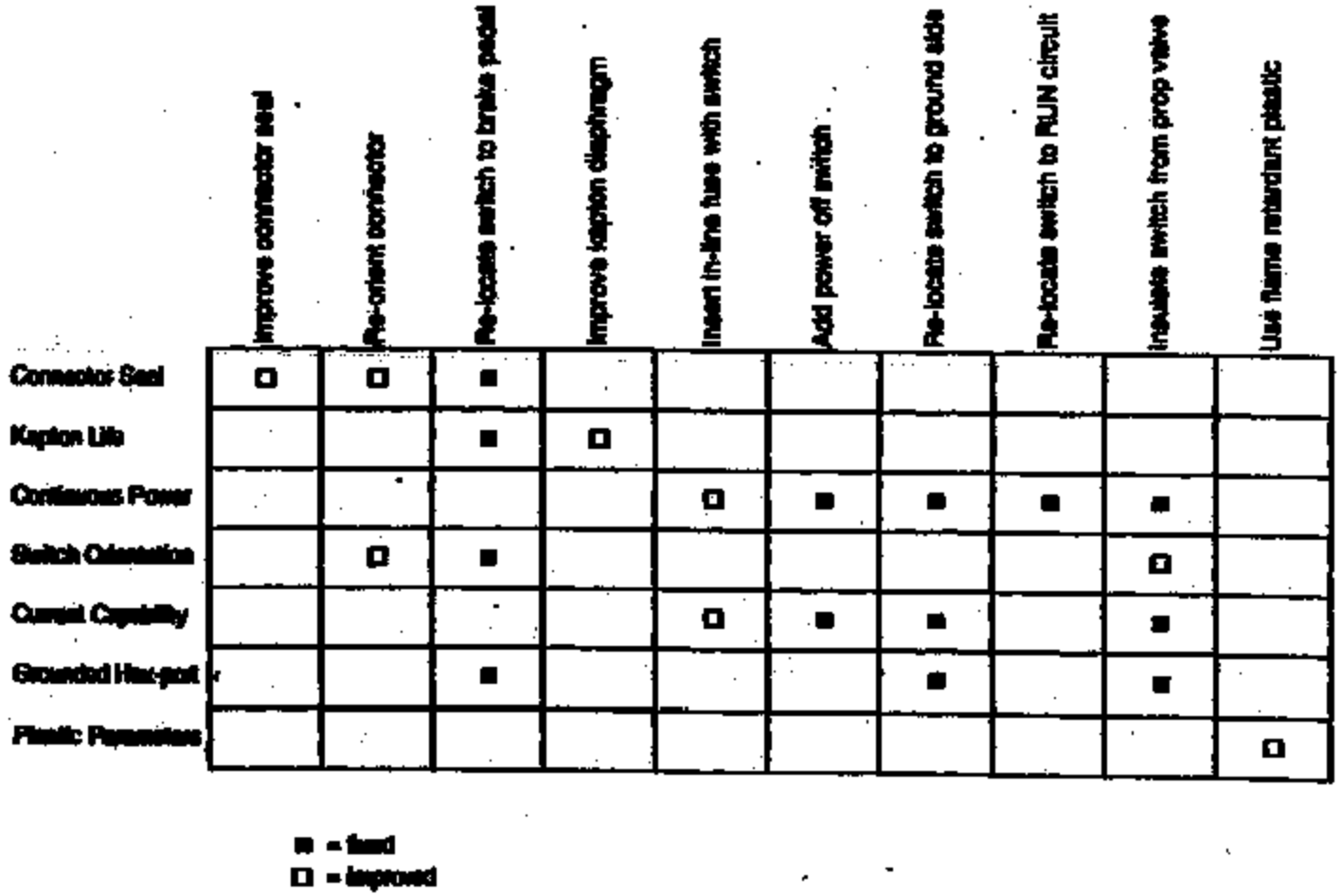
Contributing Factors



1. Connector Seal
2. Kapton Life
3. Continuous Power
4. Switch Orientation
5. Current Capability
6. Grounded Hex-Port
7. Plastic Parameters

Delivered to Act on 3/11/99 by Ford.

Potential Actions



TLNHTSA 012001

Epstein, Sally

From:	McGuirk, Andy [a-mcguirk@email.mc.ti.com]
Sent:	Friday, March 12, 1999 10:31 AM
To:	Beringhause, Steven; Dague, Bryan; Baumann, Russ
Cc:	Rowland, Thomas; Pechonis, John
Subject:	FW: (U) Brainstorming

EXHIBIT NO. 16a

AUTOMOTIVE SENSORS AND CONTROLS GRA MANGER
34 FOREST ST M/S 23-05
ATTLEBORO, MA 02703
TEL : (508) 236-3080
FAX : (508) 236-3743
PAGE: (800) 467-3700 PIN 604-2044

From: Frederick J. Porter[SMTP:fporter@ford.com]
Sent: Friday, March 12, 1999 9:01 AM
To: a-mcguirk@email.mc.ti.com
Subject: (U) Brainstorming

to: a-mcguirk@email.mc.ti.com

Regards,
Fred Porter OV - fporter fporter@ford.com
Chassis E/E Systems Applications (313)845-3722
Bldg 5 - Mail Drop 5030 - Cubicle 3E004 fax: 390-4145
*** Forwarding note from FPORTER --DRBN007 03/11/99 17:59 ***
To: N1654584--EXTERNAL

FROM: F. J. Porter USAET(UTC -05:00)
Subject: (U) Brainstorming

Andy,

Attached is a list of ideas that were developed by a group from our research laboratory of potential changes that could be made to the switch that may improve our condition. TI has investigated some of these already.

I would like you to go through each idea and let us know what your feasibility and manufacturing issues are as well as timing for their potential implementation.

1. Coat cup with plastic or other non-conductive coating (like anodizing)
   Lengthens corrosive path to ground
   Insulates from broken spring switch contacting ground

2. Make cup of non-conductive material
   Lengthens corrosive path to ground
   Insulates from broken spring switch contacting ground

3. Add plastic diaphragm between cup/transfer pin and the spring contact/switch
   cavity
   Additional layer of isolation between mechanical components and electrical components

4. Place plastic insulator disk on the cup with hole only for the transfer pin

Reduces surface area exposed between battery and ground

5. Replace kapton membranes with pure teflon membranes
   Increased flexibility of membrane

6. Replace kapton seal with sliding piston seal
   Eliminates wear on kapton

7. Change cup/converter topology
   Spread flexure over greater area of the kapton
   Reduce interfaces where extreme flexure occur

8. Replace switch with pressure transducer and semi-conductor switch
   Eliminates kapton seal

9. Design thermal link in power supply side of switch that opens at elevated temperature (one time or cycling)
   Turns off power before heat becomes great enough to cause ignition

10. Reverse polarity of switch contacts
    Removes power from spring contact if it moves out of position

11. Insulate/plastic coat spring except contact area
    Reduces corrosive exposure
    Reduces conductive material to making contact with ground

12. Gold plate spring contact
    Reduces corrosion

13. Fill air gap in switch housing with potting material to seal connector openning
    Seal off connector path of contamination

14. Change switch housing material for improved ignition parameters
    Reduces ability for flame to spread after initial heat source is removed

15. Add another layer to the kapton seal
    Possible increased life of seal before perforations occur

16. Add ground fault interrupter circuit to switch circuit
    Turns off power if ground path to case is detected

Regards,
Fred Porter OV - fporter fporter@ford.com
Chassis E/E Systems Applications (313)845-3722
Bldg 5 - Mail Drop 5030 - Cubicle 3E004 fax: 390-4145

Epstein, Sally

From:	McQuirk, Andy (a-mcquirk@email.mc.ti.com)
Sent:	Saturday, March 13, 1999 8:01 AM
To:	Beringhause, Steven; Degua, Bryan; Baumann, Russ
Cc:	Rowland, Thomas; Baker, Gary
Subject:	FW: (U) Brainstorming

fred and team really like the last one....and it may be a very good solution as it deals with a method of de-powering which is near to our long term input to Ford.....TURN OFF THE POWER. this is done if a fault is detected....

when could we have an idea/concept? should we deploy this to an extended eng'g team outside us for 'invention' + delivery ?

a

EXHIBIT NO. 27

AUTOMOTIVE SENSORS AND CONTROLS QRA MANGER
34 FOREST ST M/S 23-05
ATTLEBORO, MA 02703
TEL : (508) 236-3080
FAX : (508) 236-3745
PAGE: (800) 467-3700 PIN 804-2044

From: Frederick J. Porter[SMTP:fporter@ford.com]
Sent: Friday, March 12, 1999 9:01 AM
To: a-mcquirk@email.mc.ti.com
Subject: (U) Brainstorming

to: a-mcquirk@email.mc.ti.com

Regards,
Fred Porter GV - fporter fporter@ford.com
Chassis E/E Systems Applications (313)845-3722
Bldg 5 - Mail Drop 5030 - Cubicle 3E004 fax: 390-4145
*** Forwarding note from FPORTER --DRBN007 03/11/99 17:59 ***
To: N1654584--EXTERNAL

FROM: F. J. Porter USAET(UTC -05:00)
Subject: (U) Brainstorming

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   Lengthens corrosive path to ground
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3. Add plastic diaphragm between cup/transfer pin and the spring contact/switch cavity
   Additional layer of isolation between mechanical components and electrical components

4. Place plastic insulator disk on the cup with hole only for the transfer pin

   Reduces surface area exposed between battery and ground

5. Replace kapton membranes with pure teflon membranes
   Increased flexibility of membrane

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   Eliminates wear on kapton

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    Possible increased life of seal before perforations occur

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    Turns off power if ground path to case is detected

Regards,
Fred Porter OV - fporter fporter@ford.com
Chassis E/E Systems Applications (313)845-3722

Bldg 5 • Mail Drop 5030 - Cubicle 3E004 Fax: 390-4145

77PSL2-1
5% Salt Water Ingress Experiment

Abstract

This experiment has demonstrated that ingress of a 5% NaCl / 95% tap water solution into the electrical connector cavity of 77PS2-1 switches can initiate a thermal event. To simulate accelerated rates of ingress, the salt water solution was injected into a 77PS2-1 switch at 10 minute intervals (approximate). The switch was powered at 14.5 volts for the duration of the test. At approximately 2 hours and 45 minutes into the test, the switch ignited into flames. The entire test was documented on video tape.

Data:

Raw data from the data acquisition from this test, is presented in Appendix B.
Table 2, below, displays observations and notes made during the test.

Table 2.

Time Elapsed (minutes)	Observations
0	Test started, power applied.
10	Salt water solution injected into contact cavity.
20	Salt water solution injected into contact cavity.
30	Salt water solution injected into contact cavity.
40	Salt water solution injected into contact cavity.
43	Clutch actuation is irregular (possible contact arm failure).
50	Salt water solution injected into contact cavity.
60	Salt water solution injected into contact cavity.
70	Salt water solution injected into contact cavity.
80	Heavy activity (no solution added).
85	Video tape replaced.
86	Data Acquisition data saved and reset.
90	Salt water solution injected into contact cavity.
100	Salt water solution injected into contact cavity. More violent reactions.
110	Salt water solution injected into contact cavity.
120	Salt water solution injected into contact cavity.
125	Salt water solution injected into contact cavity.
130	Salt water solution injected into contact cavity.
135	Salt water solution injected into contact cavity.
140	Salt water solution injected into contact cavity.
145	Salt water solution injected into contact cavity.
150	Salt water solution injected into contact cavity.
155	Salt water solution injected into contact cavity.
159	Video zoom in on switch.

165	Switch ignition occurred.
166	Flames extinguished.

Appendices C1 through C6 contain switch photos taken during testing. They show smoke emanating from the test specimen as well as red hot, glowing internal components.

Figure 11, below, displays current and voltage measurements for the duration of the test. Sharp spikes in the data may be attributed to points where the connector was removed.

Figure 11.

5% Salt Water Ingress Experiment

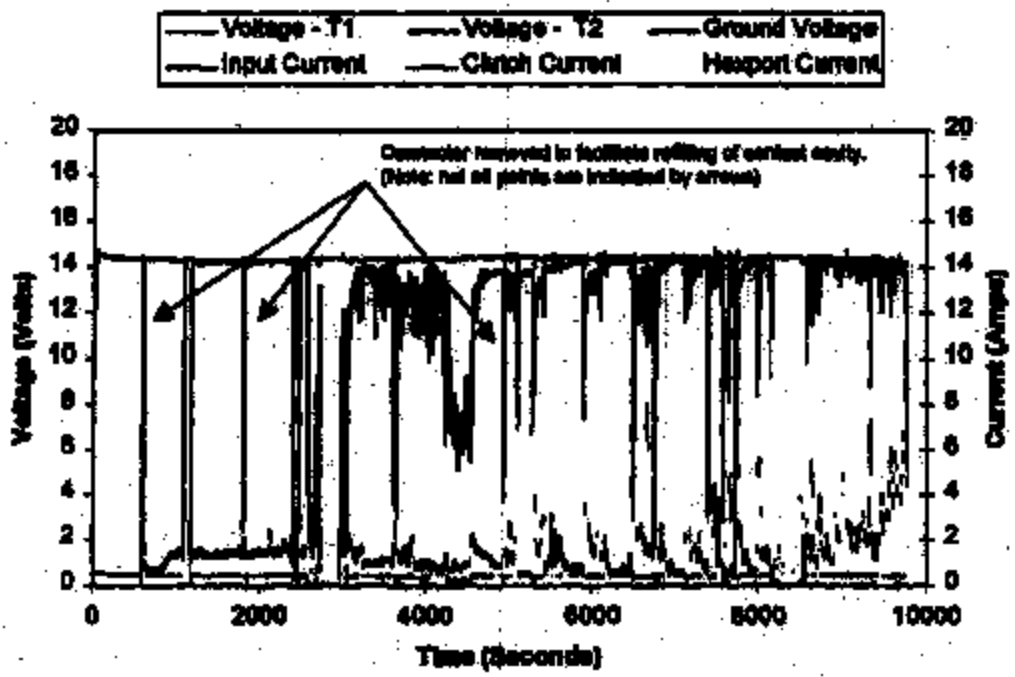


Figure 12, below, displays hexport current verses time. A (100) point moving average trendline was added to filter out data scatter and spikes recorded during refillings. The trendline shows that the hexport current remained relatively steady at approximately ¾ Amps (average) for the first 100 minutes of the test. Over the following 60 minutes of the test, the hexport current steadily increased until it reached approximately 2 ½ Amps (average) at which point ignition occurred and the test was stopped.

Figure 12.

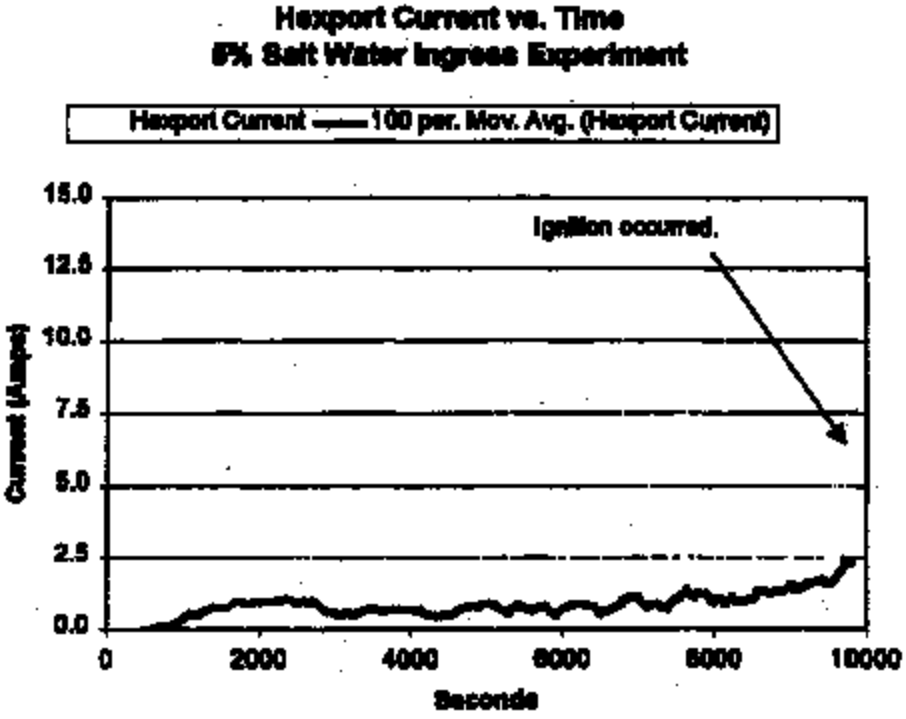
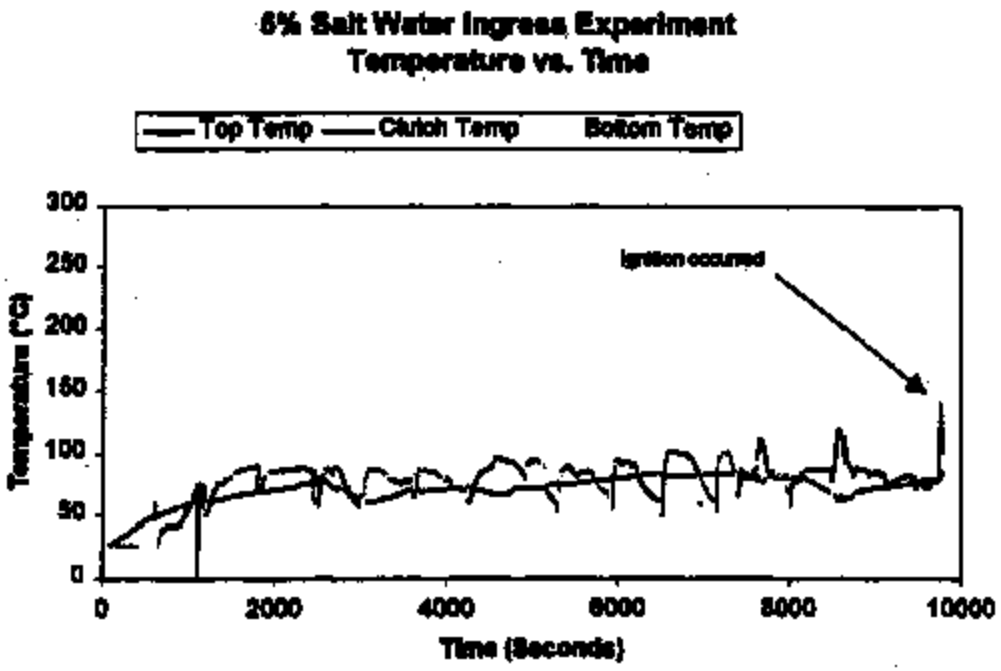


Figure 13, below, shows the thermocouple measurements made for the duration of the test. Relatively low temperatures were recorded up to the point of ignition where, over 250 ° F was recorded before flames were extinguished.

Figure 13.



Appendices D1 through D10 are photos of the switch at the end of testing. D8 and D9 show the internal corrosion build up in the switch.

Chemical analysis of switch corrosion and degree of arcing were not available at the time of publishing.

Results

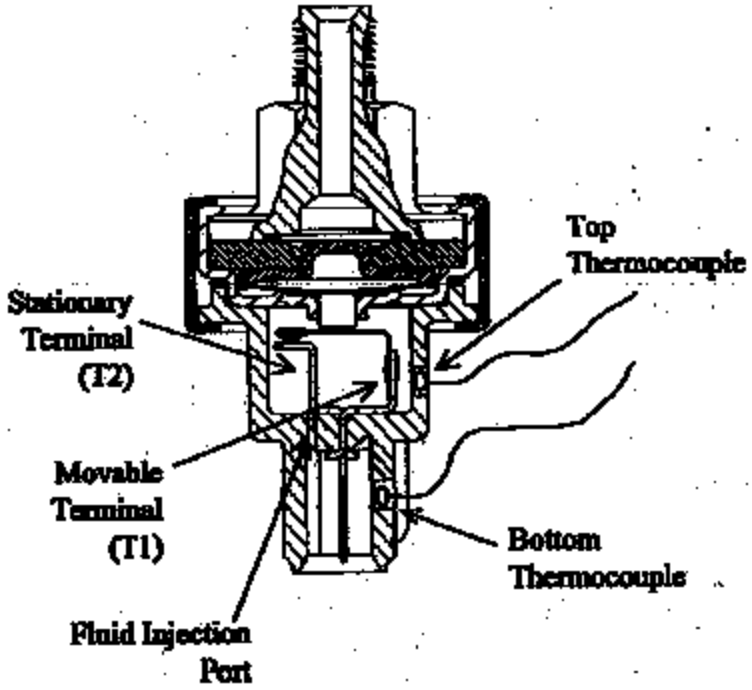
This experiment has demonstrated that repeated salt water ingress into the contact cavity of a 77PSL2-1 switch, while the switch is powered, can cause an ignition. Evidence indicates that ionic corrosion of switch components builds up in the contact cavity of the switch. Over time, corrosion builds sufficiently to create an electric path from powered terminals to the grounded hexport body. As ionic corrosion continues to build, hexport current increases, (see hexport current data of figure 12), and internal component temperatures increase. This fact is illustrated by the red hot glow in the switch as captured on video as well as photographs (see Appendices C-5 and C-6). Eventually, a critical point is reached where, ignition occurs. In this case a hexport current of 2.5 Amps (average) was necessary to cause and ignition. It should be noted that a hole

burned through the switch base prior to ignition. This hole provided a source of oxygen necessary for ignition.
Approximately (8) ounces of solution were used to refill the contact cavity of the switch. Some of the solution immediately escaped from the hole that developed in the switch base.

Conclusion

This experiment has demonstrated that ingress of an ion rich fluid into the connector cavity of 77PSL2-1 switches can cause a thermal event. Repeated injections of a 5% NaCl / 95% tap water solution into contact cavity of a 77PSL2-1 switch resulted in an ignition (2) hours and (45) minutes into the test. The fluid injections simulated accelerated rates of ingress into the switch contact cavity. Evidence suggests that ionic corrosion buildup in the connector cavity creates a path from powered terminals to the hexport body. When the hexport current exceeded 2.5 Amps (average) a thermal event occurred. (Other factors may also be necessary to create an ignition).

5% Salt Water Ingress Experiment
Test 1



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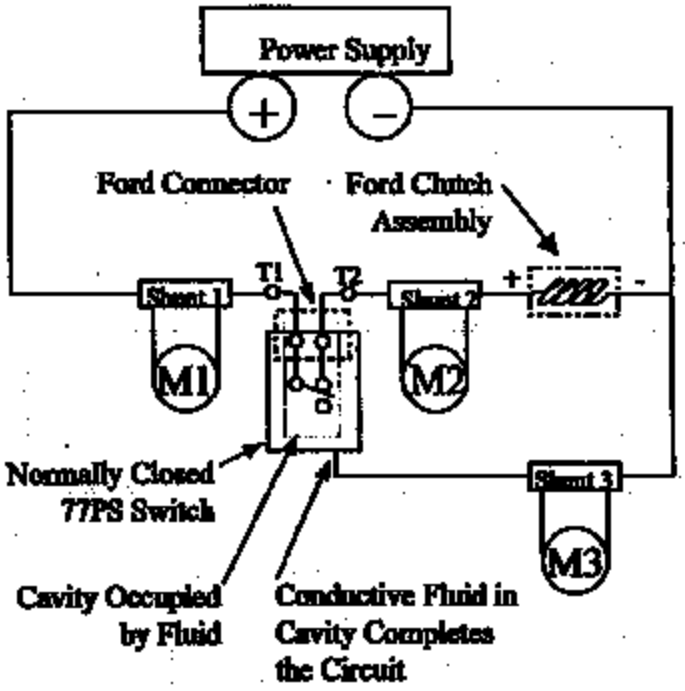
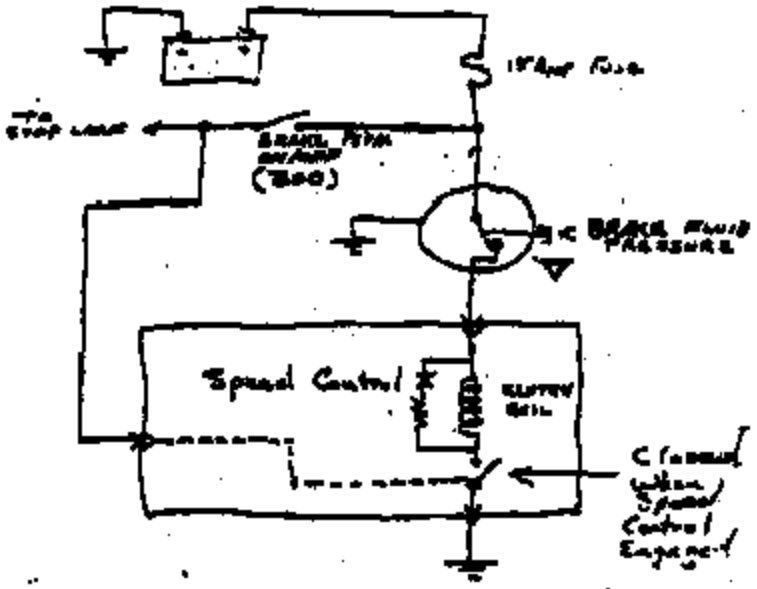


Test 1: Figure 1 and Figure 2.

Brake Pressure Switch
Potential Thermal Event Theory
Profile 3/15/99

Brake Pressure Switch Function-

- **Provide power to Speed Control Clutch circuit. Clutch engages servo-motor to pull throttle cable.**
- **Provide redundant sensing of brake application independent of the primary system deactivation mode by disconnecting power to clutch circuit causing servo-motor to release throttle cable.**
  - **Under Hard Braking only**
  - **Step lamp signal is primary (normal braking)**



570_Ingress.doc
3/19/99

Proprietary Information: Attorney-Client Privilege Invoked
PS/99/12
3/15/99

) 77PS
5% Salt Water Ingress Experiment

Abstract

This experiment has demonstrated that repeated injections of a 5% salt water solution into the electrical connector cavity of 77PS2-1 switches can initiate a thermal event. The salt water solution was injected into a 77PS2-1 switch at approximately 10 minute intervals. The switch was powered at 14.5 volts for the duration of the test. At approximately 2 hours and 45 minutes into the test, the switch ignited into flames. The entire test was documented on video tape.

Purpose

The purpose of this experiment was to determine the corrosive effects of a salt water solution on the electrical components of 77PS switches. In particular, it was intended to determine if salt water ingress could corrode switch components sufficiently to cause a thermal event. This test simulated accelerated water ingress into the electric contact cavity of switches. The test specimen was configured for use in Ford applications. It was electrically wired to a Ford power steering clutch assembly, mounted at a 45° angle and powered at 14.5 DC Volts.

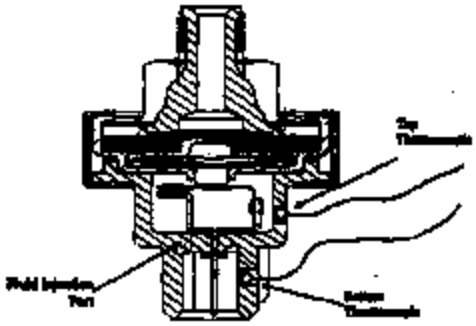
Test Setup

Instrumentation:

See Appendix A for photos of the test setup.
DC Power supply. .
VCR Camcorder .
HP34901A (20) channel multiplexer.
(3) Shunts calibrated at 100 Amp = 100 mVolts.

A small hole was drilled through the base of a 77PSL2-1 switch, next to the terminal leads as shown in Figure 1, below. (This was to facilitate injection of fluids into the contact cavity of the switch).
(2) holes were drilled into the side of the switch base which did not penetrate through the base wall. A K-type thermocouple was placed in each hole as shown in Figure 1. The thermocouples were secured with epoxy.

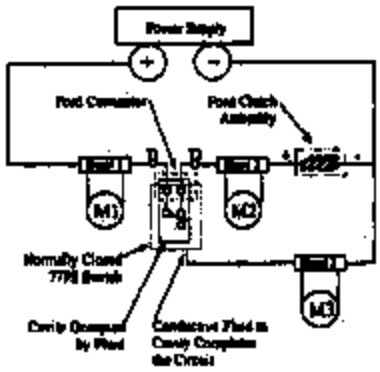
Figure 1.



The switch was placed in a metal test block, which was clamped in a vice at a 45° angle. (45° is the position of the switch as used by Ford). The switch was orientated such that the moveable terminal connector lead was located at the bottom of the switch.

The switch was connected to a 14.5 Volt power through a Ford clutch assembly. Refer to Figure 2, below.

Figure 2.



Shunt 1 was connected in series between the power supply positive terminal and the pressure switch movable terminal via the Ford connector.
Shunt 2 was connected in series between the positive terminal of the Ford clutch assembly to the pressure switch stationary terminal via the Ford connector.
Shunt 3 was wired from the switch test block to the negative terminal of the power supply. lead to the negative terminal of the power supply.
A Ford clutch assembly was connected in series with the pressure switch, represented as an inductive load in Figure 2, above.
A thermocouple was placed in the air gap of the Ford clutch assembly; between the coil and housing.
A data acquisition system was used to record the following measurements:
Time, elapsed time, input current (M1 of Figure 2), clutch current (M3 of Figure 2), hexport current (M2 of Figure 2), T1 voltage, T2 voltage, ground voltage, switch top temperature, clutch temperature and switch bottom temperature. The results were saved to a spreadsheet.

Procedure:

14.5 Volts DC power was applied to the switch and a timer was set.
Video taping and data acquisition began at the same time.
After (10) minutes, the contact cavity of the switch was injected with a 5% NaCl in water solution (% by weight).
The cavity was refilled at several times at irregular times, as reported in the data section of this report.
The switch was dissected and analyzed to identify the corrosion material.

Data:

The Data obtained from data acquisition is presented in Appendix B.
Table 1, below shows observations and notes made during the test.

Table 1.

Time Elapsed (minutes)	Observations
0	Test Start.
10	Salt water solution injected into contact cavity.
20	Salt water solution injected into contact cavity
30	Salt water solution injected into contact cavity
40	Salt water solution injected into contact cavity
43	Clutch actuation is irregular (possible contact arm failure).
50	Salt water solution injected into contact cavity
60	Salt water solution injected into contact cavity
70	Salt water solution injected into contact cavity

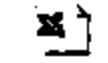
80	Heavy activity (no solution added)
85	Video tape replaced
86	Data Acquisition data saved and reset.
90	Salt water solution injected into contact cavity
100	Salt water solution injected into contact cavity. More violent reactions.
110	Salt water solution injected into contact cavity
120	Salt water solution injected into contact cavity
125	Salt water solution injected into contact cavity
130	Salt water solution injected into contact cavity
135	Salt water solution injected into contact cavity
140	Salt water solution injected into contact cavity
145	Salt water solution injected into contact cavity
150	Salt water solution injected into contact cavity
155	Salt water solution injected into contact cavity
159	Video zoom in on switch.

Appendix A

Appendix B

Epstein, Sally

From: Dague, Bryan (bdague@email.mc.ti.com)
Sent: Tuesday, March 16, 1999 3:37 PM
To: Warner, Pam; Rahman, Aziz
Cc: McGuirk, Andy; Beringhause, Steven
Subject: RE: TESTLOG.xls



<<TESTLOG 3-17>>

Andy,

Check it out to make sure the words are right and I did not miss anything.

See you at 7:00.

Bry

From: Rahman, Aziz
Sent: Wednesday, March 10, 1999 9:03 AM
To: Warner, Pam
Cc: McGuirk, Andy; Dague, Bryan; Beringhause, Steven
Subject: TESTLOG.xls

<<File: TESTLOG.xls>>

Pam,

For Andy's trip today.

Regards
Aziz.

Brake Pressure Switch Test Log. Updated 3/16/99

Category	Test	Location	Test Parameters	Results Update
Lab Simulation of Potential Ignition in Switch	1	TI	Various Levels of Brake Fluid, Water Switch 14Vdc to one terminal, teleport grounded Water Conc: 0%, 4%, 6%, 10%, 75%	250+ hours. Current down in the 0.5mA to 5mA range Fluid has discolored
	2	TI	Various Levels of Brake Fluid, Water, 1 Amp through switch terminals	No Significant Temperature Rise. Test Suspended Internal Analysis in Progress.
	3	AVT	Brake Fluid in Switch, 24 VDC to one terminal Teleport Grounded	250+ hours. Constnat temperature. No significant temperature rise with time Test Suspended.
	4	AVT	Brake Fluid in Switch, 24 VDC to one terminal Teleport Grounded, Ambient at 100 C	> 300 hours into test, max current 7mA No significant change with time. Test ongoing
	5	AVT	Brake Fluid in Switch, 16 Amps Through switch terminals	18 hours into test max current 5mA No significant temperature rise with time. Test suspended
	5a	AVT	Brake Fluid in Switch approx. 50 Amps through Switch Terminals	Temperature rise of 28 C above room temp Delta T reached steady state at 20 C. Test suspended
	6	TI	Build heater elements into Switch. Heat till failure, include sparking With Fluid & Dry	Temperature rose to approx. 270 F. No smoke. No ignition Test suspended.
	6a	TI	Pump brake fluid with metal shavings 5% brake fluid solutions	2 tested. Smoke observed, ignition observed on part wheeler Gas attachment Test complete
	6b	TI	Create heater by corroding spring arm Salt water solution, 14V between spring and teleport	Brake fluid in cavity slows down heat build up Smoke observed at 676 F, Blaze make and fails off at 880 F
			Re-run igniting test to understand repeatability, current path	One out of 15 devices increased resistance to 5 ohms. Others either very low resistance or megaohms It took about 180 scans to reach the 5 ohm stage That 5 ohm device ignited under conditions similar to test 6
				Switch ignition with reposted 5% water solution into switch Current path is through teleport. See plots and video Additional test [illegible]

Brake Pressure Switch Test Log, Updated 3/10/99

Life Cycle Reliability	7	TI	0-1400 psig pressure pulses at 135C	First leak observed at 726,000 cycles
of Pressure Switch			per FS	Test Completed. See attached Weibull Chart
Diaphragm Wear	8	TI	0 1400 psig pressure pulses at 13C ambient	Parts withdrawn every 200k cycles, characterized for wear
Field vs Lab Correlation	9	Central Labs	Failed returns, from dealer lots, junkyards	Parts in Central Labs, being processed
Design Of Experiments	10	TI	Various Levels of Brake Fluid, Water,	Test in progress
Evaluating Factors			Ions	
Effecting Diaphragm Wear				
			12 snap switches and 0 % water in brake fluid	Suspended at 1.3 million cycles with no leaks observed
			12 snap switches 5% water in brake fluid.	Suspended at 1.3 million cycles with 2 leaks observed at 1.3M.
			12 quiet switches and 0% water in brake fluid.	Suspended at 1.3 million cycles with no leaks observed
			12 quiet switches 5% water in brake fluid.	Suspended at 500k cycles to assess fixturing anomalies
			Test Report being written investigation continues.	
			DOE is being repeated	
On-Vehicle Characterization	11	AVT	Monitor Pressure and Temperature	Test in progress at AVT
of Pressure & Temperature			at Switch Location for ABS and non-ABS	
Profile in Town Car			braking events	
Spark /Arc Study	12	Central Labs	Determine if microspark forms in switch	Equipment set-up in progress at Central Labs.
			using clutch loads and high speed video.	
			Use dry switches as well as switches with	
			various brake fluid water mixes	
Characterization of	13	Central Labs	Characterize electrical, mechanical	Data log and analysis procedure set up complete.
switches retrieved from field			and chemical aspects of returned switches.	Analysis of switches in progress.
junkyards & other sources				
Compatibility of Kapton	14	Dupont	Characterize change in properties of Kapton	Progress update expected from Dupont by 3/29.
with Oxalic Acid			with various % oxalic acid in brake fluid.	
Evaluation of Plastic	15	TI	Assess properties and moldability of different	Sample material Cellanex 3316 under evaluation
Materials with Improved			grades of plastic resin with additives	Samples Obtained see video
Parameters			to improve performance	

TI-NHTSA 012592

3/16/99

Remember

→ Fishbone: switch fire

→ DOE:

- Cup analysis - Sean
- FD curves - Pat
- Sum, Results - Pat.

→ Ignition:

- Copy Tape -
- Sum. Data/Down Load - Keith
- H_2O part - me
  - data Review - me
  - cut open - me
  - conclusion - me

- Data
- Video
- Pictures
- TSC

- 1st Part To TSC/Pictures
- Report (chemical composition) - Sean
- Brake Fluid Burn test - Sean - Cancel
- old Brake Fluid
- incl 30% old Brake Fluid.

→ Russ's Car - check.

→ Long term Brake Fluid w/power

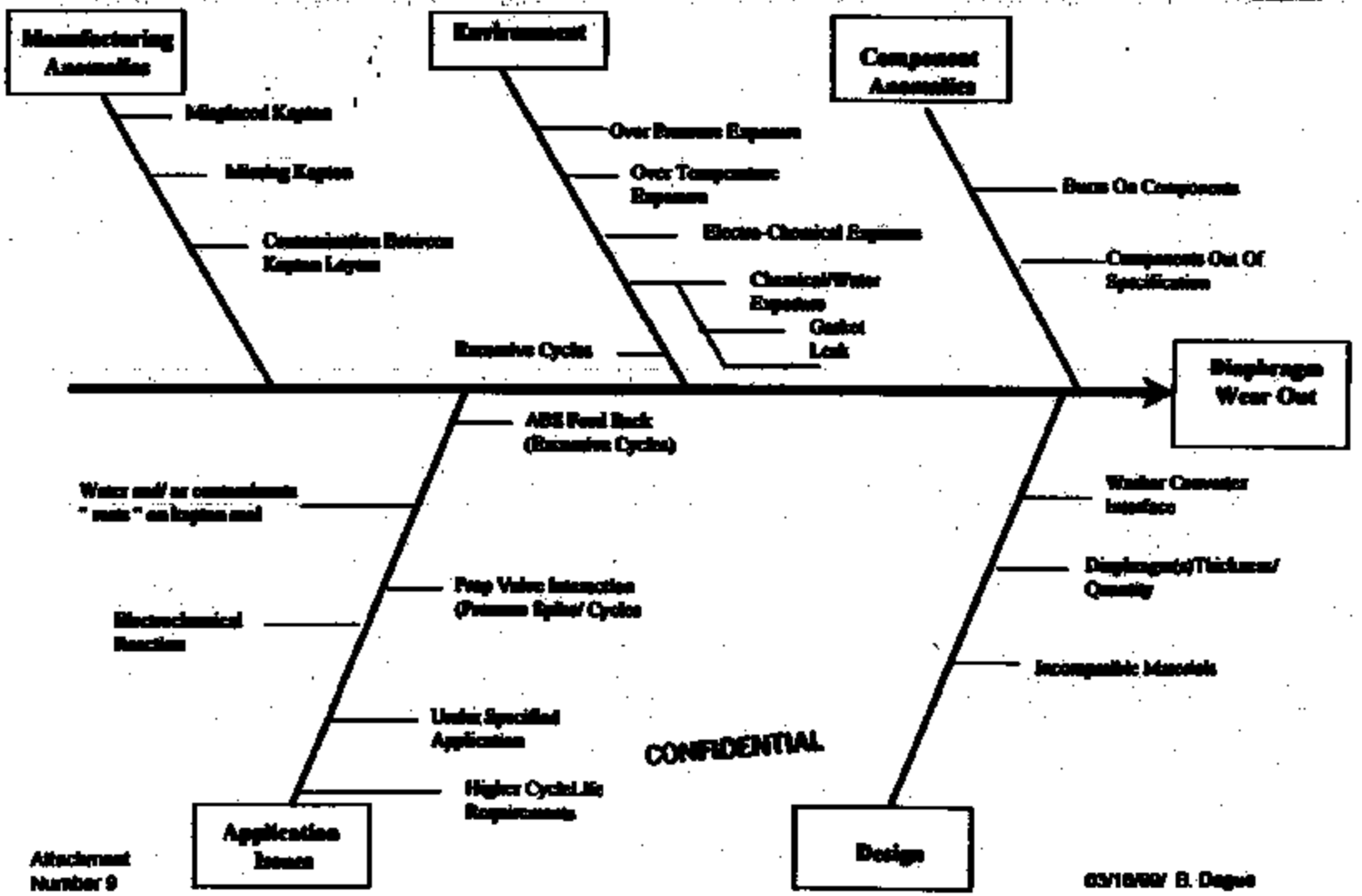
~~Sketch w/ switch Patent~~

→ FU GFI info.

update TI Test Matrix

TEXAS INSTRUMENTS

Ford Electronic Speed Control Deactivation Pressure Switch
TI P/N 77PSL Series
Wear Out Fishbone



CONFIDENTIAL

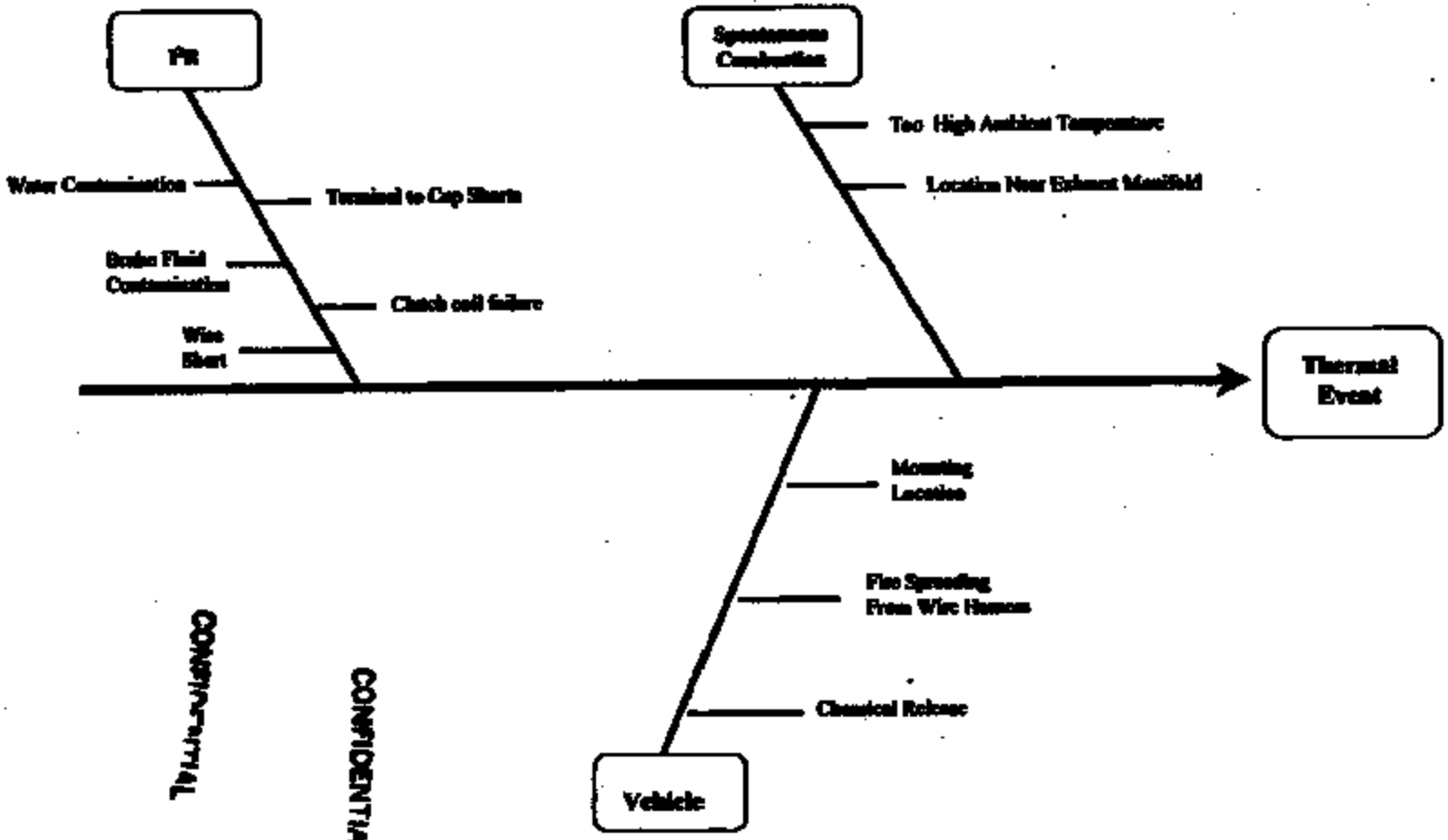
Attachment Number 9

TI-NHTSA 012884

03/18/02/ B. Dague

TEXAS INSTRUMENTS

Ford Electronic Speed Control Deactivation Pressure Switch
TI P/N 77PSL Series
Thermal Event



CONFIDENTIAL

CONFIDENTIAL

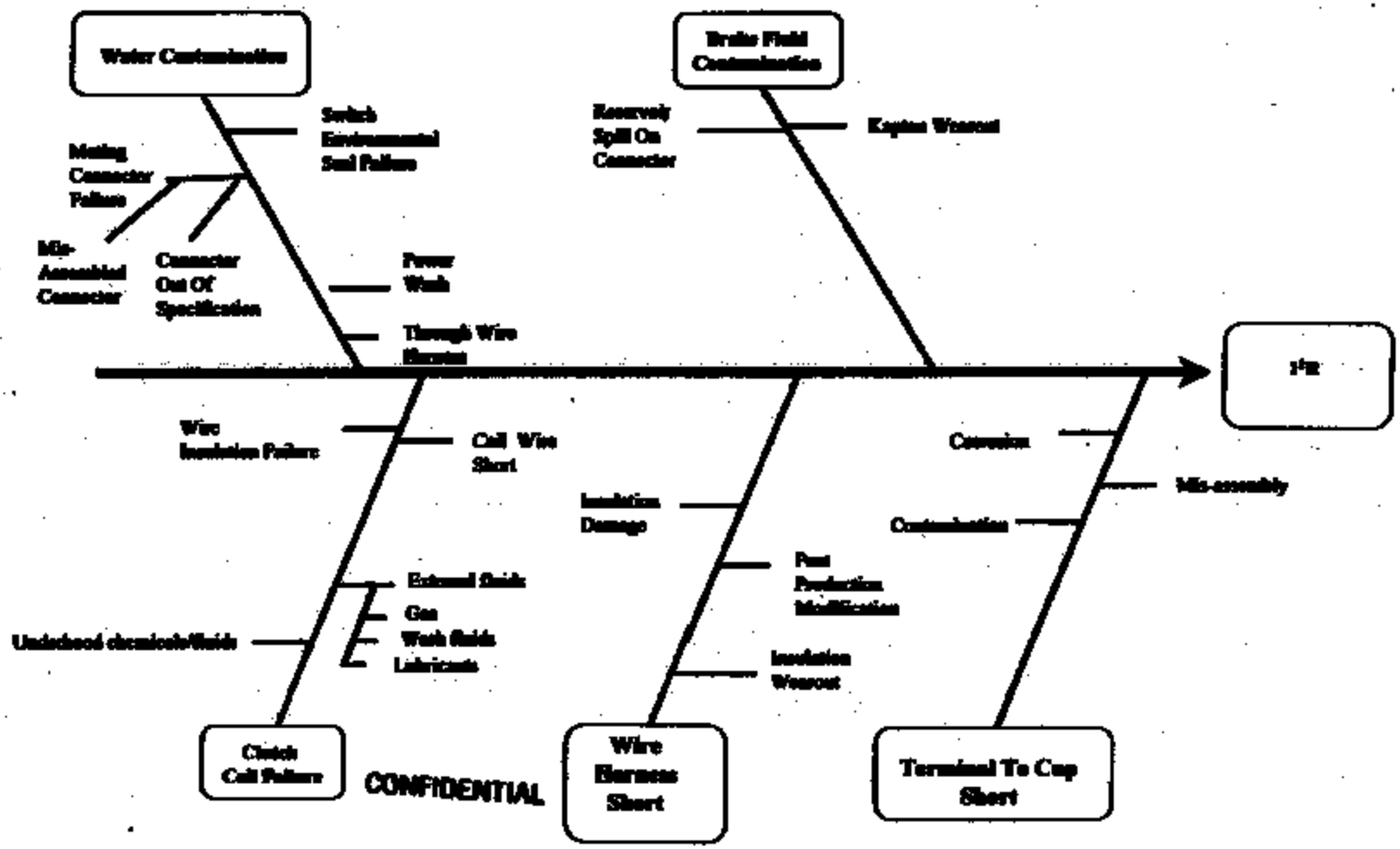
THNHTSA 012695

Attachment Number 18

03/16/99 B. Dague

TEXAS INSTRUMENTS

Ford Electronic Speed Control Deactivation Pressure Switch
TI P/N 77PSL Series
Thermal Event



CONFIDENTIAL

Attachment Number 11

03/16/99 B. Dague

TI-NHTSA 012696

Today's Date: UPDATED 03/16/99

Scope or Effect Description

1. Operational Definition (Problem Statement): TOWN CAR UNDERHOOD FIRES			
2. Description	IS	IS NOT	Get Information
WHAT	Town Car MY '92, '93, '94	Crown Victoria? Grand Marquis? TB Super-Coupe? MY '91, '95, 96 ?	COMPARE PLATFORMS
	FIRES.. - Electrical pressure switch - Connector - Servo system - Electrical Distribution	Not only pressure switches	COLLECT/TEST OTHER SYSTEM COMPONENTS FOR 'SYNERGY' COMPARE VEHICLE OPTIONS FOR SYNERGY
WHERE	Driver side hood Medium height in engine compart	Passenger side hood Dash – pass compartment Not high in engine comp Not low in engine comp	EVALUATE HEAT SOURCES
WHEN	1-24 hours after parking Ignition off After 4-5 years After XXX miles	Not while driving Not while ignition on Not before 3 years ? Not before YYY miles	EVALUATE POWER AND HEAT AND WIND SOURCES REVIEW MILES
	After AAA switch cycles	Not Before BBB cycles	
HOW BIG	149 cars / 223k miles "candle size" flame	Not all cars ? Not "explosion"	COMPARE PLATFORMS READ FIRE RPTS
	Several pressure switches	Not all underhood fires Not all pressure switches	PARETO UNDERHOOD